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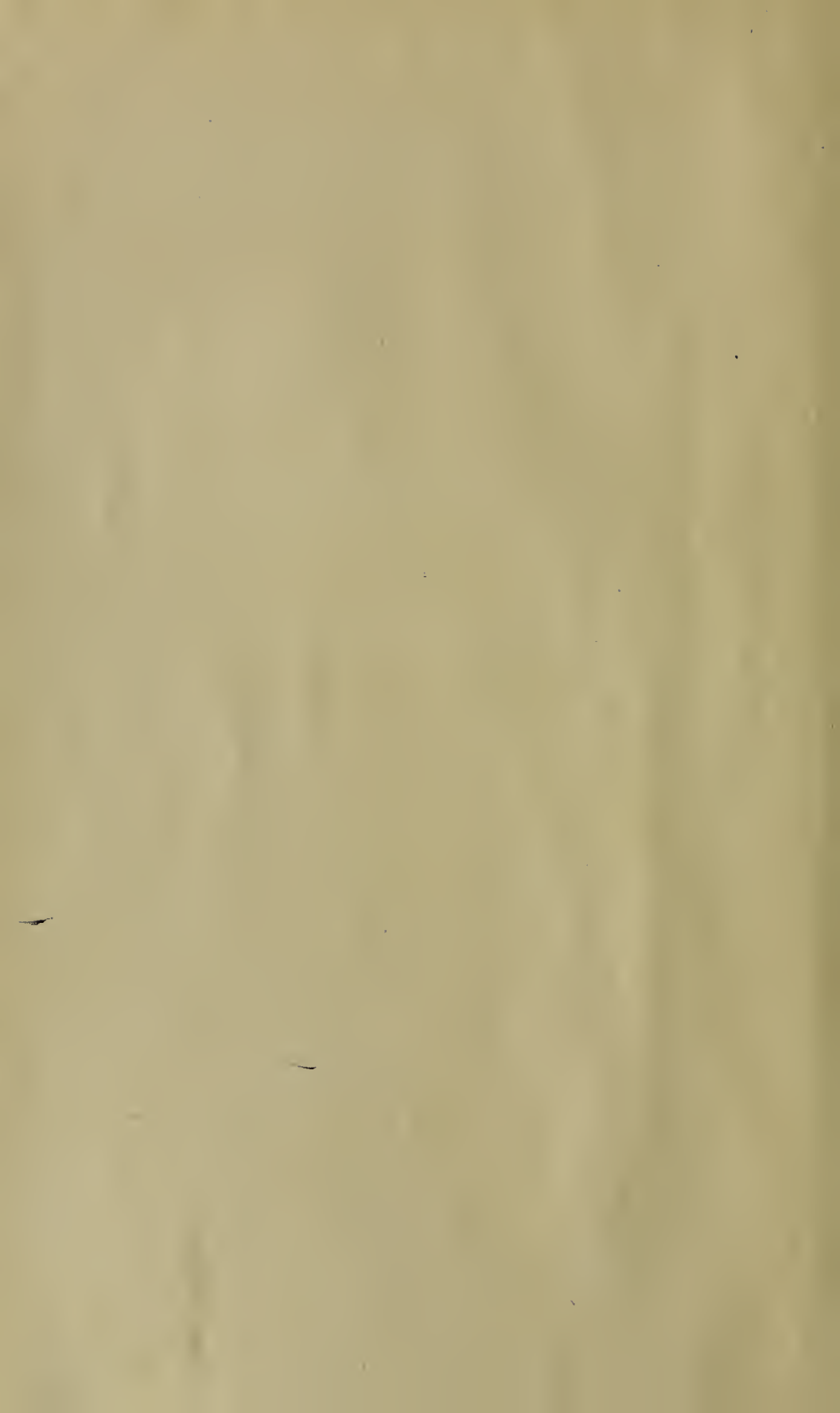
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CAMERA CRAFT

A Photographic Monthly

Edited by
FAYETTE J. CLUTE
H. D'ARCY POWER, M. D.
EDGAR FELLOES

VOLUME XXVII

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MISS KATHRYN COPE
By PERCY NEYMANN, PH. D.

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A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXVII**JANUARY, 1920****No. 1**

Composition with the Scissors

By William Bush

With Illustrations by the Author

A few weeks ago I ventured forth on what, to me at least, was quite a new expedition in photography. I had made, with more or less success, landscapes and seascapes, beach scenes and wharf views, street and roadway scenes, sunshine and shadow effects, groups and single individuals, architectural subjects and interiors, and of course had to try flower photography. Now, although I have been following the delightful and interesting pastime of amateur photography for quite a while, I had never ventured an attempt at making pictures of flowers. So far as my experience goes, I have concluded that the particular subjects I selected for my first attempt are about the most difficult of their kind for successful pictorial accomplishment. Some of my readers are, no doubt, familiar with this branch of photography, but I feel quite sure there are a good many who have not yet made the attempt to photograph flowers of any description, especially the water lily variety, so I propose, in this article, to try and tell these last how they may escape many of the difficulties I had to overcome before meeting with any success.

Water lilies, as I have suggested, are somewhat difficult subjects to secure, and when I finally succeeded in obtaining a number of very fine specimens of various colors, red, white and yellow, I congratulated myself upon my good fortune and started for home with the idea that all I had to do was to reach there, set up my camera, arrange the lilies in an artistic manner and make the exposure, doing it all very leisurely. My! it seemed so easy that, in my mind, the successful pictures were an accomplished fact.

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My specimens were secured in the morning of a hot day in August; they were taken from the pond, carefully wrapped in wet paper and then completely covered with dry paper, preparatory to my joyous hour and a half ride home on the street cars. But alas! When I arrived home my lilies were in no shape to serve as subjects from which to make photographs, being badly wilted and with their flowers closed. And right here there is one peculiarity of water lilies that deserves mention. Many of them will present perfect blossoms for three or even four days, but only opening as the sun mounts high in the heavens and invariably closing as it starts downward in the west. It generally lacks only an hour or a little more of being noon, on a bright, sunny morning, when they become completely open, and about four to five hours later they will commence closing, remaining closed until the hot sun brings them out on the following day. So if one wishes to secure good pictures of growing water lilies, he must not expect to select the time for side-lighting effects, with the proper shadows, for at such times they will be only partly open. Another of their peculiarities is that the blossoms of the white variety float on the surface of the water, while the colored or the red, blue and yellow ones, throw up straight stalks or stems, holding the blossoms from fifteen to eighteen inches above the surface. I am being this explicit in order that my amateur friends may more clearly understand what follows. I frequently read articles in the various magazines in which the writer shows us what he has accomplished; but, though we may be deeply interested in the subject, we often fail to understand, from his writing, how the work was done. I shall try to show, as nearly as I possibly can, how the illustrations that accompany this article were made, so that any reader of the magazine who knows how to make a good negative and how to copy a print, may tackle a like job and feel assured of success.

First of all, the work must be done in the daytime, when the light is strong and the flowers are out full. When the lilies are gathered their thick stalks are full of water and perfectly stiff, but as soon as they are taken from the water, evaporation commences, the stems quickly become limp and the blossoms gradually close up. To remedy this the flowers must be kept in water until all the preparations are complete. The ideal place for the work is on the north side of the house, in a well sheltered position. For copying, I use a home-made contrivance of my own design, one that I have found very effective. Roughly speaking, it consists of a board, ten inches wide and six feet long, used perpendicular, with another piece of board with its end cut square, about four feet long, securely nailed at right angles to it at a convenient height, say about the height of a tripod. This forms a shelf that is securely braced so that I can set the arrangement up bodily against the sides of the house where I have an upright mark and two screw holes that enable me to set it up and take it down as quickly as a person can set his camera on a tripod. A small box stands on the outer end of the horizontal board or shelf, and that on this I place my camera, while the subject for copying is fixed on that part of the upright board coming above the shelf. Small objects to be photographed can be placed on the house end of the horizontal board, the camera being shifted back and forth to get the proper focus.

COMPOSITION WITH THE SCISSORS



THE THREE COMPOSITE PRINTS MADE FROM THE SEVEN ORIGINALS

I experimented quite a little with backgrounds before coming to a decision; I borrowed the blue curtains from the windows and the red hangings from a doorway; also a gray window shade; exposed two or three plates on each, and finally decided that my focusing cloth of black velvet was the most suitable for my purpose. This experimenting accounts for the slightly varying depth of tone in the different backgrounds in the made-up pictures, necessitating rather contrasty prints in order to get even results.

I found it no easy matter to arrange and group the flowers in a satisfactory manner; the stiff stems, when they were fresh from the water, made it very difficult to get them into the desired position to produce the best results, while the warm atmosphere caused them to wilt very quickly. To avoid this last trouble, I first put a few common flowers in position in the desired container, obtained a good sharp focus thereon, and then replaced these with the lilies and made the exposure. I also put crumpled-up green tissue paper around the stems in the bowls to steady the flowers, as they showed a decided inclination to slip sideways or droop forward before I could make the exposure. With the lighting I had,—a bright day, slightly cloudy, and working during the middle of the day in the shade of the house, the exposure, with stop $f-22$, was one to



THE SEVEN ORIGINAL PRINTS THAT SEEMED SOMEWHAT STIFF

CAMERA CRAFT

one and a half seconds, the red and yellow flowers requiring more time than the white ones.

Coming more closely to the subject of these illustrations, as the above applies to the original negatives made direct from the lilies, let me explain how the finished pictures came about. While I felt, on making prints from the original negatives, a certain amount of elation over what I had accomplished in my new venture against unexpected difficulties, I was far from being pleased with the results, considering them as compositions. Submitting them to one critic, I was overwhelmed with a long discourse on the importance of variety in spacing and proper arrangement in spotting, some of which I could understand and some not. But a more practical advisor, finding that I did know



SHOWING HOW ONE OF THE COMPOSITES WAS PATCHED TOGETHER

something about pleasing arrangement and that the difficulties encountered had prevented the carrying out of my ideas, suggested that I study the matter and fortify myself for another attempt by cutting apart the various components of my several pictures and rearrange them in a more deliberate manner than the actual subjects permitted.

Equipped with a pair of scissors and a pot of paste, I cut the prints into sections, as their parts were needed, cutting out individual flowers to the outline, when necessary; and then, with pieces of the black paper that comes around my plates for a background, I made more permanent my selected groupings. In other words, I built up a new set of groups by pasting the cut-out portions or individual flowers on the black paper. Realizing that the bowls and other containers occupied too large a portion of the pictures, the opportunity of removing sections and thus minimizing their obtrusiveness was also accepted. The tall glass was easily made shorter, the wide bowl more narrow, and the white dish less dominant.

This done, the idea came to me, why not set these built-up pictures before

COMPOSITION WITH THE SCISSORS

my camera and produce new negatives? The thing was tried and the results are shown herewith. The new negatives were made just before noon of a bright day, with an exposure of one and a half seconds, using stop f-22. One of these negatives was made without a glass over the patched-up print and the curl of the paper presented different surfaces to the light, so that, printed not too strong on Solio, it shows how the building-up was done. The others, placed under a clear sheet of glass and with more even lighting, do not show these defects. They show, however, what can be accomplished by a little ingenuity, plus patience and perseverance.

Some of my readers may ask: Does it pay? I think it does. For myself



ONE OF THE COMPOSITE PRINTS AFTER A LITTLE RETOUCHING

I can say that it opens up new vistas and new possibilities in the way of studying arrangement and composition. One can utilize this plan in building up new groupings from the material in prints already made. As a help in the formation of satisfactory groups when the flowers are again at hand, the time is well spent, as the results facilitate the actual handling of such difficult subjects. Moreover, why not apply the idea to other subjects than flowers? We often find ourselves wishing that some one would come into view, when about to expose on a landscape, feeling that a figure, particularly if at the right place, would greatly improve the picture. A man returning from work; a fisherman standing beside a stream; a house gracing the top of a hill, and so on. A painter does not hesitate to put such figures into his pictures whenever he feels it will add to the beauty of the scene; then why not the photographer?

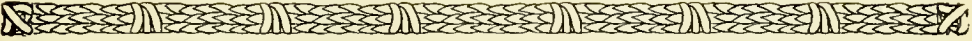
As I have before stated my object was to form groups, in a rough sort of way, as a form of educational exercise that would prepare me to make better groupings with less loss of time, to say nothing of patience, when another

opportunity presented. But as I progressed with my experiments, new possibilities were discovered, and I came to the conclusion that good finished pictures might easily be built up in this way. By closely examining these illustrations of the original pictures and the built-up results, particularly in the one given a little retouching, the improvement can be easily seen. The prints reproduced herewith were all, with the one exception, made from straight negatives without any retouching, either on negative or print. The only control exercised was that secured by using the grade of Velox paper, hard, soft or contrasty, best adapted to the securing of the desired result. The perfected print, the one of the lilies in the white dish, was made from the negative after it was carefully touched up by a friend on purpose to show what could be accomplished by more expert workmanship.

For such workers as do not care to attempt retouching of the negative, the same object may be attained by making an enlargement, working thereon with a pencil of non-shining lead, perhaps a paper stump as well, and an ordinary pen-knife used as a scraper to introduce high-lights or lighten too dark portions. Although even this requires some skill, the size of the enlargement permits of a degree of crudity in the work that would not be allowable in the smaller negative to be printed by contact. When the enlargement is properly worked up, put a plate in the camera and make a new negative. I made such a negative only a short time ago from a 20x30 copy. A friend wanted a number of grouped pictures for distribution, so I placed them in position on the 20x30 card, worked in some border effects, and then made him a 5x7 negative that gave fine prints very suitable for his purpose. Of course, the worker who understands the carbon or gum process can smooth up his backgrounds or hide other defects in his negatives, and make it all appear very artistic, but the ordinary amateur must be satisfied with what he is accustomed to work with, viz., good old Velox.

I should, perhaps, explain that all my work of this kind is done on the north side of a low building against which I fix my copying arrangement. This gives me a strong lighting from one side as well as from overhead. On the other side, when needed, I use a reflector, and always a clean, white blotting paper on the stand below and in front of the copy, this last to reflect the light upwards. This gives practically even illumination from all sides, resulting in good negatives that do not have the granularity that comes from uneven lighting. It is necessary, also, to expose as nearly correct as possible; and, in case of patched-up copy, a plate of good, clear glass should be used to hold all flat and snug. One should be careful to carry developing just far enough to assure a negative that is inclined to thinness rather than otherwise, and then select the grade of paper to suit. A little care, a little patience, and you will not regret the time spent. I certainly wish you the greatest possible success.

To carry on the feelings of childhood into the powers of manhood, to combine the child's sense of wonder which the appearances of every day, for perhaps forty years, has rendered familiar; this is the character and privilege of genius, and one of the marks which distinguish genius from talent.—COLERIDGE.



Carbon, Its Decorative Application

By Edgar Felloes



With an Illustration by the Author

In my preceding article, "Elementary Carbon Printing," I gave an account of the work which is necessary for the novice to understand before proceeding to its employment for decorative purposes. Manufacturers of tissue supply a large assortment of colors, but it will be necessary to order from the importers, as few dealers are likely to store any colors but those usually required for general trade purposes. Under these circumstances, a knowledge of the home preparation of tissue will be useful, and the worker may thus suit himself as to any shade of color.

We will first consider the preparation of the jelly, which is made from a gelatine having certain qualities of solubility. Some operators combine different makes of gelatine to secure this end; but, as I have used Nelson's No. 1 with success, I will confine my remarks to that particular brand. The following is the formula:

Nelson's gelatine, No. 1.....	1 ounce
Rock or sugar candy.....	¼ ounce
Water, cold.....	4 ounces

Add the water and sugar to the gelatine, and allow the latter to soak until thoroughly soft. It will be necessary to push the gelatine down into the liquid a few times, unless one takes the trouble to cut it up into short lengths. Use tinware in preference to glass containers to avoid breakage. Take the cup of softened gelatine and stand it in hot water, stirring gently until all is thoroughly mixed. Where they can be procured, dry colors finely ground are preferable to any other. But I have had good results generally with colors ground in water, sold in glass jars; though at times I have met with samples hardly fine enough. For experimental work, or work on a small scale, the moist water colors sold in tubes answer the purpose very well, the only objection being the price.

On a plate of glass, having selected suitable colors, mix up the tint required with a palette-knife, the total quantity to equal the contents of half a tube. With a tablespoon take out some of the liquid gelatine, place it on the glass slab and mix half of the colors with it; work the two together until the liquid jellies, when it should be scraped up and returned to the cup to be remelted. The amount of pigment required is best ascertained by test. Some colors are naturally more transparent than others, and in that case more of the pigment must be added than where they possess greater opacity. The blues and browns are classed as semi-transparent. The blacks, light red, Venetian red, and the ochres have good body.

Having added the pigmented gelatine to the stock in the cup, mix it well, but

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do not froth it; then make the first test. Take a narrow strip of white paper, bend up about an inch of it from the end and touch that end on the liquid, the object being to have a coat of the pigmented gelatine on one side of the strip. When this is chilled, examine it, and you will see the pigment in little particles held together or buried in the gelatine. This will show that there has not been sufficient pigment added. Repeat the process of mixing gelatine and pigment together on the glass till we have sufficient pigment added to make an opaque coating on the paper strip, which should be examined occasionally by transmitted light, that is, by holding it up before the light and looking through it. If the shadow of a matchstick held on the paper side of the coated strip just shows, it indicates that there is sufficient pigment in the solution. For transparency work, such as designs for lamp shades, about one-quarter more pigment should be added. By attending to these details, there will be no difficulty in judging the amount of pigment necessary.

I will here draw the worker's attention to the advantage of this more heavily pigmented gelatine for prints from thin negatives, as by working with a weak sensitizer, as described in my former article, stronger effects may be secured.

Presuming that the pigmented gelatine is ready, we must now strain or filter it. Procure a tin funnel and line it with a piece of fine muslin; place the funnel in a clean tin receptacle surrounded with warm water. It is important that the stem of the funnel should touch the bottom or side of the container so that the gelatine in filtering does not fall in drops, as this would produce a crop of bubbles later, causing no end of trouble. With the funnel in place as described, pour the pigmented gelatine on the muslin strainer and place the whole in a warm, not hot, oven. The gelatine solution, in spite of its viscosity, will soon filter through; after which the mixture is ready for coating. I wish to impress the worker with the importance of avoiding air bubbles, as they are difficult to remove, especially when small, and highly detrimental.

There are various ways of coating the paper support, with the pigmented gelatine. I will describe two, but recommend the first for workers on a small scale on account of its economy. The paper we need for our tissue must fill two requirements—it must be fairly strong and also porous; a strongly sized paper is therefore to be avoided. For large work, cartridge paper is excellent; but the paper known as "blank stock," to be secured at dealers in wall papers, will answer our requirements perfectly. It is sold in rolls and is cheap. Next to the paper, we shall need a printing frame, say 8x10 inches; one with the back fitting easily is best. This may be secured second-hand; also four pieces of glass—old negatives—to fit the frame. Cut from the roll of paper four pieces about 9x11 inches in size. Fill a tray with hot water and drop into it one of the glass plates. Leave it there a few moments to become of the same temperature as the water. Now take one of the pieces of paper and immerse it in the same tray and so arrange over the glass that the same proportion of margin overhangs all four sides of the glass plate. Lift both out together and, with a squeegee, remove all surplus water from the surface of the paper and, if any air bubbles show between the paper and glass, they must also be removed. Also mop off the moisture from the back of the glass, at the same time turning down the

CARBON, ITS DECORATIVE APPLICATION



JUST A BIT OF WILD OREGON LANDSCAPE

overhang or margin of the paper and placing immediately in the printing frame, the glass side uppermost, and a waterproof backing on top. Now put in the back of the frame and close it. All these manipulations should be done with reasonable haste, as we wish to coat the paper while the glass is warm. To this end the backing should be warmed also. Hold the printing frame on the palm of the left hand, paper side uppermost, and carefully pour about one ounce of the pigmented gelatine upon it. With the aid of a piece of card and gentle tilting of the frame, the gelatine can be quickly spread over the paper surface; which done, place the frame on a level table to set the gelatine. It is, of course, necessary to have an even coating. In a few minutes it will have set. Turn the frame face down and remove the back, also the water-proof sheet. Do not attempt to take the glass out of the frame just yet, but lift up the paper edgings all around the glass and spread a little gum or paste on them. This done, turn them down again on to the glass. With the hand on the glass, turn the frame over and, with a blunt pointed pocket knife, cut through the jelly close up to the frame all around, lift the frame off, and we have in our hand a sheet of glass holding the tissue smoothly with the edges of the paper securely fastened to the under side of the plate. Place the whole in a plate-rack to dry. One should make it a point during the drying process to reverse the plate, that is, to turn it on its opposite edge, so that what was the bottom corner is uppermost, otherwise all the moisture will gravitate to the lower corner and the supporting paper

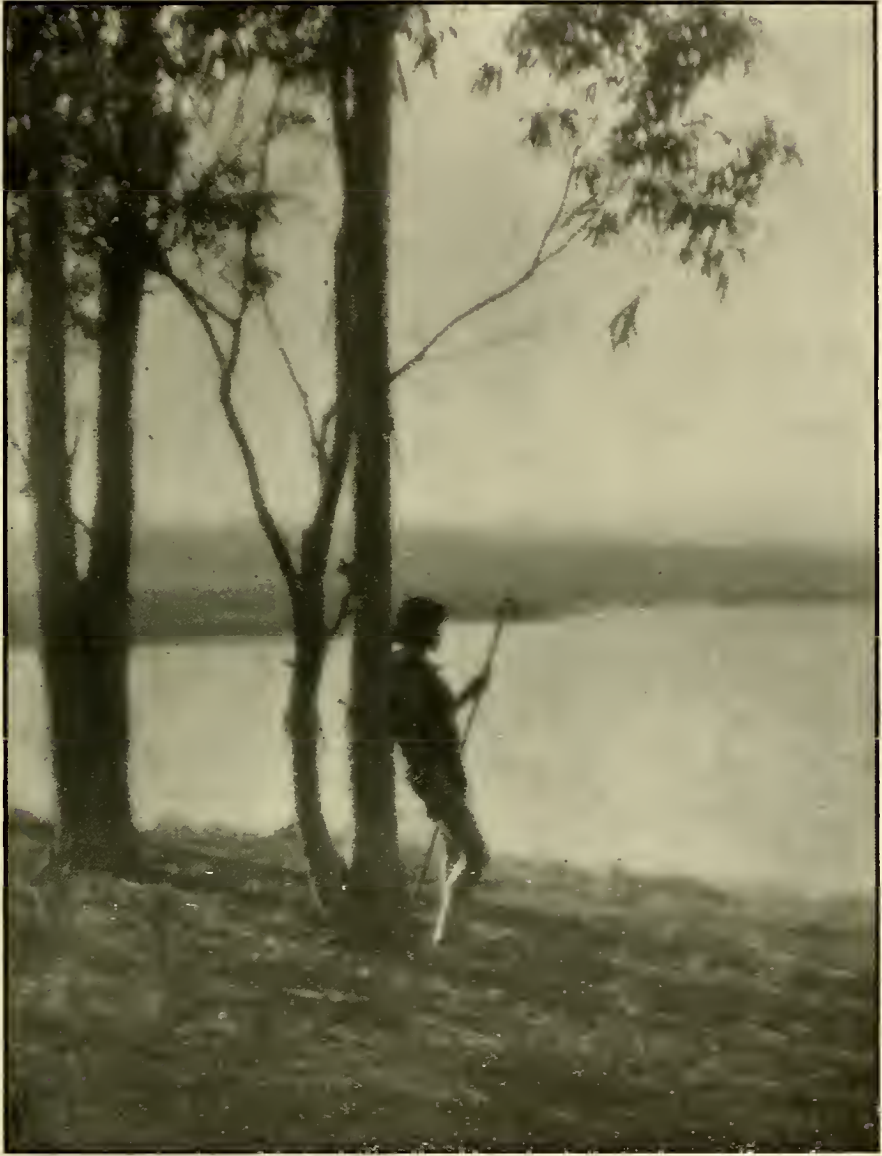
CAMERA CRAFT

will be too tender there to stand the pull of the drying gelatine. Or the plate may be placed in a horizontal position to dry, provided we protect it from dust. It will be apparent to the worker that a cold room is unsuitable for the process of coating. If conditions are suitable, plates can easily be prepared and coated in two minutes. When the tissue is dry, pack it away with the glass until needed for sensitizing.

To sensitize by the bath method, remove the paper from the glass and proceed as directed. But, when using the spirit sensitizer, coat the tissue while attached to the glass, where it will dry perfectly flat. When dry, detach and print.

The following is the second way of making tissue. It is useful where one needs it in quantity. Paper may easily be coated by this method in six-foot lengths, two at a time. Procure a brass tube three-quarters of an inch in diameter, its length being about two inches greater than the width of the paper to be coated. Also procure two metal washers, each one inch and a quarter in diameter; and with two wooden plugs at the same time closing up the ends of the tube. We now have something like the spool on which the film of our hand cameras is wound. We next need a rather deep tray, to be tilted in another tray—trough-like—the outer tray holding hot water, to be kept hot with a small stove. The inner or tilted tray is to hold the pigmented gelatine in liquid form. Naturally we need our jelly in greater quantity, but its preparation is the same as already described. As regards the pigment, it would be advisable to use that sold in the glass jars, or dry powder; whichever it is, it should be finely ground. If the pigment in the jars is too liquid, spread some of it on blotting paper to absorb the surplus moisture. It will be necessary to use a paper somewhat heavier than the blank stock already described, if we intend to coat long strips. Take two sheets of paper of exactly the same width, and, say six feet long, and, with a sponge and warm water, dampen their under surfaces, cause the two to stick together, back to back, smoothing them into contact with the palm of the hand. Place the coating apparatus near the floor and have a box handy to stand upon. This done, take the brass tube and hold it parallel to the top end of the paper, but a few inches below it. Then carefully sink the brass tube beneath the surface of the liquid gelatine with the paper under it. Take hold of the free end of the paper, being careful that it is above the liquid. Stand on the box and draw the whole length of paper slowly and steadily through the liquid gelatine. The object of the metal roller is to keep the paper submerged while in transit through the gelatine. The gelatine will not get between the two sheets of paper, but only cement their edges which, when dry, may be trimmed off and the two strips separated. In coating by this method, the following should be remembered. That the paper should be drawn up perpendicularly with a steady slow motion. The slower the movement the thinner the coating, because the paper then has time to approach the liquid in temperature. On the other hand, haste will cause a thicker deposit for the opposite reason. The objection to a thick coating is that it causes a waste of material in after-manipulations. Too thin a coating is liable to cause the light action in the subsequent printing to act right through the film in the shadow parts of the negative and thus anchor the paper backing, making development difficult if not impossible; for it is always

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WHILE THE FLOCK IS GRAZING

By FRED R. ARCHER

necessary to have a film of soluble gelatine between the printed face of the tissue and its paper backing. The drawing of the paper through the liquid at an uneven speed will cause a coating of varying thickness; and, when we come to sensitize, we will have a tissue more sensitive in some parts than in others, in consequence of the thick patches absorbing more sensitizer and causing uneven drying.

In order to apply the carbon print to various surfaces for decorative purposes, it will be evident, even to a novice in the process, that the image cannot in all cases be transferred to, and developed upon, its final support. Should we elect to decorate a wooden box, we certainly could not develop with hot water

a carbon image thereon. This forces us to adopt a process called retransfer or double transfer. Double transfer is nothing more than developing the print on a temporary support, from which it is in time transferred to the article we wish to decorate, be it cardboard, paper, wood, leather, glass or any other substance. The worker who is already familiar with single transfer has really very little more to learn. The temporary support may consist of any substance such as zinc, glass, paper or celluloid. Where one wishes a perfectly matt surfaced print, he can go about it in the following way: Take a sheet of ground-glass—opal glass ground on one surface is even better—and rub over it a waxing solution of beeswax, five grains; oil of turpentine, one ounce. If the plate has not been used before, give it two coats of the waxing solution and polish off the wax with a soft rag, leaving an almost imperceptible coating of wax on the ground surface of the glass. Place this glass plate in a tray of cold water, slide the printed tissue into the same tray, and proceed exactly as described in making the single transfer. The image in this case is developed on the glass. When development is complete, a piece of double transfer paper, which is similar to single transfer paper, except that it has a thicker coating of gelatine, is soaked in tepid water and brought into contact with the printed image on the glass; it is squeegeed thereon and placed under moderate weight for a short time; then placed to dry. When dry, it will often detach itself from the glass surface, adhering to the final support in the natural or unreversed position.

If the final support is to be a polished surface, use a smooth glass waxed for the first support in the same way as just described. This is all that is necessary for portrait or landscape work from ordinary or unreversed glass negatives. Double transfer paper can be procured at the dealers with working directions; I do not think it pays to make it for oneself.

Film negatives, the reader may remember, do not need this extra operation; one avoids it by simply printing with the celluloid or back of the negative in contact with the paper.

There is yet another kind of support, which is called flexible. For this purpose thin celluloid is as good as anything. A flexible support is necessary when our picture has to be transferred to a curved surface; the tops of boxes often require its use. Prepare the celluloid with the waxing solution if it has a matt surface; but, where the celluloid is perfectly smooth and clean, I do not use the wax.

If we wish to make a transfer on ivory—and such pictures are often used as a base for coloring miniature portraits—we would proceed in this way: Clean the ivory to remove all grease; make up a five per cent solution of gelatine; place the ivory in it; then take the piece of celluloid bearing the developed picture, which piece of celluloid should be a little larger than the ivory; slide it over the ivory, both being immersed in the gelatine solution; bring the two out together; lightly squeeze them into contact; with a damp sponge remove the superfluous gelatine; and, when dry, strip off the temporary support, and the picture will remain on its final support. If the object to receive the picture cannot be submerged in the gelatine solution, we simply paint the gelatine liberally on that part to be occupied by the picture, place the support bearing the picture on it,

CARBON, ITS DECORATIVE APPLICATION

being very careful that no air is imprisoned between them. When this is dry, strip as before.

So far, all the transfers I have spoken of are on light grounds. Supposing we wish to transfer our picture on to a dark ground, say, a dark wood panel, we would proceed in this way: Take some of the five per cent gelatine solution, say, a teaspoonful, and on the glass slab mix with it some Chinese white or zinc white; add to it a little yellow ochre or other suitable color to tone down the rawness of the white; place this dab of colored gelatine in an egg cup standing in warm water and, when again liquefied, use it as a paint. Take the temporary support on which the transfer has been allowed to dry and, with a suitable brush, carefully paint this light ground over the transfer, being very careful to keep the color within bounds. If the color chills too quickly, add a little warm water to it—just a few drops. The idea is to flow on a uniform coating the same thickness all over. It requires a steady hand but really no painting skill. When this ground has set, paint it over with a two per cent solution of alum; let it dry and transfer with the gelatine solution after wetting the surface of the transfer.

All these transferred pictures on wood should, when quite dry, be varnished or polished with the rest of the wood-work. It protects the picture and incorporates it into the article itself. The transfers are exceedingly thin; there is no perceptible edge; the effect of "stuck on" is entirely absent.

The arts reflect each other; the terms which are applied to the arts are borrowed from each other. We speak of the tone of a picture and the color of a piece of music. The sculptor must have a sense of color and music or his work will be cold. Each art may definitely require a special set of faculties to be trained, but these are co-relative and must be brought into harmony for power in any one art. Hence a certain amount of training in different arts develop the art capacities and enables the mind to grasp the elements that are fundamental in all arts.—S. S. CURRY.

Zeal ever follows an appearance of truth, and the assured are too apt to be warm; but it is their weak side in argument, zeal being better shown against sin than persons, or their mistakes.—WILLIAM PENN.



“Thinkouts,” A Photographic Production

By Cobb Xavier Shinn



With Illustrations by the Author

The reproductions herewith are presented, through the kindness of the *Chicago Herald and Examiner*, in whose pages they have all appeared, not as being examples of photographic art, but as showing an interesting application of one's knowledge of photography, combined with a little rudimentary skill in drawing and a willingness to give thought to the work. The newspaper mentioned runs an interesting page of reproductions of photographs, each day, and one of them is along the lines shown, the title reading: "Daily Thinkouts for Children", followed by the explanatory text as given with the few shown.

The reader has only to look at them to see that there is no great secret about the making of such pictures, and yet they are quite decidedly off the beaten path. They are, in fact, only another application of the method described in these pages some two years ago. Their use, by a large metropolitan daily, indicates that they have some value, and the check received in payment,



"THINKOUTS;" A PHOTOGRAPHIC PRODUCTION



while not taxing the resources of my local bank when it comes to cashing them, is even more convincing.

The moral of this little story, if there is any moral to such an infliction upon a class of readers who are supposed to be seeking for the pictorial, is this: Don't wear out your patience and the stamp cancelling machine at the postoffice in a vain effort to sell pictures of pretty landscapes and the like to the long-suffering editors of the newspapers and magazines; try them with something different. And something different doesn't mean something hard to make, as witness these examples shown. I don't, for a moment, suggest that these I am showing here-with be imitated or the particular idea back of them be used; but anybody possessing some little ingenuity ought to be able to devise some application of their photographic skill that is more original, even if not more artistic, than the "usual thing" in the way of camera productions.



Working out some such idea will be found very interesting; the necessary thought involved should not prove a deterrent, and while no salon awards may fall to one's lot, a few extra dollars may come his way. I trust that the reader will, at any rate, find some interest in the few examples shown herewith, not because of the childlike nature of his mental equipment, but by reason of their presentation of a less common application of photography.



More About Light and Exposure

By L. E. Rea



With Illustrations by the Author

In our article on "Light and Exposure" in the December number of "CAMERA CRAFT," we endeavored to show that it is the reflected light that reaches the plate that produces the picture. We will now consider several other phases of light control that contributes materially to the production of good pictures.

In beach and water scenes, distances with high elevations, and open landscapes, we have the direct rays of sunlight falling on our subject and, in addition, the reflected ray from the sky with a probable arc of a hundred and eighty degrees. With these conditions in our favor, we can safely use a much smaller stop than could be used if a downtown city street scene were the contemplated picture. In the first place, the average business building is of the light-absorbing type. Then, to add to our discomfiture, we find the buildings tall and excluding the sky to the extent, let us say, of one hundred and thirty-five degrees, thereby leaving only forty-five degrees for reflected skylight and sunlight. Even if the same light were falling on these tall buildings as is falling on our beach scene, the color of the walls, cornices, window sills, doorways and signs helps to absorb the light that would otherwise be reflected to the camera.

Try the experiment of setting up two dark-covered books on the table in the same relative position as the buildings in a street, with an electric lamp in place of the sun. Then remove these books and note the difference in effect on objects that were between the books.

Then there is the consideration of time of year and hour of day. During the winter months the sunlight is only about one-half the strength that it is in summer. In the early morning and late afternoon the rays of light from the sun must pass through a much greater depth of atmosphere than at mid-day. If the earth's atmosphere is, as scientists estimate, fifty miles in depth, then consider the vast amount of air and proportionate vapor the desired photographic rays must pass through. When at an angle of from forty-five to ninety degrees, the sun's rays are acted upon as if an enormous prism were planted upon the earth's

MORE ABOUT LIGHT AND EXPOSURE



AN INVITATION TO WIELD THE OAR

surface and the apex of this prism reached to the limit of the atmosphere. The white light, composed of a bundle of various colored rays, in passing through this prism, is broken up into its separate colors, thereby producing the beautifully colored sunsets we are privileged to enjoy. Snapshots under these conditions usually result in dismal failure. Why? Because the ultra-violet or photographic rays have been dispersed to such an extent that it is necessary to confine our efforts to time exposures or use a so-called fast lens.



A BIT OF THE SOUNDING SEA

CAMERA CRAFT

My readers have, no doubt, observed that snapshots are better for distant views than for near objects. Again, why? Because a greater amount of reflected light enters the lens from a distance than from what is near, as is most familiarly shown in the fact that one instinctively shades his eyes when looking to a distance.

I am sure that there are but few of us so lacking in observation as not to have noticed the peculiar actions of a lady ironing. To test the intensity of its heat, does she not moisten the tips of her fingers and slightly tap the iron a quick, glancing stroke? And then does she not proceed to place the iron upon the cloth, moving it to and fro at the rate of speed she judges exactly proportionate to the heat she has ascertained from her first test. We observe that, in testing the heat of the iron, her movement was so rapid that she did not burn her fingers. We find that a properly timed snapshot does not permit the light to penetrate the sensitive emulsion any more than the heat from the iron did the lady's fingers. A time exposure has its parallel in the process of ironing. The speed of the iron is in proportion to its heat, and the length of a time exposure should be in proportion to the strength of the reflected light. A snapshot saves the delicate gradations of the distance, while a time exposure permits the faint rays of light from the deep shadows and darker objects to impress themselves on the plate.

Another point in the successful production of good photographs is in the understanding of the shutter speeds and diaphragm markings of your lens. It is quite surprising to find how few photographers, whether amateur or professional, really understand the apparatus with which they work. In our endeavor to explain the lens equipment to you, we will consider that a sensitive plate is like a pan of flour. This flour requires a certain amount of water to turn it into dough. The sensitive photographic plate requires a certain amount of reflected light to make the correct impression on it. In order to save trips to the well, we select a cup of sufficient size so that one trip will suffice. Now, if we consider the diameter of this cup to be $f-11$ in its clear opening, and one twenty-fifth of a second its depth, we immediately grasp the idea that this combination represents volume. What is the difference between a cup of water to the pan of flour and a cup of light to the photographic plate? If we increase or reduce the diameter of the cup, we increase or reduce the volume of water or light; and, if we increase or reduce the depth of the cup (shutter speed, remembering that one-fiftieth is half of one-twenty-fifth), we also increase or reduce the volume. The best practice is to let the shutter speed remain at one-twenty-fifth, and vary the size of the diaphragm as occasion may require, when making snapshots.

In conclusion, let me say that a little horse sense goes a long way toward success. Get a good exposure meter—there are many on the market—and apply the few rules I have given here, along with the data the meter has to offer, and you are bound to be successful; always remembering, however, that the diaphragm or f - numbers are in inverse ratio to the size of the opening.

Your rusty kettle will continue to boil your water for you if you don't try to mend it. Begin tinkering and there is an end of your kettle.—CARLYLE.

Help Boost Your Locality

By A. S. Dudley



Illustrations by Various Workers

There are times when the professional or amateur photographer may operate in a dual role, with distinct benefit to the community. Probably a very small percentage of amateurs realize that their work may be made to reflect, both pleasantly and educatively, their community and its life to all parts of the world.

Few appreciate how much really valuable work can be done through good pictures. It is estimated that eighty-two per cent of all human knowledge is absorbed through the eye, and that sight strikes deeper than sound. Everyone is familiar with the old saying, "Seeing is believing". So that, if the camera depicts exactly what is in front of the lens, it presents the exact truth to that sense which is most receptive.

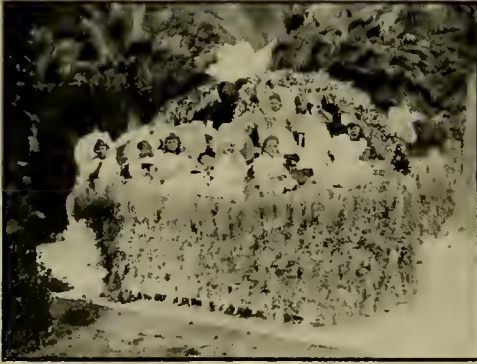
Photography today is almost universal. It probably has more amateur devotees than any other art. The fond new mamma keeps a record of baby with her kodak. The student, the school teacher, the picnicker, the hiker, and, in fact, almost every variety of human being is becoming addicted to the camera habit. Quite a large majority of them certainly do more than back away a certain number of feet and click the kodak. They take real pictures, and have



ONLY A BLUFF; BUT IT SHOWS THE SIZE OF A THREE - POUND CALIFORNIA ORANGE



SOME OF THE BIG VISITORS' REGISTERS AT THE LOS ANGELES CHAMBER OF COMMERCE



A COUPLE OF FLOATS IN THE PASADENA ROSE TOURNAMENT, HELD IN JANUARY

a good, common sense conception of composition, as is attested by many amateur photographic exhibits. It is this common sense, or better sort of photography, that states facts of interest, that becomes a community booster. A striking photograph has possibilities of world-wide circulation. It is not unusual for a single picture to be reproduced in scores of publications, even though it is a photo having distinct advertising value for the particular community it reflects.

It would be difficult to find a community anywhere that does not have at least one bright and pretty spot of exceptional distinction or beauty. It may have become so familiar to residents that they fail to realize its pictorial value; but the value is there. Such spots as these, reflected accurately and artistically through the camera, become silent salesmen. They perform the first step necessary in advertising—that of arousing interest or attracting attention. They are more powerful than the most vivid verbal description. They tell at a glance a story that might take thousands of words. They are accepted as the truth, because they visualize a scene. What interests the eye is accepted by the mind; no further doubt exists regarding what is transmitted optically. This cannot be said of what is heard or read.

If the statement is made that a tree trunk is so large that two grown persons cannot span it, the hearer is inclined to be skeptical and think that the statement is exaggerated. If shown a picture of this tree with the adults straining to make their arms meet, it is not only interesting but convincing, and fixes attention.

The power of a picture as an advertiser is demonstrated constantly by commercial organizations throughout the country, which are glad to furnish photos of interesting features of their respective communities. They employ expert advertisers to select the pictures and to supervise and encourage distribution. Some chambers of commerce are highly successful in having photographs of their city and its enterprises published broadcast.

Here are some suggestions made by a patriotic photographer in a Minnesota town, who, apparently, has keen appreciation of the possibilities of the photograph as a community booster:

Snapshot the beauty spots, especially of lake and stream, for water scenes are the prettiest pictures.

Snapshot the good catches of fish and the good bags of game.



A FORTY-ACRE ASTER FIELD IN SOUTHERN CALIFORNIA—GROWN FOR SEED. A GORGEOUS SIGHT IN EARLY WINTER

Snapshot the good herds and flocks, the pure-bred stock, the good crops.

Snapshot every large outdoor gathering of your community and all its organizations—celebrations, picnics, parades.

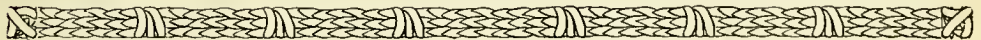
Snapshot your good roads and their making, new ditches, new land clearing, new industries, new buildings.

Keep sets of such snapshots, make up simple albums of such sets, to show visitors and others.

Give and send such snapshots, singly and in sets, to friends, but especially to those whom you want to interest in your section, to visit, settle or invest.

They will say, "What beautiful scenery! What great fishing and hunting! What rich soil and prosperous people! What a lively, progressive community!"

Thus will you boost by your kodak.



How Metol Was Re-Discovered

By Louis J. Stellman



Among the most important chemical compounds lost to America through the recent war was metol, as every photographer knows. For a time, the stock

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held out, increasing in price from the original forty cents per ounce, retail, to almost that amount in dollars. It was announced that Thomas A. Edison had discovered the formula; but his para-amidophenol hydrochloride proved sadly lacking in the the qualities of German metol. A host of others, called substitutes, and several actually new productions, came into the market. Some were original metol greatly diluted with other chemicals; some were rank fakes; but none of them were metol pure and simple.

William J. Van Sicklen, post-graduate of Stanford and professor of chemistry at Rice University, Houston, Texas, finally synthesized this important developer with exactitude, and has gone the Germans one better by making a grade that is chemically pure and non-poisonous. For ten months he worked in the Texas laboratory, secretly and for about eighteen hours a day, to reproduce metol, the importance of which his interest in, and knowledge of, photographic processes brought strongly home to him. He had practically nothing to aid him. The German manufacturers had never patented their metol in the United States, thereby avoiding the necessity of depositing a formula with the Patent Office. Instead, they had patented the "use of metol" and the trademark, which shrewdly served their every purpose.

In 1897, a German chemist named Paul published a hypothetical method of production for metol; but this Van Sicklen found, upon experimenting, to be incorrect. So he entered upon a long and tedious process of molecular analysis, determining the exact atomic structure of metol. After his discovery, he faced the even greater task of proving it to the photographic trade, more or less reconciled to substitutes and thoroughly suspicious of new compounds because of the many almost worthless imitations they had tried. Van Sicklen had to combat this prejudice by argument, demonstration and chemical tests. He was constantly being asked, "How can you prove that your compound is metol? I've already tried a dozen that are said to be, and all of them are short of metol qualities."

While there is no single test for metol which is absolutely conclusive, Van Sicklen cites a double test which can not be gainsaid:

(a) Metol is practically the only developer that dissolves in concentrated hydrochloric acid.

(b) A five per cent solution of mercuric acetate, when added to a dilute solution of metol, will give a purple color after standing for about one minute.

Any substance that stands either of these tests is almost certain to be metol. If it stands them both, the proof is indisputable, so far as modern chemical knowledge goes. Of course, the test which interests photographers more practically than any other is the keeping quality of a developer. Genuine metol will oxidize much slower than its substitutes of equal developing speed. Van Sicklen claims, and is prepared to prove, that his metol lasts from fifty to three hundred per cent longer than any other so-called metol, substitute or imitation.

Van Sicklen has rid metol of its greatest handicap, the poisonous quality, which he found to be a free base closely akin to carbolic acid. This free base has been removed from his chemically pure grade, which is colorless and more-lasting than the commercial grade.

The truths of Nature are one eternal change, one infinite variety.—RUSKIN.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

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No. 1

We Thank You

We realize quite fully that, while in the very nature of things, it is impossible for us to get that degree of what may be called the personal contact that would be possible with a smaller number, there is still, between our readers and ourselves, a somewhat different, a somewhat more intimate, relationship, a somewhat more pronounced feeling of give and take, than exists in other fields of endeavor. We, ourselves, find it impossible to look upon our subscribers merely as customers who have made a purchase of the goods, the magazine, that we find so much of interest in producing, in producing in such a form that it will, according to our best belief, best suit their wants. We feel that each reader is entitled to our best efforts in his behalf; we are only too glad to be of any assistance that we can; and we find no small part of the joy and pleasure that our work affords is directly proportional to the amount of such help that we can find time and opportunity for giving. On the other hand, it must be remembered, that we are constantly made aware of the fact that our readers are also most kindly inclined, our daily mail and the office door bearing evidence that cannot be ignored. To thank each one either by letter or by word of mouth is of course out of the question, the list is too long, supposing even that a complete list were a possibility. And were it possible, would these good friends feel that their kindness were any the more appreciated simply because the editor had taken of his time, which is none too plentiful, to write and tell them so? We prefer to believe otherwise; in fact, we feel that our so doing would, in the majority of cases, be more of an embarrassment, be more undesirable than the implied lack of time and opportunity that our neglect to attempt the task might indicate.

We can, however, thank our readers, as a body, for the generous support they have given CAMERA CRAFT in the past; and, as the renewals and new subscriptions indicate, are ready to extend to us in the months to come. And we shall certainly try to make the magazine merit this handsome support. You are, all of you, no doubt, renewing your subscriptions or becoming one of our family of readers, primarily because the magazine is, to you individually, worth all of the price that is charged, and that alone demands our appreciation. And where, as seems so generally the case, the kindness is extended still further, we can only offer the assurance that our full appreciation is not withheld, even though a personal acknowledgment, such as we would like to give, is not forthcoming. Time and physical endurance do not permit. We know that we enjoy this support, this extension of the kindly spirit of our readers, support that is given in full measure and with a disinterestedness that makes it all the more gratifying. A few names and addresses, a kindly word spoken for the magazine, and a new subscriber results. This new subscriber is but the starting of a chain; a number of these chains means much in the way of circulation, and circulation, in turn,

means everything to the success of a publication. Circulation such as CAMERA CRAFT enjoys means satisfied advertisers, and their business, in turn, means that we can continue the present low price, despite the advance in cost of production. Invariably our new advertisers are surprised at the number of inquiries that their announcements in our pages bring forth, only later to be again most agreeably surprised at the amount of business that results from these inquiries. As a recent new advertiser wrote us but a few days ago, one learns to consider almost every inquiry received from our readers as a good customer added to the list; catalogues, printed matter, and even personal letters being good investments instead of a waste, such as results from using a mailing list, or even in replying to direct inquiries from a less satisfactory source. And right here is where we might introduce a few words to explain how anxious the advertiser is to get in touch with our readers. The catalogue he sends out are informative, his printed matter is instructive, and he is always ready to answer your queries as to his products and their application to the best of his ability. If our readers could only realize this as fully as they should, the situation would be even more gratifying to all concerned. But we did not start out to preach to you, simply to extend our thanks; and, in doing so, allow us to do the same to our good friends, the advertisers. We know that they are quite strongly inclined to bestow their patronage where the returns are so gratifying, but our thanks are due them just the same. They, alike with our readers, make the magazine and a continuation of the present price, which we hope to maintain, a possibility. We thank you.

The Seventh Pittsburgh Salon

We cannot say too much in behalf of the Annual Pittsburgh Salon of Pictorial Photography, of what it means to the pictorial photographers of the country, and in praise of the untiring work and energy that is given by those whole-souled and enthusiastic workers responsible for its success.

Next month will be too late to urge upon you the importance of preparing and submitting of your best, as the closing date is February fifth, a point that must be borne in mind. The exhibition will be held from March third to thirty-first, inclusive, but that does not mean that the closing date for entries can be overlooked. As we have before stated: All prints will be passed upon by an impartial and thoroughly competent committee of selection. Prints possessing the highest merits in artistic expression and execution will be hung. As has been the rule heretofore, no picture will be eligible that has been exhibited before in the United States. Entry forms, containing full information and conditions of the Salon, may be obtained by addressing Charles K. Archer, Secretary, 1412 Carnegie Building, Pittsburgh, Pennsylvania. Last day of entry, Tuesday, February tenth, 1920.

And we can, perhaps, do no better than to quote further from our previous announcement as follows: The above is the bare wording of the preliminary announcement, an announcement that means much to many of our readers and perhaps but little to many others, depending upon their zeal or zest in the matter of pictorial photography.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

The Carbro Printing Process

The process of making carbon prints from bromides is not new, as it was invented fourteen years ago by Thomas Manly, and has been familiar as the ozobrome process. The carbro process, which is now described, as will be observed, follows on the general lines of ozobrome, but differs from it in the fact of the tissue being prepared by treatment in one single bath; also ordinary carbon tissue is employed in the carbro process, in which it has been possible to standardize the times of treatment for tissues of different color. Since the publication of an earlier article outlining the carbro process, the writer has received so much encouragement from those who have given carbro a trial that it was decided to continue experimenting in the hope of making the working so mechanical as to bring it within the reach of the most inexperienced worker. This has now been accomplished, and altogether seventeen colors of Autotype carbon tissue have been successfully adapted to the process.

Early experiments soon showed quite a variation in the time of immersion required for different colors, with dark blue at the short end, only three and a quarter minutes, ranging to engraving black, with a lengthy immersion of ten minutes before detail was obtained in the high-lights. It was found possible to work the whole of the available thirty colors in a single working bath, but the time of immersion of some of the colors was so unduly prolonged, as in the case of engraving black, that a second working bath was introduced for the purpose of reducing the time to something more convenient. With these two working baths the whole of the colors appeared to drop into two series, and the table given is probably the most convenient method that it will be possible to introduce.

A comparison between the two working baths will show that while the proportion

of B and C differ, the quantities of A solution and water remain constant. This last point is most important, and the worker is advised to adhere to the figures as closely as possible, obtaining control for pictorial results by varying the proportions of B and C solutions only.

Temperature, too, has a considerable influence on the chemicals used, and the ideal temperature for the working baths is between fifty-five and sixty-five degrees Fahrenheit, this being the normal temperature of a living-room in England both winter and summer; and, as the process requires no dark-room the whole of the work may be carried out in cold weather beside the kitchen fire.

The keeping qualities of the stock solutions are excellent, and the working bath, until used, and thereby contaminated with organic matter from the carbon tissue, keeps for months. This is a useful point, as it permits the mixing of the working bath a day or two before required, and, by keeping it in a living-room, the mixed solution will take the temperature of that room and be ready for use at any time.

For the information of those who are unacquainted with the carbro process, the first part of this article gives full working instructions, while the latter part will contain information which may prove useful should any difficulties arise.

Briefly, a piece of commercial carbon tissue is sensitized, and while wet brought into contact with a bromide print—this bromide acting as a negative. These are allowed to remain in contact for about fifteen minutes, then separated, and the carbon tissue squeezed to a piece of transfer paper. On this transfer paper the picture is developed, and the final result is a carbon print from the bromide. The picture is not, as in the single transfer of the carbon process, reversed from right to left.

The following are the stock articles required: A good bromide print; carbon tissue;

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single transfer paper; squeegee; squeegee board, and suitable dishes.

A flat squeegee is best, and a useful length for all prints up to 12x15 is eight inches. The dishes should be porcelain or enamel; papier-mache is too difficult to clean, and thorough cleanliness is essential. It will be seen from the above that there is no great outlay for the initial work, and neither will the future require any additional expense.

The sensitizing baths are made up from the following stock solutions:

- A: Bichromate of potash.....400 grains
Bromide of potash.....175 grains
Ferricyanide of potash...175 grains
Water 20 ounces
- B: Chrome alum300 grains
Bisulphate of potash..... 45 grains
Water 20 ounces
- C: Bisulphate of potash..... 45 grains
Water20 ounces

All the above appear to keep well if stored in a cool, dark place.

From the stock solutions make up the following sensitizing bath:

- Solution A1¾ ounces
Solution B2½ drams
Solution C100 minims
Water 7 ounces

For convenience, this may be called a *a* bath.

This is a most useful quantity for half-plate; for whole-plate use fifty per cent more, keeping the same proportions all through, and for 10x12 double the quantities.

First place the bromide print in cold water and allow it to become thoroughly soaked; now take a piece of carbon tissue, cut about half an inch larger than the bromide from which the carbro is to be made, and immerse face downwards for a definite time, according to time and color table *a a* given at the end of this article. About a minute before the end of the time of immersion of the tissue remove the bromide print from the water and lay it face upwards on the squeegee board. At the expiration of the exact time, withdraw the carbon tissue from the sensitizing bath, and, after allowing it to drain for a moment, lay it face downwards on the bromide and squeegee into contact. Now mop off any superfluous moisture from the back of the tissue and cover with a piece of paper, or preferably waterproof cloth. Place a book over this to prevent the

tissue from curling, and thereby losing contact, and leave them in this position for from twelve to twenty minutes, the exact time is not a material point if kept within those limits.

A detail which requires emphasis is that from the moment of contact of tissue and bromide the sensitizing action begins; it therefore follows that once the two have touched there must be no attempt to adjust the carbon tissue if it has been laid down at the wrong angle, as such a course would inevitably result in a blurred or double image. Should any slipping occur, it is far better to squeegee and make the most of the resulting picture, as under no circumstances may the tissue be moved.

Towards the end of the time of contact of bromide and tissue (twelve to twenty minutes) take a piece of transfer paper cut slightly larger than the carbon tissue, and soak this in cold water for about half a minute if of the thin variety, and about a minute for the thicker papers. Complete wetting is necessary, but over-soaking has a tendency to lead to frilling and other troubles during development.

After wetting the piece of transfer paper, hold it up to drain for a moment, then lay it face upwards on the squeegee board. Now take the carbon tissue and bromide, still in contact, and by raising one corner of the tissue steadily pull the two apart; leave the bromide for the present, place the carbon tissue face downwards on the transfer paper, and squeegee the two into contact. Remove them from the board, place them between blotting paper with a book over them to prevent curling, and allow to remain there from twenty minutes to one hour, a couple of hours will do no harm. Go back to the bromide print, now bleached to a pale yellow, and place this in a dish of cold water for washing and reddevelopment.

It is advisable to change the wash water during the first few minutes of washing, as the greater part of the sensitizing bath, transferred from the carbon tissue to the bromide, washes out very quickly. Obviously, this water soon becomes a solution sufficiently strong to have some material effect on the bromide print. After changing the water the print may be ignored until the process is finished.

The development of a carbro print is a

A PHOTOGRAPHIC DIGEST

far simpler matter than the development of bromides, no chemicals being required. After sufficient time has been allowed for the pigment of the tissue to adhere to the transfer paper, tissue and transfer paper are placed in a dish of warm water. Start with a temperature of about ninety-five degrees, the hand being sufficient guide. Keep the two papers, still adhering, well covered by the warm water, and wait until the pigment commences to ooze round the edges of the carbon tissue. This usually takes a minute or two, and if at the end of that time the oozing is not very apparent, a little more hot water may be added, great care being taken that the temperature is evenly distributed. As soon as the oozing shows all around the edges, carefully lift one corner of the carbon tissue, and, keeping the transfer paper as much as possible under water, steadily strip the two apart. The transfer paper will now be seen to be covered with a thick coat of pigment, a smaller quantity remaining on the carbon backing. This piece of backing has now completed its work and may be thrown away.

Turn the transfer face downwards in the water and proceed with the development by holding one edge and gently moving the print over the surface of the water, great care being taken not to touch the bottom of the dish. A better plan, if the dish is large enough, is to gently splash the face of the pigmented transfer paper, and as the picture begins to reveal itself the splashing may be local for reducing any particularly dense part at the desire of the worker.

Development is complete when it becomes obvious that no more pigment will wash away, and the picture is laid face downwards in cold water to clear it from any loose pigment on its surface.

It will now be noticed that where the carbon tissue has been in contact with the transfer paper the latter is marked with a bichromate stain, to remove which the print is placed in a bath consisting of a three per cent solution of alum, and allowed to remain until the stain has disappeared. This may be done immediately following development, or the print may be dried and alumed the following day. The alum bath may be used repeatedly until its failure to remove the stain shows that it is exhausted. Should the solution become very dirty it merely re-

quires straining through a piece of old cotton or muslin.

This completes the process, and the bromide, after well washing; twenty minutes in several changes is all that is needed, may now be redeveloped, well washed, and is ready for further carbros prints, no fixing being required.

It is most important that the redevelopment of the bromide print be very thorough, and the prints are best left face downwards in the developer for at least fifteen minutes. If this redevelopment is not complete it will be found that all succeeding carbros will lack detail in the high-lights, and once the high-lights have suffered from this insufficient redevelopment there appears to be no means of retaining them in carbros, except by slightly increasing the proportion of B solution in the sensitizing bath.

Both for the original development of the bromide and also for redevelopment, M.-Q., Azol and Amidol all give excellent results, the writer's preference being for the last mentioned. For redevelopment, which, by the way, requires no dark-room and no fixing, it is better to omit bromide of potash from the developer.

In making first attempts with the carbros process the worker is advised to try a preliminary test, using one hundred minims less of C solution than the given formula, and, with two similar small bromide prints, give one piece of tissue an immersion of fifteen seconds less, and one an immersion of fifteen seconds more than the time given for the color which is being worked. The transfer paper may be marked on the back for future reference, with the formula used and the time of immersion. Example: (A.50, B.9, C.3—4 $\frac{3}{4}$ min). This would form a permanent guide for future reference, and give the worker a clear idea of the effect of varying the time.

It is interesting to note here that the time of immersion may be well compared with the time of exposure of a bromide print;—under-immersion (exposure) gives increased contrast, over-immersion (exposure) gives general flatness with high-lights veiled. Over-immersion may be remedied by using hotter water for development; under-immersion has no remedy. If in doubt give the tissue fifteen seconds more immersion than the standard time.

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Excess of B solution produces a general clogging, with a heavy deposit of pigment; excess of C solution slows the action of the bath, and longer immersion is needed to obtain definition in the high-lights. At the same time it holds back the shadows and general flatness results. This last detail is very useful for a harsh bromide, as by the addition of about one hundred minims of C, any degree of softness may be obtained, but don't forget to prolong the immersion from half to one minute.

The treatment of the original bromide print is an important factor in the final results obtained, and correct exposure and development are very essential. Over-exposure and under-development of the original bromide print produce great flatness, and the richness of the shadows is entirely lost in the final carbro print. A weak bromide gives a weak carbro, and for a weak negative the enlargement is best made on gaslight paper.

There are occasions when slight over-exposure of the bromide may be turned to useful account, as in the case of bald-headed skies. Slight over-exposure in bromide gives the appearance of fogging, but the deposit of pigment in the sky of a carbro print gives a suggestion of color. Wherever there is reduced silver in the bromide there should be a deposit of pigment in the carbro print.

The figures of the time and color table have been worked out for all the principal British makes of bromide papers, platino matt being the most useful. Some makes which appeared to contain very little silver required quite a lengthy immersion, one paper taking eight and a half minutes for sepia. There is no doubt that any paper will give a good carbro, but such a prolonged immersion as eight and a half minutes might be very baffling for a beginner. Some bromide prints made over eight years ago gave excellent results.

Gaslight papers, on the other hand, need only three-quarters of the time given for bromides with the same proportion for all colors, and the exact proportion of one maker's gaslight to their bromide platino matt is as eleven is to sixteen. Gaslight paper gives carbro prints fully equal to those obtained by bromide, and is therefore a valuable asset when dealing with a flat negative.

Although the tables are given as working at a temperature between fifty-five and sixty-

five degrees, it is advisable to keep as near the sixty degrees as possible. At above seventy, trouble develops on account of the softening of the tissue necessitating great care to prevent slipping when squeegeeing to the bromide. Also there is danger of crushing the high-lights when squeegeeing to the transfer paper. Below fifty-five degrees the activity of the chemicals varies in different proportions, upsetting the balance of the working bath. Obviously, too low a temperature is best avoided; it is an easy matter to raise the temperature by putting the bottle of working bath in warm water before pouring into the dish.

A convenient method of working a number of carbro prints is to take them in lots of four. Put in the first tissue, then immerse the other three at regular intervals of two and a half minutes, and by the time the last one is out the first will be ready for the transfer paper. Quarter-plate prints may be worked, if all of the same color, with four prints on one piece of tissue. Lay them in a square on the squeegee board, with a space of about one-quarter of an inch between them, and cut the carbon tissue about $7\frac{1}{2} \times 9\frac{1}{2}$; this gives a comfortable margin for squeegeeing. For all work it is best to cut the tissue about three-quarters of an inch larger than the bromide to allow for error when placing the two in contact.

For economy and convenience in working an excellent plan is to classify the bromide prints according to the desired color, then, having mixed one working bath, continue with the colors belonging to that bath until the mixed solution is exhausted. It is worth noting that filtering after use will increase the keeping qualities of the working bath, but the bath is very cheap and there is no need to use stale solutions.

Carbro has many advantages over bromide printing: It is permanent pigment; and you know before you commence working what the final color will be. This cannot be said of bromide toning. It is simpler than bromide making, and you have a choice of seventeen colors, with about ten different surfaces of paper support. In cost, carbro has a fractional advantage.

✓ Beware of air bubbles on the tissue during immersion. This is best avoided by lightly pressing the paper to the bottom of the dish and stroking the back of the tissue during

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the first minute of immersion. Accurate measurement of all solutions is imperative. Fifteen minims more or less of B or C solution might make a difference of half a minute in the sensitizing bath. Store all solutions in the dark—light has a very powerful action on bichromate, and also on ferricyanide. In the dark these two are fairly stable. Should the working bath suddenly give a very harsh print it is an indication that it is exhausted.

Oxalic acid may be substituted for bisulphate of potash, but its keeping qualities are not good, especially in the mixed bath, and its use is not recommended. Bisulphate of potash as called for must not be confused with the bisulphite salt.

The process is suitable for transparencies, and prints on wood and silk, the method of preparing the support being the same as that given for the carbon process in the Auto-type Company's booklet. For transparencies, give a rather longer immersion than for paper support, half a minute being sufficient for most of the colors.

And just one "don't"; don't attempt modification of the working bath until you have become acquainted with the process.

The table for use, at a temperature of fifty-five to sixty-five degrees and for *aa* working bath is:

Color of Tissue	Time of Immersion
Dark Blue	3¼ minutes
Terra Cotta	3½ minutes
Standard Brown	4¼ minutes
Sepia	5½ minutes
Sea Green	3¾ minutes
Vandyck Brown	5½ minutes
Bottle Green	4 minutes
Italian Green	4¾ minutes

For contrast omit C and shorten time by one-half minute.

For *bb* working bath, made up as follows: A, one and three-quarters ounces; B, five drams; C, 5 drams; water, seven ounces.

Warm Sepia	4½ minutes
Red Chalk	5½ minutes
Brown Black	5¼ minutes
Rembrandt Sepia	4½ minutes
Cool Brown Mezzotint	4¾ minutes
Warm Black	4½ minutes
Ivory Black	5 minutes
Engraving Black	6 minutes
Gray Green	4½ minutes

For contrast, use one hundred minims less

of C and shorten time by one-half minute.

The above figures are applicable to the papers used and others will no doubt give very similar results.—H. F. FARMER in *British Journal of Photography*.

Sulphide Toning Modifications

In the *Trade Notes* issued from time to time by Rajar, Limited, there is nearly always something of practical value to the amateur photographer. This month they remind us that colder tones than those given by the straightforward method of bleaching and sulphiding can be obtained if the gas-light or bromide prints are first placed in a sulphide solution before bleaching. Thus the fixed and washed prints may be immersed for five minutes in one part of liquid ammonium sulphide diluted with forty parts of water, or in an ounce of sodium sulphide dissolved in the same quantity. A portion of the silver will be converted into sulphide in this way, and when the prints are well washed and then placed in the bleaching solution it will be found that the image will not bleach out so completely as usual. After this bath, followed by sulphiding and washing, a cooler tone results. Messrs. Rajar point out that they prefer ammonium sulphide to sodium sulphide, as it is more stable, and is not liable to erratic action. Another modification they mention as giving a good variety of tones is that in which the print after bleaching in the usual ferricyanide-bromide solution is well washed and is then placed for a longer or shorter time in a weak developer, such as amidol or m-q diluted with about five times its bulk of water. In this the black image gradually regains its strength, and at any point desired the redeveloping may be stopped by washing, and the washed and partly redeveloped print placed in the usual sulphide solution and then washed. In this way we get an image partly of silver (black) and partly of silver-sulphide (brown): the further redevelopment is carried the more will the final color tend towards a black.—*Amateur Photographer*.

Sulphide Toning With Polysulphide

In the current issue of the *Bulletin of the French Photographic Society*, M. L. P. Clerc has a note on the process of sepia toning with polysulphide, originated some years ago by M. Desalme, a translation of whose communication appeared at the time in the

method consisted in making a solution of polysulphide by boiling sulphur with strong solution of ordinary sodium sulphide, or by mixing a strong solution of sodium sulphide with hydrogen peroxide. The yellow solution produced in each case is largely diluted with water to form the toning bath, in which prints gradually tone from a black to a warm sepia ground in about thirty minutes.

M. Clerc has found that the process does not work with the same readiness in the case of all papers, and that certain brands refuse to tone at all. The simplicity and cheapness of the process and the excellent results obtained under suitable conditions have therefore prompted him to make tests of a number of prints which showed no toning action after an hour's immersion in the bath with the object of discovering the cause of their failure to tone.

In order to test the condition of the image of a print which had thus remained untoned in the polysulphide bath, a print was well washed and treated with Farmer's reducer. The image was slightly reduced at the same time, becoming, almost instantaneously, of sepia tone. It thus seemed that the particles of reduced silver were attacked superficially in the hypo-ferricyanide bath, a layer of black metallic silver being removed from the nucleus of brown silver sulphide, and disclosing the toning already partly completed. In these conditions it appeared probable that toning would take place by prolonging the time of immersion of the prints in the polysulphide bath for a sufficient time.

The strength of the solution appeared to have no influence either on the time of toning or the color of the prints. The only practical means for increasing the speed of toning thus appeared to be the use of a higher temperature. Prints which had been toned for one hour without having exhibited any change were hardened, with other untoned prints, in weak solution of formaline, and then immersed in solutions of polysulphide at various temperatures. Toning was found to take place more rapidly according to the temperature of the bath. At a temperature of about one hundred and twenty degrees Fahrenheit toning was complete in ten minutes, but the tone was no longer sepia brown, as when toning in the cold, but purplish brown, resembling the tone obtained by hot hypo-alum.

Other prints which refused to tone in the cold within a reasonable time were kept in the polysulphide solution for a longer period than two hours. With two hours' immersion at a temperature of about sixty degrees Fahrenheit the prints became warm black; after three hours some of them toned to a very pleasant purplish brown, whilst others took six hours to tone to sepia brown.

The same process of toning is applicable to glass transparencies, the toned images being much more transparent than before toning. In testing the action of the bath on transparencies made on different brands of plate, the same differences are met with as among papers. Some transparencies tone rapidly whilst others are difficult to tone, and show an alteration of color only after several hours' treatment. Still others obstinately refuse to tone even after very prolonged immersion in a heated bath.

The differences here noted by M. Clerc conform fairly close to those which are found in the case of the toning of bromide papers with liver of sulphur. It is no doubt common knowledge that some bromide papers tone very readily by this method and yield excellent results, whilst prints on other papers seem almost untonable in a "liver" bath, although both descriptions of paper will tone with equal readiness both by the bleach and sulphide method and by hypo-alum.—*British Journal of Photography.*

Radiographic Stereoscopy

A note in the *Bulletin of the French Society of Photography* states that H. Becclere calls attention to the difficulty of correctly placing the stereoscopic details in these radiographs, by reason of the skin surface not coming into the field of stereoscopic vision, and explains that a remedy can be found in lightly rubbing over the skin with vaseline, and then rubbing in carbonate or subnitrate of bismuth. The powder fills in the smallest details of the superficies and gives a foreground to the bony parts without in the least degree veiling them. [Note: The proposal seems eminently practicable, and could be utilized in studying cutaneous affections. I have tested it within the last few days and obtained most beautiful results, but not by the exact technique mentioned above. I propose to treat of the whole question in a subsequent issue.—H. D'A. P.]

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Easily Available Subjects

There was an amateur in to see me the other day and of course he had the usual collection of prints in his inside coat pocket; but in this particular case the pictures were a little different from the ordinary run. They were all made right on the streets of his home town, all made on early Sunday mornings, and all of them made with the most simple apparatus; and yet, almost any one of them would be worth submitting to a salon jury. I tried to get the gentleman to promise he would write me an article telling how they were made and showing some of them as illustrations, but he claimed there was nothing to tell and he would not know how to tell it if there was. And besides, as he explained, he got the idea out of an old copy of CAMERA CRAFT; in fact out of this very department. And as he proved that the whole thing was explained in one little paragraph, it did not seem quite consistent for me to urge him further to write an article on the subject. As originally printed, the paragraph describes the procedure of another amateur, a correspondent, not a visitor. This other worker, appreciating the good quality of an early morning light, starts for his office a little earlier than usual and gives himself time to pick out a corner where the lighting, the vista beyond, and the composition of the foreground makes a good setting for a genre picture. Then, the following Sunday morning he proceeds to the selected spot, a street corner, sets up his camera in the proper position to include the view, and awaits suitable subjects. Having two of his friends along they are posed shaking hands, and "I met Smith this morning," results. Then a man on his way to work approached and one of our amateur's companions stopped him at the right point and asked to be directed to a certain place. "Three blocks down and turn to the right," was the title carried out. A newsboy, alike unconscious that he was being photographed,

helped to make "Morning Paper, Sir?" The next subject, a milkman with a can in his hand, was asked to pose with an upward look of inquiry on his face, and "I wonder if that is the right house," was at once decided upon as the title. A fairly large stop and a lens of not too short focus, combined with the morning lighting, gave this worker some fine results as a reward for his trouble; and, from our description of his method the visitor of a few days ago obtained his suggestion. Possibly a few other of our readers can do the same and for that reason the idea is again put forward here.

A Broken Ground-Glass

One of our local view men came in the other day, just back from a trip into the High Sierras. It seems that about the time he got well to work, his camera took a tumble with the result that the focusing glass was badly broken, the largest piece being hardly more than a fragment. Just what to do was the question. He had heard of exposing and fixing a plate, but he had no fixing bath with him. Grinding two plates together would be all right if the requisite emery powder had been obtainable. He even contemplated the use of tissue paper, but none was available. Thinking over the tissue paper he had determined upon fitting it by cutting a cardboard frame to hold it in place, and this in turn suggested the plan he actually carried out. Without much trouble he located a piece of cardboard of the same thickness as his broken ground-glass, cut it to the desired size and then cut a hole, about an inch in diameter, in the center and in each of the four corners. Over these holes he fastened bits of the broken ground-glass, using some adhesive tape that he always carried with him. These pieces were put on what was to be the inner side of the cardboard, their ground surface facing out; the cardboard being the same thickness as the ground-glass this brought the focusing

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surface, although reversed, in the same position as before. Of course this practically opaque focusing screen did not answer as well as the original one when it came to composing the picture, but as a direct vision finder was also used, this did not matter. When he wished to focus upon some object that did not come directly opposite one of these glass-covered openings, the camera had to be turned about a little until it did, but that was a very small difficulty as, once the focus was secured, the camera could be returned to the desired position before the exposure was made. The result was that our friends went right ahead and made over a hundred very fine $6\frac{1}{2} \times 8\frac{1}{2}$ negatives without the necessity of a three days trip back to a place where such things as ground-glass, fixing baths and the like could be obtained.

Sand Grain Borders

About fifteen years ago I described, in this department, how an amateur friend made some pleasing borders by means of masking off the margins while printing the negative, and then, with the piece cut from the mask covering the printed portion, giving a short exposure to the border portion after first sprinkling it with sand by means of a salt shaker. Last week I had the pleasure of seeing some very fine border effects produced in exactly this manner; only this time the work was that of a professional. In addition to protecting the printed portion which happened to be a head in an oval, he had also protected a small panel below and to the right of the portrait and in this protected part, this white panel in the tinted border, he had placed his name and the year. The effect was pleasing, novel, and quite artistic; in fact, in some of the examples, the sand had been so distributed as to produce somewhat of a clouded or graduated effect. I am only sorry that I have none of the pictures to reproduce in connection with this description. It is obvious, of course, that the printing of the sand border must be done with the paper, carrying its protecting cut-out over the print, placed beneath a sheet of glass with the exposing light coming from above. It might be mentioned that the effect is just the reverse of "spatter" work, the dots being white on a ground that is more or less dark according to the exposure given. There is, however, no reason why one could not produce border negatives that would

print dark spots on a white ground by simply sanding an unexposed plate, giving it a flash exposure and then developing and fixing it.

Work For Winter Evenings

Almost every home provides old books containing some very fine steel engravings or other like illustrations, pictures that are of value and pictures that would be appreciated by one's friends if nicely reproduced in slightly enlarged form. Copying these is not at all difficult and the results that can be achieved have all the charm of artistic productions such as the originals really are. Even the later-day half-tone can be reproduced to look exactly like a photograph if one will but make the copy negative fairly small, using a fast plate and not developing too hard, so as to eliminate the dot of the screen. One amateur of our acquaintance dug up an old copy of the history of his section of the state, a book containing engraved portraits of the pioneer settlers. Numbering among his friends and acquaintances not a few of the descendants of these early citizens, he copied and enlarged the portraits and presented them to those interested, his kindness being appreciated so much more than he had expected. Some old bound copies of *The Art Journal* that one of these friends placed at his disposal gave him negatives of engraved reproductions of a number of old masterpieces, and these made beautiful prints, and that proved well worth framing. Copying black and white subjects of this kind is not only much easier but much more satisfactory than trying to reproduce paintings, and the prints made are just as pleasing and satisfactory.

A Yellow Light For Illumination

The worker who uses a white light in his dark-room as a source of illumination when the ruby light is not sufficient and when the latter is not for the moment necessary, knows that on switching it off and turning again to the ruby light it is some minutes before the effect wears off and he can see as he should. This is inconvenient, and the glare, when it is turned on, can hardly avoid being somewhat of a strain upon the eyes. A much better plan is to use a bright yellow light as the alternative. Doing this one will find the eye-strain much less and the time required to again become used to the ruby light much reduced.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Notice to I. P. A. Members

Shortly after the first of the year, A. E. Davies, 1327 Grove Street, Berkeley, California, I. P. A. Secretary for California, will make up, for circulation among its contributors, an album of prints made by members.

Not alone those members in California, but any located west of the Rocky Mountains who would like to see this album, are invited to send prints to be included therein. Send any number of prints desired and any size up to 8x10. Select some of your pictures that you are proud of, pack and address carefully, and send. Mr. Davies will do the mounting and route the album to you just as soon as enough prints are received to make a good showing. If you are interested in photographic work and appreciate the helpful hints and suggestions to be derived from seeing the work of others along the same line, do not delay.

Officers of the I. P. A.

F. B. Hinman, President, Evergreen, Jefferson County, Colo.

J. H. Winchell, Chief Album Director, R. F. D., No. 2, Painesville, Ohio.

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James B. Warner, Director Stereoscopic Division, 413-415 Claus Spreckels Building, San Francisco.

A. E. Davies, Director Western Lantern Slide Division, 1327 Grove St., Berkeley, Cal.

Arthur H. Farrow, Director Eastern Lantern Slide Division, 51 Richelieu Terrace, Newark, N. J.

NEW MEMBERS

4684—H. G. Roberts, Custom House, Changsha, China.

Quarter plate (3¼x4½), on bromide paper of Chinese city, country and river scenes, Chinese temples; for good general work. Class 1. (Members will kindly see that proper postage is used.)

4685—Mrs. Minnie Bennett, Butler, Mo.

3¼x4¼, 3½ and 12-inch panoramas on developing paper, of a little of everything with some fine views of the coast; for anything of interest. Class 1.

4686—Roy A. Feathers, Box 125, Truckee, Cal.

3¼x5½, on developing paper of snow scenes, lakes, woods and mountain views; for anything interesting or curious, landscapes and

marines. I desire to exchange only post cards. Class 2.

4687—E. Cedric Marshall, 70 Goddard Ave., Hull, England.

3¼x4¼, 4x5 and 4¼x6½, on bromide and papers of various surfaces, of child studies, river and landscapes, bathing snapshots and caravan holiday scenes; for beach snapshots, girls' head studies, native life and so forth. Class 1.

4688—Freeman S. Spears, Ashland, Ill.

3¼x4¼, on any paper. Desires to exchange only prints. Class 2.

4689—J. H. Eisenberg, 394 Vermont St., Brooklyn, N. Y.

Scenes of New York and all points of interest, noted buildings, etc. Desires to exchange anything in prints. Class 2.

4690—F. M. Yates, 4423 Calumet Ave., Chicago, Ill.

Postal cards, various papers, portraits, landscapes, etc. Desires to exchange all kinds of portraits, landscapes, interesting or instructive scenes. Class 1.

4691—Paul Rosencrans, 75 E. Pine St., Atlanta, Ga.

Class 3.

4692—Benjamin Beauchamp, Castle Blayney, County Monaghan, Ireland.

4¼x6½, printing-out and bromide papers; has views of Castle Blayney and district, to exchange for photographs of San Francisco, or any American cities or lakes. Class 1.

4693—O. B. Humphrey, 57 State St., Bangor, Me.

2¼x3¼ up to 8x10, various papers. Desires to exchange figure studies, landscapes and portrait studies for American and foreign figure studies, landscapes and portraits. Class 1.

4694—Sgt. Ralph Curry, Q. M. C., Fort Brown, Brownsville, Tex.

Post card and 2¼x3¼. Desires to exchange Mexican border, nature and historical for general prints of interest. Class 1.

4695—Dr. Louis A. Braaffadt, Shantung Christian University, Tsinan, Shantung, China.

Class 3.

4098—Chester W. Whittemore, Box A, Lompoc, Cal.

1½x2½, 3¼x5½, gaslight paper, general subjects. Desires to exchange subjects of general interest, preferably with Eastern and foreign exchange. Class 1.

RENEWALS

3254—Vernon W. Hutchins, 39 Academy Sq., Laconia, N. H.

Class 2.

4425—Geo. W. Frey, La Honda, San Mateo Co., Cal.

4428—J. B. Gale, Lynden, Wash.

Class 3.

4431—Wm. C. Settgas, 526 Flatbush Ave., Brooklyn, N. Y.

Class 2.

4447—G. W. Grant, 317 E. 14th St., Oakland, Cal.

4458—R. M. Hart, care S. Kind, 66 Center Sq., Easton, Pa.

Class 2.

4581—George W. Greene, 745 Milwaukee Rd., Beloit, Wis.

4618—J. E. Dow, R. F. D. No. 2, Big Sandy, Tex.

Class 2.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

The Stereoscopic Society

The United States branch of The Stereoscopic Society of England, has been organized with W. S. Cotton, 5021 Thirty-third Avenue S. E., Portland, Oregon, as local secretary. The parent society was organized in England, twenty-six years ago, for the advancement of stereoscopic photography by the circulation, criticism and exchange of stereoscopic slides. Its folios Nos. 86 and 87, consisting of twenty-three slides each, by English workers, with notes and criticisms, has just completed the circuit in this country. Comments on a few of the prints may be of interest:

A toned glossy bromide print of a village on the shores of Lake Como, Italy, taken from the deck of a passing steamer, by Mr. Smith, would show to much better advantage as a single print than as a stereogram. Quite naturally there are no foreground objects such as a successful stereo picture seems to demand. The one who thinks expensive equipment is necessary should see some of the stereograms made by Mr. Copeman, the

president of the society, prints from negatives made with a pair of single lenses. In one, that of a running stream of water with heavily wooded banks, the definition is all that could be desired, with no harsh high-lights and the water real, running water. A slide by Mr. Woodsend, made at Daphni, France, looking down the valley from La Blunde, is a perfect example of a landscape stereogram, as regards technique and stereoscopy, one of the best shown. The entrance to the picture is made by a winding path which passes a straw thatched cottage and leads down into the beautiful valley. A cloud crowned mountain peak in the far distance is the finishing touch which makes this a perfect stereogram or single picture, as one prefers.

The first folio containing slides by the members in this country will be circulated here during January, and all are very anxious to see the criticisms of their slides by the English workers, and to have the opportunity of comparing the work of the two widely separated branches.

OUR BOOK SHELVES

"Social Games and Group Dances"

We all know the difficulty that young people in particular, and older people in general, find in dispelling stiffness and embarrassment when thrown together in a social way, aside from the ballroom and the card table. In this book we have a wealth of suggestions, fully elaborated, suitable for any occasion or to any age. One can, by the simple process of familiarizing himself with the material contained in this book, always find himself in demand as one who can as-

sure a full measure of wholesome entertainment, particularly where such variation has so much to recommend it over those forms of entertainment that are less conducive to that full enjoyment which properly directed social activities should afford. The book is handsomely printed, well illustrated with reproductions of good photographs, and written in a clear and entertaining style. Published by J. B. Lippincott Company, Washington Square, Philadelphia. Price one dollar and seventy-five cents, net.

NOTES AND COMMENT

A Department Devoted to the Interests of Our Advertisers and Friends
In it will be found much that is new and of interest

Northern Light on the Coast

The Northern Light, so well and favorably known to a number of our professional portrait readers, is now being carried in stock by Hirsch & Kaye, the local dealers, who report inquiries and sales as most gratifying, particularly at this season of the year when daylight is none too certain and none too long in its hours of workability. Difficulties attending production during the war period have been overcome and the firm behind the Northern Light are enabled to again go after business in a manner consistent with the decided merit of their production. Other large stockhouses throughout the country are now stocking the Northern Light and it is becoming quite the thing for portrait work, even where the ordinary skylight is readily available.

What's In a Name

The question has often been asked: "Is Probus a man's name; Or what does it mean?" The Twentieth Century Encyclopedia tells us "Probus, Marcus Aurelius, one of the ablest of the Roman emperors, was born at Sirmium in the year 232." The name Probus, as used in connection with photographic products, is a derivation of probity, meaning virtue or integrity, tested and confirmed; also virtue, able to withstand tests; strict honesty; integrity. The French is probite, and Latin probita or probus, meaning good. Probus is not only "good" in Latin, but it is good in photography.

The Way It Was Done

Back in 1899, Charles G. Willoughby conceived the business which is today acknowledged as a model organization of its kind. From a small beginning in a "2x4" office in the Cable Building at 621 Broadway, New York, the present business has grown. There was laid the foundation upon which has been built the present gratifying success. There, in that little office, with a personnel consisting of Mr. Willoughby and one assist-

ant, was written in to the ledger of the firm the triple entente of business success: Persistence, Honesty, Equality.

A square deal to all: a legitimate profit only and the giving of the best values possible were the dominant policies that were driven home with every sale. With the growth of the business came a greatly increased personnel, additions to the physical force which today has been organized into the "Willoughby Co-Workers," who are really partners in the business, for besides a liberal salary, they receive a bonus, a fair percentage of the net profits of the institution. First of all the right was given any of the Co-Workers to purchase stock at par. The by-laws were so arranged that, after a dividend of ten per cent had first been declared, the balance of profit was to be distributed, sixty-five per cent to the stockholders and thirty-five per cent to those Co-Workers who had been with the concern for a period of two years. In this distribution the president refused to participate and later it was arranged so that the stockholders would receive only sixty per cent, the remainder going to those who might share in the distribution. This plan has worked exceedingly well and has proven eminently satisfactory. Business has increased to large proportions since the organization came into being. The members of the concern resemble one big family, and it has never been necessary to install a time clock or maintain close supervision over them, as is the case in many instances where the employees have no interest in the welfare of the business.

Good Photo Finishing

The Rex Photo Finishers, of Meridian, Mississippi, have been doing some fine enlarging and kodak finishing for a limited trade, but have now decided to branch out into the mail order line. We have seen and heard of their work during the past months and feel quite sure that any of our readers who entrust their films to them will be

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pleased and gratified with the results. Promptness is a part of their service and good quality is made paramount. At least give the firm a trial if you are at all dissatisfied with the work you are at present getting.

Some Real Bargains

A. Madeline, 503 Fifth Avenue, New York, is offering some very attractive bargains in high grade imported and other cameras, and it will be well worth our reader's while to get in touch with him. The prices have been still further reduced, as Mr. Madeline wishes to clear out his stock to be ready for the new supply expected from abroad. In writing him, ask for a circular covering the Ontoscope, a popular little French model of distinction.

Storing Sensitive Papers

With the advent of dull, damp weather we would impress upon our business friends the importance of providing for the proper storage of sensitive papers. Bromide and gaslight papers possess astonishing keeping properties if certain precautions are observed. The one who uses shelves and cupboards for his storage should arrange for the papers being placed on the lower shelves as near the floor as possible, particularly in a room lit or warmed by gas. The golden rule to observe is to keep all sensitive papers well away from the products of combustion, and in a cool, dry place. Dampness will also cause sensitive papers to rapidly deteriorate, and in the case of bromide and gaslight papers, the emulsion may become locally de-sensitized. In some workrooms a practice is made of exposing bromide prints and delaying development for a day or two, but this is a method which we do not recommend. We made some experiments in this direction, and found that bromide prints, exposed one day and developed a few days later, did not give anything like such good results as usual, especially those that had previously been stored in a damp place. The latent image appears to lose a large amount of the depth impressed upon it by light action. With exposed plates and films this is not so apparent, excepting in the case of damp storage. "Stale paper" is often the verdict given on paper that shows the characteristic discoloration of the edges, whereas the real reason is invariably "bad storage."

Sensitized plates and papers should never be stored in a room where sulphide or hypo alum toning is done, or in fact anywhere near where sulphide fumes are likely to be present.—*Trade Notes*, RAJAR LIMITED.

Illinois College of Photography

After nine years' experience in his own studio, W. J. Wagner of Lynn Haven, Florida, has returned for a special course in air brush and background work.

President and Mrs. Bissell have just returned from their annual visit to their daughter, Mrs. J. F. Magee, who resides in San Francisco. As is always the case, they report an enjoyable trip.

The cosmopolitan attendance at the College is attested by the register for one of our recent classes showing that within a few hours were enrolled a Cuban, an Italian, a Japanese and a Mexican.

Master Signal Electrician J. N. Hillhouse, with us in 1912, has been detailed to take charge of the photographic department at Fort McHenry, Maryland. Quite a number of convalescing soldiers are spending their time in studying this interesting work.

Captain Fred H. Seligman of Chicago is one of the recent arrivals at the College. He saw service on all the battle fronts, and the active part taken by him is evidenced by the fact that he won the Croix de Guerre and the Distinguished Service Medal.

Walter Weber left Effingham in 1901 to engage in business. He is nicely situated, and on a recent visit to the College stated that he was interested in oil, as well as photography, being the holder of some valuable oil stock. His home is now in Oklahoma City.

A new instructor has taken his place in the ranks of the College Faculty. Herbert A. Turner, a student of a number of years ago, is taking up the work in the retouching department. He has just returned from England with a newly made bride in the person of Mrs. Turner.

The champion swimmer of the Colleges is undisputably Arthur Q. Morrison of St. Louis. The length of Lake Kanagga is over five hundred yards, but Mr. Morrison has plied it four and one-half times at one stretch. He says he will never be satisfied until he is able to remain in the water all day.

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One-pound container - - - -	\$15.00
Half-pound container - - - -	7.65
Quarter-pound container - - - -	3.90
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ANSCO COMPANY, Binghamton, N. Y.



CAMERA CRAFT

A Photographic Monthly

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IN

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3/4x4 1/4 Ross Combinable, f-5.5, 5 1/2-in. focus; single element, f-11, 9 1/2-in. focus, in recess mount. List \$70.00	48.50
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4x5 Ross Homocentric, f-6.3, 6-in. focus, in Multispeed Jr. shutter; good condition. List \$63.90	42.50
4x5 Syntor, f-6.8, 6-in. focus, in XL Sector shutter; like new. List \$48.00	35.00
4x5 Ross Combinable, f-5.5; first class condition. List \$62.50	50.00
4x5 Ross Compound Homocentric, f-6.8, 6-in. focus; like new. List \$40.65	30.00
4x5 Rodenstock Eurytar, f-5.4, 6 1/2-in. focus; in good condition. Selling price	33.50
5x7 Rapid Rectilinear, f-8, 7 1/2-in. focus, in Koilos shutter; in good condition. List \$20.00	12.50
5x7 Austrian Wide Angle, f-16, 4 1/2-in. focus; fair condition. Selling price	7.50
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Continued on Next Page

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THE DIGNITY THAT DOMINATES
By JESSE T. BANFIELD



CAMERA



CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

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No. 2

Sepia Results

By D. Nathan Sederquist



With Illustrations by the Author

My efforts in this article will consist in giving to my readers some of the knowledge accumulated from experiences in producing sepia portraiture covering a considerable period of time.

It should be understood that, in discussing the manipulation of developing-out papers and their subsequent toning, I have reference only to the professional or portrait grades used in the making of portraiture. The extreme variations of latitude and developing speeds of the more contrasty papers mostly used for purposes other than that of making portraits, would prevent one who did not use them continually from arriving at definite conclusions as to their proper manipulation for sepias of a predetermined tone.

The popularity of sepia tones for portraits seems unquestioned. The warmth and richness of tone in well made sepia photographs seem undoubtedly to be the cause of their almost universal popularity. If, then, the desirability of sepia tones is acknowledged, their production should be facilitated, especially among those who have not been getting satisfactory results; and this can easily be done, providing the explanation of a satisfactory working method be obtained. I make no attempt to pose as an authority upon the exact chemical reactions of various formulæ, but can definitely state that, with each variation from what may be considered a standard formula, a certain difference of tone will result in prints which were exposed and developed identically alike. This knowledge should, as we progress, be considered as the basis for control of tone. There are undoubtedly difficulties in their making over that of a black and white print,

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as witness the fact that a satisfactory black and white print will not always tone to a good sepia; but that should prove to be no hindrance, if the underlying causes are but understood. I shall try to explain the difficulties and their individual solutions as we progress.

I have seen photographs that were of a pronounced purple tone, others ranging in tones through the different shades of brown until they approached the very undesirable yellow; yet they were called sepia photographs. This, of course, absolutely conflicts with the dictionary definition of sepia, and actually is only the attaching of a fixed title to whatever result is haphazardly produced. Unless one decides in advance what color is really to be obtained and knows how to obtain it, I do not see a possibility of any but an accidental result. Once the color is decided upon, it will be seen later how it may be procured.

Another grievous fault found in the work of many seems to be a lack of detail and a bleached appearance in the high-lights, due to insufficient length of development brought about, no doubt, by a desire to avoid a cold or purple tone, which would ordinarily be obtained by too long development. The experienced printer should know that, in the developing of all portrait papers of quality, the exposure should be so judged that, when being developed, the image will leisurely proceed to a point where it seems to hesitate. From then on, for perhaps the following thirty seconds, it will be found to take on an added richness in general tone without appreciably darkening, and that the little points of high-lights will then show visible detail, giving a sparkle to the print as a whole, which it lacked previously. Until then development is not complete; and my purpose is to show, from such a print only, can the best finished result be made.



CHILDREN ARE ALWAYS MORE NATURAL AT HOME

SEPIA RESULTS



THE KIND OF PICTURES THE PARENTS LIKE

The proper length of development in a normally balanced developing solution should be not less than sixty seconds and not more than one hundred and twenty seconds for papers of various speeds.

I shall divide developing papers into two classes; one, such as Professional Cyco, having a natural tendency for giving prints of a blue black tone, as against Artura Iris, which produces normally more of an olive tone with equal amounts of bromide used. When using any portrait paper which produces ordinarily the former tone, an increase of potassium bromide over a normal amount is advisable, even to double the quantity will not be found excessive.

When using the papers which naturally produce the more olive tones, any excess of bromide would be detrimental, in that it would increase the tendency of the resulting sepia to being yellow in tone. It will be found best to work with one kind or the other, according to one's preference, at any one time, as they are toned in hypo alum baths of different composition.

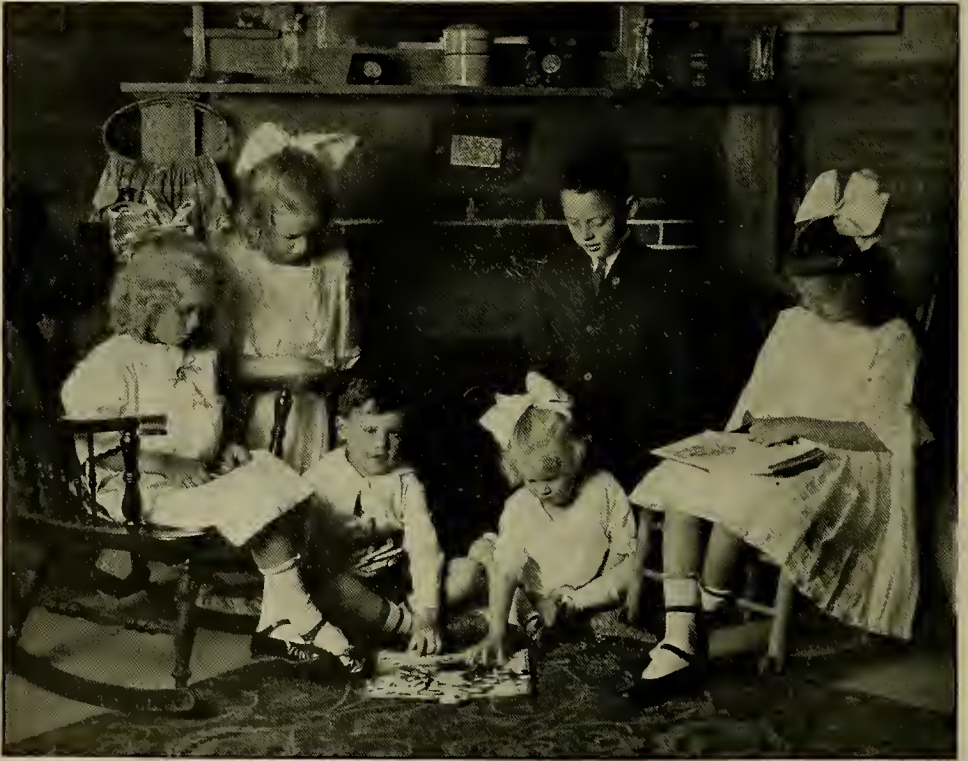
For purposes of experimentation, let us make six prints from one negative; first, three prints from a paper such as Artura Iris, Haloid Imperia, or other olive-toned papers, using a minimum amount of bromide, developing as previously explained. Then three prints from a paper giving a cold black and white tone, such as Cyco, Artura Aegis, or Haloid Cameo, as preferred, using a maximum amount of bromide. Take care that each print shall be as nearly identical as possible on like papers. After these are fixed it is advisable to wash just long enough to rinse away any acid remaining in the print from the fixing bath, when they are ready to tone. The use of too strong a hypo bath for fixing the

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prints should be avoided. One that will test about sixty per cent by hydrometer is about correct, also having included in it the ordinary amount of acid hardener for prevention of blisters. A hypo bath stronger than this may have a tendency to cut or bleach the image to a certain extent, which would result in giving a very pale or weak-appearing sepia.

A normal toning bath should be made as follows, preferably some time previous, as it will be found to work better if having been given the opportunity to cool, then reheating it for use:

One hundred ounces of water, in which dissolve one pound of hypo. Then add four ounces of powdered alum, and heat to the boiling point. As soon as it



A PLEASING FAMILY GROUP BY FLASHLIGHT

has boiled a few minutes, set it aside to cool. Dissolve in one ounce of water, thirty grains of nitrate of silver. Precipitate the silver with about thirty drops of pure ammonia or, if more convenient, use thirty grains of common salt. Then add the contents to the alum bath after it has cooled.

To use the bath, heat it again to about one hundred and thirty degrees Fahrenheit. The bath should have a milky appearance, and should not be dark in color. If this should be so the silver nitrate was not properly precipitated before adding it to the first solution.

For proof of ability to control tones as wanted, let us now tone two prints previously made as directed. Using one each of the papers having different characteristics. Toning at one hundred and twenty to one hundred and forty

SEPIA RESULTS



THE LADIES OF THE HOUSEHOLD

degrees Fahrenheit should be complete in ten to fifteen minutes. Upon examination, the two sepias will be found unlike. The print which was the more olive originally will be the warmer brown, or of a more yellow tone.

For further experiments, divide the alum bath into two fifty-ounce solutions. To one add ten grains of silver nitrate and also one ounce of gold chloride solution, which is made as follows: Dissolve forty-five grains of chloride of gold in sixteen ounces of water to be used as a gold stock solution. To the other bath add ten grains of iodide of potassium, dissolved in a very little water. In these two baths when heated, two each of the remaining prints should be toned. Then all six prints should be compared. No two prints will be found exactly alike in tone. The ones which were toned in the gold bath with an increased

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amount of silver, will be found to have a more chocolate or purple tone than the first two that were toned, although one should be more so than the other. The ones that were toned in the bath having iodide added should be a much warmer tone than any of the others, but one should be more of a yellow tone than the other.

By the addition of silver or gold to a bath when colder tones are wanted, and by the addition of potassium iodide to keep the tones as warm or light as wanted, it is possible to produce in your work your own conception of what sepias should be, not having to accept, even if unsatisfactory, the tone which may happen to be produced. A tendency of the bath to give gradually colder tones from continual use will be noticed, which may be corrected by the addition of from five to ten grains of iodide whenever needed. In addition, the knowledge may be made use of that, to a certain extent, a print may be so exposed as to render it necessary to slightly prolong development beyond a strictly normal length of time, being careful not to overdo it, which will give proportionately colder tones in any alum bath. By working in the opposite manner and so timing the exposure that development is complete at the expiration of the minimum time, the tones will be correspondingly warmer in any bath.

With this knowledge gained, and a decision formed as to which particular print is preferred, it is only necessary to use the paper which gave that result in the particular alum bath which was used. A larger quantity of one bath may then be made for regular use by keeping the different chemicals proportionately the same. The bath will evaporate somewhat from continual heating. Renew the volume with additions from a separate solution of the same formula of hypo and alum only, using the gold, silver, or iodide as the means of controlling the tones. The papers answering the purpose best, perhaps, are the ones which give a rather undesirable cold black and white toned print; but, if used with enough bromide, and not forcing the development through undertiming of the print, will yield the most pleasing browns.

The use of either a buff or white color stock paper base is of course for individual preference to decide, but I do not feel that, for white draperies, or where the predominant tone of the clothes is white, a buff stock should be used. If a lady wears a white dress, I feel as though her taste should be respected, and that it is undoubtedly because she does not prefer a yellow one. On the other hand, for certain effects, a buff paper will often seem to add a certain richness to the whole effect which is very pleasing. The papers having a slight sheen or semi-sheen will be found to tone a more brilliant brown, and will remain nearly the same after being dried.

The matte or rough surface papers will normally tone to a less brilliant color, and will show a considerable dulling down in color after being dry. With experience, it will be perfectly possible to make allowance in your original print for this slight change of color, by making the matte surface prints a trifle lighter than those on semi-gloss papers.

I would also advise their being exposed so as to develop in the minimum time, using in the alum bath enough iodide to prevent the resulting browns from being too chocolate in color.

SEPIA RESULTS



PORTRAITS SHOULD HAVE AN APPEAL THAT IS PLEASING

There seems to be a predominant impression that, in order to make successful sepias, it becomes necessary to make a hard or rather contrasty negative. This happily is not a fact, as were it so, it would then be necessary for the better workers purposely to make negatives of sharp gradations, minus the very qualities of modeling which are essential to work of quality, for the secondary purpose of conforming to requirements considered necessary to produce a given style of work.

This idea no doubt originated from the fact that a certain amount of contrast has been found to give the richest appearing brown tones. The proper solution of this difficulty seems to be in so lighting the subject as to make the best possible negative, being careful to have the necessary contrast between your subject and background. By so doing it will be seen that the proper scale of gradations in the lighting is retained, and that no detail present in the highest points of light need be sacrificed. The use of too light a background for most sepia work will result in a pale brown color which will be very undesirable, and not at all pleasing.

The fact that sepias are not so easily made as a plain, untuned print, seems as though it were an advantage as well as protection for those who wish to produce portraiture with a certain touch of individuality, which may not be so easily duplicated by others.

Continuously producing rich appearing sepia toned portraits of a uniform shade, will surely attract the attention to you of that clientele for whom the more desirable work may be done, with its resultant sense of satisfaction and proportionately larger profit to you.

In concluding this very technical talk on mechanical manipulations, I wish

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to depart from my subject proper and say that, though all the different mechanical processes should be thoroughly mastered, they should be considered but incidental to the result being sought.

I feel that a purely mechanical photographic reproduction is just a photograph, and that it lacks the qualities necessary to its being termed a portrait.

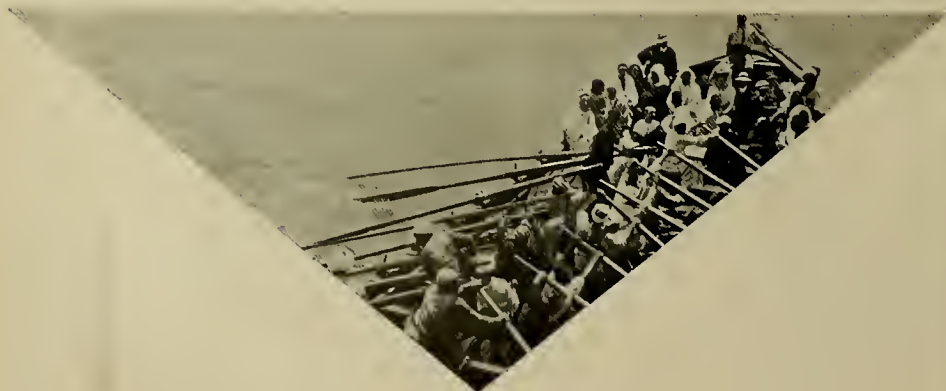
It is possible to idealize each individual in one's own mind according to one's ability to do so, trying to avoid being impressed by the objectionable, subordinating those things in importance, being mentally quickly responsive to the pleasing characteristics of each person. I believe it possible then to visualize mentally a picture which can be reproduced photographically as a characteristic portrait of any individual, yet a thoroughly pleasing one as well.

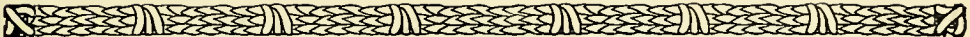
In the few illustrations accompanying this article, I am trying to illustrate what I mean by the introduction of that element of appeal which renders a picture pleasing.

Many technical errors will be overlooked by the public, through their not being understood, if your portrait work has that quality of appealing to them through its being pleasing to the sight.

Whether it may be the play of light and shade, the animation of the eyes, the brightness of expression, or the balance of the composition, the constant striving for only that which is pleasing to you will lift your work above the purely mechanical into the class of those who make portraiture, not purely for mercenary gain, but because it offers opportunity for the expression of self in the form of idealism, to the end that others may also be helped to become more conscious of the fact that the beautiful is all about us, and needs but be looked for with receptive eyes.

To acquire certainty in the appreciation of things exactly as they are, and to know them in their due subordination, and in their proper relation to one another—this is really the highest enjoyment to which we ought to aspire, whether in the sphere of art, of Nature, or of life.—GOETHE.





Third Los Angeles Salon

By James N. Doolittle



With Reproductions of Some of the Pictures

In essaying to "cover" an exhibition, one quite unavoidably accepts, or rather assumes, the role of critic, the impulse to criticize being that peculiarity of our nature that asserts itself spontaneously. We criticize our own work before submitting it to a jury, the jury criticizes it by selection for public view, and we criticize both the jury and the public in accordance with their acceptance or condemnation of it.

As honest as we may be with ourselves, and as loudly as we proclaim our desire for constructive criticism, there are few among us who can accept it otherwise than as a challenge. Neither are there any who are immune to the influence of flattery; or, to put it more pleasantly, who are not secretly elated when they find that their self-approved efforts have found favor alike with jury and public.

Since, by the nature of things, I find it necessary to become critical, there is a generous measure of satisfaction to be derived from the statement that the Third Annual Salon of the Camera Pictorialists of Los Angeles inspires only comment of the most favorable character, particularly when I can apply it, not only to the exhibition as a whole, but, practically, to each individual contribution. Exceptions there are, to be sure, but to make examples of them would do nothing for the benefit of the man who has not seen the show; whereas, to the visitor, "a word to the wise is superfluous".

The uniform excellence that prevails makes it decidedly a difficult matter to mention the work of particular exhibitors without realizing that equally meritorious work has been slighted. At other shows I have usually, after a mental process of elimination, selected one print that I considered the best; but, on this occasion, I have been unable to do so. It is felt, therefore, that not the least of the credit should, in this instance, be accorded—to whom it comes, I regret to say, but seldom—to the jury. Far rather than feel that contributions to this salon have been of an exceptional nature, I am pleased to credit this body with rare judgment, from the fact that, during the two or three hours that I spent in looking over the prints on opening day when the galleries were crowded with an appreciative throng, I failed to overhear one word of disapproval directed toward a single print. One might, indeed, search in vain for a subject that would cause him to wonder what distorted vision would permit a sane group of men to admit it to public view.

There is enough that is new, but no apparent attempt has been made to thrust upon us the ultra-radical in art. Recalling an Eastern show of about three years ago, we take pleasure in the absence of picket fences pictorialized

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and in the fact that none have stooped so low as to seek beauty beneath automobile chassis. No longer does the photographer find inspiration in flower pots and window frames.

In relief from the usual array of prints high in key or gloomily dark, with others of intermediate treatment, a brighter note has been introduced by more than the ordinary number of toned subjects, the colors of which might inspire



AVILA

By JOSE ORTIZ ECHAQUE

criticism if taken singly, but the general effect is thoroughly pleasing. Several examples of multiple toning are in evidence, which are a tribute to the technical skill of the artist, although I am not altogether satisfied with the effort to suggest natural colors by this method. Far more effective is the feeling of color created in the establishment of proper tone values in monochrome.

As usual, the greater number of prints are done in bromide or other developing papers, but it is refreshing to note that, while there is an increasing tendency toward the use of the so-called control processes, only those examples of each have been accepted in which the process has actually been controlled, with the result that, when one looks at, for example, a gum print, he is not required to consult the catalogue to connect the subject with its title.

Speaking of titles, I have often wondered why they are, almost invariably, an afterthought. They usually bear only as much relevancy as might be expected from the method of their inception. If a jury, instead of accepting our work at its face value, first judged the subject from the standpoint of the working out of a theme, or considered it as the words to a story, I fear there would be a higher percentage of "rejects".

After a couple of years of suspended interest in pictorial photography, it is a

THIRD LOS ANGELES SALON

pleasure to note the number of new names that now appear in the catalogues, although, judging by the quality of the work submitted, these artists are evidently older workers who, for some reason or other, have only recently decided to "let us in" on what they have been doing.

Interesting, therefore, are the works of L. A. Olsen of Salt Lake City, one of whose six subjects is here reproduced; and of Ford Sterling, whose portraits and figure studies attest advanced skill in the portrayal of character, in which technical excellence is by no means a negligible element. His portraits, "Tessie" and "The Tong Man", are especially well done.

It is a joy indeed to greet the artists from abroad who, aside from justifying the "International" character of the salon, bring to us new viewpoints and serve to keep alive an interest in foreign work that heretofore has come to us only in reproduced form, depriving us of the full enjoyment of such work, for instance, as is offered by Dr. Henry B. Goodwin of Stockholm, whose carbons in various reds furnish not a little of the "life" of the salon.

Of the landscapes, the five subjects by W. H. Porterfield require no more than passing mention, for who is not familiar with the work of this artist? Having, however, seen a "one-man show" of about fifty of his prints, I feel that his present subjects do not represent him quite as well as might be.



CORDES, TARN

By DR. A. D. CHAFFEE

It is not mere force of size that compels attention to the three prints of Dr. Rupert S. Lovejoy—rather their simplicity in line and mass. "Ebb Tide" is a particularly satisfactory rendering in low key of decorative landscape. Nor, on the other hand, do the twenty-five or thirty small prints occupying a wall by themselves require generous proportions to attract their full measure of appre-

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ciation, for, in platinum, carbon or gum, each subject rewards the closer inspection it invites. Among these are two by Mrs. Walter S. Hervey, one of which, "Breton Peasants", is excellent. Of the six splendid platinums by Doris U. Jarger, I cannot endorse her choice of the subject which she titles "Masts". Masts they undeniably are, but she has trimmed the print, I should say, about fifty feet too high above the deck.

It is seldom that photogravures find their way into photographic exhibitions, yet from Spain come six charming examples, the work of Jose Ortiz Exhague.



"ON DIT"
By ANDREW BARCLAY



PHANTOM
By J. H. BRODIE

In tone and texture they place themselves in a class quite apart from the so-styled "straight photographs". "Avila" is here reproduced.

Lionel Wood of England, in three of his six subjects, has selected rather a lofty viewpoint in depicting different phases of aerial maneuvers. Pictorially treated, they are reminiscent of the late war. A fourth by the same artist shows "Miss Noreena Feist in 'As You Were,'" in a characterization of a denizen of the nether regions. Her costume, which Mr. Wood has effectively toned a flaming red, suggests the appropriateness of a partial revision of the title to read "As You May Be".

"On Dit", reproduced herewith, is one of the five offerings of Andrew Barclay, also of England. "Pearls Washed Up" is the somewhat obscure title of another subject by the same artist, the charm of which is not lost in wondering whether "Pearls" should not have been written without the "s"; but that would suggest the lady's name and sounds awkward. Mentally, in passing, we murmur, "Pearl"—which might do just as well.

Of the local workers, there has probably been no more consistent exhibitor

THIRD LOS ANGELES SALON

than Louis Fleckenstein, whose recent election to membership in the London salon is a high testimonial to the excellence of his work. "Nature's Shelter" is one of his most interesting offerings, in which a herd of sheep well grouped is seen grazing in the shadow of a cypress grove.

The work of Arthur F. Kales, the first of which we saw only four years ago, is now too well known to require introduction, his one-man shows throughout the country enjoying an increasing and well-deserved popularity. Although he has shown meritorious landscape work, figure subjects provide the most fruitful field for the display of his talents.

E. M. Pratt, in each of his six prints, shows the development of rare skill in the interpretation of values, his "Sun Flecked Columns" being an excellent bit of architectural work. "House Tops—a Pattern", is perhaps a somewhat radical departure for John Paul Edwards who, it will be remembered, has con-




THE PROW OF THE MARY DODGE
By L. A. OLSEN



THE SHAMBLES, YORK
By W. A. HUDSON

finied his work practically to landscapes, in which he has developed a style quite his own.

The salon, now in its third year, has, through the interest and co-operation of the municipality of Los Angeles, arrived at a stage where it has become one of only two important institutions of its kind in the United States, which fact is attested by the conditions under which its annual exhibitions are held. This city is among the very few in the world where photography has gained sufficient recognition as a vehicle of artistic expression to warrant the endorsement and support of an art institution, which should convey no little meaning to pictorialists both at home and abroad.



The Titling of Negatives

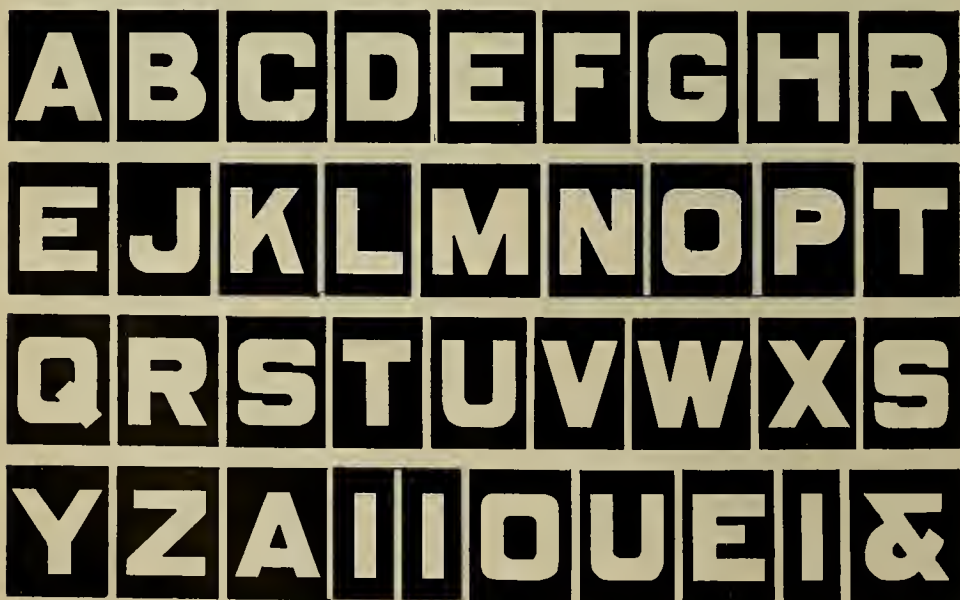
By Edgar Felloes



With Illustrations by the Author

Questions on this subject are perennial. Many ways have been advocated, but the queries still come: "How shall I—?" or "What is the best way—?" In my belief, the following is the very best way to add titles; and this assertion is backed by experience. In my own practice, I write the title with white paint on a black card, and this original is reduced, by copying, about six times. Obviously, this method would not do for the average person, because lettering requires considerable practice; but, if this difficulty is removed, nothing remains to prevent any photographer from accomplishing the desired result.

In the first place, we need an alphabet. One with white-faced letters will be more generally useful, but black-faced titles for special purposes can readily be made from these white letters. It will be necessary to provide oneself with about five copies of this alphabet, when all one need do is to make a negative of the group of letters the same size as here printed and, with Velox or other suitable paper, reproduce the desired number. Some readers may not have sufficient length of bellows to their cameras to allow of copying the same size. Should such be the case, they should turn this part of the work over to some professional, it will not cost much and there is an advantage in working with the original letters at the size here given.



THE TITLING OF NEGATIVES



Materials: One sheet of black cardboard, six or eight ply thick; some stout, tough wrapping paper; also dry mounting tissue, or a mountant that will not cockle; and a sheet of glass, free of bubbles or scratches, in size, let us say, 11x14 inches.

Here is the plan: If we take those letters and mount them on tough paper which is wide enough to enable us to bend it back, hook-like, we shall be able to hang each letter along a straight edge and, by a proper arrangement, form the words needed. With this end in view, we will proceed in the following way: Cut off the first line of letters in one strip, from left to right. Mount it, with the tissue, on the stout paper backing, allowing a full half inch of the backing paper to project beyond the top, this to form the hook referred to. Do the same with the rest of the lines of letters.

Now take the first strip and lay it on the sheet of glass, shifting it so that the glass edge comes exactly under the black background, along its top edge. Bend the backing paper down sharply, turn the strip over, and rub down the creased paper with the handle of a pocket knife. With scissors divide each letter apart, trim close up, as no white must be shown except the face of the letters. If the mounting and creasing have been done properly, our letters will always line up, and that goes a long way to a neat result.

From the sheet of black cardboard cut a piece 11x14 inches; place this the long way from left to right on a piece of glass and, with the aid of a straight edge and sharp knife, cut a clear line through it twelve inches long. The location of this line may be anywhere about the center of the card; the inch of margin at each end of cut line will hold the cardboard together. A second line may be cut below the first one, three-quarters of an inch distant from it, to provide for two-line titles; which will generally be sufficient. As a matter of economy, it is good practice to place a couple of cut lines near the top and also near the bottom of the card, which would enable the worker to photograph three titles at one time on the same negative; but this would probably need a larger number of alphabets.

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Having decided on a title, take the letters and pass the half inch of backing strip through the cut line in the black card. The letters are quickly adjusted and spaced by sliding them to left or right; but do not let them overlap one another, and between words leave a blank space about the width of a letter. There is room for good taste in a simple thing like this. Some times two lines are better than one; and, in titles, the lower line may often be made shorter than the upper, with the center of each coinciding. Presuming the title looks satisfactory, lay the whole on the copyboard, place the 11x14 glass on top, and fix in place with half a dozen thumb-tacks around its edge, which will cause all the letters to lie perfectly flat, when our copy is ready to photograph.

We will now consider the copying. Even lighting of our copy is essential; we may use either daylight or artificial light; perhaps the latter is more easily managed. In the December number of "CAMERA CRAFT", Mr. Victor A. Ulrich, in his article "The Simplicity of Copying", has described an excellent arrangement for home work. The reader should refer to this copy if in doubt as to how to proceed. The plan shown is this: An ordinary electric light is suspended on each side of the copyboard and, forward of it, a piece of card is suspended from the light cord in such a way that it reflects the light on the copy at the same time shielding the lamp from the lens. This simple outfit will enable one to light the copy perfectly.

We will suppose the copy evenly lighted and that there are no reflections caused by the cover glass. We will then make the negative on film. For those who have a camera with a ground-glass screen, it is easy to determine the size of our title; six times reduction will give us a letter a trifle less than one-sixteenth of an inch in height, which is about as small as we shall require and is suitable for postcard pictures. Readers with the popular hand cameras and roll films can overcome the difficulty of focusing by a few experiments and measurements. All who work with a short bellows camera will find a portrait attachment useful at times.

The best film for this kind of work is a slow one, and for this reason I always use the positive film made for the movie men. The trouble here is that the average amateur would have considerable waste, as even a small roll like one hundred feet would make more titles than he has negatives for. This being the case, we will consider the film supplied for hand cameras. The rapidity of this film makes more care necessary. It is not so much a question of absolutely black letters in our negative as great clearness in our black background. Therefore accurate exposure is essential; and, to this end, artificial light has the advantage on account of its constancy.

The development and after manipulation are simple enough. Having made ourselves familiar with the exposure time for six times reduction, working with the smallest stop and timing with a watch, we shall have little further difficulty. If we need larger letters, the camera is brought a little closer and the exposure time increased. A correctly exposed film will allow the white letters of the copy to gain considerable density in the negative before a deposit begins to show in the clear portions. It is necessary to remove the film from the developer as soon as any clouding appears, and fix at once. Use the acid fixing bath. It is a sure

THE TITLING OF NEGATIVES

sign of over-exposure if the black cardboard and cuts between the letters show in the negative. Discard such a negative and try again, giving one-third less time to the next exposure. In developing, use a well restrained developer with no tendency to stain. Plain hydroquinone developer is still as good as any for this class of work, and the following Cramer formula for contrast work will keep well and do what is claimed for it, i. e., make black and white negatives.

A:	Water	16 ounces
	Hydroquinone	$\frac{3}{4}$ ounce
	Sodium sulphite, dry	$\frac{1}{2}$ ounce
	Sulphuric acid	30 minims
B:	Water	16 ounces
	Sodium carbonate, dry.....	$\frac{1}{2}$ ounce
	Potassium carbonate	$1\frac{1}{2}$ ounces
	Potassium bromide	60 grains
	Sodium sulphite, dry.....	$1\frac{1}{2}$ ounces

To develop, take equal parts A and B. Develop from six to ten minutes; temperature seventy degrees Fahrenheit, according to exposure and density desired.

If, on removal of the negative from the fixing bath, it shows clear but the letters somewhat thin, this can easily be corrected by intensification. The negative, after a little washing, is cleared by a short immersion in a weak red prussiate and hypo reducer. This is also known as Farmer's reducer. This reducer will also reduce the density of the letters somewhat, but not sufficiently to damage the negative. We must get absolutely clear film in our background, there must not be the slightest suspicion of fog there. This operation of clearing will probably take a minute or even less. Wash the film thoroughly—ten minutes in running water will suffice, then intensify. We may use the well known mercury method or have recourse to one of the intensifiers on the market. I have found the Victor intensifier very good, though I use it somewhat weaker than the formula given. Were we to intensify without the preliminary reduction we would find a tint showing in our background which would be fatal to results. The title, when printed along with our picture, must show absolutely nothing but the white letters. A tinted background would make that impossible.

I will describe two ways of using our film title. The first is really a makeshift, but will at times suffice if one wishes only to letter half a dozen prints. The second method is that recommended for all commercial purposes. As the practice is now almost universal to provide the edges of our prints with a clear margin, we can paste a strip of lantern slide binding along the edge of the negative and at the same time have that strip hold our film title in place. If the title is located in a dark part of our picture, the strip will not show, provided it is quite clear. This way, the reader must remember, is a sort of compromise with trouble and will not always prove satisfactory. The following is the proper method; and, though really entailing very little work, my detailed description may give the reader the impression that it is quite a job.

Into a cup or other suitable small container place some amyl acetate, sufficient to cover our strips. With a pair of scissors trim away all the superfluous

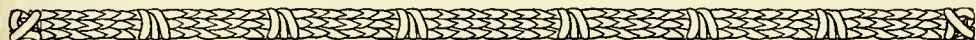
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film around the title. The object of this is to economize the solvent. Put the title or titles into the cup, push them under the liquid, cover the cup to prevent evaporation, and let the strips remain in the acetate till all the celluloid is dissolved. I should mention here, in the case of films coated with gelatine on both sides, that the back of the film should be freed of the gelatine, otherwise the solvent action is prevented by the protecting coat. The films may be left in the acetate for a convenient time, but will be ready in a couple of hours. Take a second cup with a like quantity of acetate in it and use it as a finishing bath. From cup number one, remove, with the fingers, one of the strips, drawing it between the thumb and forefinger of the other hand so as to remove most of the liquefied celluloid, which will appear syrupy. Transfer this strip to the second cup and proceed with any others in the same way. Contents of cup number one should be poured into a wide-mouthed bottle, well corked, and put away for future use. It can be used repeatedly till quite thick, when it may be thinned with fresh acetate, and it will then serve as a very good varnish for negatives, etc. Cup number two then takes the place of number one, and so on. After the title strips have been soaked in the second bath for an hour, remove them, pass them between the fingers as before to remove the surplus solvent and lay each strip out on a piece of clean glass to dry, glossy side upwards. If the plate is placed in a current of air, they will be dry in half an hour. When the strips are dry, remove them from the glass. For this purpose a safety razor blade is as good as anything. Place the strips in an envelope till wanted. These little strips are exceedingly thin but quite strong; and are easily lost on account of their lightness.

To apply them to our negatives, proceed in the following way: Prepare the following gelatine solution: Gelatine, ten grains; water, one ounce; place the container in some warm water until the gelatine is melted. This gelatine solution is used warm, and if a drop of preservative is added, we shall save ourselves the trouble of mixing fresh each time of using. When the gelatine has lost the power of setting or becoming a jelly when cold, discard it and make a fresh supply. We now need a small camel-hair brush; number eight or number ten is a suitable size. Take a sheet of glass; bridge it across some books; on the table place a mirror or white card below the glass, to act as a reflector; on top of the glass lay the negative and tilt the mirror so that the light will come up through the plate of glass and the negative. Some will find it convenient to interpose a sheet of tissue or tracing paper, with some parallel lines penciled on it, between the negative and the glass plate, to enable them to locate the strip correctly and have it run true with the base line of the picture. Now take the strip, not forgetting to reverse it; that is, it must be placed to read backwards, in a clear part of the foreground in the negative; adjust the strip in its proper place, and hold it there with an ounce weight placed near its end. Next lift up the free end of your strip and, with the camel-hair brush dipped in the gelatine solution, paint on the negative (but do not wet the strip itself); now lower the free end of the strip into place; next, remove the ounce weight from, and put the adhesive under, this other end also; pass the brush over the whole strip now it is lying in place, and set the negative to dry horizontally.

WHAT HAPPENS DURING EXPOSURE

Some readers may think this is ticklish work; perhaps at first it may appear so; and yet I have seen girls mount these filmy titles at the rate of ten a minute and keep it up. In the trade the glass plate spoken of is a piece of glass let into the table top; under this is an electric light that takes the place of the mirror; and, close handy, likewise under the table, is another light of the same kind; above it, in the table, is a circular hole in which a pot of gelatine is kept warm. In place of the ounce weight there is a flat piece of metal bent into a goose-neck spring, the tip of which is covered with a piece of sheet rubber. This holds the strip in place while the negative is being prepared to receive it. Amateurs generally will not need anything so elaborate as this, but I have gone into these details thinking they might interest and perhaps be of some use to others.



What Happens During Exposure

By L. E. Rea



With Illustrations by the Author

The least of the worries of the average photographer is in regard to what happens to the sensitive emulsion on his plate or film during the exposure, and what happens when the exposure is supplemented by development. It may surprise many of my readers to learn that the authorities do not claim to know, and the theories they advance do not always agree. Although there may be protest, it can hardly be proven otherwise than that the following theory looks the most reasonable; and that is my excuse for presenting it.

X-Ray photography proves conclusively that electricity, or a certain form of electrical energy, acts exactly as does light on the photographic emulsion, justifying our conclusion that light is a form of electrical energy. At any rate, so considering the matter establishes a basis upon which we can theorize; and, to do this last, we will concern ourselves, not with the mass, but with one little gelatine cell going to make up the mass, the sensitive emulsion. This tiny cell is the habitation of Mr. Silver and his wife Bromide, a very happy couple. They are very much in love with each other and seemingly inseparable. Silver has a very positive disposition, while Bromide is quite affectionate, yet they are content to live in their one little room and let well enough alone. But, suddenly, a blinding flash penetrates their abode and, sad to relate, Silver is as quickly changed from his positive, loving disposition to one exactly opposite or negative, becoming absolutely repellant to his wife. But the walls of their abode remain intact, and Bromide is compelled to remain with her lord, despite the fact that all love and affection have flown.

Throughout our land we have the divorce courts intended to alleviate the

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trials and tribulations of mortals who have become negative in their relations with their mates, the judge deciding upon the matter as presented. In the case of Mr. Silver and his wife, the photographer acts as judge, deciding that the couple should be separated, and proceeds, through due process of law, appointing three officers to carry out his behest. Officer Sodium Carbonate is sent to break down the walls of the residence of the unhappy couple; Officer Metol, with perhaps Officer Pyro as an aid, is instructed to rescue the unhappy lady and leave Mr. Silver where he is; while Officer Sodium Sulphite accompanies the other two simply to protect them while they are carrying out instructions.

Our Judge Photographer, fearful that, if he leaves Mr. Silver alone, surrounded as he is by affectionate couples who are sooner or later doomed to the same fate, his usefulness will be destroyed, and really wanting to use him for a higher purpose, sends Officer Hypo to remove his useless neighbors, leaving him a useful citizen even though divorced. And, from that time on, our Mr. Silver, along with the myriad of other divorced Mr. Silvers, changed from a colorless and inefficient to a dark and sturdy individual, proceeds to carry out his mission by the aid of the same light that caused his original emancipation from his humdrum existence and selected him as one of those to be used while his neighbors were destined to destruction.

About all that we really know is that, as the shutter opens and closes, the light, impinging upon the sensitive emulsion in the form of the picture image, so modifies those silver-bromide molecules incorporated in the gelatine of the emulsion that, when the developer is applied, those, and those only, are rendered black and permanent while the others, unacted upon, remain colorless and are easily dissolved away by the hypo bath, leaving a duplicate, in negative form, of the original picture image. While the action of the light, in its effect upon the emulsion, is not clearly understood, the action of the developer is simply one of opening the pores of the gelatine and subjecting the silver-bromide molecules to an oxidization that results only after the action of the light has prepared the way, liberating the bromine of the combination at the same time. In fact, it is the liberation of this bromine that causes our old or used developing solutions to behave as if supplied with a liberal allowance of bromide solution, that is, as if well restrained.

If, as one might suppose, the susceptibility to development of the light-formed image on the emulsion of the plate or film was in proportion to the amount of light action permitted by the exposure, the production of a good negative image, by development, would be almost entirely a matter of the proper compounding and application of the developer. But such is not the case. The permitted light action must be within the "limits" of the emulsion used, and yet sufficient to fulfil the requirements of the same emulsion in the matter of "speed". Given a subject containing no very marked contrasts, the proper exposure for the emulsion being used, and development becomes a very simple matter. In fact, it can hardly be otherwise in any case. The old idea that "tentative" development and other methods of manipulation gave the worker added control is giving way to the more rational idea that it is the exposure that controls the result, and a rightly balanced developer will give one all that he can hope to expect.

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A COUPLE OF TYPICAL CALIFORNIA VIEWS

Let us take an ordinary landscape and consider the difficulty our emulsion, with its "limits" and its "speed" established, must contend with. Our brilliant sky, itself a source of light, may require only a thousandth part of a second exposure, while perhaps a deep shadow in the immediate foreground may require several seconds before the weak light reflected therefrom can act sufficiently to give us satisfactory detail. It is these extremes that must be kept within the "limits" of our emulsion. Too long an exposure will give us detail in the deep shadow, but the brilliantly lighted portions will become "burned-up", as the saying is, even to the point of reversal perhaps, in the sky portions. Too short an exposure will render the sky and better lighted portions well, but our deep shadow will be a black mass, and even the better lighted shadows will be but smoky masses without any of the soft detail that the eye can so easily see. Our exposure must be a compromise in order that neither end of the long scale that the subject presents shall overreach the limitations of our sensitive emulsion in its requirement that the light action be neither too great nor too small for its capabilities, generous as are these last.

But this does not mean that an exposure on a subject having a wide range of illumination, such as our landscape with brilliant sky at one end of the scale and deep near shadow at the other, requires the most careful timing, for the simple reason that the range of illumination, being already longer than the emul-

sion can register, too little or too much exposure simply shifts the zone of unregistered illumination more or less to one end or the other, with this modification: as it is shifted to 'bring the poorer illuminated parts within the scope of the plate speed by increasing the exposure, the scale of tones is flattened, particularly in the high end of the scale of illumination. For example, the sky and the more brilliantly lighted parts of the landscape will show less contrast; in fact, a rather full exposure on a brilliant sky may produce reversal that will give result in a well tinted expanse, contrary to the belief that a thin sky in the negative is an indication of under-exposure.

On the other hand, a subject containing but little contrast in illumination, a short scale at all times well within the limits of the emulsion, must be timed very nearly correctly if a good negative is to result. Copying falls within this class, as do also birdseye views. And a little thought should make the reason for this quite clear. In our birdseye view we have no deep shadows because of the intervening atmosphere, and for the same reason there are no very brilliant high-lights. We have no long scale of illuminations that can be shifted from one end or the other of the scale which our emulsion can safely handle. Our scale is so short that the least over-exposure of one part means the under-exposure of the whole; and the same in the case of over-exposure, with the added disadvantage of the natural tendency of the emulsion to flatten the results as the exposure is increased.

The beginner should early learn that there is no magic in any particular developer or developing formula, and there can be but very little control over results, once the exposure has been made. The exposure is the important factor, and every effort should be made to make it as nearly correct as possible. If we are to break up all these happy homes, make widowers of these myriads of Mr. Silvers and destroy untold numbers of other peaceful residents of these tiny gelatine-walled homes, we should use every care to see that all this destruction is wrought to some good purpose, something at least approaching the quality of a good printable negative.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

HEADS OF DOGS AND CATS: I recently had quite a number of dog and cat portraits to make, and after working over the problem for some time discovered that the best method of procedure was to use a lens of about seven or eight inches focal length. Such a lens, used at about six feet from the animal, gave me an image with the head a little less than an inch across, and from these negatives small enlargements were made. Working in this way gave me the desired depth of focus that a larger lens would not, and the size of the image was such that considerable movement of the animal's head was allowable, as there was plenty of margin for trimming or masking when enlarging.—T. G. B., Nevada.

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A PHOTOGRAPHIC MONTHLY

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Giving Up Photography

The percentage of subscription renewals this year has been larger than for any other in the history of our magazine, but we have received, as always, a number of letters advising that the writers were "giving up photography" or that they had already done so, together with a few words of explanation. While less in number than heretofore, it so happens that we know several of the writers quite intimately, and in several other cases the writers explain more fully than usual just why they are discontinuing so agreeable a line of work, pastime, or whatever one chooses to call it. And, in practically each of these cases, the reason is that there is so little to show for the time and cash that have been expended. These dissatisfied ones have neglected, of course, to credit their hobby with all the pleasure they have derived, with all the benefits they have reaped, from having a hobby to which they could turn for a change, and with such healthful, out-door pursuit as their photography no doubt involved. But, even admitting that these should be given consideration, there is no good reason why any and every user of a camera should not have something well worth while to show for his efforts after a few years of such use. The whole trouble lies in the lack of a definite, or somewhat definite, aim. The "average amateur", that we all know so well, takes up photography quite enthusiastically, and, in the inborn delight that we all feel in creating something, finds particular gratification in the photographic image that results from his more or less well directed efforts. While this lasts the enthusiasm is maintained with little or no other incentive. A photographic image of the most commonplace landscape, of the pet cat, of the girl next door, all are wonderful productions, because produced in such an interesting manner and so exact in every detail. But the wonderment gradually wears away, and then comes the trying time. What has this wonder-working process given him. A collection of miscellaneous views that have little or no interest, even for himself. But, with something as a definite aim, all this would be changed. One worker that we know started, a few years ago, photographing home gardens, ordinary vegetable gardens. Aside from the fact that he has what is perhaps the most complete collection of such pictures in the country, two or three of them have received salon recognition, several have been sold as cover illustrations, and not a few writers on agricultural subjects are constantly calling upon him for prints to be used as illustrations to articles they have prepared or have in preparation. Seed houses have paid good prices for a number of his pictures for catalogue illustrations, and two or three of them have asked him to furnish them with albums containing a large number of pictures. But, aside from any monetary return, the satisfaction of having something really worth while as a result of his work precludes any danger of this worker "giving up photography". Every new picture adds to the value of

his collection, and every new picture has a value by reason of being a part of the whole. People are interested in his work and are constantly calling his attention to opportunities therefor. In fact, in two or three cases, home gardens have been laid out in a certain way in order to make them better fitted to his requirements. And this is only one class of subjects; the list is endless. The wild flowers of a section, farm buildings, farm animals, even farm gates, would make an interesting series. Some years ago we knew of one amateur who specialized on front doors to town houses. Special industries, local activities, typical scenes, anything, in fact, that will give the worker a field that is more or less individual as compared with the too common miscellaneous aggregation of subjects that his prints represent.

The Articles In This Issue

Months ago, Mr. Sederquist sent us a number of prints from which to select a few to be used as illustrations for his former article, all of them in sepias of remarkably good quality. The tones were rich sepia, genuine sepia, such as the painter knows, with none of the sickly, yellowish tendency so often seen. We of course asked our good contributor to tell our readers just how they were produced, and "Sepia Results" is the outcome. The article is full and explicit, showing great care in its production, and any reader who could see some of Mr. Sederquist's prints would lose no time in trying out his recommendations.

Mr. Felloe's article on "Fitting Negatives" is another that deserves a few words from us in order that the reader may not overlook its importance as describing an entirely new method of procedure, one that is in actual use in a large plant and one that is found particularly satisfactory. In fact, the process is one that, were he so inclined, Mr. Felloe might well consider as a trade secret of his own and for his own use.

Mr. Rea's article, our offering to the amateur this month, is of particular value, and in that author's most entertaining style.

The pictorialist has, in Mr. Doolittle's report of the Los Angeles salon, something more informative and helpful than the usual cataloging of the pictures so generally offered. And, while each of these several articles will no doubt appeal most strongly to the separate classes of photographers, we believe that any and all who are users of the camera will find something of interest in each of them.

We might add that we have had a number of separate copies of the lettering appearing on page 54 printed on heavy paper, suitable for copying, and will gladly send one, while they last, to any of our readers who may apply therefor.



A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

Stereoscopic Portraiture

It is hardly sufficiently realized how valuable stereoscopic photography is in the province of portraiture. No one who has ever seen a really successful stereoscopic portrait can ever have failed to remark upon the almost uncanny realism of it. To the artist it is perhaps too gross a realism. It has that death-in-life or life-in-death quality which is the bane of the wax-work show, and yet apart from that there is a preciousness about such a vivid relic of a dead or absent friend that must be recognized. How religiously we should cherish, if it existed, such a presentment of any of the "great ones gone," or, to bring it closer home, of some dear departed member of one's own family. The professional photographer never seems to have found it worth while to push this branch of his work. Perhaps he knows his public too well to venture on the enterprise of stereoscopic portraits. Whether this is so or not the amateur need have no hesitation in taking up the work, and if he will do so he will be surprised and delighted at the results, as will his sitters also.

It is hardly necessary to point out that for stereoscopic portraiture twin lenses and a stereoscopic camera are practically essential. To take successive portraits in the hope that no movement will have occurred in the thirty seconds or so occupied in the changing of camera position would be futile, and the use of mirrors with a single lens would mean a reversal of the image fatal to correct portraiture. Pinhole photography is unsuitable owing to the long exposure required, and the twin-lenses arrangement seems the only way to insure perfect results.

The surroundings and background having been appropriately arranged, the principal light should be well concentrated on the face of the sitter. A three-quarter length will generally be the most effective portrait.

It should be known that in the case of a plain background the prints may by suitable

masking be made to show a head or, indeed, any object well in front of the picture plane. To effect this the background is masked in two circles, squares, or ovals of equal size, the two being at the extreme limit of two and three-quarters inches apart, while the portraits themselves are only separated by two and a half inches. This means that the head in the left picture is a little to the right of the center of its background, and in the other a little to the left of the center, the backgrounds being, of course, the same size and shape. The result is a portrait standing as it were solidly in space with a background well behind. If the masking is carried out the other way, bringing the head in the left-hand picture to the left of center and in the right-hand picture to the right, the portrait will recede behind the picture plane. This is always the best way of masking a landscape and generally best for a portrait. The effect then is that of a picture seen through a frame; occasionally, however, in portraiture, an amusing effect is procured by the opposite plan, allowing the head to look out from beyond the frame. In stereograms of such subjects as museum exhibits—a fossil or a mineralogical specimen—it is also generally best to mask so that the object is in front of the picture plane.

The chief drawback to stereoscopic portraiture is the need of a stereoscope to view the results. This objection must, of course, be admitted, but it should be pointed out here that the knack of seeing stereoscopically without any instrument is so extremely easy to acquire that it is a great pity it is not more general. Most people can learn the way to do it after one or two trials, and then with a very little practice it becomes practically instinctive. The writer scarcely ever uses the stereoscope, and never has a moment's difficulty in combining the elements of a stereogram with the unaided eyes. It is very advantageous in mounting stereograms to be able to do this, as it precludes any

possibility of mistaking the right-hand for the left-hand picture. It is also convenient to be able to enjoy stereograms in a book just as well as on separate cards.

The way in which it is done is a little difficult to describe in words, but briefly it consists in fixing the eyes on an imaginary distance as though looking through the stereogram at something beyond. This involves no squinting; there is no more convergence of the eyes than in looking at any object a yard or two away. Probably the only difficulty in seeing stereograms in this way is that while looking through at the imaginary distance one naturally focuses the lens of each eye for that distance, whereas this instinctive tendency has to be resisted as we require to focus them for the stereogram while converging them for a more distant object. The art of doing this soon comes, and with a little practice one learns to combine readily pictures even as widely separated as four inches or more. If the faculty of stereoscopic vision were more widely cultivated stereoscopic portraiture would be proportionately more popular.

In stereoscopic portraiture it is tempting to introduce intricate accessories to add to the magic of the stereoscopic relief. A portrait of the late Mr. Washington Teasdale with his "geometric pen" is a good example, being strikingly effective in its fidelity to the intricacies of the apparatus, with its levers and cogwheels. On the other hand, pure portraiture with a plain background lends itself to stereoscopic treatment almost more wonderfully, as it keeps the attention concentrated on the figure, and we really get as near an approach to an actually "speaking likeness" as mechanical means can accomplish. A good example is shown in the second illustration, in which all accessories are avoided.

There is one important point in stereoscopic portraiture—the process which goes by the name of retouching must be eschewed, unless the retoucher is particularly skilful in treating the two pictures exactly equally, and even then much less should be done to the negative than is usual in professional photography.

Retouching in portraiture generally has come to be considered necessary, largely because the public will inspect a photograph at a proximity to the eyes at which they would never think of scrutinizing the paint-

ing of an artist. The lines which the retoucher so carefully eliminates in deference to public taste in the matter of wrinkles are not really the blemishes that they have come to be accounted. In them a great part of the character resides, and if they show unduly it is often that the lighting has not been judiciously arranged, or that the print is being examined from too close a point of view. Place an untouched print in a frame on the wall and view it at a reasonable distance. It will be seen at once to be immeasurably superior both as a likeness and an artistic production to the smooth, characterless wax effigies which so many photographers turn out—not perhaps to please their own taste, but simply because their public will have it so.

Now, in stereoscopic photography retouching is not very practicable, for any marks made by hand are apt to show up, in mid-air as it were, in the stereoscope, nor will it be found that even popular taste will object to the true presentment of lines and wrinkles in a stereogram. So that in stereoscopic portraiture the photographer is happily saved by the very necessities of the process from a practice which is of doubtful advantage in portraiture in any case, and beyond that is generally carried to an extreme that to the true artist borders on the offensive. In speaking of "retouching" we are not, of course, including mere "spotting out" or the removal of mechanical defects in a negative caused by dust particles, etc. Freckles, too, by their non-actinic coloring, are unquestionably too conspicuous on a photograph, and it is often desirable to remove this defect by working on the negative. To the elimination of such spots no objection can be raised, though possibly a certain amount of valuable time is sometimes wasted in getting rid of specks so microscopical that their presence or absence is a matter of absolutely no importance.—C. E. B. in *British Journal of Photography*.

Aerial Photography For Amateurs

G. G. Ross Smith, Lt. R. G. A., writing in *Special to The Amateur Photographer*, says: Now that restrictions on civilian aviation have been removed, doubtless a certain number of our readers may find themselves taking the air, either on pleasure bent, or with more serious ends in view; and as no doubt their cameras will accompany them, the following notes on

A PHOTOGRAPHIC DIGEST

aerial photographic methods and conditions may prove of service.

Aerial photographs are divided into two main classes, termed respectively "vertical" and "oblique," according to whether they are taken vertically downwards or at an angle.

The vertical, or plan, photograph, although of inestimable value for service or topographical purposes, is, from the fact of its perpendicular viewpoint, rarely, if ever, pictorial, although a stereoscopic pair, taken with a few seconds interval, will often produce very striking results, which should find favor with devotees of stereoscopic photography.

The oblique photograph, then, may be taken as the more generally interesting to the ordinary person, and the most pleasing results are obtained when the camera is depressed between thirty and sixty degrees from the horizontal.

The two main conditions likely to affect photography are the vibration of the machine and the rapidity, or otherwise, of its movement relative to the ground.

At heights of one thousand feet or more the latter is so small as to call for no special precautions; but vibration is a more serious matter. In the case of hand cameras (oblique), which is the only type an amateur is likely to use, it can only be combated by steadiness in holding.

On no account must the photographer, in his efforts to steady the camera, rest the arms or elbows against the sides of the cockpit, as this is merely courting disaster in the shape of blur.

The rush of air or "slip stream" from the propeller is very considerable, and persons unused to flying may find their movements considerably hampered when they leave their seats, and forsake the shelter of the wind-screen in their efforts to hold the camera over the side. The instrument must be gripped as tightly as possible, and the more attention that is paid to holding it rigid and steady by muscular power independent of supports, the better the results are likely to be.

Exposures of one one-hundredth or one one-hundred and fiftieth of a second have been found to be short enough to obtain negatives free from blur and movement, so there is no necessity to employ the highest speeds of a focal plane shutter; as though the aeroplane may be progressing through

space at the rate of knots, its movement relative to terrestrial objects appears small, unless one is flying very low indeed. If movement shows in a negative it can almost invariably be traced to faulty handling of the camera.

The types of instruments most suitable are as follows: Folding focal plane cameras, having anastigmat lenses working at f-4.5 or f-5.6, so that short exposures can be given even when using K1 or K2 filters, and, in extreme cases, K3, should atmospheric conditions necessitate the use of a panchromatic plate and filter in order to cut out haze. Cameras having lenses working at f-8 are not by any means to be despised, however.

Hand cameras having fairly high speed diaphragm shutters of the "Compound" or "Koilos" types. Vest pocket cameras are not entirely satisfactory, and the Reflex type is quite unmanageable, owing to its bulk. Direct vision viewfinders are the only satisfactory pattern, either the concave lens or the open frame types being suitable.

With fast lenses, a lens hood is very desirable; but detachable patterns are so likely to carry away that their use is hardly possible. A position should therefore be chosen so that sunlight does not shine into the lens.

The lens can always be focused for "infinity". This setting should be checked periodically, as vibration has been known to upset the setting of a focusing mount after a time.

Atmosphere is largely a matter of climate and season. Often in hot weather visibility at moderate heights may be fair from the visual point of view; but, photographically, hopeless, owing to bluish haze, which may or may not prove penetrable by the use of a K filter and panchromatic plate.

As the intensity of haze usually increases with height, it is, as a general rule, best to photograph from the lowest practicable altitude.

In taking a ship, building, or some such prominent object, one thousand feet is sufficient, although to encompass a town, or large area, considerable greater height may be required.

At comparatively low altitudes a plate of the anti-screen type may be used, but its powers of haze penetration are not nearly so great as those of the panchromatic class suitably filtered.

It is often possible to see and to photo-

graph directly downwards, even in mist, when oblique work is impossible owing to the thicker layer of mist that has to be penetrated.

Calculate the exposure by any reckoner, bearing in mind the open nature of the subject and total absence of foreground. The "distant landscape" factor in exposure reckoners gives a satisfactory estimation.

Development calls for no special comment. Negatives should be thin and full of detail for subsequent enlargement.

For safety, fasten a light codline lanyard to the carrying handle of the camera, and pass it round the neck.

Try to avoid including wing tips, struts, or wires within the angle of view of the lens, unless a pictorial effect with strong "foreground" is desired.

Color Screen-Plate Hints

Many photographers who have had but little experience with the screen-plate processes of color photography complain of the lack of brilliancy of the colors in the deeper and more poorly lighted portions of the subject in the resulting transparency. The explanation of this is simple. The colors are not there in sufficient brilliance in order for them to be properly rendered in the picture. In proof of this let us take a simple example. A laurel bush is viewed somewhat against the light. The best lighted portions of the bush will be found to be brilliant and strong in color, but those receiving no direct sunlight will be found to lack color. The colors exist we know, but they require a full and brilliant lighting in order to bring them into full prominence. As a general rule, against-the-light pictures are unsuccessful as color subjects, as also are poorly lighted woodland subjects, and the photographer must realize that in order to get a good result an equal and uniform lighting is to be desired.

Too little attention is often paid by color photographers working the screen-plate processes towards giving a correct exposure. In my own experience most of the failures with both the Autochrome and Paget processes may be traced to this cause. Exactitude, both in calculating with the aid of the meter and in timing the indicated exposure, is more essential in color work than in any other branch of photography, since any error, even if only of a minor degree, is almost certain to falsify both the color rendering

and the contrasts of the final result. When calculating the exposure a meter should always be used that makes an actual test of the actinic value of the light, instead of a calculator, or table working upon certain factors, assessed for the most part by guess-work. Great care must also be taken to ensure that the meter is held in the proper way, in order to give an indication of the strength of the light that illuminates the "deepest" shadow parts of the subject. In color work any trace of under-exposure, which would prove of little account in ordinary monotone work, and more especially in the case of rather dimly lit shadow detail, is to make the production of a perfect result impossible.

In the case of the Autochrome process, correct exposure is more essential than that of the Paget, since with the latter slight inaccuracies of the negative may be compensated for to a certain extent when making the transparency, though this plan is at the best a makeshift, and not to be recommended. With the former process under-exposure gives a very thin negative. Upon reversal the image is, as a rule, over dense, and it may be that the colors are falsified. On the contrary, over-exposure giving a dense negative, the positive may be too thin. Thus it will be seen that the secret of success is a carefully calculated exposure. Of course, there are modifications that may be employed in order to correct the results of under or over-exposure, but their use does not produce the fine results that accrue from the course recommended above.

In the case of the Paget process, the plate upon which the negative is taken being a panchromatic the best results will only be obtained if the exposure is decidedly on the full side. We have found that any great under-exposure produces false colors; in fact, it is far better to over than under-expose. When the subject contains extremes of contrast, as in the case of a woodland scene in sunlight, the only safe way is to expose fully for the shadows and to rely upon a careful development with a fairly dilute solution. A long experience of this process confirms my opinion that most of the failures met with by photographers may be traced to carelessness in giving the exposure.—R. M. FANSTONE in *British Journal of Photography*.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

How Some Portraits Were Made

The star visitor of the day, the one with the most interesting story, was an old amateur friend who lives in one of the smaller cities. After talking about various other things, he produced nine good portraits of as many young ladies, and asked me what I thought of them as prints from unretouched negatives all made in the space of about one hour's time. They were excellent. True, there was a certain uniformity of pose and lighting that might have been improved; but that was the only criticism I could offer. And this is the story of their production. My friend's daughter was invited to a little party made up of a few of her school chums, just eight of them, she making the ninth. After arriving on the scene, the idea occurred to the girls that they would like to have their pictures taken, not in the form of the conventional "group", but individual pictures that they could exchange with each other as a memento of the occasion. So father, my amateur friend, was phoned for and no excuse would be accepted. In fact, their idea was that his excuses as to being unprepared and all that were accepted merely as evidence of his disinclination to forsake an easy chair and a book. He simply had to go. A 5x7 camera, six loaded holders, a tripod, a focusing cloth, and he was on his way. The only thing obtainable at that time in the evening was some Number 3 Eastman Flash Sheets that the corner drug store had on hand, along with their small stock of film and Velox paper. A dozen of the flash sheets were procured, and they were found to answer admirably although my friend had never used any before. The young ladies were posed with their right side to the camera, facing a fairly bare wall that would reflect a little of the light. This particular arrangement was made so that the hands held in their laps would be in the same plane as the face, permitting a large stop, and also so that the back lighting would cause the

faces, most of them in profile, to be somewhat in shadow, removing the necessity of any retouching. The lighting, back lighting as I have explained, was arranged by pinning a flash sheet to a large piece of card which was, in turn, fastened to the upper end of a piece of board about eight feet long. This piece of board was stood against a chair about four feet back of the subject, its length bringing the flash sheet about four feet above the subject's head. The light was not directly back of the subject but a little to the front; just enough to get good lighting on the near side of the back hair of the subject and to cause the ear, to cast a shadow against the cheek. With a fairly comfortable chair and a book in the lap, the lighting was particularly pleasing, as suggesting the natural effect of a person with her back to the light as in reading. The two or three who did not present good profiles were asked to turn their heads slightly towards the camera; but the profile portraits were really the best. The exposures were all well timed with an f-6.3 stop and, printed on matte surface paper, there was absolutely no occasion for any retouching. The wall behind the figures was at such a distance that it received none of the light, particularly as the edge of the cardboard on that side was bent up to throw the light more directly forward. Most of the young ladies were dressed in white; their faces, with the back lighting, came in nice half-shadow; and the backgrounds were of that dark, atmospheric quality so hard to get in any other way. As half-shadow effects in profile they could not have been done better under the most favorable skylight conditions.

A Film Camera Focusing Screen

I was visiting a friend the other day, ran over to see him on Sunday afternoon; and he wanted to get my ideas on the suitability of a certain location on his grounds for portraiture. The shade of a large tree and the cutting off of the light from one side by a building seemed to make it ideal; but we

CAMERA CRAFT

both decided that the only way to determine the matter was by making a few exposures. His daughter was called out to serve as a model; the 3A Kodak was mounted on a tripod; and he then proceeded to secure the focus by the aid of his focusing screen, something quite new to me I must confess, although I think I read of the plan some years ago. This focusing screen consisted merely of a strip of tracing cloth about fifteen inches long and the same width as the film. Both ends of the strip were cut the shape of the black paper on which the film comes mounted, and, as produced, was wound on an empty spool which was placed in the camera just as would be a fresh roll of film. The free pointed end was threaded into the empty spool and a few turns of the key brought the cloth taut across the back of the camera, and that was all there was to it. When the correct focus was ascertained, the key was turned until the piece of cloth was wound off, the spool was then removed, the empty one moved over to the other end of the camera, and the roll of film to be used inserted, and the exposures proceeded with. It took but a moment to do the whole thing; and my friend went ahead with every confidence that, as long as the seat on which the subject posed and the tripod on which the camera rested were not moved appreciably, his pictures would all be in proper focus.

Titles On Prints

An Oregon reader says that he has been told that written titles and signatures can be transferred from paper to the negative so that they print white, quite clear, and distinct. He has tried it, following the brief instructions given, but without the desired success. The method is not really particularly satisfactory, except as used for producing the photographer's signature, or monogram design, on some fairly dark portion of the print. So used, it has the advantage of harmonizing, being photographic, and not so obtrusive as the same lettering would be if done with pen or pencil directly upon the print. The procedure is as follows: Use a hard-pressed or calendered writing paper, not an enameled one; do the writing with a good copying ink such as railroad offices use, and dry by heat so that the ink will remain on the surface as much as possible, doing the writing only a short time before

its use. Swab that portion of the negative that will receive the lettering with a wet wad of cotton for about two minutes, blot off and allow to stand for a like length of time. Then, holding the negative to the light, place the strip of paper carrying the signature, face down in the desired position and rub into contact with the tip of the finger, being careful that it does not slip or move. Allow to remain in position for about a minute, and then remove. Too thin an ink, not enough pressure in rubbing down, the use of a blotter on the writing, or too old a signature will result in a weak transfer. Allowing the paper to slip or using too much pressure will result in a blurred image.

A Source of Pinholes

If your camera is one that has a bellows and you have used it at all freely during the past summer, the chances are very much in favor of the corners of the folds being well filled with fine dust. When the front is drawn out, this dust is disturbed and some of it finds its way onto the plate or film. Right now is a good time to overcome this difficulty. Take a soft piece of cloth and spill a few drops of glycerine about upon it. Hang where it will be in gentle heat for a few days, at the end of which time the cloth will be found to have become pretty evenly moistened with the glycerine. With this,—and it will pick up and hold any dust with which it comes in contact, gently wipe out the interior of the bellows, seeing that they are well extended for the purpose. You will be surprised at the amount of dust and dirt the cloth will remove. But best of all, there will be a degree of cleanliness in your negatives that will be quite a relief.

A Use For Spoiled Plates

Or call it spoiled film if you wish, the usability of these unsatisfactory exposures is just the same. I always make it a point to carry every exposure right through development and all the rest, regardless of whether I expect to make prints therefrom or not. Then, when I run across some formula for reducing, intensifying, printing in of clouds, blocking out portions of a negative, or whatever it may be, and want to try it out, I have plenty of material to work upon without having to risk the spoiling of a negative that I do not care to have damaged.



CLUB NEWS AND NOTES

California Camera Club

"In Memory of our Late Member, William H. Rabe", so begins the first announcement on the Club's calendar for January, 1920. It is just a year ago that Mr. Rabe passed away; and as the Club fell heir to many of his salon prints, in order that his old friends might have another view of his work and the newer members may receive inspiration therefrom, a collection of his bromides were hung on the Club's walls during the month.

And, speaking of exhibitions, we should also report receiving and showing the Chicago Camera Club's prints, the first set to be received from the Associated Camera Clubs of America. Then, too, we wish to announce a new kind of monthly exhibit, in which any member may submit one print. The subject for February is a water scene containing a boat. At the business meeting of each month the print voted to be the best will form part of the permanent Club exhibit. By way of diversion, there was a card party and a masquerade dance. Also a hike to the Mill Valley home of "Parson" Bindley, one of our fellow members.

A demonstration of elementary principles of portraiture by artificial light, was given by Harry Field, home portraitist, who explained the working of the new apparatus donated to the Club by President Eisen.

Southern California Camera Club

The club added considerable to its equipment through the opportunity afforded by a novel Christmas tree on which the members were invited to hang presents suitable for the purpose. A six-months free course for advanced amateurs has been arranged for every Thursday evening, and a like course for beginners, who will meet every Tuesday evening. At the International Salon just held by the Camera Pictorialists, the club was represented by twenty-five excellent pictures, the work of eight members. C. M. Payne, the author of the "S'Matter Pop" series of comic strips, showed a number of very interesting autochromes at the regular January meeting. Many of them had been made at quite inaccessible locations in the deserts of Arizona.



OUR BOOK SHELVES

"Verse for Patriots"

The recent war has pointed, or rather, disclosed the desirability of more attention being given to the teaching of patriotism in such a way as to benefit those who can most obviously be benefited thereby, and our public schools at once suggest themselves as the logical vehicle for such instruction. But, in turning to them, we are confronted by the undeniable fact that it is unwise to make a too deliberate assault upon the emotional side of the average, normal youth; the better plan being to make a less definite and direct appeal to the imagination. This compilation, by Jean Broadhurst and Clara Lawton

Rhodes, is intended to serve the purpose indicated, being suitable as an aid in teaching English and at the same time creating an appreciation of good verse. Only the best has been included, embracing the national hymns and war songs of other nations, as well as our own, a tribute to the wave of patriotism that swept our land so few short months ago, despite the diversified character of such a large part of our population. The book is one that should have the attention of every teacher to the end that its object may have the widest possible opportunity of achievement. Published by J. B. Lippincott Company, Washington Square, Philadelphia. Price one dollar and fifty cents, net.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

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NEW MEMBERS

4096—Arthur Craff, R. F. D. No. 1, Lockridge, Iowa.

2½x4¼, developing paper, of landscapes, farm scenes and family groups; for lantern slides, stereoscopic views and all other good photographs. Class 1.

4097—James A. Forrest, 720 N. Elm St., Hays, Kans.

Post card size, glossy developing paper and cards, of landscapes and buildings; for the same. Am a beginner. Class 1.

4098—Guy J. Shields, 806 Manistique Ave., Detroit, Mich.
Class 3.

4099—P. L. Harper, Star, N. C.

3¼x5½ and 5x7, developing paper, of views and portraits; for the same.
Class 1 for postcards only.

4100—J. F. Braselman, 151 N. Sixth St., Philadelphia, Pa.

Various sizes, mostly matte developing paper, of landscapes, portraits, copies, etc.
Class 2.

4101—Vere Renzenberger, 227 Neil Ave., Marion, Ohio.

2¼x3¼, 4x5 and 8x10, developing papers, landscapes, still life and miscellaneous; for mountain scenery and typical views.
Class 1.

4102—Edwin B. Ayers, Jr., Hillsboro, Ohio.

2¼x3¼ to 11x14 enlargements, bromide, developing and hand-sensitized, of street scenes, portraits, children and flashlights; for anything of interest. Class 1.

4103—Louis LaCroix, Ord. Sgt., U. S. A., Fort Worden, Wash.

All sizes, printing-out and P. M. C., views, army views, guns, etc.; for views, mountain scenery, genre, portraits. Want postcards and prints up to 6½x8½. Class 1.

4104—Ed Tangen, Box 492, Boulder, Colo.

Stereos and 5x7, all kinds of paper, scenery and scenic; stereoscopic; for anything except groups. Class 1.

4105—W. E. Fowler, Goliad, Tex.

5x7 enlargements, bromide paper, general, no "record" stuff but good work; for the same. Class 1.

4106—J. E. Johnson, Herdel Block, Main St., Hillsboro, Ore.

Vest pocket to 5x7, developing paper, female figures in classic and statuesque poses; for

same in dignified poses, no freaks or "fuzzies". Class 2.

4107—Frank Patterson, 1729 Franklin St., Eugene, Ore.

Up to 8x10 and enlargements, developing paper and bromide, of Western scenery, female figures, as stereograms, lantern slides or colored in oil; for the like and notable scenery. Class 1.

4108—R. W. Carlson, 315 N. Sixteenth St., Escanaba, Mich.

2½x4¼, developing paper, of railroad scenes; for locomotives, particularly those of the C. & N. W., Soo Line and the C., St. P., M. & O. Class 1.

4109—H. B. Gregory, Box 475, Warwick, N. Y.

3¼x5½, developing paper, of country scenes; for any subjects of interest. Class 1.

4110—Lawrence McClelland, Arnegard, N. Dak.

3¼x5½, 4¼x6½ and 5x7, developing paper, landscapes, tractor and railroad scenes; for landscape views of all kinds and snow scenes. Class 2.

RENEWALS

2285X—C. A. Holman, U. S. Dredge, Rio Vista, Cal.

1½x2½ prints, developing paper. Class 1 for postcards. Class 2.

2482—John W. Kimball, Box 42, Windsor, Vt.

Post cards, 4x5 and 5x7, developing paper, lake, brook, river, and mountain views, country roads, waterfalls and general New England scenery; for similar views from other parts of the country and abroad.
Class 1.

4236—William Rocamp, Ashville, Manitoba, Canada.

3¼x5½, of Manitoba scenery; for pictures of children or other subjects of interest.
Class 1.

4459—Louis M. Rommel, 1516 E. Franklin Ave., Minneapolis, Minn.

3x4, 3¼x5, 4x5 and 4x6, developing paper, of Minneapolis local views, milling district, Fort Snelling, Minnehaha Falls, water views, cloud effects, scenery, etc.; for scenery, water views, cloud effects and subjects of general interest. No glossy paper and no post cards except by agreement. Class 1.

4475—Branson M. DeCou, 167 N. Grove St., East Orange, N. J.

Will exchange (or buy) unusually beautiful lantern slides of American and Canadian scenery. Write what you have to offer.

4567—G. W. Johnson, 30 Mitchell St., Jackson, Ohio.

Class 3.
4571—Joseph H. Moore, 4025 Warwick Blvd., Kansas City, Mo.

Class 2.
4576—P. S. Daniells, Hughson, Cal.
Views and figure studies, kind for kind or figure studies for views. Class 2.

4618—J. E. Dow, Big Sandy, Tex.

4x5, post cards and smaller, developing paper, of farm scenes, railroad views and scenes of general interest; for anything of interest. Class 2.

4662—William Grigg, 318 North Ave., Milwaukee, Wis.

2¼x3¼ and 2½x4¼, developing papers, of everything outdoors, including public parks; for the same, including animals and genre studies. Class 1.

NOTES AND COMMENT

A Department Devoted to the Interests of Our Advertisers and Friends
In it will be found much that is new and of interest

Show What You Can Do

The Bausch & Lomb Optical Company is in the market for pictures that are tests of real lens efficiency. Satisfactory prices will be paid. Speed pictures or other difficult studies illustrating the remarkable corrections, reserve covering power and sharp, clear definition, given by the Bausch & Lomb Tessar series are particularly desirable, while samples of work done by the Protars, a more convertible lens, are likewise asked for from the world of photography. Pictures of a timely and interesting nature are naturally the type preferred. Glossy prints should be submitted for inspection and if accepted, the company prefers to buy the negatives outright. The address to which all prices should be submitted is Bausch & Lomb Optical Company, 624 St. Paul Street, Rochester, New York.

The Passing of the Rapid Rectilinear

Time was when the amateur who owned a good rapid rectilinear lens felt that he was pretty well equipped. At any rate, such a lens was considered much more preferable than the single achromatic with which so many outfits were supplied. In fact, the former still has, undoubtedly, virtues that the latter does not possess. However, even as the single achromatic has gradually become less and less popular, so the modern trend with amateurs is away from the rapid rectilinear. Improved methods have so decreased the cost of manufacture that an anastigmat can now be obtained at a cost that is almost as low as that of a high grade lens of the rapid rectilinear type.

On looking over the new Wollensak catalogue we notice one lens in particular that seems to be well adapted to the needs of the amateur where price is a consideration. This is a lens known as the Wollensak Series V Anastigmat f-7.5. It is furnished in cells that are readily interchangeable with those on the standard kodaks, Ansco and Seneca hand cameras, as well as many other popular

makes, at a cost that ranges from eight dollars for the $2\frac{1}{4} \times 3\frac{1}{4}$, to ten dollars for the postcard size. This lens is also supplied with standard Wollensak shutters at only a slightly greater price.

Of course the speed of this lens is not as great as the higher priced Velostigmats and anastigmats, but is nevertheless better than that of the ordinary rapid rectilinears and the definition rendered is so much superior that it is well worth the consideration of any amateur who is after better results.

An Advance Necessary

The Michigan Photo Shutter Company advise, under date of January 8th, an advance of fifty cents on each size of the Packard-Ideal shutters, to become effective at once. This is made necessary by the sharp raise in the cost of material, as well as an increase in labor wages. It is really surprising that an advance has not been announced much sooner, and this small increase in the price will be gladly paid by those acquainted with the merits of this line of shutters.

Illinois College of Photography

The "White-Frost" affair was a surprise to everyone. To be more explicit, Miss Wilma White of Hutchinson, Kansas, and Luther A. Frost, of Stuart, Nebraska, were quietly married in Terre Haute, Indiana, recently. It is simply another case of the workings of Cupid among the I. C. P. students.

Two of our 1918 students have recently gone into business on the Pacific Coast. Miss Emma Hyatt Morton is opening a home portrait studio in Portland, Oregon, and Leon F. Douglass, Jr., is now saying "look pleasant, please" in San Rafael, California.

A large number were present at the College Camera Club social recently given. In the contest for the honors "Murdock Tribe" finally won. A lantern slide exhibit and refreshments closed the evening.

CAMERA CRAFT

The I. C. P. basketball team, for this season, promises to be equal to any of its predecessors. The boys are alert and confident, and will only be satisfied when they have won a majority of the games played.

The Government is constructing a one hundred and sixty-eight-mile concrete highway from St. Louis to Terre Haute, through Effingham, over the route of the old National Pike, built during Jefferson's administration, and Effingham is headquarters for this work. Thousands of men and machines are required, and the construction activities make good subjects for the photographer.

A very interesting letter has been received from G. W. Walker of Beacon, New York. While a student in 1912 he showed great ability for cartooning and has since made good in that line. For some time he was Animating Cartoonist for the Mutt and Jeff Film Company. He then became official cartoonist for the Prohibition Party, and is now working on a comic series for the New York Syndicate.

Three-Color Exposures with the Northern Light

January 10, 1920.

Simplex Photo Products Company,
Richmond Hill, L. I., N. Y.

Gentlemen:

The No. 1 lamp you sent me is very satisfactory. I would have written before but I wished to give it a thorough try-out first. As you know, most of my work is in color photography, the following being some results of the tests.

The lamp was used six feet from subject, measured on the diagonal from carbons. Cramer plates and filters were used. The factors found by test were: Red, x 8; green, x $7\frac{1}{2}$; blue, x $3\frac{1}{2}$. These results, in the red and green, were surprising, for they are about half the daylight factors. The blue exposure could, with advantage, be cut to x 3, making a total factor of $18\frac{1}{2}$ against 34 for daylight. The unscreened exposure at f-16 was three seconds, working with one and a third times normal lens extension. This compares very favorably with daylight exposures under a good skylight; in fact, I believe they are a little better.

I will ship the remainder of the No. 5 lamp to you some time during the week, and I must thank you for your kindness in sending me the No. 1, as you did, in exchange

for the No. 5, simply because you felt it would better suit my purpose. I forgot to mention the No. 1 gives about five times the amount of light given by the No. 5.

If any of the above will be of any use to you, you have my permission to use it over my signature.

Thanking you for the unusual interest you have shown in making me a satisfied customer, I am,

Very truly yours,
(Signed) C. K. TEAMER.

2915 W. Lehigh Ave.
Philadelphia, Pa.

New Photographers Forging to the Front

The moving pictures of the German Revolution, now being shown at the Century Theatre, New York, were taken by Harry A. Chase, recent graduate of the New York Institute of Photography, 141 West Thirty-sixth Street, New York. The picture shows the thrilling happenings of the German Revolution and is the most sensational story of the great war.

Mr. Chase was head of a staff of photographers associated with Lowell Thomas, the noted traveler, and one of the *New York Globe's* foreign representatives. The last two months of their trip was spent in Germany, and they were eye-witnesses to the downfall of kaiserism, and the birth of the German Republic. The pictures are not only full of thrilling happenings of the German upheaval, but also displays the photographer's talent in the beautiful colored pictures taken in the face of danger.

After a stay in New York, these pictures will be shown in all the big cities throughout the country, together with: The Palestine Campaign, With the King of Hedjaz in Arabia, and From Hoboken to the Rhine. Over fifty thousand feet, almost ten miles of film, were taken in France, Italy, Palestine and Greece. During certain stages, the staff was attached to the American, Italian and British armies.

Mr. Chase's success has been phenomenal since graduating from the New York Institute of Photography. His earnings have never been less than seventy-five dollars a week with all expenses paid.

The savage lives within his income. Are you doing any better? Buy W. S. S.

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One-pound container - - - -	\$15.00
Half-pound container - - - -	7.65
Quarter-pound container - - -	3.90
One-ounce container - - - -	1.00

ANSCO COMPANY, Binghamton, N. Y.



CAMERA CRAFT

A Photographic Monthly

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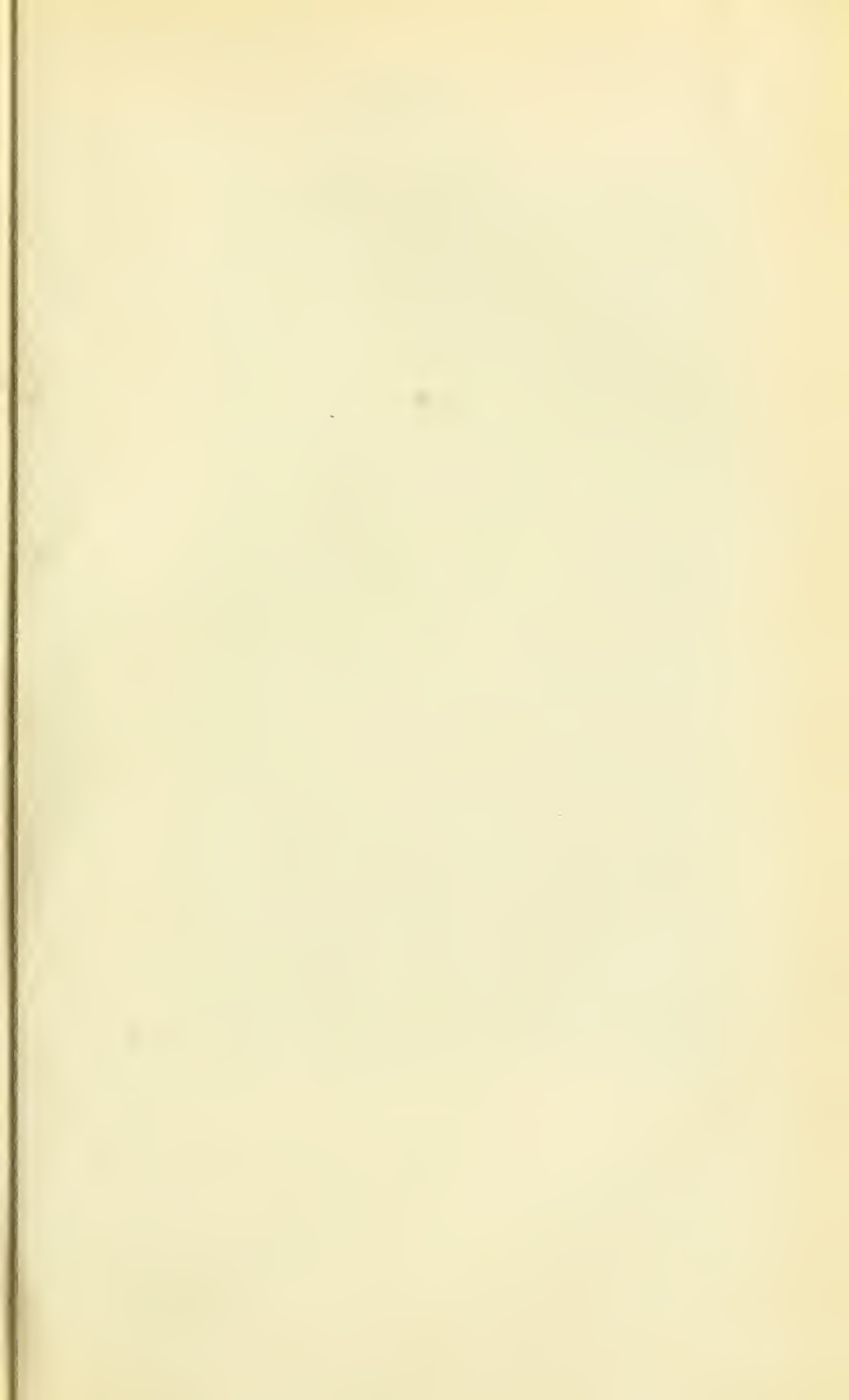
High Grade Lenses and Cameras

LENSES

1 $\frac{5}{8}$ x2 $\frac{1}{2}$ Eastman Kodak Anastigmat, f-7.7, 3 $\frac{1}{4}$ -in. focus, in B. B. shutter; first class condition. List \$12.50	now	\$6.50
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Adaptability of the Flash-Cabinet

By R. C. Ward



With Illustrations by the Author

There is much of the work that an all-around commercial photographer is called upon to do that would be almost, if not entirely, impossible were it not for the power that the flashlight places at his disposal; much that can easily be executed with a flash-cabinet, although extremely difficult by the ordinary method of working. The illustrations herewith are examples in point, being part of an order recently finished with satisfaction to both myself and the circus people for whom the pictures were made.

Called upon to photograph some wild animals, as they actually performed in the arena, I hesitated a little at first; but the trainer informed me that his lions were very tame, which somewhat reassured me, particularly after being in their company for a few minutes. While they seemed quite tame and docile; I could not forget that they were still wild animals, and even their trainer gave them but little opportunity of following out their own inclinations, whatever they might be.

I wanted my pictures to be a little different, if possible, from the regular run of such work; so we made an appointment for the next day. Appearing upon the scene, the trainer told me that the big, boss lion's name was Nero, and that I should call his name over and over, so that he would know I was friendly and kindly disposed and that there was nothing to fear from the cannon-looking accompaniment. I started in with my Nero monologue and kept it up quite faithfully. The arena bars were too close together to permit of photographing from the safe side, so inside I went, the several attendants, revolvers



SOME FLASHLIGHT PORTRAITS OF NERO

in hand, standing ready for any false moves. The trainer put Nero through a few of his paces, up to the point where he wanted the exposure made, when I was all focused and ready to press the bulb. Up to that moment I had not given a thought as to how Mr. Nero would take to the flash; but I was in it and could not back out. At the first turn of his head in my direction, the bulb was pressed. Bang! went the flash, and—Mr. Nero never so much as batted an eye. Gee! but I felt good. In fact it was all so easy that I was quite anxious to try a few more; and Nero behaved like a good boy throughout the entire procedure. Then the trainer drove him out of the arena and brought on a couple of leopards with their lady trainer.

These subjects, the leopards, had a sneaking way that I did not particularly like. They would sit down in the far corner and stare at me in a way that was somewhat disconcerting. After considerable persuasion, their keeper managed to make them perform, explaining to me as she did so that I must not take too much time; these particular animals did not like to have her on their backs for long, the caution being for both her safety and my own. It is needless to say that I hurried and, at the proper moment, when she said: "Make it," I was all ready to run, but pressed the bulb before doing so. To the surprise of all, including the trainer, the leopards never moved; in fact, it was fully fifteen seconds before they did so, after the flash. They both went peaceably to their cages, no doubt glad that they had had their picture taken with a flash-cabinet, let us hope. The same morning I photographed the bear, the ape, the elephant, and the ponies, all of a more docile nature than the previous subjects.

Returning home, I was so anxious to see the results that all of the films were developed at once. I use Eastman portrait film in all my commercial work, as the negatives it gives me have a texture that I cannot get with plates, especially when using the flash. I made up my usual developer for the tank, put all the exposures in, win or lose, and, taking a look at the determined time, found them all well-timed exposures. For the extreme uses to which the flash can be put, from photographing babies to wild animals, the flash-cabinet is the only thing that permits one to be sure of his results. Full timed negatives, no moves, and the expression always preserved.

And, mentioning babies; the next day, upon presenting proofs, or rather,

ADAPTABILITY OF THE FLASH-CABINET

finished, ferrotyped prints from each negative, the wife of the animal trainer asked me if I could come and take a picture of their child, as they did not have time during the day to dress and visit a studio. This was right in my line, I explained; but the mother objected that she did not want the picture taken out in the sun, and the circus tent did not supply a suitable background. Explaining that I always carried a plain background for just such emergencies, the new job was quickly arranged. The seat was a moment's problem, the most available one being a barrel used by the elephant in his performance. The gaudy stripes that encircled it were hidden by a piece of carpet that happened to be handy, and this gave my sub-

ject a seat that was of a desirable height and quite satisfactory. While busy beneath the focusing cloth, I felt something move about my feet, but gave it no particular attention. As I reached for my film holder in the carrying case, I found that the largest assistant I had ever had was about to hand me a holder with his trunk. It was feeding time and the elephant, untied, was roaming about the tent at his own sweet will. Being the proper time to do so, the lions were roaring just a little louder than at any other time of the day. If you really want some excuse for uncertainty as to whether you have removed the slide, set the shutter properly, or performed some like



THE PRIDE OF THE CIRCUS PEOPLE

essential, just try the experiment of doing home portraiture under such conditions.

I neglected to say that the finished proofs of Nero's portraits and the other subjects were all very satisfactory, and a nice order resulted; another case where the flash-cabinet scored quite easily. A still further case was where I was called upon to take the interior of a large boiler to show defective pipes. With a naked flash, about one exposure would cause all the smoke that an operator



A FLASHLIGHT MADE OF THE LEOPARDS

could enjoy; but, with the cabinet, I made four different views and came out the boiler untroubled by any difficulties.

Using a good portable flash-cabinet, and mine is a Halldorsen Number 2, Victor flash powder, and Eastman portrait film, subject and light conditions count for naught. Against the light, across the light, or where there is no light, it is all the same, and results are always sure. For dark days in the studio or where special lighting effects are wanted, the cabinet, ready set up will prove invaluable. The possession of one, together with the slight knowledge and experience required to use it successfully, broadens one field of work, taking it into those unusual by-paths where the profits are largest and the satisfaction in work well done the greatest. Do not take my word for it, but ask any photographer who has adopted the flash-cabinet as a part of his equipment.

Lots of men are wishing for a little leisure time so that they can turn out some good work. But we notice that the best work comes from fellows who haven't a minute to spare. Big men make little noise; newsboys yell their heads off.—*The Russel Co. Bulletin.*

You watch figures in the field, digging and delving with spade or pick. You see one of them from time to time straightening his loins and wiping his face with the back of his hand. * * * It is there that for me you must seek true humanity and great poetry.—MILLET.

A Cabinet for Photo-Micrography

By Dr. H. D'Arcy Power

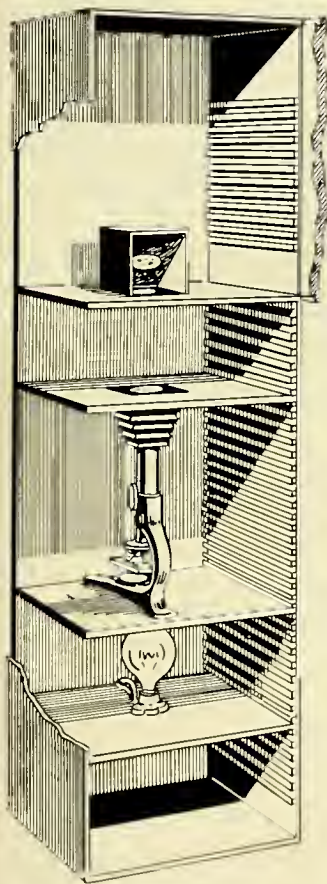


In the May and June numbers of *CAMERA CRAFT* for the year 1916 I published an account of the photographic cabinet I used in enlarging and reducing, and in copying, and promised that, at a later date, I would describe how it could be applied to the purposes of high-power photo-micrography, as well as the low-power work which was dealt with in the June number.

As three years have passed, it may be well to elucidate the principles of the vertical cabinet enlarger.

The plan of the apparatus involves the construction of a cupboard-like cabinet, light-tight in the upper part, and closed by light-tight doors. The size will depend on the maximum enlargements likely to be undertaken. The cabinet is divided into the following sections: An upper part separated from the lower by a bottom perforated to receive the lens. The upper and the lower portions are both grooved to receive one or more movable shelves, the grooves or cleats being one inch apart. The illuminating apparatus, whatever be the form adopted, is attached to a movable shelf electrically connected, which can be placed in any one of these grooves. In enlarging work, the illuminating apparatus is placed in the upper cabinet, that it may be projected downwards through the negative, which is placed in an appropriate kit on one of the shelves below it, and above the lens. In making reductions, the arrangement is reversed, and the illuminating apparatus is placed in the lower part of the lower compartment, and the image is transmitted by the lens to a sensitive plate contained in the upper cabinet. When the apparatus is used for copying, the

illuminating apparatus is transferred to the upper instead of the lower grooves of the lower section, the image being projected upwards by the lens. The illuminating apparatus, as used by myself, consists of six sixty-watt nitrogen bulbs, arranged around the edge of the shelf; a bent sheet of white blotting paper placed behind them acts as a perfect reflector, while the rays of the bulbs do not fall directly on the object to be enlarged or reduced. The description here given will be readily understood by reference to the accompanying illustration.



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With this arrangement enlargements can be made from one to eight times the original, or conversely, reductions in the same proportion. It will copy manuscript or pictures to scale, with absolute equality of illumination and the greatest simplicity of handling. It can be used for the direct photography of small objects under almost any desired angle of light, and it has a special application for the rapid reduction of x-ray plates to lantern slides or small-print copies, and is so used by one of our leading radiographers. All these varied procedures require no more time than is necessary to place a sheet of paper, or a plate on one shelf and the object to be treated on another. No more mechanism is involved than that required in turning the illumination on and off, and the dark-room is robbed of no more space than that covered by the largest sheet of paper on which one desires to enlarge, or the largest plate to be reduced. My own apparatus, with which I am constantly making enlargements, occupies a floor space of 18x22 inches, with a height of six feet, making it hardly noticeable as a part of the dark-room equipment.

In regard to photo-micrographs, much has been written on the photographing of minute objects up to ten or twenty diameters without the use of a microscope. With this enlarger, such magnifications can be made as high as one hundred diameters, and the magnification of small solid bodies up to ten or twenty diameters is a matter of the greatest simplicity. All that is required is that the lens used be of a sufficiently short focus to give a considerable enlargement of the object at a reasonable distance below. For the mass of my work, I use a five-inch Zeiss Protar. For photo-micrography, I add a simple landscape lens of the same focus. This brings it to approximately a three-inch lens, which, when used pointing up from the lens-board, so as to bring it within a short distance of the negative, will give me an image of twelve linear magnifications on the lower shelf of the enlarger. I could exceed this, but for most purposes it is unnecessary. Sections such as those of human skin, of small insects, water larvæ and cross sections of plant stems, are shown in admirable detail when projected in this manner. The negative so obtained by being again enlarged can bring the magnification to over one hundred diameters. To one not having a microscope, a wide range of utility is made possible by the possession of such an enlarger. Again, there are very many small objects whose details are perceived with difficulty by the unaided eye, that can be enlarged to great advantage by reflected rather than transmitted light. In this case they are placed on a sheet of glass in the upper compartment, illuminated from below, and the image received on a negative plate at the desired magnification. Examples accompanying this article prove how valuable such small enlargements may be. No special precautions are necessary in making these photo-micrographs, except that where color is an element the proper screen be used in conjunction with the lens, and that the plate be a panchromatic.

To come now to the subject of high-power micro-photography. I spent very much time and endless experiments in seeking to project the image made by an ordinary microscope downwards in the same manner as in regular enlarging, but without any success. The problem would have remained unsolved for me at present, had it not occurred to me that, could I throw the image upwards in

A CABINET FOR PHOTO-MICROGRAPHY



AN IDEAL SPOT FOR LUNCH

By L. E. REA

the usual way that we look through the microscope and then reflected to the eye, the difficulty would be overcome. Very little adaptation of the inside of the apparatus is necessary for this purpose, but the focusing of the projected image was a matter of extreme difficulty, and would have thwarted all my efforts had I not been able to devise a focusing screen capable of showing images under the highest magnification in perfectly clear detail. These two points attained, I feel that I can say that the observation of slides and the photographing of selected fields can be accomplished with as much ease as working with the microscope under usual conditions, and the taking of the photograph be of no greater trouble than the ordinary exposure of a plate.

To come now to details, the arrangement of the apparatus will be as follows: The microscope will be placed on a shelf below the lens opening, and connected with it either by a velvet-lined collar or a short piece of bellows, so as to permit of the normal up-and-down play of the microscope in focusing. In the upper chamber, a shelf with the necessary sized cut-out is provided to receive the negative. A small square box, having the dimensions of the plate usually used, is arranged as follows: Its bottom is made of a piece of focusing glass to be presently described; its front is open, and, placed obliquely at an angle of forty-five degrees, is arranged a piece of good mirror glass—a surface silvered mirror would be the ideal thing. This small movable box fits accurately over the opening where the plate will be placed, and images from the microscope, when focused on its ground-glass under surface, are visible in the mirror. So perfectly is this done, that, even with high powers, it is a thing of simplicity and convenience to sit in front of the apparatus and work the focusing screws and move the object, observing the image solely in the mirror, until the desired field is found, when all that is required is simply to remove the reflecting box, place film or plate in the aperture and make the exposure. Of course, the light is turned off during this transference.

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So far I have not spoken of the illuminating apparatus, which can be either reflected as usual by a mirror from any form of illuminant the microscopist desires, or, as I prefer to have it, a nitrogen bulb placed under the shelf bearing the microscope, the rays passing through a circular hole cut through the shelf immediately under the Abbey condenser.


There now remains for me to describe the focusing screen, upon whose qualities is dependent the success of the whole procedure. I purpose shortly to treat of the whole problem of focusing screens in another article. It is enough to state here that the screen for this particular purpose is best made by dissolving out the silver from a negative plate in a hypo bath, washing, hardening in ten per cent formalin and thoroughly drying. The surface is then rubbed first in one direction and then in another, with No. 00 carborundum powder in such a way that only the very slightest dulling of the surface is effected. It is possible with this screen to use a twelfth of an inch oil immersion lens so perfectly that the focusing is of no greater difficulty than when observing with the regular ocular.

The above description will be best understood by reference to the accompanying drawings, but I wish to state that the trouble and cost of making the adaptation is quite nominal, and the facility in use much greater than any photo-micrographic apparatus on the market. I am using it constantly in my professional work, and the accompanying photo-micrographs are the best demonstrations of its accuracy.

I have not touched upon any of those points connected with illumination, use of plates and screens, which are dealt with in works on photo-micrography, but I may state that the accompanying photographs were made on panchromatic plates, using a No. 3 Wainwright & Wratten screen, and the exposures varied from thirty seconds to ten minutes; in the latter case the magnification approaches fifteen hundred diameters.

In conclusion, let me point out that the amount of magnification can be controlled by altering the position of the shelf bearing the microscope and the shelf with the connector, this being tantamount to lengthening the microscope tube.





Pointers for the Amateur

By Harry A. Brodine



With Illustrations by the Author

On looking over an old collection of prints which I had acquired some time ago, I found that many of them showed excellent examples of defects to which the work of the ordinary amateur photographer often falls a victim. One of the commonest faults in architectural photographs, made with the hand camera, is distortion; shown as the first in the group of reproductions herewith, in which the building at the side leans toward the center. This is caused by tilting the camera so as to include the top of high buildings. The professional has recourse to the swing back of his view camera when making such photographs, and that is the only way in which the difficulty can be overcome. If you happen to have a really valuable negative showing this defect it can be remedied by copying a glossy print of it at an angle so that the lines are straightened, or the negative may be tilted slightly in the enlarging operation.

The photography of moving objects is often attempted and not always with success. The most important part of speed photography is to give as much time as the subject will allow. This depends on the direction in which the object is moving and the rate of speed. If it is coming in the direction of the camera, one one-hundredth of a second, with a between-the-lens shutter will get almost any but the swiftest subjects. If a broadside view is sought, the shutter must be speeded to three or more times that necessary for head-on views. This is because the image is being displaced on the plate much more rapidly than in any other case. In speed work only the fastest plates should be used, and a fast lens such as the f-4.5 Tessar. The color of the object and the foreground has much to do with the result in speed work. In the case of football players with dark suits against the dark ground, it is hardly possible to give too much time and still stop the motion.

In the picture of the large building we find not only slight distortion, but a poor lighting of the subject. Raising the frontboard to the limit and holding the camera absolutely level would have rendered the lines straight, and the lighting should have been a trifle more from the front and at an angle of about forty-five degrees. Non-halation plates are the best for architectural photography.

One of my illustrations is a fair example of a waterfall. Waterfalls are quite difficult to photograph in a satisfactory manner, as most amateurs attempt quick snapshots in order to arrest the motion of the water, and in so doing fail to secure detail in the darkest portions of the view. It is a much better plan to make a series of slow snaps of the fall when a tripod is used, as good detail is then obtained in all parts of the picture. Development should then be stopped before the high-lights are made too dense.

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One of the most interesting branches of photography is the portrayal of children at play. This work requires a small camera which is ready for action at short notice and which does not attract the attention of the subjects before the work is done. Where there are many to be included in the view, it is rather difficult to get the desired result without much waiting, as there are almost always one or two of the subjects just a little out of place. This will be noticed in the group of boys, where one of the shavers is looking directly at the camera, and another is taking a sly peek to see what is going on. A camera of the fixed-focus type is very good for this work when the light is good; but in poorly lighted places a Graflex or Speed Kodak will give the best results.

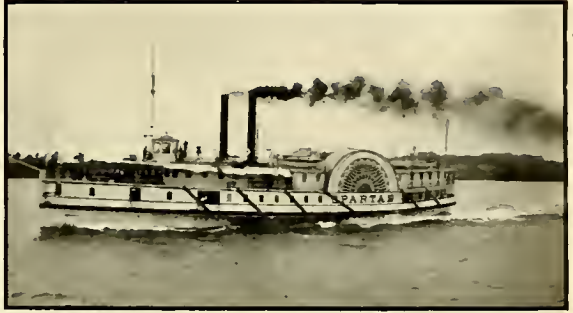
The last of the group is a somewhat ancient affair, as will be noted from the style of the ladies' hats. As a record snapshot it is quite interesting, but it serves to show that, when undertaking serious portraiture, it is best to portray the model minus the hat, or at least to make most of the exposures in that manner. The picture admired today will be less popular in five or ten years, simply because the style has changed in hats.



A COUPLE OF OUT-DOOR PORTRAITS

As a rule most snapshot portraits out of doors are very poor, for the simple reason that they are taken in direct sunlight. It seems that most amateurs are of the opinion that it is absolutely necessary that they must be taken when the

POINTERS FOR THE AMATEUR



SOME PRINTS FROM AN OLD COLLECTION

sun is shining. This is a false notion and, while good results are sometimes obtained in the usual manner, it is always best to make portraits in the shade. The two portrait illustrations are examples of ordinary snapshots taken in full light and in the shade. The first was made with a fast bulb exposure with the camera held in the hand; and it is quite simple to hold the camera steady for a

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quick bulb exposure after a little practice. The other is a fair result and was made in one-twenty-fifth second. The shadows under the eyes are heavier, and it will be found that, in enlarging those negatives which are made in the shade, much better portraits are obtained than from those made in the sun. When making portraits in the shade it is best to use a light tripod, to stop the lens to f-16, and then give a quick bulb exposure.



THE WINDING RIVER

This river view shows a very pretty cloud effect, but with little detail in the shadows. This is the usual result in snapshots. Either the landscape portion is lacking in detail or the clouds are blocked if development is carried far enough to register detail in the shadows. A ray filter helps much to overcome the difference between the bright clouds and dark landscape. A graduated filter is very good for this purpose, especially when the ground-glass is used for focusing.

Most amateurs are entirely too careless as to where they send their work to be finished, and it is generally "finished". Unless you patronize a reliable firm with the best equipment, it is useless to expect the best results. Why not try your hand at doing the work yourself? If you desire to become a good workman, you will find that wonders can be accomplished with even a Bröwnie camera. And, as a matter of fact, it is much better to start your photographic work with a box camera than any other type. There are many less things to forget.

Therefore, I would say: be chary of choosing pictures which catch the eye of the children and interest them at once, either sentimentally or because of the story they tell, if by such choice you are led to exclude works of greater beauty and higher imaginative value.—RALPH RADCLIFFE WHITEHEAD.

Photographing the Baby

By L. E. Rea



With an Illustration by the Author

All of the "fond parents" want a picture of "Baby", and if they have a kodak or other small camera, they want to make the picture themselves, at home; some even going so far as to buy a kodak for that particular purpose. Even if you are only the possessor of a kodak and have no baby of your own, this demand for good pictures, by the fond parents, reaches out and demands your attention. And it takes some attention, and some patience, and some skill, and some good luck, and some film, if you really must have a picture that will do even a fractional part of the justice that the wonderful importance of the subject demands. A few suggestions, based on my own experience as well as upon the actual requirements, are offered for the readers' benefit.

The ideal location for the temporary studio is a room having a large bay window with a southern exposure, and a bright sun shining outside. If no bay window is available an ordinary one can be used. The forenoon hours are the best, say about ten o'clock, as the subject is more likely to be bright and good natured at that time, although afternoon, particularly following a noon-day nap, will answer quite well. Earlier than ten in the morning or later than three gives one a weaker light that requires a longer exposure.

Run the shades up to the top and allow the



A PICTURE OF THE BABY

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sunlight to come blazing in against one of the sidewalls of the room. From here it is reflected to a point opposite where it is reinforced by the unobstructed light from the sky, through the upper part of the window. Even this flood of light may be increased by hanging a white sheet over the sunlight-reflecting wall if it be at all dark, or of a nature that does not reflect the light to the fullest extent. Or, if the sidewall is not near or the window an ordinary one, hang the sheet so that it will receive and reflect the light.

Place the baby in a chair or on a lounge that is in this strong light at a distance of about six feet from the window. Strong as is the light it will be found soft and diffused by reason of the combined strong light from the sky and the reflected light from the sunlit wall or sheet opposite. The camera should be on this opposite side, but of course, not in the path of the sunlight striking the wall on that side. This stream of sunlight is simply one's illuminator, and both the camera and the subject must be kept out of it. With conditions as described, using stop f-8, an exposure of one-fifth or one-half second will suffice, the longer one being the most satisfactory if the activities of the particular baby involved will permit. With a larger stop, such as the better lenses permit, the exposure can be reduced accordingly.

And this matter of catching the opportune moment for the exposure is one of no little importance. If the camera has a finger release only, the difficulty is increased, but even with a bulb or cable release, one finds himself snapping the shutter open only to regret having done so almost simultaneously. A better plan is to get the camera in position, either on a tripod or supported on a small table, with the shutter set at "T" or time, and then, holding a book or something having a dark, non-reflecting surface in front of but not touching the lens, snap the shutter open and await the opportunity for making the exposure. When the right moment arrives all one has to do is to withdraw the dark object from in front of the lens and replace it at the close of the exposure, then snapping the shutter closed.

Working in this way there is no danger of shaking the camera no matter how uncertain the support may be; one has a much better opportunity of watching the restless little subject and selecting the proper moment for exposure, and the whole operation becomes more easy and controllable. The same procedure works admirably in making pictures of older persons where time exposures, exposures of two or more seconds, are to be given. Mr. Smith can be taken in an easy pose at his desk, with the camera perhaps resting on the railing at the side, the situation being such that an exposure of several seconds is required. One simply withdraws the book, hat, or whatever it may be that he is using as a shutter, and then, at the first sign of the subject moving, returns it quickly to its place.

I once took a picture of a very nervous old lady in this way, took it without her knowledge just because she would never have been able to sit still long enough had she known her picture was being taken. The position of the camera was determined by using another person seated in her favorite chair. When Grandma Smith came in and sat down, I carelessly entered, put the camera down in the marked position, placed my hat over the front and snapped the

MAKING AERIAL PHOTOGRAPHS

shutter open. A few minutes later I picked up my hat, turned it around once or twice, replaced it, snapped the shutter closed and walked out after a few words with the kindly old lady, carrying an exposure that produced a fine negative, the wonder and delight of the entire family. They had never been able to get a picture of her or to get her to a studio for the purpose.



LIFE GUARDS—ATTENDING STRICTLY TO THEIR KNITTING

By A. B. ELB



Making Aerial Photographs

By Perry H. Thors, Former Instructor U. S. A. Aviation Section



Illustrations by Aviation Section

To the average person very little is known about the photographic division that works in co-operation with the aviation section of the United States army. Ordinarily known as the Aerial Photographic Unit, this division has done much towards bringing the great war to a speedy termination. In order to introduce the subject properly, one must know briefly the duties that are performed by this body of men on the battle front. The unit consists of thirty men, including non-commissioned officers, and in many cases it will be found that the unit is composed entirely of non-commissioned officers, under the leadership of a first

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lieutenant. Upon this leader devolves the responsibility of turning out superior photographic work for the information and guidance of both the light and heavy field artillery, enabling them to destroy enemy trenches, gun emplacements, fortifications of all descriptions and, where possible, to annihilate entire armies of the enemy, whether they be marching on foot, transported by motor convoy or encamped.

The photographic sections are generally assigned to the artillery and infantry, making their headquarters with the aviation section, which is also connected with these two divisions. The finishing of all photographic work, when at a stationary base, is done in a small, low wooden building of standard design, known as a hut, which is systematically laid out so as to form one large work room and a series of dark-rooms. These are equipped with the most modern facilities for extremely rapid finishing of photographs. The building is located in the immediate vicinity of the airdrome so that the aerial photographers and aviators may work rapidly together without the loss of time.

However, the photographic section is also equipped with a motor-drawn, portable dark-room, known as a photo lory. For illumination purposes, the lory is equipped with two artificial light producing units, one which is fed with calcium carbide from which issues an illuminating gas piped into the dark-room. This source of light proved very unsatisfactory, owing to the intense heat generated by the numerous flames used in the dark-room which, of course, were encased in a metallic box fitted with ruby colored glass for general work. This unit was only used in emergency cases. The other unit was made up of a small gas engine and generator, resulting in ordinary electric currents such as we use in our homes. Photographic work necessitates the constant use of pure water, and for this purpose a small hand pump, operated by a crank which injected water into a supply tank fitted into the top of the dark-room was employed. The feed hose was dropped into a river or stream whenever possible; in fact, a location such as this was always sought, for convenience as well as safety, as the lory was carefully camouflaged beneath the trees that generally grow in the vicinity of the water supply. When locations of this kind could not be found, the tank was filled at the base, or water had to be carried from nearby sources.

No doubt you are wondering how the word "aerial" is affixed to this particular section. Its understanding can only be brought about by beginning on this side of the Atlantic Ocean and following the civilian who has had some photographic experience, or who was a professional, and who is now a recruit at some draft or mobilization camp in our country.

After passing the customary physical examination, and formal paper work, to which the recruit is subjected, he is given what is called the classification card upon which are listed various industrial and professional occupations upon which he marks the particular branch of service he followed in civil life, at the same time giving references of former employers under whom he worked. After satisfying the examiners that he has had sufficient experience, he is given transportation and maintenance money to a camp in direct connection with the school or place of training to which the recruit will eventually be assigned. In this

MAKING AERIAL PHOTOGRAPHS



A PHOTOGRAPHIC PLANE ABOVE BAKER FARM



IN A PHOTOGRAPHIC PLANE AT BAKER FARM

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case, owing to the fact that the science of photography is to be followed, the name of the camp, as well as its location, shall be divulged. This camp or military post, Madison Barracks by name, located in Watertown, New York, is one of the oldest army posts in the United States. It is beautifully situated, about twenty miles from Watertown, along the banks of Lake Ontario, within a day's trip of the St. Lawrence River and directly opposite Canada, the two countries being separated by a narrow neck of Lake Ontario about half a mile wide. It was near this spot that a decisive battle was fought between the Americans who were fortified on the land and the British frigates on the lake. To commemorate the memory of the valiant American forces, a granite column has been erected on a bluff overlooking Lake Ontario. Many of the old buildings used as barracks are still standing, and, by digging in certain parts of this vicinity, one can unearth buttons and other souvenirs that have been buried since the War of 1812.

Upon arrival, the recruit is quartered, after being assigned to a company; and thenceforward undergoes military instruction in earnest. When he has attained a soldierly appearance and a certain amount of knowledge, he is put before a trade test board, composed of expert photographers, and is questioned very carefully in all branches of his craft. Although the questions asked by the experts are not scientific problems, nor do they delve very deeply into the technical side of photography; they are questions which require common sense to answer. For example: "What is required in order to take a photograph with a camera?" The average photographer can easily answer this by saying: A light-tight box, a photographic surface, and a lens form the essential parts of a camera.

The examination of this board is the last test to which the photographic recruit is subjected; and, if by his answers he is unable to convince his questioners, he is transferred to some other branch of the army. On the other hand, if he satisfies the board of examiners, he is immediately classified as a photographer of the first, second, or third class, and is placed on the available list for entrance into the Aerial School of Photography, located at Rochester, New York. When a call is received at this training post, about one hundred men are selected from the list and sent forward to the school. The average length of time, during which the recruits undergo military training before they are sent to Rochester, is about six weeks.

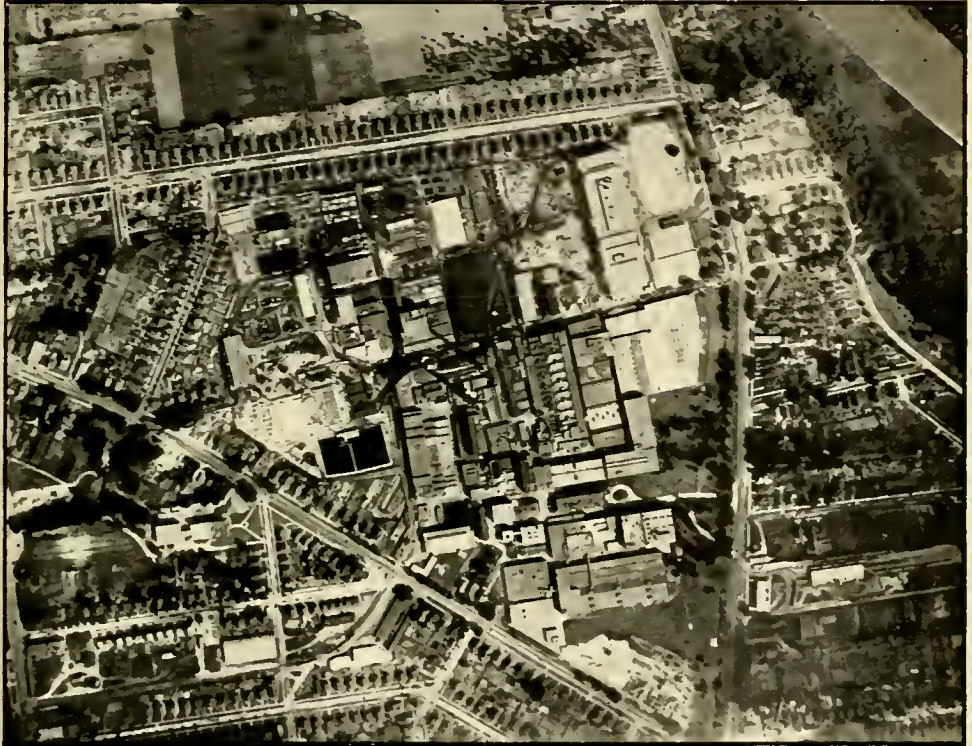
Arriving at the Kodak City, known as Rochester, the men are met at the depot by regulation army motor trucks and are driven to Kodak Park, located about two miles from the center of the city. The School of Aerial Photography has been placed in one of the newest reinforced concrete buildings erected in Kodak Park. At the time this country declared war on Germany the building was about four-fifths completed and partitions dividing the various laboratories and living quarters were easily erected and, as a result, proved an ideal school as well as sleeping quarters.

Following the arrival at the park, the men undergo more routine, filling out various applications, etc., and are then assigned to dormitories, where they are expected to remain during the school period of about five weeks. The following morning they are assembled on the parade grounds and marched in

MAKING AERIAL PHOTOGRAPHS

formation to a department devoted to camera instruction and construction which covers every class of camera used in this branch of the service.

For two days, the students are given a series of lectures, during which they take notes, and at the end of each day they are requested to write a lengthy technical story covering the day's work, and this is turned in to the instructors the following morning for correction. For the balance of the week, instruction



AN AIR VIEW OF KODAK PARK—BARRACKS WITH PARADE GROUNDS IN FRONT SHOWN TOWARDS UPPER RIGHT HAND CORNER

is given in mosaic mapping from the air stereoscopic photography, inverted lettering and map plotting. Along with the lectures on these subjects, practical work is given which is of great assistance to the student, as he is thereby able to prove to himself that the instruction given by lectures is correct, and this system is of great aid to him in grasping the theory. During practical work, the students are divided into groups of twelve to fourteen, and have an instructor in charge to answer baffling questions that may present themselves.

During the first week of instruction, as well as that which follows, the student is constantly under the eye of the instructor, who makes notes of his ability, neatness and military appearance, so that an efficiency grade may be given to each student at the end of the week. On the last day of the week, each subject is rehearsed by having the instructor ask the student various questions and marking him according to the acquired knowledge. A written test is also given on each subject, on which he is also marked. The class is then dismissed.

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On the Monday following, names are posted of those passing the first week of instruction, which means that they are prepared to enter the second week. If the student has not made a sufficient grade to enable him to advance, he is termed a "hold-over," and must repeat the first week of instruction. As a general rule, about sixty per cent of the classes advance during the first week. The following four weeks are given over to instruction in developing, printing, enlarging, lantern-slide making, washing and drying and formulating.

These subjects are all carefully lectured upon and intense practical work is given. The routine is exactly the same as that passed through during the first week of the customary practical and written tests upon the completion of each subject. If a student has made the necessary grade on each subject, he is sent to the flying field, called Baker Farm, about six miles from Rochester. This field is laid out to represent an army camp such as they have "overseas". Instead of sleeping in steam heated barracks and having his meals served in a modern cafeteria as he did formerly, the student is quartered in a tent and is served from a field kitchen.

Here they stay for one more week; and, as they are all graduates from the school, they are given various posts in the photographic hut, and undergo a severe week of photographic work, such as has been covered at the school. They are carefully watched by instructors and, at the close of the week, are given their final marks, after which they are weeded out and sent to numerous army camps located in the United States for a few more weeks of practical work. From there they are sent overseas to perform their duties in earnest.

I wish to take this opportunity to explain that it is through the tireless efforts and hard work of the instructors that the students are enabled to become efficient and record-breaking photographic finishers. Let me add that on this branch of the service a great deal of responsibility rests. When negatives are brought in by the battle or scouting plane, they are immediately rushed to the photographic section; and sometimes as many as one thousand enlarged photographs and lantern slides are turned out and distributed to the field artillery and infantry for intelligence purposes within a very short space of time.

This war, unlike former wars, was aided by the wonderful science of photography, so that it was not necessary to see with the naked eye what advance had to be made or what fortifications were to be singled out for destruction.

It was with the aid of the camera and photographs taken from the aeroplane that this invaluable assistance was rendered to the other units; so it may readily be understood that the breakage of negatives in handling during their course through the photographic dark-room was absolutely inexcusable, and a soldier carelessly breaking one was subject to court-martial.

To detect camouflaged machine gun nests, and to discern the depth of enemy trenches, stereoscopic photography was used.

With the aid of this class of photography, one could easily detect military objects that could not otherwise be discerned by an ordinary photograph. The tone of the negative used in aerial photography differs somewhat from studio photography, due to the fact that the aerial negative must be developed so that detail will be apparent in the high-lights as well as in the shadows.

PARAGRAPHS PHOTOGRAPHIC

As a closing word I might state that the photographic division of the aviation section was one of the most interesting as well as important branches of our army.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

PRINTING A CONTRASTY NEGATIVE: Make the exposure with the negative close to the light or by diffused daylight and then develop in:

Water	16 ounces
Metol	10 grains
Hydroquinone	50 grains
Sulphite of soda	240 grains
Carbonate of soda.....	320 grains

For use, add an equal amount of water. For Artura papers add a drop of saturated solution of bromide to every two ounces of developer; for Azo and Velox a little more and for Cyko papers up to eight drops to every two ounces. These amounts depend somewhat upon the water used and the age of the paper. Use just enough to keep the whites clear. This way of working will give one good print from seemingly impossible negatives and will allow the use of hard papers on ordinary negatives, as one often wishes to use a particular surface not quite suited to the negative in hand.—T. G. B., New York.

TO FIREPROOF FLASH BAGS: In a gallon of water dissolve half a pound of ammonium phosphate and a quarter of a pound of common laundry soap. Warm to about one hundred and twenty degrees and keeping it there, soak the cloth therein for an hour or more and then hang up to dry.—G. H. N., Massachusetts.

A SHOW-CASE SCHEME: I went through my list of patrons and found that I had quite a number on one particular street. To each one of them I wrote a note asking permission to place their picture, along with those of others on the

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same street, in my case for one week as a display entitled, "Residents of Upper Walnut Street". In practically every instance permission was granted, in some cases there was a request that a new sitting be made, and in others it was suggested that Mrs. So-and-So be asked to sit in order that her picture could be included. This gave me a hint and I at once sent out the most tactful solicitor I could employ to broach the subject of like displays for other streets or sections, suggesting sittings to make the display for these particular locations as representative as possible, the display of portraits from another section being shown at the studio, helping the plan along. The idea worked out admirably, my show windows had an added interest and much new business and valuable publicity was secured.—J. K. L., Ohio.

MAKING UP THE METOL-HYDRO DEVELOPER: As a demonstrator, I find many workers having trouble with the several new metol substitutes simply because they disregard the rule to dissolve chemicals in the order given. Be sure that one chemical is dissolved before the next is added. When trouble arises it is sometimes blamed upon the fact that the sulphite was not added after the metol and before the hydroquinone, as was recommended some years ago, but the real trouble lies in the failure to observe the rule given above.—H. J. K., Illinois.

TREATING UNDER-EXPOSED NEGATIVES: Some time ago a customer brought me several dozen exposures, landscapes taken on a distant trip, all of which he knew were under-exposed, as he had tried to develop a few of them himself. He asked me to see what I could do with them. I made up a weak pyro-metol developer, purposely under-developed them somewhat and then intensified by using a gold toning bath, such as is recommended for Solio paper. The prints were of course not perfect, but they were all passable, while the negatives my customer had made were all impossible from a printing point of view.—A. S. D., California.

REMOVING DRYING MARKS: It may not work in all cases, but I have had good success in removing drying marks by first bleaching in the ordinary ferricyanide and bromide bleaching bath and then redeveloping with amidol. This bleacher is made by dissolving one hundred grains of ferricyanide and a like amount of bromide in each eight ounces of water. Bleaching must be thorough and development must not be carried too far.—A. S. D., Florida.



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No. 3

Seventh Annual Pittsburgh Salon

At this writing this, the most important photographic event of the year, is well under way with the catalogue out and in the hands of the more than one hundred exhibitors. Nearly thirty per cent of the pictures were from Pacific Coast workers who represented over twenty-five per cent of the total contributors, Los Angeles coming in for the lion's share of the representation.

To get down to actual figures, one hundred and eighty-four contributors submitted twelve hundred and twenty-five prints. Seventy-six failed to receive recognition and nine hundred and eighty-seven pictures failed of acceptance, leaving a total of one hundred and eight contributors represented by two hundred and thirty-eight pictures. The jury was composed of Everitt Kilburn Taylor of the Orange Camera Club, Remmick N. Neeson, photo pictorialist of Baltimore, and Samuel A. Martin of the photographic section of the Pittsburgh Academy, all members of the Pittsburgh Salon. That these men were as fair and impartial as they were competent and conscientious is proven, were any proof needed, by the uniform excellence of the exhibition, as well as by the fact that not a few of the foremost workers failed to receive recognition for their full quota of prints. F. Bauer of this city, Alexander P. Milme of New York, W. H. Porterfield of Buffalo, Ford Sterling of Los Angeles, and Karl Tausig of New York, were the only ones whose entire set of six pictures were accepted, although the list of those having four or five accepted runs to quite a respectable number. All credit is due President Reiter and his co-workers for the continued success of this annual event and the pictorial workers of the country owe them a deep debt of gratitude for the result of their untiring efforts in the matter of an annual exhibition that is worthy of their best support.

The First Buffalo Exhibition

Opening a little earlier but closing about the same date, the First National Exhibition of Pictorial Photography under the auspices of the Buffalo Camera Club is being held in the Albright Art Gallery in that city. San Francisco is not represented. Oakland is represented by Mrs. Brigman, whose work is always of a high order, and the Los Angeles pictorialists come forward with enough fine pictures to give the Pacific Coast almost a twenty-five per cent representation. Judging from the names of the exhibitors, thirty-four in number, the exhibition is a representative one and the Buffalo Camera Club is to be congratulated upon its success with its first exhibition of so wide a scope.

The Eastman Amateur Competition

This competition closes May first, and we will therefore not have an opportunity of again calling your attention to it before so doing is too late to be

effective. The prospectus that you can obtain of any Eastman dealer contains full information and the few simple rules that are to be observed. Get one at once and enter a few of your favorite prints. There are some twenty prizes and we are anxious to see as many as possible of them go to CAMERA CRAFT subscribers. We would really enjoy pointing out that our readers won a good generous share of these prizes; they ought to capture about half of them at least. And winning one of the twenty prizes will really mean something, as the competition will be keen, and the awarding of the prizes will be free from any suspicion of favoritism for any particular style, school, individual or idiosyncrasy.

Mr. Huesgen on the Coast

Charles H. Huesgen, member of the firm of Herbert & Huesgen of New York, paid us a visit while in this city, his stop here being but an incident in a most extended trip that will include almost the entire country before his return. As Mr. Huesgen has not favored us with a call for a great many years, his old friends in the trade were more than pleased to see him and absorb some of the enthusiastic optimism that he so convincingly presents. Good as business is at the present, it can only improve, and if the activities of his own firm are any criterion of the possibilities, either present or to come, his appraisal of the situation is perfectly justifiable. His firm is undertaking the distribution of several of the best foreign lines, and as these goods start to arrive a few months later we can look for a much wider range from which to select than we have heretofore enjoyed.

German Goods In This Market

From letters received and from conversations held it seems that not a few are of the opinion that, as soon as full trade relations are established with Germany, we will be enabled to purchase a wide variety of photographic apparatus and supplies of superior quality and at most advantageous prices. Leaving aside all patriotic considerations, such as might be urged in behalf of the goods of home manufacture, even avoiding any discussion of the relative excellence of workmanship or the relative merits of the goods originating in different countries, the matter of price is one on which we should base no false hopes. The same factors that are responsible for high cost of production in this and other countries exist in Germany to as great, if not greater, an extent than elsewhere. Only in the case of a few specialized, patented, or otherwise protected products, on which the pre-war profits were admittedly great, can any return to an approach of such pre-war prices be expected. Goods of German manufacture will of course be offered, and of course they will be sold, even when offered at an advanced price; in some cases as a testimonial to the thoroughness of German workmanship; in others because of the particular article more nearly meeting the requirements of the particular buyer, and in still other cases only because of the value that some associate with an imported article; but it is our firm belief that those who anticipate a saving by so buying are doomed to disappointment.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

Methods for Dye-Toning of Lantern Slides

Fortunately within the last ten years or so there has been the most marked improvement in the quality of slides used by lantern lecturers, who are themselves photographers. The old standards have passed away, and the lantern lecturer of today is expected to compete in a measure with the makers of prints for the exhibitions. Perhaps this higher standard of quality has come about from the exceedingly fine work of a very small circle of lantern-slide makers, among whom may be mentioned particularly Frederick H. Evans, James Shaw and J. Dudley Johnston. The last named, it will be remembered, discoursed a year or so ago on the pains which he is accustomed to take to secure a certain character throughout a whole lecture set of slides, and to depart from it in the deliberate intention of producing a carefully considered degree of variety. Mr. Johnston obtains his effect by direct development, and probably if other slide makers of equal eminence were canvassed it would be found that they also prefer this method to the many processes of after-toning, which at one time or another have come into use. Certainly the methods of producing warm tones by toning with uranium or copper have declined enormously in popularity owing to the lack of transparency which the results exhibit. Other methods, which are less open to this objection, have never come into anything like general employment, although there is much to be said for the effects obtained by the simple process of converting the black-and-white slide into an image of silver chloride, bromide, or iodide, which was worked out by the late Welborne Piper.

There is, however, another class of toning process which is coming largely into use for cinematograph film, and is equally applicable to the transparencies of the lantern slide maker. This is the process of dye-toning, which consists in bleaching the black silver

image, thereby converting it into a compound, which can mordant or "take" dye from a bath in which the bleached slides are allowed to soak. The original process of this kind was devised some eight or nine years ago by Dr. Traube, and known as "diachrome." The ordinary lantern slide is bleached by means of a solution of iodine to yield an image consisting of silver iodide. The silver iodide acts as a mordant towards a large number of dyes, the dye becoming more or less firmly fixed upon the silver iodide. Slides treated simply according to the process in this form show extremely pleasant tones on the projection screen. In carrying out the process no notice must be taken of the appearance of the slide, for one which is a bright red when viewed by reflected light will show on the screen as a cool brown, and the difference is just as great in the use of other dye baths. While a slide requires to be projected in order to find out what is the effect of the process, the method is extremely regular in working, and once a given bath of dye has been selected the effect on the screen will be the same with any number of slides which are passed through it.

The presence of the iodide of silver in the image gives a softening effect, while it also adds to the opacity of the emulsion. Such slides are not very suitable for exhibition by means of a light of moderate power, but show excellently with the arc or oxy-hydrogen light. The silver iodide can, however, be removed by means of a strong solution of hypo, and if the slide has previously been passed through a hardening bath of tannin or formaline the image will be left consisting almost completely of the dye, which was attached in the first instance to the silver iodide. These dye transparencies yield effects on the screen very different from those from transparencies containing the silver iodide. The colors are of exceptional brilliancy and purity: in fact, much too vivid

and brilliant for the purposes of a lantern lecture. If used in any variety an audience is soon wearied by them, whilst the repetition of one color becomes conspicuously monotonous. Our own feeling is that for the lantern lecturer the simpler process, in which the silver haloid is retained in the image, is much the more valuable, and is indeed one which deserves to be much more widely used than it has been. We venture to think that makers of lantern slides will find in this process, or rather in the further developments of it which we shall now pass to mention, an interesting and profitable field for experiment during the winter season.

One of the first modifications in the Traube process was that which was the subject of a patent by the Brewster Film Corporation. According to this specification the silver image may be treated in the first instance in an iodine bath, which gives a silver-iodide image of much greater transparency. The formula recommended was:

Potassium iodide	50 gms.
Iodine	1½ gms.
Glacial acetic acid, 3 per cent solution	50 c. c. s.
Water to	1000 c. c. s.

Apparently the chief difference between this bath and that of Traube lies in the much larger proportion of iodide. The same principle is adopted in compounding the bath simply from iodide, acetic acid, and bichromate, according to the formula:

Potassium iodide	50 gms.
Glacial acetic acid, 3 per cent solution	50 to 250 c. c. s.
Potassium bichromate, 1 per cent solution	50 to 250 c. c. s.
Water to	1000 c. c. s.

The process has latterly been given a different form by two American workers, F. E. Ives and J. I. Crabtree, of the Eastman Research Laboratory, the latter of whom was the first to publish working details. It was found that the iodine can be replaced by the much cheaper bleach of copper ferricyanide, similar to the ordinary copper-toning formula of Ferguson, which gives an image of copper ferrocyanide, capable of fixing the dye in the same way that silver iodide does. Mr. Ives has subsequently worked out still another bleach yielding an image which mordants a dye. This is a solution of equal parts of potassium ferricyanide and chromic

acid, the action of which can be to produce a bleached image of a high degree of transparency. A suitable bleaching bath consists of one ounce each of potassium ferricyanide and chromic acid dissolved in one hundred and twenty ounces of water. After bleaching, the yellow stain of the chromic acid is removed in a bath containing a little soda bicarbonate, and the remainder of the process then consists simply in soaking the slides in a bath of dye acidulated with acetic acid and in washing out excess of dye in water, likewise rendered very slightly acid with acetic acid. Considering that a considerable variety of dyes are available for these processes and the very occasional exposure to light which the toned slides receive, there is no reason for disparagement of the process on the ground of fugitiveness of the results. From the references which we have given those interested in it should find ample guidance for their experiments, and may be encouraged to extend the field of work in the direction of discovering still other bleaching solutions which may be employed to produce fixatives of dyes. [In this connection attention should be drawn to an article on the subject by Dr. H. D'Arcy Power in *CAMERA CRAFT*, for December, 1911.]

Two-Color Prints or Films by Copper and Iron Toning

Details are given in a recent patent specification of a method of producing two-color prints or films worked out by F. E. Ives, in which the essential feature is the combination of a red copper-toned silver image with a blue-green image, the latter preferably formed by toning with iron salts. The object of the invention is to afford a simple, effective and convenient mode of producing a multicolor picture or print, and one which, compared with hitherto known processes, will be less complicated and quicker to carry out, and will yield a better product, having superior and more permanent coloring. It relates particularly to the known type of process in which at least two differently colored images are successively produced in or on the same carrier, whereby the necessity of attaching independently produced supports is obviated. The invention could, for instance, be applied to the production of the images at the opposite exterior faces of the support, which may be of gelatine or other colloid, with preferably a celluloid core or base be-

tween the exterior faces; but it has the advantage of being equally applicable to the production of the images within, and at different surfaces, of a single colloid layer at one side of a transparent or celluloid carrier. As the product has one face free from any image-carrying layer, the method of production last referred to is peculiarly adaptable for use in the production of a color motion picture film free from liability to injurious defacement of the pictures.

For the purpose of describing one embodiment of the invention it is assumed that two or more simultaneously exposed views or series of views have already been taken from substantially a single view-point for securing color-selection negatives from which afterwards the positives or diapositives are to be made. The two-color system is supposed to be employed, for although the three-color system might be used, the two-color is eminently more simple and is sufficiently satisfactory for general practical purposes.

In exposing for taking the view or series of views, a red screen may be interposed in the path of the light-rays, or in some other way a selection of the red rays may be made, and in connection therewith a film-sensitized specially for red rays may be employed. Thus red-selection negatives are obtained. Similarly a green screen and green-sensitive film may be employed for securing green-selection negatives.

It has been proposed to produce in a single gelatine layer an insoluble color image such as a silver image toned by well-known methods, or an iron-blue image, and subsequently to add a second image of a different color, either consisting of a soluble dye introduced into the gelatine layer by absorption, or produced by sensitization of the image-containing layer with iron salts, printing and developing. The present invention constitutes an improvement on this method and eliminates disadvantages in production, and defects in the product, by applying a particular treatment, not heretofore adopted in this connection, for the toned silver print and by employing this particular treatment in connection with the location of the two images in or on different surfaces of the same carrier. Such location per se is, however, already known, it having been proposed to produce a toned silver image by exposing a sensitive layer from one side and to produce in the

same layer a dye image from a silver image made by exposing the layer from the opposite side without resensitizing.—*British Journal of Photography*.

Straight Prints From Straight Negatives

The key to the whole matter is that the power of a tone in a print depends far more on its force of contrast with the other tones immediately surrounding it than on its correct representation of color by the density given by the negative. The same density produced by the developer may be the making of one print and the ruin of another.

When developing a negative or bromide print one often finds that density is coming too fast in certain places, and one would like to exercise control by stopping the action, but development has to be continued to obtain detail in other parts. In an ordinary landscape negative, to get detail in a dark foreground the sky will be ten times over-exposed probably. The trouble is due to the excessive actinic power of the light passing through the lens from the sky, preventing the developer doing what is required. It is not that the developer is unable to provide the proper density, given the opportunity. Mr. Muir proposes that we shall have a fit of the sulks and stop photographing when Dame Nature does not put on a garb just to suit what we can develop on a negative, even when we can obtain by other means (retouching, etc.) just what we require to obtain a satisfactory print.

I should like to ask Mr. Muir whether he considers a bichromate print a legitimate photographic production, where the various tones are produced by removing certain amounts of the pigment.

A short time since, at a meeting of the Royal Photographic Society, I described my new bichromate-alum process and method of development. Over the exposed film I pour a weak solution of alum and hydrochloric acid. In about ten seconds the soluble pigment flows off the high-lights, and by the time the lightest half-tones are visible the whole of the film has been acted upon by the acid alum in accordance with the amount of light action. The soluble portion can then be washed away, or left, as desired.

I attach a small tube (similar to the stem of an ordinary tobacco pipe) by a piece of rubber tubing to a water tap. The force of the water is equalized by the friction in pass-

ing through the long small bore of the tube, and the pressure is varied at the tap as required.

Surely, if the developer had given too much density in a certain part of a negative, I ought to be able to correct it by not removing the full amount of pigment from the print. This I can do, by not letting the water play on that particular spot. On the other hand, if there is not sufficient density (in a thin sky, for instance, where reversal had commenced owing to over-exposure), by increasing the force of the water I can remove more of the pigment.

To contend that one must be bound only by the densities given by the negative, is like saying that one must play the violin by holding the bow by the thumb and one finger only, when a beautiful tone can be obtained by using all the fingers.—HERBERT S. STARNES in *The Amateur Photographer*.

A Warning as to the Use of Formaline in Tropical Development

A. Chargois, in a communication to *The British Journal of Photography*, says: I have noticed during the past year or two a tendency to advise the use of formaline in fixing baths for use in the tropics.

My experience in tropical photography covers over thirty-five years, and during the major portion of that time I had been traveling in the bush towns, where there is no ice available, and where the only means of obtaining cool water is by means of the well known canvas water-bag.

About twenty years ago formaline was being listed as a regular thing in our photo-chemical lists, and I tried it for the purpose of hardening the film so that I could develop without so many of the usual cooling precautions. It acted all right both as a preliminary bath and as an admixture in the fixing bath, but I gave up the use very soon on account of the injury to my eyes.

I think, so far, my experience was about the same as that of the present-day experimenters in the use of formaline, but note the sequel. Four or five years later, when looking up old negatives for re-orders, I noticed occasional ones which were cracked all over like a fine mosaic, and on rubbing them with the finger the cracked film could be reduced to a dry powder. I eventually found that these were the formaline-treated negatives; the tough, leathery nature of the

gelatine had been destroyed by the strong tanning effect of the formaline.

I would be pleased if you would sound this note of warning and ask for further experiments as to the after-effects of such strong tanning agents before passing on these formulæ to the public. I may here mention that the effect of strong alum baths or hardening-fixing baths containing alum and acid has never been like that of formaline.

A New Phenomenon: Photographic Images by Heat

In the September number of the *Journal of the Chemical Society*, appears an article by Messrs. Donald Neil McArthur and Alfred Walter Stewart, giving preliminary notice of experiments of great photographic interest. The results so far obtained are so extraordinary in character that they may turn out to be of far-reaching importance.

An ordinary dry plate is placed, film upward, at the bottom of a light-tight box; two or three glass microscope slides are placed on the film as a support for a negative, also film side upward. The box is then closed, and placed near a source of heat, such as a Bunsen burner, a naked gas flame, or an electric heater. After some hours exposure to heat in this way the plate is developed and gives a positive image. No light penetrates the box, and precautions are taken against any possibility of radio activity.

The time taken to produce the result varies according to the nature of the source of heat, and is also modified by the distance of the plate from this source.

Although the effect produced is exactly similar to that resulting from light action, there is one very striking point of dissimilarity. This is, that the result is in no way affected when the plate is placed between the negative and the source of heat, instead of beyond the negative. This arrangement would almost certainly result in a fogging of the plate, instead of the production of a positive image, if there were any question of direct acting rays of some kind.

Experiments are to be continued, as the results already obtained are so unusual as to warrant further investigation of phenomena, which may open up new and hitherto unexplored fields.

Loose quarters may become lost quarters. Thrift stamps tighten your hold on them.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

The Water We Use

As a rule, ordinary tap or well water is perfectly satisfactory for photographic use; that is, in mixing up such solutions as the photographer ordinarily compounds. On the other hand, a lot of tap or well water is entirely unfit for use. Water that originates from streams or lakes may contain quite an amount of vegetable matter, particularly at certain seasons of the year, while water from wells and springs may contain mineral matter, generally magnesium or lime salts. It may even happen that the individual worker may draw one kind of water from his house tap at one season of the year and the other kind at another, as the water company find it necessary to change from one source of supply to another. Excessive "hardness" can be taken as an indication of the presence of mineral salts and most discoloration as evidence of other undesirable contents. One way of determining, roughly, is to dissolve a little caustic potash in a small quantity of the water to be used and see if turbidity, indicating the presence of lime or other salts, is produced. If at all suspicious, the water should be boiled briskly for about five minutes and then allowed to settle, lastly pouring off the top so as not to disturb any precipitate. Vegetable matter and the like is best removed by filtering, although the latter does not remove the confined air that boiling and quiet cooling does. But it should be remembered that these suggestions are rarely necessary and are only made to be used in exceptional cases and used as answering the requirements quite as well as the costly and troublesome practice of buying distilled water. As we said at the start, ordinary tap or well water, as a rule, is perfectly satisfactory, except, of course, in the case of silver or platinum solutions.

Washing Out the Hypo

Three letters in one day, asking about get-

ting all of the hypo out of negatives, about the efficiency of "Hypono", and how to tell when all the hypo is washed out. If one will stop to consider just how retentive a gelatine emulsion is he will understand that it would take much longer washing than the most careful worker gives to remove absolutely every trace of hypo. Or, suppose you try an experiment: soak a piece of plate or film, freshly fixed and washed but not dried, in some easily soluble color, say wash blue, which last must be even more easily removable than hypo, and then see how long it takes to wash out every trace of the color. Then try another experiment. Take a small plate or film and fix it thoroughly in a fresh fixing bath, leaving it therein as long again as it took for all of the milky whiteness to disappear. Give this a very superficial washing under the tap, just enough to remove the bulk of the hypo solution, and dry. See if you can, by placing this out in the sun for a few weeks, produce the so-called hypo stains. The result will be that you will have a "sort of suspicion" that all the hypo is never removed and that it really does not matter much if it is not. But do not feel that you can be too careless in the matter. Hypo in a piece of plate or film that carries no image has not the same opportunity for making trouble, and if some of the developer or alkali portion thereof is allowed to remain in the film the chance of trouble is improved. Most dangerous of all is the film or emulsion that contains portions not thoroughly fixed, portions that had just passed out of the milky white stage when the negative was put to wash. In those portions, although transparent, the hypo had not completed its work and there was left an insoluble compound that no washing could remove, and a compound that is capable of turning a dirty, brownish yellow as time passes. The moral is, rinse your plates or films to remove as much of the developer as you can before placing in the fixing bath,

have the latter fairly fresh and clean and give it full time to act, and then do not worry so much about getting out all the hypo. Hypo facilitates matters, saves time and water, and for that reason is well worth while. But give more attention to the thorough fixing of your plates and films and your so-called hypo stains will fail to make their appearance.

Photographing Falling Snow

It is not the right time of year to bring up this subject, but a couple of recent letters have brought inquiries as to why the writers could not secure such effects, despite their best efforts and varying the exposure, stop, and other conditions. The reason is that the right combination of conditions were not secured. The snowflakes will not show against the sky, even when the latter is quite dark, simply because the latter, even at its darkest, is quite luminous. In addition, as one worker complains, snowflakes falling near the lens come out as large white blotches that spoil the effect. We should have thought that this would have suggested its own remedy, but it did not. To get good falling snow one must select a fairly dark background, some evergreen trees or shrubs, a weathered or dark painted building, or a brick wall, something at least that cuts off the light. Then, to prevent the near flakes from appearing as blotches, the camera should be set up under a shed inside a barn door, or where it is protected by something of the kind that will assure the nearest snowflakes being some distance in front of the lens. With these two precautions the securing good snow-storm effects is quite easy; a fairly large stop and a short exposure, one twenty-fifth second or less, being about all that is required.

Buildings Out of Plumb


One of my friends, an old worker and a very careful one, came in a few days ago and showed me a bundle of small prints he had made from some negatives taken in Chicago during his last trip there. I was a little surprised to notice that in nearly every case the sides of the buildings were out of plumb through his having pointed the camera upward in order to get them all in, without using a swing-back or a rising front, or both. Remarking on this point he replied: "That doesn't matter; I am going to make

small enlargements from all of the negatives that I care to use, and it is easier to straighten up the buildings that way than it would have been to have used a swing-back and the smaller stop necessary, or to have run the risk of not getting what I wanted because the front was raised beyond the scope of my finder. Besides, there was no swing-back or rising front of any great range on the camera I happened to be using." And I guess he was right. It is an easy matter to tilt either the negative or the easel when making the enlargements, and in that way correct the leaning effect. One must, however, remember that a smaller stop is required to bring all into focus.

The Eastman Competition For Amateurs

The announcement of the new Prize Competition for Amateurs, the first strictly amateur competition the Eastman Company has held in several years, should attract a large army of contestants. The competition closes May first, is for pictures made prior to February fifteenth, and five hundred dollars in cash prizes will be awarded. There will be twenty of these prizes, five in each of four classes, these different classes taking care of the small Brownies and Premos; the larger ones, the vest pocket and other small Kodaks, Graflexes and Graphics, and the larger ones. Quoting from the prospectus, and you must send and get one: "Amateur photographers have created a new art—the art of story telling with a camera whose language the whole world understands. The best stories are simple. The best pictures concern the cheerful incidents of everyday living, the daily adventures of children, the forms and faces of nature, pictures reflecting happiness and sunshine, the humorous and the quaint, age and youth, quiet and action—pictures that mean something to all who see them."

The rules of this competition are few and simple and every reader should send in such pictures as he thinks eligible. The prospectus carries a blank to be sent with the pictures, and copies can be obtained by addressing: Prize Competition, Advertising Department, Eastman Kodak Company, Rochester, New York. We would like to see at least half of these prizes go to CAMERA CRAFT readers and shall await the publication of the list of names with considerable interest in the hope that our wish will be gratified.



CLUB NEWS AND NOTES

California Camera Club

With practically all of its service members reinstated on the active list and a growing membership of over four hundred, the California Camera Club is well started on a year of activity.

Tuesday is Club Night. The Board of Directors meeting is held the first Tuesday, business meeting the next, with socials following to complete the month. Slides from the Grand Rapids Camera Club were shown after the last business meeting and prints from the same organization were exhibited during February. These last displayed a wide latitude in context and method; bromides, pinholes, artatones and gums, being included. At present the Club is holding a print sale, a number of bromide prints by well known pictorial workers being offered at a very low price.

J. A. Ferguson, exhibitor of a boat scene in Sidney Harbor, was winner in the member's contest. On the thirteenth, X-rays were discussed in a practical demonstration by Oscar W. Ginsburg, Roentgenologist, who

greatly enlightened his fellow members on this branch of photography, using his set of apparatus to illustrate.

San Francisco is indeed a fortunate location for a Camera Club, so much attractive and easily accessible territory being available to picnic parties and photographers. The hike to Iron Springs drew about fifty camera equipped members, the Fairfax hills and Cascades affording much worth-while photographic material.

San Diego Y. M. C. A. Camera Club

This club, recently organized, is reported as quite active, being fortunate in having a number of very capable workers as members. The quarters are conveniently located and well fitted up for photographic work. Harold A. Taylor is giving a series of excellent lectures, and interest is being shown to a marked degree. All in all, the Club is one that we expect to hear well of, as it continues to grow and develop. A. L. Ward is general secretary, and can be addressed care San Diego Y. M. C. A., Eighth and C Streets, San Diego, Cal.



OUR BOOK SHELVES

"Photograms of the Year 1919"

As usual, this annual contains a well selected collection of the representative pictorial photographic work of the world, there being over a hundred of these handsome reproductions on the best art paper in the best style of the engravers' art. "Some Pictures of the Year," by F. C. Tilney, is a rather critical discussion of the subject that will appeal strongly to the reader, while W. H. Porterfield's treatment of "Pictorial Photography in America" will also be of particular interest to our home readers. The Pacific Coast is well represented in the pictures and full credit is given for the achievements of its workers. The scope and importance of this annual are too well known to justify us in giving word to all the praise that it deserves. Published by Hliffe & Sons,

Limited, 20 Tudor Street, London, E. C., England. Tennant & Ward, 103 Park Avenue, New York, American agents. Obtainable locally from Hirsch & Kaye, 218 Post Street, San Francisco. Price, postage paid, paper covers, two dollars; cloth binding, three dollars.

"Pictorial Photography in America"

This is the first annual publication gotten out by The Pictorial Photographers of America; a book of some one hundred and twenty pages, almost a hundred of which are devoted to reproductions of the best work of the year by the pictorialists of this country. This book is well printed on India tint paper and the reproductions show evidence of careful and unprejudiced selection. The Pacific Coast is well represented and we are pleased to see two or three of the

Portland, Oregon, workers included in the list. Tennant & Ward, 103 Park Avenue, New York, are the publishers, and the price is three dollars and fifty cents.

"Practical Retouching"

This, number nine of the Practical Photography Series, is, like its eight companion books, eminently practical and informative. Every step of the work is explained and suitable illustrations afford added help in making matters clear. The book, of course, is not intended to take the place of instruction such as one would require to become

a professional retoucher; in fact, it advises the reader to go to a good retoucher, if possible, and get one or two lessons. But the book certainly does give one the instruction that should make him capable of doing the work required in amateur practice, and even more, if long practice and a delicate touch are combined therewith, these last two being required even with a teacher available for personal instruction. Published by American Photographic Publishing Company, 1145 Pope Building, Boston, Massachusetts. Paper covers, thirty-five cents; cloth binding, seventy-five cents.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

New Members

- 4711—Charles B. Denton, 19 Catherine St., Elizabeth, N. J.
4x5 and smaller, developing paper, of views, water scenes, landscapes and portraits. Class 3.
- 4712—John W. G. Winkler, L. B. 392, George, Iowa.
5x7 and smaller, developing paper, of studio portraits and landscapes; for portraits and landscapes. Class 2.
- 4713—Aubrey Nelson Allen, Box 521, Canton, Mo.
2½x4¼, on developing paper, of river views, school and nature subjects; for river views and school pictures. Class 1.
- 4714—Oscar Johnson, Stirling, Alberta, Canada.
3¼x5½, on developing paper. Class 2.
- 4715—Wright L. Hess, Shawnee, Wyo.
Class 3.
- 4716—P. T. Tarnoski, 1810 Humboldt Blvd., Chicago, Ill.
Up to 8x10, on bromide and gaslight papers, mostly of landscape subjects; for landscape and genre. I desire to exchange only prints. Class 1.
- 4717—Joseph Williams, Box 246, Pontiac, Mich.
3¼x5½, on developing paper, of frozen fountain, public buildings, churches, construction works and the like; for portraits, pretty girls, ships, public buildings, riding and driving, cowboys, etc. Class 1.
- 4718—T. G. Duvall, 753 Pacific Electric Building, Los Angeles, Cal.
5x7 and smaller, on developing paper, of general subjects; for historical, birds, flowers, etc. Class 1.
- 4719—Lewis Stout, Wapakoneta, Ohio.
3¼x5½ and 5x7, on gaslight paper, of landscapes; for landscapes and marines. Class 2.
- 4720—E. A. Waterman, R. 1300, Municipal Bldg., New York, N. Y.
All sizes, on developing paper, of fires, fire houses, bathing girls, aeroplanes, automobile racing, draped and undraped figure studies; for same class of subjects. All photographs to be sent as first class mail. Class 1.

- 4721—Frank L. Hamilton, R. F. D. 1, Gnadenhutzen, Ohio. Class 3.
- 4722—Geo. Weller, L. B. 136, Wadena, Minn.
2¼x3¼, on developing paper, of views of Northern Minnesota country; for views of Southern Coast country. Class 2.
- 4723—Leonard A. Williams, 622 2nd Ave., St. Cloud, Minn.
3¼x4¼ and 5x7, on developing and bromide papers, of home portraits, figure studies and pictorial landscapes; for the same or interpretative dancing pictures.

RENEWALS

- 777—Herbert R. Gregg, Oroville, Wash.
3¼x5½ and 6½x8½, on developing paper. Class 2.
- 1756—George W. Given, 2771 Pratt St., Bridesburg, Pa.
Has no time to exchange.
- 2479—Mrs. L. E. Gundelach, Amboy, Wash.
- 2500—B. P. Angle, Whitehall, Wis.
- 2858—H. M. Sutton, care Sutton, Steele & Steele, Box 1076, Dallas, Tex.
Too busy to exchange at present. Class 3.
- 3255—Dr. A. M. Sutton, 175 S. First St., San Jose, Cal.

CHANGE OF ADDRESS

- 1213—A. B. Davis, 216 Parkview Ave., Halycon Apts., Detroit, Mich.
(Was 212 Parkview Ave., Detroit, Mich.)
- 1572—H. E. Bishop, 3344 Michigan Ave., Chicago, Ill.
(Was 551 E. 40th St., Indianapolis, Ind.)
- 4433—John Y. Owsley, 238 Shrader St., San Francisco, Cal.
(Was 1915 Hyde St., San Francisco, Cal.)
- 4603—S. T. Parnell, Tuskegee Institute, Ala.
(Was 1866 20th St., Ensley, Ala.)
- 4608—Bobroy Price, Box 554, Fort Worth, Tex.
(Was 309½ Main St., Fort Worth, Tex.)
- 4611—Elbert M. Morey, 681 Monadnock Bldg., San Francisco, Cal.
(Was 239 Iriquois Ave., Detroit, Mich.)
- 4627—R. French, Box 800, Cincinnati, Ohio.
(Was Camp Sherman, Ohio.)
- 4643—W. B. Goolsby, Box 716, Fort Worth, Tex.
(Was care U. S. Oil Assn., 114 E. 8th St., Fort Worth, Tex.)

NOTES AND COMMENT

A Department Devoted to the Interests of Our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

Lyle Rennick is now operating at Hartsook's San Francisco studio and Mrs. Rennick is with the same house. They are thinking of teaching little Jean, their daughter, retouching, making it quite a photographic family.

Marcell of the Paxona Studio, Fresno, is out and about again, having been very ill for about three months.

The Landon Drug Company, Fresno, have improved the appearance of their store one-hundred fold since Mr. Mardon, the photographic salesman, has taken charge.

H. A. Parker now has a force of six people, with G. Dickson of New York in charge of all the dark-rooms. Parker's art shop is one of the prettiest in Southern California.

Earl Lewis of Los Angeles recently informed us of a new arrival, making the fifth young lady in his family.

Mrs. Weber, formerly Miss E. Tucker, of the Broadway Department store's photographic department expects to resign soon in order to assist her husband in managing a large movie house in Louisiana.

Many photographers are now regretting that they did not use a little Probus paint on their skylights last summer so there would have been no leaks this rainy season.

H. K. Zynkian has opened a new studio at 633 Clement Street, San Francisco.

Louis Magnus, of Hirseli & Kaye's, has taken a partner for life.

Fredericks & Company have opened a well equipped commercial studio in Sacramento. Mr. Fredericks has been in the business many years, and the new firm is fitted to handle all classes of photographic work.

"Pop" Moffett of Tulare has put in a first class kodak finishing department.

E. B. Maze of Merced has one of the best equipped kodak finishing departments in the State.

Tom Shoob of Turlock reports business as excellent.

The Misses Carlton and Giggey of the Lafayette Studio, San Francisco, are doing some very fine work in portraiture. Mr. Gainsborough, the celebrated English photographer, is doing the operating.

Do Not Delay Too Long

The rush season for photographic finishing will not be long in arriving and the wise finisher will take this season to overcome those handicaps under which he may have worked last year by putting in new equipment of a practical and up-to-date character. The apparatus turned out by the Photographic Appliances Corporation of Minneapolis, Minnesota, has both the above qualifications. Every article manufactured by them has had long and rigid test in actual use in their own large finishing plant, and every article is manufactured in the best possible manner in a plant specially equipped with the best in machinery and men for turning out a perfect product. All parts are standardized and all mechanical designs have been highly developed. The firm and its products are rapidly forging to the front and the worker doing more than the ordinary finishing of a very small studio should get in communication with the firm, as he will profit thereby.

Photo-Sensitizing Dyes

The trade will probably be glad to know that photo-sensitizing dyes, formerly manufactured in Germany, are now available and can be obtained from the Eastman Kodak Company, Rochester, New York, who are licensees under the former German patents now owned by The Chemical Foundation, Incorporated, 81 Fulton Street, New York.

The Chemical Foundation, Incorporated, is prepared to consider applications for licenses under the patents which they own covering these dyes, should their manufacture be contemplated by other firms.

Again in the Field

The Graf Optical Company, South Bend, Indiana, successor to the Graf Lens Corporation, after devoting its entire energy to war work for a period of two years, has returned to the manufacture of photographic lenses. They are now on a full production basis, specializing in anastigmat lenses and engaged in the manufacture of binoculars, prisms, projection lenses, lenses for surveying instruments, focusing magnifiers, etc.

Mr. Graf, president of the company, is one of the pioneers in the American lens industry, and is the inventor and patentee of the Graf Vicar Super Anastigmat, which took the experience of a life-time to develop. Possibly one of Mr. Graf's greatest achievements was the designing and making of the first f-4.5 anastigmat lens, using American glass exclusively. This was done for the Bureau of Standards, United States Government, after the United States went into war with Germany and imported glass was no longer available. Anastigmat lenses of American glass for the Photographic Section of the United States Air Service were of the utmost necessity, and Mr. Graf met this need. His formulæ were accepted and all lenses made for this most important branch of the army were built upon his specifications.

Graf Vicar Super-Anastigmat lenses are being made in speeds of f-3.5 for motion picture cameras; f-4.5, f-5.5, f-6.3 and f-7.7 for general photographic purposes; f-8 and f-9 for photo-engravers, and diffusing lenses of f-4.5 and f-5.5 for portraiture and enlarging. A cemented lens of six elements, similar in construction to the Dagor, speed f-6.8, is also being made.

"The Photo Phrase"

This is a neat little book made up of hundreds of printed quotations, on gummed paper, all ready to be attached to the pages of one's snapshot or photo album. It seems impossible to imagine a picture that one could make, no matter what its nature, that this collection would not furnish one or several most apt titles that would be applicable. They range from glad and gay to solemn and serious, from the popular catch phrase to the more dignified and poetic. One-tenth of them added to your collection of prints will increase their pleasure-giving qualities far in excess of the cost of the entire col-

lection. You will find the announcement of the publishers in a small advertisement in the front section of this issue.

The Perfection Clip

In our advertising pages this month will be found the announcement of the Northern Photo Supply Company of Minneapolis, Minnesota, concerning their "Perfection" Clip, a utility that is finding a wide sale and giving the best of satisfaction. We have seen these clips in actual use for some time in one of the local finishing plants and the proprietor is loud in his praise of their simplicity and effectiveness. The advertisement shows the clip and describes it so well that we can hardly do more than refer the reader thereto in addition to the above confirmation of what the reader will naturally assume therefrom. And if you are a commercial finisher, do not fail to send for a copy of the firm's instructive booklet dealing with that work.

Kodak Wins in Lewis Suit

The United States District Court in New York City recently handed down a decision, dismissing a suit brought by Julius L. Lewis against the Eastman Kodak Company.

Lewis, for more than twenty years, has been a dealer in photographic supplies on Sixth Avenue in New York City. He sued the Kodak Company for treble damages under the Sherman law, amounting to three million dollars, claiming that the Eastman Kodak Company was a monopoly in restraint of trade. He claimed to have suffered damage by reason of the Kodak Company having refused to sell to him its products because of his refusal to comply with its terms of sale. The case was tried before United States Judge Julius M. Mayer and a jury. The plaintiff occupied a week in presenting his evidence to the court, and at the close of his case, Judge Mayer dismissed the case, holding that the Eastman Kodak Company's terms of sale were not in violation of the Sherman law at the time they were in force, and that the plaintiff had not suffered any damage. No evidence was offered by the Kodak Company.

Judge Mayer, in announcing his decision stated that there were several grounds other than those mentioned, upon any one which it would have been necessary for him to dismiss the case. Lewis' attorneys have announced that no appeal will be taken.

CAMERA CRAFT



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can never be obtained with make-shift or antiquated equipment. A reliable, scientifically correct, modern printing machine is essential in the production of work of highest quality.

The ANSCO 11 x 14 Professional Printing Machine is designed for general use. It is easy to install, economical to maintain and uniformly dependable as to light.

PRICES and full description of this Printer and other AnSCO professional apparatus for photographic studios will be mailed on request.

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347 Adelaide St., W.



CAMERA CRAFT

A Photographic Monthly

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Expirations—Subscriptions to Camera Craft are discontinued on date of expiration. The date on the address label on the wrapper shows the time to which each subscriber has paid. Thus: Nov. 09 means that the subscription expires with the number dated November, 1909. **Renewing**—In renewing a subscription, do not fail to say that it is a renewal, giving name and address just as now on the address label. **New Address**—In notifying us of a change of address, give both the old and new address. Should you miss a copy through change of address, advise us of the fact, and another will be gladly sent. **Dealers**—All photographic supply dealers and news dealers are authorized to receipt for subscriptions in our name.

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 San Francisco, California

FOREIGN AGENTS

Australia	Harringtons, Ltd., Sydney
England	Kodak Australasia, Ltd., Sydney
Malta	Francis Collas, 3 Wine Office Court, Fleet Street, London, E. C.
	Do Agius Catania, 41, Sda. Reale, Valletta
New Zealand	Richard Hill, Matlock House, Devonport, Auckland
	Waterworths Limited, 53 Queen St., Auckland
Philippine Islands	Waterworths Limited, 286 Lambton Quay, Wellington
Japan	F. O. Roberts, Manila
China	K. Kimbel, Yokohama
	Squires, Bingham & Co., Shanghai

APRIL BARGAINS

IN

High Grade Lenses and Cameras

LENSES

1 $\frac{5}{8}$ x2 $\frac{1}{2}$ Eastman Kodak Anastigmat, f-7.7, 3 $\frac{1}{4}$ -in. focus, in B. B. shutter; first class condition. List \$12.50	now	\$6.50
2 $\frac{1}{4}$ x3 $\frac{1}{4}$ Euryplane, f-5.6, 3 $\frac{1}{2}$ -in. focus, in Compound shutter; good condition. List \$45.00	now	27.50
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Voigtlander Dynar, f-6.3, 4 $\frac{1}{4}$ -in. focus, in Koilos shutter; like new. List \$40.00	now	28.50
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Beck-Steinheil Orthostigmat, f-6.3, 4 $\frac{1}{4}$ -in. focus; fair condition. List \$61.00	now	26.75
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Ross Homocentric, f-6.3, 5-in. focus, in Compound shutter; like new. List \$50.00	now	36.00
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Darlot, f-4, 8-in. focus S. P.; fair condition	now	12.50
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Ross Homocentric, f-6.3, 5 $\frac{1}{2}$ -in. focus, in Koilos shutter; perfect condition. List \$44.80	now	36.50
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Voigtlander Collinear, f-5.4, 4 $\frac{1}{4}$ -in. focus, in Ilex Acme shutter; first class condition. List \$56.00	now	37.50
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Goerz Celor, f-4.8, 5-in. focus, in Ipseo shutter; first class condition. List \$55.00	now	42.00
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Ross-Goerz, f-6.8, 5-in. focus, in Optimo shutter; good condition. List \$59.00	now	38.75
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Goerz-Dagor, f-6.8, 5-in. focus, in Kodak Auto shutter; good condition. List \$55.00	now	30.00
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Ross-Goerz, f-6.8, 5-in. focus, in Acme shutter; first class condition. List \$59.50	now	38.75
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Ross Homocentric, f-6.3, 5-in. focus, in Multi-Speed, Jr., shutter; good condition. List \$48.50	now	37.50
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Ross Homocentric, f-6.3, 5-in. focus, in Koilos shutter; first class condition. List \$44.80	now	32.50
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Turner-Relch, f-6.8, 5-in. focus, in Acme shutter; like new. List \$40.00	now	30.00
3 $\frac{1}{4}$ x5 $\frac{1}{2}$ Cooke-Telar, f-7, 8-in. focus; gives equivalent 13 $\frac{1}{2}$ -in. focus; like new. List \$50.00	now	37.50
4x5 Ross Homocentric, f-6.3, 6-in. focus, in Multi-Speed shutter; good condition. List \$53.90	now	42.50
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Continued on Next Page



A. B. MOOD, ESQ.
By THERON WENDELL KILMER


CAMERA

CRAFT


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No. 4

An Improved Vertical-Type Enlarger

By Frank E. Hinkley



Having read a description in CAMERA CRAFT several years ago, of a vertical enlarger, and realizing then some of its good points, decided I would, at some future time, make one for my own use, but before the need and opportunity presented, an account of an "Improved Enlarging Apparatus", appeared in the same magazine of May, 1916, by the same author.

The information gleaned from these descriptions has been well utilized by our mechanic, Senor Muniz, in the construction of an apparatus for use here at the Arequipa Station of the Harvard College Observatory. By combining the essential features presented in both of these articles, and supplementing a few others for convenience in working, we have an instrument almost ideal in its adaptability for various kinds of work.

It will not be necessary to occupy space in enumerating the good features possessed by this kind of an instrument, since Dr. Power has presented these very fully in the articles referred to. All that he has said with reference to both of those constructed by him, is true of this one, with several improvements added.

The enlarging cabinet is made of one-inch, well seasoned pine, grooved, and with particular attention given to have the fibre of the wood in exact correspondence, so that the contraction and expansion will be all in the same direction to prevent cracking and warping. The door and back of the upper compartment is panelled to allow of free distension also. The cabinet is eighty-two inches high, inside measurement from top to bottom. The upper and lower chambers being divided by a permanent shelf, twenty-four inches from the top of the enlarger.

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The apparatus is erected in a low-roof building used as a laboratory, with the upper chamber joined to a short extension, F, Figure 1, leading out through the roof. Thus far the cabinet is in every respect almost a duplicate of the original enlarger planned and used by Dr. Power. We have, however, arranged for cutting off the light from the sky, whenever desired, and by means of a removable frame holding electric lamps and placed in grooves at the top of the cabinet, are able to convert it into an instrument that can be used at night, and for purposes in which the daylight enlarger is not adapted.

This light frame E, Figure 2, occupies the grooves at the extreme top of cabinet. It is made for the use of lamps in either a horizontal or vertical position, according to the kind of lamps available. There is a row of three sockets on either side of the frame with one socket at the front and one at the back for regular one-hundred candle power filament lamps, and a crown of seven sockets for concentrated filament lamps at the top. This arrangement gives good distribution with whatever lamps used. We prefer, however, the concentrated filament lamps, but as we are not always able to procure these here, the frame has been made for either kinds.

In the wall directly back of the frame are two flat brass springs corresponding to two similar springs located in the frame. These sets of springs are for the purpose of connecting, automatically, the lamp circuit with the exterior wires, when the frame is pushed into place. The light is governed by a switch conveniently placed.

The next lower frame D, holding a 14x17 ground-glass, ground on both sides, has also one fixed position in the center of the upper chamber, and is supported in grooves. By having the glass ground finely on both sides we obtain good diffusion, and this also aids in cutting out undesirable reflections. The distance between the ground-glass and negative frame is always sufficient to prevent that granulated appearance in the projected image which is observed when the ground-glass is too near the objective focus. Between frame E and D are some light-trapped holes to provide ventilation.

Three inches below the ground-glass frame there are seven grooves, one inch apart; the last one being three inches above the permanent partition dividing the upper and lower chambers. These grooves are to accommodate the negative frame C. This frame, Figure 3, is an assembly of three frames. The base frame, j j, with tongues at both sides to slide in the grooves, a to g, as shown, located below the ground-glass, has fixed guides, m m, at front and back, for holding in place the second thin frame, l l, which moves from right to left. This frame has also fixed guides, o o, perpendicular to the first ones, for holding in place the third frame, n n, which moves from front to back. Both of these frames have a movement of three inches from center. The last frame has an opening for plates or auxiliary frames up to 8x10, and is self-centering by means of special spring clicks arranged to engage the notches as shown. This whole arrangement is very convenient for bringing any selected portion of a negative into a central position for enlarging. The grooves, a to g, are so designated from the lower one upward and should be so marked for use of the table of lens settings.

AN IMPROVED VERTICAL-TYPE ENLARGER

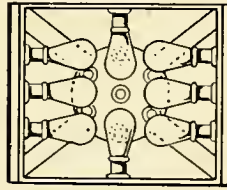
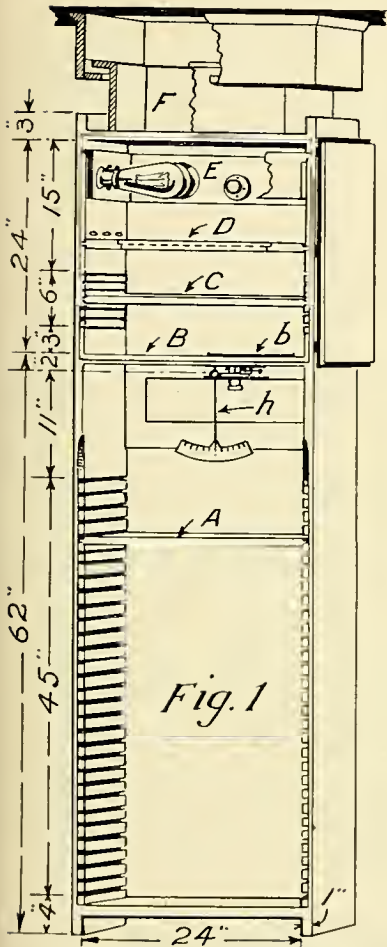


Fig. 2

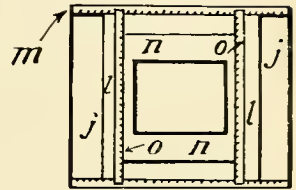


Fig. 3

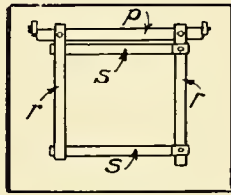


Fig. 4

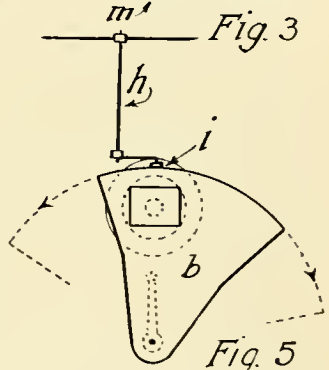


Fig. 5

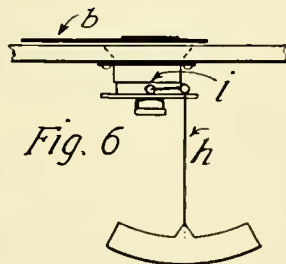


Fig. 6

Table of Settings
Lens $5\frac{1}{2}$ " f.

M. or Red.	Neg. Shf.	Foc. Sc'l.	Shf. No.
1/0	g	.5	1
1-2	d	.5	5
1-3	C	.4	9
1-4	C	.8	12
1-5	b	.1	16
1-6	b	.2	20
1-7	b	.3	23
1-8	b	.4	27
1-9	b	.5	30

The grooves in the lower compartment, for the accommodation of the printing shelf A, are at intervals of one and one-half inches, beginning with No. 1, thirteen inches from the top of lower chamber, and extend to No. 31, at the bottom of cabinet. The printing shelf, Figure 4, is a plain, flat, parallel board, one inch thick and provided on one side with an adjustable frame working as follows: The brass bar, p, revolves on its axis by means of pins through lugs or ears at both ends. The two arms, r r, sliding on this bar laterally, give any adjustment in this direction, and the sliding spring-arms, s s, give an adjustment in the opposite direction. These arms are set in place by thumb screws, and their own weight is the working pressure over the paper. The frame is adapted for 10x12 paper and smaller, and for other sizes the shelf is reversed and the paper held in position by thumb-tacks.

In the center of the partition B, which divides the upper and lower chambers, is set the objective, mounted in the smaller of two focusing tubes fitting one inside of the other, with the screw threads common to focusing mounts and arranged to be held where wanted by a clamping screw. These tubes are approximately three inches, inside diameter, and give a lens movement of one inch. The

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starting point being made at the center adjustment, there is an available focusing movement of one-half inch in either direction. This movement, in connection with the movable negative shelf, in grooves a to g, forms the means of focusing, and with the focusing scale and table of settings, about to be described, gives a simple and accurate means of obtaining any range of enlargement or reduction with ease and certainty.

The front, or what becomes the lower end of the inner focusing tube holding the objective, carries a projecting flange on which revolves a small wheel or roller in connection with a pointer extending in front of the focusing scale, shown below partition B and at back of cabinet. The construction is as follows: On a horizontal shaft extending from the lens to the back of the cabinet, are attached two arms at right angles to each other, the small one carrying the wheel or roller and the other, or pointer, ending just in front of the index scale below at the back of cabinet. The proportional length of the arms is very nearly one-to-five, to facilitate reading; a movement of one one-hundredths of an inch in the objective being clearly indicated on the scale. A spiral spring, not shown in the drawing, holds the small wheel always against the lens flange when moved in either direction.

On top of partition B, above the lens, is located a shutter, b, in a circular-shaped segment of thin tin-plate, holding a frame containing a square piece of yellow glass, Figures 1, 5 and 6. This is attached at the center of rotation to a pivot passing upward through the board upon which the shutter turns. On the under side of the board, at the lower end of this pivot, is placed a hand lever, represented by dotted lines in Figure 5, and extending toward the outer edge to facilitate working. Three studs or stops are arranged, limiting mechanically the movements of opening and closing of the shutter when focusing or exposing the lens.

Figure 1 shows elevation looking toward the front; Figure 5 shows in schematic form the plan of shutter, lens and focusing scale, looking from the top; while Figure 6 shows elevation looking from the back. Figures 1, 2, 3 and 4 are drawn to the same scale about one twenty-fourth size of the reproduction, while Figures 5 and 6 just twice as large, or about one-twelfth size.

The lens employed is one of five and one-fourth inches focus, and the table of settings is arranged as follows: The first column gives in full numbers the magnification or reduction; the second gives the grooves for the negative shelf, marked by letters a to g upward on side of the enlarger; the third gives the number representing the lens focus, obtained by turning the thumb flange of the focusing tube, either to the right or left, until the proper number is reached on the scale below, and the fourth column gives the grooves numbered from one downward, in the lower chamber, for setting the paper shelf A in its proper position. By means of this table the settings are made mechanically and with ease and certainty. When the necessary tests and adjustments of the figure on the scale have once been made, an error in focusing is impossible.

The arrangement of this enlarger, as well as those we have referred to, permits of almost endless variations in adjustments between "natural or same size", to enlargements or reductions from one to nine times.

“Getting His Goat”

By George Parke



With Illustrations by the Author

When the gentle burglar isn't burgling he's just the same as any other honest business man, so I am sure that when the traveling photographer has retired with his ill-gotten gains and established himself in a bungalow, bought on terms of all you have as first payment and sixty dollars a month for the balance of your life, he has aspirations and twinges of conscience the same as any other grafter. Such being the case I want to be the first one of the craft to turn "state's evidence".

My first efforts at relieving the public of its coin were rather crude and simple, but in the days before the advent of the intelligent amateur with his hand camera, the average person looked upon the photographic process as akin to magic. We could put over almost anything without detection,—and we did. The only requirements then were that both ears showed and the victim was all in the picture, nothing but full lengths being accepted.

Prosperity made me careless and I was not warned of the impending change of public opinion, even when Dr. Eastman brought out the roll holder and the paper negative in the late eighties. I scoffed at a process which compelled the use of castor oil and a hot flatiron, followed by ineffectual attempts to print from the semi-opaque negatives that resulted. But soon after this the celluloid



THE GOAT TEAM USED IN MEMPHIS

CAMERA CRAFT

film was introduced and my fate was sealed. Amateurs developed in every household, they infested the streets and highways, and the public became so blasé that even the offer of fifteen "ping pongs" for a dollar did not tempt them.

I had to invent some new way of getting them on the plate. Some brilliant minded genius toured the streets with a gaily caparisoned pony on which the ambitious youngster was easily persuaded to pose. Another substituted the humble burro, with equally satisfactory results. But I seemed always to be just at the tail of the procession, not the burro, every time I landed in town. Someone had always cleaned up and I had to take the crumbs that were left.

One day I attended the opening of a new grocery in the hope of getting a chance to "shoot" the place. They were raffling off a number of odd prizes to customers, and I bought something to get a ticket. Of course I won the booby prize,—a large white Angora with red horns. The paint on his horns was fresh and I ruined a good suit of clothes before I got him home. Although I went up alleys all the way I met most of my friends. I really didn't know I had so many.

What to do with William was a problem, till the bright thought came into being: "Why not get a wagon and use him as a lure for the kids?" I tried it out after buying another Billy to match the original William, and a set of harness to fit. They were a match in appearance but not their opinions, for they disagreed at every corner; one starting one way and the other the opposite. This wore out the harness and my temper, and drove off prospects, so I tried another plan. I sold the second goat, bought two young females, and the results were ideal. I have since thought that there must be something in the Turkish and Mormon marital scheme of life, for Billy and his two wives never had a cross word. They traveled along together and obeyed my slightest word, causing the dollars to roll in steadily. Only when we stopped near a good grass plot was there any trouble, for the goat is a climber and will go anywhere to gratify his appetite. I would have four or five kids posed and the slide drawn when Billy would spy a succulent clump of grass, pass the word to the harem and off they would go, to the great delight of the children who were not averse to a free ride.

As a lure for the children the goats were fine, but as a means of transportation they were not a success. They were too slow to walk beside for any distance, yet the attempt to ride the wagon was worse. It had no springs, not even on the seat, and the result was a close copy of a funeral procession, the mourners being myself and young son, the admiring and ribald audience including all ages and colors trailing along on either side. So we generally left the team at some stable or barn until the next day. This worked well until one evening we could not find a suitable place, so we got permission to tie the trio up in the yard adjoining the home of an Irish washlady, who was given many assurances that they were perfectly harmless and easy to control.

About one a. m. we were awakened by a telephone call from our accommodating Irish friend. She demanded that we come at once and save her from "these devils". Asked where she was at the time she said she was in the home of a neighbor whose husband was guarding the door with a shotgun. I got down to that end of town in a nighthawk hack and found the goats in complete

“GETTING HIS GOAT”

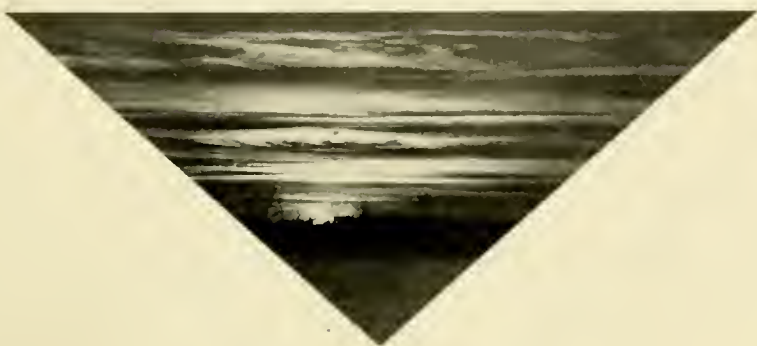


THE KIND OF PICTURES THE PARENTS LIKE

possession of the premises. During the night they had gnawed their ropes, prowled around the house and eaten all the clothes on the lines, as well as most of the shrubbery. Then all three entered the house through an open pantry window. The results were marvelous. A goat, being finicky and fastidious in his appetite, abhors common food, and those marauders made a careful selection, breaking or trampling all that they failed to devour. This awoke the indignant owner who, trying to eject them, was forced to flee for her life to the protection afforded by her neighbor's house.

I haltered the horned harriers, paid the damage and spent the rest of the night leading them home. That ended my work in that town, for the news spread and I learned that most parents had ordered their little ones to keep at a safe distance from those terrible animals.

Art is not a thing of spontaneous origin, but of slow and gradual, though constant, growth, ever changing, with a tendency to advance from the simple to the complex; and, while we may study and compare its fluctuations in the past, and view the changes which it undergoes in the present, and speculate as to its beginnings, yet in nowise can we foretell what will be the end.—HENRY BALFOUR.





As the Eye Sees

By Richard J. Grace, et al.



With an Illustration by Mr. Grace

I was just recovering from a recent illness, and playing at work at my desk, when that young irrepressible Tom breezed in to inquire about my health. After a few moments conversation, he reached in his breast pocket and handed me a print. It was a portrait, unconventional, of a young woman whom I have known since she wore braids, a member of one of our first families, and who is now living on two-dollar chocolates, and whom I suspect of sleeping on fifteen-dollar roses and orchids, since Tom and his hated rival have started rushing her. It is a remarkably human portrait, taken with a wide open anastigmat with the subject unaware, and displaying animation and coquettishness for the benefit of her rival suitors. But the background, a hazy pergola, with spotty leafy high-lights, and massive detailless shadows in a hedge, to my mind, spoiled the whole thing. I promptly suggested working over the background, but Tom protested, one of his protests sticking very forcibly in my mind, "When you look at a face close up, the background looks exactly as it does in that print," and it does.

After he left, I looked over the dock roofs to the other side of the river. Over on the box factory, is a large gold and black sign. Sixty feet from my window, on this side of the river, is a dingy black and white sign of a steamship company. With Tom's remark still in my mind, I kept my eyes focused on the cross river sign. I was conscious of the steamship sign directly below me, but I could not read it without shifting my eyes to it. I could sense its form, but it was hazy and diffused. If my eyes are normal, Tom is right, and the wide open anastigmat records very similarly to the human eye.

This matter recurred in my mind almost daily for some time, until I came across a very sharp cut professional view, every leaf, pebble, bark lamination, the distance and foreground in absolute detail. The falsity and the impossibility of the whole thing was striking. It was a rendering mechanically and completely, of everything in sight, and you could have examined everything with a microscope if you wished. You could obtain shadow detail alongside of small stones, which if you looked at the scene yourself, you would never dreamed of examining. In fact, it was a dictionary and encyclopedia of that scene; it was so complete. It was not as the eye sees, except after long and studied attention in detail, and when you make such an examination the general effect is lost completely. With my due apologies to Madge, if you were to make a photo of her, on this order, you would be conscious of certain freckles and skin pores that you do not notice ordinarily, because of her girlish charm and animation. If we do not portray people with a microscope, knowing better, why use it for landscapes?

AS THE EYE SEES

I can understand now the sudden "fad" for diffused lenses. Like most converts, the usual beginner with this type of lens, overdoes it to the extent of "confusion". The diffused-focus lens is a compromise between the "dead" sharp, and the one-plane focus of the anastigmat. I have seen some remarkably true work done with the rear combination of a diffused lens. The bellows extension was fourteen inches for a 5x7 plate, and the lens worked at about f-6. The drawing and the modeling was perfect, even close up, and the diffusion just enough to render retouching unnecessary. I have taught Tom his photography, but I believe he has taught me something in return, and I am going to experiment further along this line. "Out of the mouth of babes", etc., if you remember the quotation, "comes occasional wisdom."



IN THE GARDEN

By RICHARD J. GRACE

The above was the original story, but I showed it to my friend who is supposed to know considerable about photography, and he pooh-poohed the whole proposition about the eye having anything to do with it; the whole thing was mental.

So a little doubtful, I called up Dr. Downey, and he said, after considering a while, "Well, if it is mental, so is the sensation of walking also mental", and went off into a lot of stuff about "neurons", etc., while I said "Yes" at his breathing spells. It was not until a week later that I discovered a "neuron" was

CAMERA CRAFT

a nerve; it certainly sounds more expensive that way. Not satisfied, however, I sent the article and the comments to an old friend of mine in the East, who has quite a reputation as an oral and ocular surgeon. I will not burden you with the whole thing, but from his letter, I learned that, "the inner layer of the retina is formed by the optic nerve fibers. The impression received, is sent from neuron to neuron and on to the brain center—immediately back of the iris, is the crystal-like lens—the function of the lens with its suspensory ligaments or fibres, is the focusing of images on the retina; the image on the retina is inverted, as on the ground-glass of the camera. Focusing is accomplished by the contraction of the ciliary muscle, which produces greater convexity in the lens, thus shortening its focus, or by relaxation to increase its length, by decreasing its convexity. There is a spot in the retina of clearest vision, called the 'fovea', which corresponds to the full aperture of a lens. Outside of this spot, the vision becomes weaker, so that the extreme edge of the retina is only conscious of a very bright light. The eye is not well adapted for tri-dimensional perception, as it focuses in a series of planes, and if it were not for the fact that we are two-eyed (stereoscopic), we would have great difficulty in perceiving the third dimension, depth."

This verified my statements in a way, but it was not treating the subject from the photographic standpoint, but from the doctor's side. Again I wrapped up the "papers" and sent them to my friend, A. M. Sutton, M. D., of San Jose, California, who, in addition to being an optician, is also a photographer and photographic writer of note, as well as the secretary of the Pacific Photo Club. He, in spite of the fact that he is a very busy man took the time and care to answer very fully, as follows: "I have not had the time or opportunity to make any experiments or actual observations upon this rather interesting topic, but will just set down a few thoughts which occur to me after reading the views expressed by both writers.

It seems to me that friend Grace starts in with a fallacy at the very beginning. 'As the eye sees' is all right, but in all the instances he adduces he is talking about the resultant mental impression of two co-ordinated eyes acting in concert, a difference which seems to me of the utmost importance, since he neglects to take into account that most important function of the eyes, convergence.

Whatever we see is the mental interpretation of two inverted stereographs, and for what we call 'clear vision' absolutely the most necessary condition (presupposing that both eyes are normal in refraction and free from disease), is that the eyes shall be accurately aligned, both laterally and vertically, at the correct angle bearing upon the object viewed. Each eyeball is surrounded by five muscles whose function is this alignment of the two eyes under all conditions.

The lateral adjustment is the one which affects this argument: When we view a distant object, the long axes of the eyeballs are practically parallel; when we read, they are at an acute angle; in between these two conditions are an infinite number of intermediate angles. This adjustment is called shortly 'convergence', and it is upon this that we principally depend in judging distance.

Outside a distance of, say, six feet, the focusing power of a normal eye is negligible. In other words, a normal eye should have clear vision of an object



PORTRAIT OF MISS B.
A SALON PICTURE
By OTTO C. SCHULTE

fifteen feet away with the focusing muscle in a condition of absolute rest. Such an eye must be absolutely normal in refraction; the least degree of hyperopia (far sight) makes focusing necessary at all distances.

Now then, when friend Grace looks at those two signs, one across the river and the other close at hand, he is not 'focusing' first upon one and then the other at all; he is converging his eyes upon the two alternately. And since naturally he cannot converge upon two objects at widely different distances at one time, he cannot get a clear image of both at once. But now if he will take two objects at different distances but nearly in a straight line, or at any rate within the rather narrow angle of distinct vision of a single eye, and will cover the other eye (not screw it up closed), I think he will be able to see both objects with equal distinctness. At the same time he will, to a great extent, lose his sense of distance between the two objects.

Real focus comes into play in the following: Pin a large-print card on the wall at the height of the eyes. Cover one eye, and slowly approach the card from a distance of six feet: the letters will remain sharp until the 'near point' of distinct vision is reached. In a normal eye, this near point will absolutely depend upon age: A child of ten should be able to come within four inches before the outlines begin to blur; the man of thirty will find ten inches plenty near enough, and at fifty-five to sixty, the experimenter will find the track blocked at two feet or thereabouts. This is the action of the focusing (ciliary) muscle, and, as I have said, it only comes into action normally at short range. Beyond a distance of fifteen or twenty feet a single eye is practically a universal-focus instrument.

Again, if under forty, stand in front of a window covered by a lace curtain; cover one eye, and it will be possible to focus upon the curtain sharply at a distance of twelve or fifteen inches, or by relaxing, to see clearly the landscape outside, but not to get both sharp at the same time; nor to differentiate the focus upon two objects outside, one a hundred yards away and the other a quarter mile, so long as the two are well within the visual angle. This is focus, as opposed to convergence.

What I am trying to establish is that in any attempt to compare the eye with an anastigmat, we should think of and experiment with only one eye at a time, to get a basis for comparison.

I do not think that any normal eye sees like a wide-open anastigmat. The nearest approach to that would be a moderately myopic (near-sighted) eye, one having a 'far point' of distinct vision of about eighteen or twenty inches. In such a case a face at four or five feet would be sharp enough for a portrait, while the background would be blurred. But here again is an important difference: in the myopic eye everything inside the far point is sharp, up to the focusing limit.

It is easy to experiment with the myopic eye: a one-diopter lens (convex) held in front of an eye makes that eye artificially myopic, so that its far point of clear vision is about forty inches. A stronger lens will, of course, bring that point still nearer: from one to one and three-quarters diopters would appear to be suitable for the experiment in question.

Now I really don't know whether I have actually added anything to this discussion or not. Maybe this statement of facts will not be considered as really bearing on the question, photographically. But Tom's statement 'When you look at a face close up, the background looks exactly as it does in that print' (and I agree with Grace that it does), starts the optical mind at once upon the wide gulf between the monocular vision of the lens, dependent wholly on focus, and the wonderful mechanism of our binocular vision, in which, at photographic distances, focus plays no part at all."

I have learned a whole lot about the functions of the eye, and the way it sees, and presenting this in the hope that others will get as much instruction and pleasure out of it as I have. Tom may be young and foolish in some things, but he is very observant and I believe that you will agree with me, and with Dr. Sutton that he was right about that background.

You may paint with a very big brush, and yet not be a great painter.

Which Lens for the Beginner?

By L. E. Rea



With An Illustration by the Author

Buying a camera is so rarely preceded by the reading of a photographic magazine that I can hardly hope to reach the beginner, the individual this article will help the most, except through another person, some friend who may be asked for advice on the subject. While the one I want to help is the one who is contemplating the purchase of a Kodak in anticipation of blossoming out as a photographer for the summer, what I have to say may, indirectly, be of interest, perhaps help, to the one who already possesses a camera and is in doubt as to whether he should get another lens or continue a little longer with the one he has. To most amateurs the lens is an unknown quantity, originally obtained by trusting to luck or to the advice of the salesman from whom the outfit was purchased; the outcome of the transaction, as far as the lens is concerned, being controlled more by the length of the buyer's purse than by the extent of his knowledge or the soundness of his judgment.

The books are all full of technical discussion of the subject, quite meaningless to the amateur, unless he has a fair knowledge of photography in general and lenses in particular. But it is not knowledge that the amateur wants so much as it is results, and he wants those results with the least possible effort. To be sure, he must know a little something about his outfit to be in any way



A LANDING PLACE THAT INVITES

successful, and it is with this point in mind that I will discuss the subject, leaving out all technicalities. By referring to the diagram herewith the reader will, I think, understand the few points I shall try to explain.

A single lens, usually called a single achromatic, Figure 1, when placed behind the diaphragm, gives what is called barrel distortion of the image or picture, most pronounced near the edges of the plate and most easily observed should such marginal objects be made up of lines that should be recorded as straight. The manufacturers have succeeded in overcoming this fault to quite an extent, but such lenses require a comparatively small stop to insure sharp definition and fair covering power, so that they are not suited to fast work or where very short exposures are necessary. Placed in front of the stop, Figure 2, the linear distortion is reversed, giving what is called cushion distortion, marginal lines being rendered concave instead of convex. Otherwise the lens works exactly the same, a small stop being required.

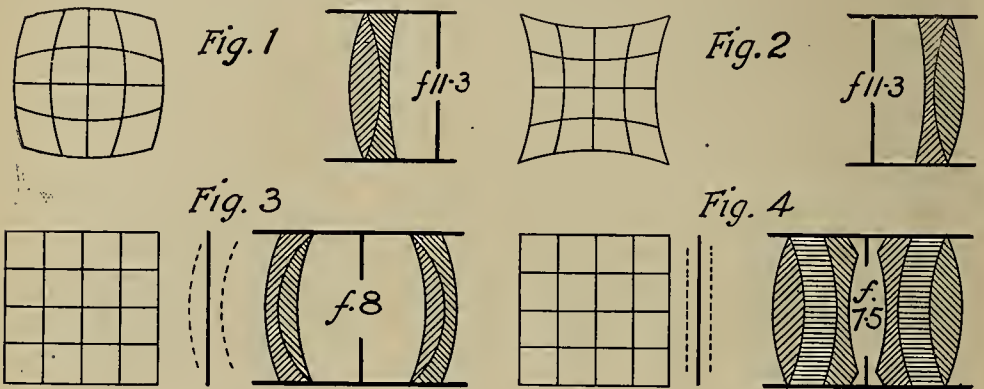


Figure 3 is intended to convey an idea of a lens combination made up of two single lenses with the diaphragm or stop between. In this arrangement the distortion caused by one element is corrected by the other, giving the lines as straight or rectilinear, and permitting of a larger stop being used. The larger stop and the lack of distortion caused this lens to be called a rapid rectilinear in order to distinguish it from the single achromatics. As a rule, such lenses are about twice as rapid as the single lenses just described, as they give sharp definition over a fair amount of plate or film surface with a larger stop. Most of the moderate-priced Kodaks and cameras are equipped with these very serviceable lenses.

Using such a lens for a time, the beginner, through his dealer, some other and more advanced amateur, or perhaps through the pages of the catalogues or photographic magazines, learns that there are other lenses that possess advantages not the property of the rapid rectilinear. In Figure 3 the reader will see two curved lines, intended to represent the field of the sharp image of the rapid rectilinear, the straight line between representing the film or plate lying within this field but not conforming to its curved form. In order to increase the depth of this field, represented by the distance between the two curved lines, sufficient to assure the flat surface of the plate or film being within such field

WHICH LENS FOR THE BEGINNER



WHERE THE FOREST ROAD BEGINS



OUT IN THE CALIFORNIA HILLS

of sharp focus, a fairly small stop must be used, although not so small a one as in the case of the single lens.

Figure 4 shows wherein the anastigmat lens has the advantage. Its field is flat and a larger stop or diaphragm can be used without endangering the focus of the image, although the depth of focus is not quite so great. With the same size of stop as the rapid rectilinear the speed is of course the same, the depth of field is the same, but the field of sharp focus or image is still flat instead of curved, and the definition throughout the whole is much better. In fact, there is not the same need of a small stop to secure good definition.

But, dear reader, do not jump to the conclusion that an ultra rapid anastigmat is the only lens to buy. A comparatively slow and moderate priced one is far the better lens for the novice until such time as he has learned something of the merits of this type of lens. With the anastigmat, the field being flat, less depth is required to keep the film covered and therefore a larger stop can be used. This means a gain in shorter exposures; and, if the the same sized stop is used, a sharper picture. Taking everything into consideration, the moderately priced anastigmat, one having a little less speed than the high-priced and ultra-rapid series, would seem to be the best for the beginner. If the rapid rectilinear with which his camera is equipped is all that his purse will permit, he can console himself with the assurance that for much of the ordinary work where no great speed is required, it will answer well. If only the modest single lens,

such as is fitted to the cheaper forms of cameras is available, the user need only remember that the slight distortion of marginal lines should cause him but little anxiety except as he should try to take the front of a building or something of that kind at fairly close range. In general landscape work the distortion cannot be detected and with figures and like subjects the margins are rarely of more than slight importance.

The high priced, high speed anastigmat is a wonderfully effective and efficient instrument having great value in experienced hands. Its flatness of field; its great covering power and its sharp definition, make it the ideal instrument for all around work. But placing such a lens in the hands of a novice is like placing an extremely sharp tool in the hands of one who has theretofore used only dull or imperfect ones. The relatively slower series of anastigmats have all the good qualities of the faster ones, except speed; they cost less, and their use, for a while at least, will prepare one to all the better appreciate and employ the capabilities of the faster ones a little later.



Boosting One's Home Town

By the Editor



In a small town up in Minnesota there is a photographer who believes very strongly in publicity, and he argues that publicity for his town and for his section cannot help but react to the benefit of his own business. This photographer is A. A. Richardson of Bemidji, and he has made both his town and his own photographic capabilities better known than perhaps any other town of twice its size, and any photographer therein, in his section of the country. One of his latest publicity efforts consisted of a paid advertisement in his local paper asking the readers to give him tips on anything in the way of events or likely subjects for his camera that could in any way be used as interesting material for newspaper publication, calling attention to the fact that a Duluth paper, circulating largely in his section, was being very generous in the matter of space for Bemidji pictures. This advertisement, some five or six inches deep, explained quite fully just what was wanted, and it really brought results. In addition, the editor of the paper in question, the *Duluth News-Tribune*, copied the advertisement in full, commented upon it most favorably, and sent it out in the form of a regular letter to the paper's correspondents, urging them to do boosting for their own home towns, help him fill up the space devoted to such material, and increase their own space credit. We wish we could print Mr. Richardson's advertisement and the letter to the correspondents of the Duluth paper in full, but space does not permit. We simply call attention to the matter as a possible incentive to other photographers to use their efforts along a line that is bound to prove of help and benefit to their business.

Making Photography Worth While

By G. Myron Allen



As the saying goes, one receives as he has given, or "We reap as we have sown," and this applies to photography as truly as to any of our other activities or ambitions. Some do not consider photography seriously and fare accordingly, and this is true of some professionals and a large number of amateurs. If the latter regards his camera as a plaything and only looks upon it as a toy to be snatched up and used as the mood strikes, the results can hardly be more than a matter of chance, giving little satisfaction and rarely ranking as "worth-while."

No matter how crude and unfinished one's work may be today, if it is gone about seriously and with a determination to avoid repetition of mistakes and to learn the cause, the why and wherefore of each failure, results will surely improve. If one does not care enough about his picture making to do it well, then the sooner that he comes to the conclusion that photography does not pay, the better.

Experience is said to be a good teacher, but in photography there are other and better sources of instruction costing much less. We must have a certain amount of practical experience, of course, but learning photography by experience alone would be a long and tedious operation. One might, for example, by wasting a lot of plates or film and using up a lot of time and patience, learn how to make those nice sunset and imitation moonlight views that add so much to the interest of one's collection. But an article in his favorite photographic magazine, telling him just how some other worker gets his results, immediately puts him on the right track and a few trials are all that he requires. And so



THE OLD MILL POND AT EVENING

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on through a long list, a list that would read very much like the yearly index that one finds in the December issue of his favorite photographic magazine. And then there are the advertisements; which, for the isolated worker in particular, hold much of interest. Were it not for them he would never know what a wealth of varied material is available. I ran across one of these chaps last summer. He wanted to sell his camera and get a better one; or rather, one with a better lens. He did not know that his camera was as good as he could want in that particular size and style and that all he had to do was to buy a better lens, in cells, and screw them into the shutter thereon. He had never heard of a portrait attachment, and quite a few of the things advertised each month were entirely unknown to him.

And this same chap who had been wasting all kinds of time, patience, film and other photographic requisites, trying to produce something that would pass as a portrait, marveled at a few of my own rather crude productions in that line. He wanted to know how I did it, or rather, how I learned how to do it. I told him that all I knew about it was gleaned from a couple of articles in the magazines, and that I would look them up and send them to him; exacting a promise that they would be returned, as I keep them as a reference library where I can find information concerning practically any photographic subject in which I may be interested. And quite often an article in itself proves a source or subject of interest. Some writer describes some process or some way of doing something and it is so easy to take up the work and follow out his recommendations, one usually having all the requisites already in his equipment. In this way I have made myself familiar with no end of photographic work that otherwise would have remained a sealed book to me. Not only that, but I have improved my work along the regular lines so that I find my pictures really "worth-while," at least to myself.

I have, of course, not made any astonishing progress considering the number of years since I first started to take the old *Photo Beacon* in 1900, mainly because my regular "bread-and-butter" occupation keeps my time well occupied. My first camera, purchased even earlier than that, and used without even the help of a photographic magazine, was no small source of pleasure. I have kept a few of the negatives made with it, mainly on account of their association, certainly not because of their good quality, but still "worth-while," despite the fact that they cost me something,—just how much apiece I don't know or care. I do know that I can do better today, blindfolded and with one hand tied behind me.

But my real progress started with my determination to do my own finishing. I know there are finishers who do good, conscientious work, and there are others who are enough to "finish" the aspirations of any except the most confirmed amateur, but it is hard to learn much about photography and picture-taking while hiring the work done. If one does the work himself he can locate his errors in exposure and learn to correlate exposure, development and printing to secure the results best suited to the picture in mind. Not only that, but doing the work one's self halves the expense, doubles the pleasure and goes a long way towards making one's photography "worth-while". Later, if time does not permit, engaging the services of a good finisher is better than denying one's self the pleasure of photography.

MAKING PHOTOGRAPHY WORTH WHILE



SOMEWHERE'S IN FRANCE SOCKS FOR SOLDIERS "A LITTLE PIG WENT TO MARKET"

I am sending herewith three or four prints, purposely selected as quite ordinary examples of what I find are "worth-while" to me. The picture of the "Old Mill Pond" would never find favor with a salon jury, and even the maker of view post cards would think it hardly the nice, clear, all-embracing view he seems to prefer. But to me, and to quite a number of my friends, it represents a most familiar spot about as realistic as a photograph possibly can. There are shadows that lack detail, but our mental picture of the spot does not carry any detail in those places. Taken in a broad flat light the picture is spotted and distracting, and showing more at the top is simply introducing material that we do not sense or observe when looking at the scene. "Some-where's in France" and its companion picture, "Socks for Soldiers," has given pleasure to a number of my friends as well as myself, particularly those of us who know the sweet, kind personality of the model I was so fortunate as to have. The other small picture, "This Little Pig," is a sample of what can be done in this direction by any amateur of the most ordinary capabilities. It is shown mainly to draw attention to the difference between such treatment and the too common procedure of having the subjects sit up straight and stare earnestly at the camera. The human interest in this picture is not dependent upon the classic features or graceful pose of the two subjects; neither is background or the disposition of the light and shade exactly such as we would expect to find in a painting, but the picture is one of a number of like examples, some better and some not so good, that I find decidedly "worth-while".

And I am, thanks to the photographic magazines, learning to make my pictures more and more "worth-while" and to make them so with an ever-increasing proportion of satisfactory results. My waste of time and material is only a fractional part of what it was, and instead of adding to an unsatisfactory collection of negatives of doubtful interest, I am gradually increasing my supply of material for producing prints that have interest for my friends and acquaintances as I choose to present them with examples of my work.

Art is simply a bringing into relief of the obscure thoughts of Nature.—
AMIEL.

PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

TITLING NEGATIVES: The ink used for marking linen in a laundry works nicely with an ordinary pen on the glass side of a negative. The writing or lettering prints quite white and the very slight softening of the edge due to the thickness of the glass is really an improvement. The ink can easily be washed off when the title is not wanted on a print or enlargement.—O. E. H., Indiana.

A REAL CONVENIENCE: One of the most useful articles one can have about the work-room is a cheap three or four-quart water pitcher, one that will pour a fine, narrow stream. Such a vessel comes very handy to mix a fixing bath in, as it can then be poured directly into a gallon bottle or jug. After prints are fixed the bath can be poured from the tray into the wide-mouthed pitcher and from that again into the bottle.—W. C. S., California.

A MARKED ADVANTAGE: The two pictures reproduced herewith should convince anyone of the necessity of using orthochromatic emulsions and filters for work in which color plays an important part. The first picture fails to



ORDINARY EMULSION WITHOUT SCREEN



ORTHO EMULSION WITH SCREEN

convey any idea of yellow lettering on a blue ground, not to mention less important elements, while the second one does. A print like the first, sent to the firm for which the display was erected, would hardly have been convincing evidence that their original colored design had been followed in the work of painting the large sign. The first print is entirely unsatisfactory as a reproduction of the subject; while the other, made at the same time and with the same camera, leaves nothing to be desired.—W. A. S., California.

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A PHOTOGRAPHIC MONTHLY

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No. 4

A Little Simple Arithmetic

Not a few of our subscribers, in renewing for the new year, expressed surprise that our subscription price had not been advanced, inquiring as to how we avoided increasing our price to that charged by the others. A few of our new and prospective advertisers, in their preliminary correspondence, called attention to the fact that while our advertising rate was lower than some of our competitors, our circulation figures were higher. A little simple arithmetic, based on quite conservative estimates, will make both these matters clear.

Our last or March issue contained just sixteen more pages of paid advertising than did the March issue of our nearest competitor in that respect. Those sixteen pages, at the rate paid, our full card rate, gives us, during the year, an income equal to a bonus of ninety-nine cents on every one of our subscribers or newsstand buyers. This will explain why our subscribers have not yet been asked to pay an additional dollar, while subscribers to some of the others have. Take a magazine with a circulation of six thousand, a card rate of one hundred dollars a page, and with thirty-two pages of advertising,—the highest number carried by any other magazine, and give it the income from our additional sixteen pages at only one-half of its card rate, which we assume it would get, and that magazine would be in a position to make every one of its subscribers or purchasers an annual present of one dollar and at the same time enjoy for itself an increased profit of a trifle over three hundred dollars a month, assuming that there was already a profit to which this increased income could be added. With a magazine carrying any less than this maximum amount of paid advertising, the situation makes a reasonable subscription price still less of a possibility.

In dealing with the advertisers' point of view, another set of figures will be found enlightening. Office expenses, half-tones, typesetting, proofreading, make-up and make-ready on the press, are all costs that are unavoidable and costs that are exactly the same, be one thousand or ten thousand copies printed. It is, therefore, safe, to assume that in the case of a magazine of the general character of our photographic ones, an edition of one thousand would cost four hundred dollars or forty cents a copy, which any printer will assure us is a conservative figure. Such a magazine, carrying sixteen pages of paid advertising, would have a production cost of twenty-five dollars per page of advertising and would have to charge the page advertiser a rate equal to two and one-half cents per copy for reaching its readers. Taking a magazine printing six thousand copies, and allowing it the thirty-two pages of paid advertising carried by our next nearest competitor in that respect, we will assume that its first thousand copies cost the same forty cents each with a cost of twenty-five cents per copy for the additional five thousand. Even with this maximum amount of advertising, there would be a production cost of fifty dollars a page for the advertising.

and that magazine would be compelled to charge its advertisers a rate equal to nearly a cent a copy for reaching its readers with a page announcement. Take our own magazine and assume exactly the same cost for the first six thousand copies and twelve and one-half cents each for the extra run of five thousand, and we have, despite the almost double number of copies printed, a still lower cost of production per page on our forty-eight pages of paid advertising. And what is still more important, we are enabled to place a page advertisement before each of our readers at a cost to the advertiser of less than half a cent per copy. We believe all our figures are conservative and feel that the explanation they evolve is one with which no prospective advertiser can find fault.

It Only Goes to Show

In a certain California city of average prominence, the photographic rights to interesting events have always been considered as a concession to be sold to the highest bidder; one who, thereupon exacted a fee from any and all desirous of professionally operating a camera on such an occasion. The photographers of the town have blasphemed, threatened, cursed, and cajoled, but to no avail.

Last week an event of international importance took place in the town in question. News and press photographers from all parts of the country journeyed there, only to find that the photographic rights were the sole property of the concessionaire. Did they go up in the air and swear by all the gods that they would be r-r-r-revenged? Far from it. They did what never occurred to the local photographic men to do. Peacefully and calmly they went to one of the most influential business men of the town, and to him they pointed out the publicity that the town would lose if they were barred from taking pictures. The business man saw the light. He would talk with other men of importance. He did. And it developed that it had never occurred to any of them that they were throwing away a chance for vast free publicity.

The sequel is brief. Every convenience was at once provided for the visiting newspaper men. A room was provided for their use as an office. A boat was at their pleasure at all times. Automobiles were arranged for, at no expense to them, to take them wherever they wished to go. Badges, permitting them to pass through all police lines, were loaned them. In short, they were welcomed where photographers had, up to that time, been *personas non grata*.

The moral is too obvious to need pointing out. It is to be hoped that in other places where the camera men are taboo there will be men in the profession who are big enough and broadminded enough and self-controlled enough to see that nothing can be gained by threats and curses. And it is invariably true that if you are in the right, you can get anything you go after if you don't go up in the air and plan to kill the poor chap who is harming you simply because he doesn't know all the facts of the matter. Pity his ignorance and explain it to him and it's a safe bet that he'll help you out. People are pretty good, after all, if you don't rub the fur the wrong way.

Sure, of qualities demanding praise,
More go to ruin fortunes, than to raise.—POPE.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

A Dye Image Color Process

Particulars are given in the *Patent Journal* (British), of the process of J. H. Christensen (patent No. 133,034), now open for inspection under the International Convention. For producing dyed images, advantage is taken of the catalytic effect of the finely divided silver of an image on the action of reducing agents on certain dyes. A bromide plate is dyed with oxaminerosa, exposed, developed, fixed, and then treated with a powerful reducing agent, such as sodium hydrosulphite or stannous chloride, which has the effect of bleaching the dye where the silver is deposited. The silver is subsequently removed by chromic acid or Farmer's reducer, leaving a clear color picture. Alternatively, the development and bleaching can be effected simultaneously by treating an exposed plate in a bath containing sodium hydrosulphite and potassium bromide, the silver and any silver bromide being subsequently removed by Farmer's reducer. Alternative dyes of the dianile class are given, some of which—for example, Chicago blue—require to be subsequently mordanted. Toned silver images can be treated similarly.

Intensification and Reduction with Pyro Developers

In a communication issued by the Research Laboratory of the Eastman Kodak Company, R. B. Wilsey writes: In the course of a study of the color of photographic negatives developed in pyrogallol developers, it was suggested by Mr. L. A. Jones, of this laboratory, that the alteration of this color might be utilized as a method of photographic reduction or intensification. It is a matter of common experience among photographers that a pyro developed negative has a greater printing density and contrast than a neutral negative of equal visual density and contrast. The strength of the pyro color can be varied over a wide range by suitably altering the concentrations of constituents of the developers, especially that of the sulphite. A pyro

developer without sulphite gives an extremely yellow negative, while sufficient sulphite can be added to the developer to produce a negative with no visible yellow color.

Several methods of photographic intensification involve bleaching the negative and subsequent re-development in a solution which gives it a greater photographic contrast. By re-developing in a pyro formula the amount of intensification or reduction can, within certain limits, be controlled at will by varying the sulphite concentration of the developer. Where the greatest reduction is desired, re-development in some such developer as Elon gives lower photographic contrast than any pyro formula.

For bleaching the negative, there are two possibilities: a ferricyanide bleach leaves pyro stain in the negative, while a permanganate bleach removes the stain. Thus, the pyro color may be left in the negative, and more color added by re-developing in pyro; or the color can be removed and a different amount of color substituted by re-developing in the proper formula.

The present experiments were made to determine the possibilities of this method, and to measure the amounts of intensification or reduction obtained under various conditions. Any intensification or reduction by this method consists in altering the color of the photographic deposit; little change is produced in the visual density values of the negative; therefore, the amount of intensification or reduction must be determined by printing upon some positive material. The printing medium used in those experiments was positive motion picture film. The negatives to be intensified or reduced were all made on Seed 30 plates.

The procedure was as follows: An 8x10 plate was exposed in the sensitometer to 22 steps, in which the exposures increased by successive powers of the square root of 2. The areas having equal density were about three-eighths of an inch wide and ex-

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tended across the short dimension of the plate. This plate was developed, fixed in plain hypo, washed and dried. It was then cut into eight strips, each one by ten inches; each of these strips contained the same series of densities. Three of these strips received no further treatment. The other five strips were bleached in the same way, and each re-developed in a different formula. When dry, all eight of the strips were mounted together upon an 8x10 sheet of clear glass. All the strips were then printed at one time upon an 8x10 sheet of positive film, care being taken to print from the "straight line" portion of the strips upon the "straight line" portion of the film.

The "straight line" portion refers to those densities which give the straight line portion of the H. & D. curve of the material. The printing light came from the flashed opal glass window of a white-lined box; illuminated by a gas-filled tungsten lamp. The print was developed in Elon-hydroquinone developer to a gamma of about unity. The resulting densities were read, and the density values were plotted against the logarithm of the exposures given the original negative.

These curves were the reproduction curves, and show in each case how the final positive rendered the original exposures. The greater portion of each of these curves was a straight line. The ratio of the slope of this line for an intensified or reduced negative to the slope for an untreated negative expresses the degree of intensification or reduction; it is the ratio of the effective photographic contrast of the treated negative to that of the untreated negative. This ratio will be designated as $\frac{\gamma_{ip}}{\gamma_{op}}$, following the terminology of Nietz and Huse, in the "Sensitometry of Photographic Intensification," published in the *Journal Franklin Institute*, March, 1918. The "effective photographic contrast" means the photographic contrast obtained under the practical conditions of these experiments, and does not mean necessarily true photographic contrast.

Where the value $\frac{\gamma_{ip}}{\gamma_{op}}$ is greater than unity, the effect has been an increase of photographic contrast or intensification; and where $\frac{\gamma_{ip}}{\gamma_{op}}$ is less than unity, it represents a decrease of photographic contrast, or reduction of the negative.

By the above procedure each strip of a plate was carried through identically the same process, except for the bleaching out and re-development in various developer formulæ. Any changes in printing contrast observed were due to the bleaching and re-development process. All the negative strips of a set were made upon one plate, which was developed as a unit; the final strips of each plate were printed upon one sheet of film, which was developed as a unit. By this method, any errors due to variations in development or in photographic materials were minimized.

The original negatives were developed in one or the other of these formulæ:

Pyro (5-10-10)

Pyro	5 gms.
Sodium carbonate, dry...	10 gms.
Sodium sulphite, dry....	10 gms.
Water to	1000 c. c. s.

Elon-Hydroquinone

Elon	4 gms.
Hydroquinone	1 gm.
Sodium carbonate, dry....	25 gms.
Sodium sulphite, dry....	75 gms.
Potassium bromide	1.5 gms.
Water to	1000 c. c. s.

The negatives were developed to visual gammas between 0.5 and 1.0. There was no indication that the value of the gamma of the original negative had any effect upon the value of $\frac{\gamma_{ip}}{\gamma_{op}}$.

The bleaching solutions were made up as follows:

Ferricyanide Bleach

Potassium bromide	10 gms.
Potassium ferricyanide ..	30 gms.
Water to	1000 c. c. s.

Permanganate Bleach

A: Potassium permanganate.	4.5 gms.
Water to	1000 c. c. s.
B: Sodium chloride	160 gms.
Sulphuric acid	40 c. c. s.
Water to	1000 c. c. s.

For use, take A, one part, B, one part, water, six parts.

After bleaching in permanganate, the negative is cleared in a one-half per cent solution of sodium bisulphite.

After bleaching the five strips of each set in ferricyanide or permanganate, they were exposed to a strong light and re-developed, one strip in each of these developers: Elon-

A PHOTOGRAPHIC DIGEST

hydroquinone, pyro (5-10-0), pyro (5-10-5), pyro (5-10-10), and pyro (5-10-25); the figures in parenthesis represent successively the concentrations of pyro, sodium carbonate and sodium sulphite in grams per liter of developer. The re-development was carried to completion, about five minutes usually being sufficient for this.

The table below gives the values of $\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$ obtained with the various solutions used; the first column being original development in Elon-hydro, permanganate bleach; the second the same, but with ferricyanide bleach; the third, pyro 5-10-10, permanganate bleach; and the last pyro 5-10-10, ferricyanide bleach.

Re-development	$\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$	$\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$	$\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$	$\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$
	$\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$	$\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$	$\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$	$\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$
Pyro 5-10-0	2.00	1.70	1.15	1.80
Pyro 5-10-5	1.50	1.35	.95	1.40
Pyro 5-10-10	1.15	1.15	.80	1.15
Pyro 5-10-25	.95	1.00	.65	.95
Elon-hydro	.80	.95	.55	.85

Each value is the final average obtained from three of four negatives; from one to three prints had been made from each negative.

The next table shows the effect of repeating the process, bleaching each time in ferricyanide and re-developing in pyro (5-10-0), to increase the amount of color in the negative, the first column being the number of successive bleaching and re-development with pyro 5-10-10, the second value with original development in Elon-hydro and ferricyanide bleach, and the last with original development in pyro 5-10-10, and ferricyanide bleach.

Once	1.70	1.80
Twice	2.10	2.20
Three times	2.40	2.45
Four times	2.65	2.70
Five times	2.80	2.85

Thus the process is capable of successful repetition, in case the previous treatment has been found insufficient.

The data of the first above table show that the process is suitable for the intensification of either pyro or Elon-hydroquinone negatives, and for the reduction of pyro-developed negatives. A slight reduction in an Elon-hydroquinone negative is produced by bleaching in permanganate bleach and re-developing in Elon-hydroquinone. By re-developing in pyro, any intensification up to double the original photographic contrast can be secured. Nearly as much intensification

can be obtained upon pyro (5-10-10) negatives by bleaching in ferricyanide and re-developing in pyro. A pyro (5-10-10) negative can be reduced to almost half its original photographic contrast by bleaching in permanganate solution and re-developing in Elon-hydroquinone. Of course, the amount reduction possible in this way depends upon the amount of color in the original negative. Pyro (5-10-10) gives about the same color as many recommended pyro formulæ.

This method, of course, may be applied with other developing formulæ than those given here. These experiments serve to show the practicability of using the pyro color as a means of photographic intensification, or the removal of it as a means of reduction.

The advantages of this method are that within certain limits any degree of intensification or reduction can be produced by suitable variations in the sulphite concentration of the pyro re-developer; furthermore, the amount of intensification or reduction is predetermined; it does not depend upon the time for which the negative is bleached or re-developed, since these processes are carried to completion. The degree of intensification or reduction that can be obtained by this method compares favorably with that of other methods. Nietz and Huse determined $\frac{\gamma}{\gamma_{op}} \frac{ip}{op}$ for ten intensifiers; only four of these gave a value exceeding 2, and five of them gave less than 1.5. The fact that the reproduction curves obtained in these experiments have long straight line portions shows that, over the range of densities used, the reduction or intensification is proportional, that is, the contrast is changed by the same ratio for all parts of the negative.

An Enlarging Point

Users of enlarging lanterns with large condensers often fail to see the disadvantage under which they labor when using small plates. If we compare two lanterns, with equally strong illuminants, one having a condenser capable of covering a whole-plate and the other covering only of a quarter-plate, the focal lengths of the condensers being in the same proportion to their diameter, we find that in the smaller apparatus only a quarter of the exposure necessary with the larger one need be given to secure the same result. It is, therefore, an excellent plan to have a smaller condenser fitted so as to be

interchangeable with the large one when small negatives of considerable density have to be dealt with. Moreover, more range can be obtained for centering the light in the case of extreme enlargement or reduction. Another plan is so to arrange the negative carrier that it can be brought forward into the convergent cone of rays so that a greater portion of this is utilized. This, unfortunately, necessitates a modification of construction which would be difficult with most existing lanterns, but which could easily be made by anyone building his own enlarger. Another desideratum is a fine adjustment for focusing, which can be operated when the lantern is several feet from the easel. In some of the early cantilevers there was a screw adjustment in the middle of the front-board, which could easily have been fitted with a long detachable key; an idea that has been revived in a different form by Messrs. Houghtons, of London.—*British Journal of Photography*.

Unequal Illumination

Users of very rapid lenses are frequently at a loss to understand why, when very short exposures are given, the center of the plate is fairly well exposed, while the corners are thin and lacking in printing value. This is due to two causes. One is a cutting off of light by the mounting of the lens, which is particularly likely to occur with lenses having long tubes. The other is the fact that the corners are more distant from the lens than is the center, and consequently receive less light. The first cause may be removed by decreasing the diaphragm until it appears as a perfect circle, but the second is incurable by ordinary means. In his "Simple Guide," Mr. Dallmeyer pointed out that when the lens subtends an angle of sixty degrees on the diagonal of the plate, a common thing with small hand cameras, the corners only receive half the illumination, which reaches the center, at ninety degrees in the case of fairly wide-angle lenses only one-fourth. If full exposures are given the defect is minimized; with snapshots it is most evident.

Cold Solution and Shadow Detail

It is not fully realized by many photographers that with the approach of the colder weather they should give special attention to the temperature of their solutions. In the case of plates, not only does development

with a cold solution take a very long time, but when this condition exists certain ingredients of the developer such as hydroquinone almost cease action altogether. If the solutions are kept in an unheated dark-room care should be taken to see that they are not used at a temperature lower than fifty degrees. We have seen negatives developed with a cold solution which though possessing full density, were lacking in the shadow details and gave the impression that they were considerably under-exposed when the reverse was actually the case. It is a good plan to add a very small quantity of hot water to each lot of developer and fixing solution or to stand the bottles in a warm room for some time before use. Of course, if the dark-room is properly heated the solutions will never fall below an effective working temperature, and this latter is the proper course to be followed for the sake of the plates, no less than for the mere comfort of those who handle them.—*British Journal of Photography*.

Rapid Fixing

At a recent meeting of the Royal College of Science Chemical Society, Mr. Hickman demonstrated the use of a fixing bath of his invention which was shown to fix effectively in thirty seconds. Without knowing more than is contained in the report, it may be surmised that this result is obtained not by the discovery of a more energetic fixing agent than hyposulphite of soda, but by addition of other substances to a hypo fixing bath of maximum fixing power. The late Mr. Welborne Piper carried out and published a large number of experiments on this question. Having found that the strength of hypo solution which fixes most quickly is one of forty per cent, he proceeded to test the effect, as regards speed of fixing, of various additions, and found that ammonium chloride and ammonium sulphocyanide are two salts which increase the speed of fixing to a substantial degree. Of the two, ammonium chloride is the most satisfactory; the softening action of ammonium sulphocyanide on gelatine is a serious objection to its use, although, apart from this, it permits of very rapid fixation. With ammonium chloride, on the other hand, a hypo bath of twenty per cent strength containing from two and a half to five per cent ammonium chloride was found to fix in two minutes, which is getting fairly close to the result obtained by Mr. Hickman.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

The Value of Stop Markings

An Indiana reader wishes to know how he can determine the U. S. or Uniform Standard value of the markings of his lens stops, now shown in *f* values, his *f*-5.6, for example. All that he has to do is to square this 5.6 and divide the result by sixteen. This will give him practically U. S. 2. This squaring of *f* numbers or values is the key to the whole situation. For example, one wishes to know what the exposure should be with a lens working at *f*-6.3 as compared with the one just considered. By squaring both of the *f* numbers we find that the exposure required with the two lenses is, ignoring odd numbers, as thirty is to forty, the first lens requiring one-fourth less exposure than the last, both used at full opening.

What Is a Good Negative

The worker who does not know, or thinks he knows, just what a good negative should look like, is a very rare sort of bird. But this idea of a good negative is one that is liable to lead him astray for the simple reason that all good negatives do not look alike, strange as the statement might seem at first glance. The average subject, the ordinary landscape, with a good even balance of light and shade, does call for a certain like evenly balanced negative. The high-lights have a certain amount of density and the shadows a certain amount of detail, with a long scale of gradation in between. And this negative will make a good print on almost any kind of paper; it is, technically, a perfect negative. But, suppose our landscape is one in which the charm lies in a certain degree of mist or haze, a scene in which there is nothing really darker than a dirty gray. The proper negative for the production of a suitable print could not possibly carry the gradation we want to meet the demands of our perfect negative. One can easily imagine quite charming marine scenes in which the scale of gradation is extremely short. A dull winter's day may afford us subjects for pictures in

which but three or four tones suffice to give us exactly the effect that our eyes behold. We could, of course, make the resultant negatives have something of the appearance of our predetermined standard, but we would lose the spirit of the scene, the feeling that we wish to convey. The point that we wish to make is this; the perfect negative is the one that gives the desired effect in the print. It may, perhaps, be even desirable to us our manipulative skill in making our negative less like the technically perfect one we have in mind, than it would naturally become under ordinary treatment. Soft and shadowy as may be the scene, the negative may be inclined to be too clear and brilliant; or, we may, perhaps come upon a scene fairly brilliant at the moment, but of such a nature that a soft and atmospheric treatment will give us something more desirable. If the truth be known, aside from regular commercial view work, there are but few subjects that cannot be made more pictorial by suitable manipulation of exposure and development in producing a departure from the so-called perfect negative. A short exposure and full development will give us one result, a long exposure and short development another, and it is well to know something about what can be done in this direction. If we have the fetish of the perfect negative, none of this control is for us; all we know is correct exposure and proper development, with a good chance of producing our perfect negative as often as possible, but such a procedure is hardly consistent with the best work.

Simplicity An Advantage

About a year ago an amateur came to me for assistance and I really lost a little of my usual interest because he was so inclined to veto anything that seemed to suggest the expenditure of time, effort, or concentration. He wanted to practice photography, but he wanted to do it in the easiest and most simple manner. Just the other day he came in and his success, both as a photographer and as

CAMERA CRAFT

a dodger of trouble is quite a revelation. True, his camera has only three exposures, instantaneous, time and bulb, but why should he complicate the making of nine exposures in order to be a little better prepared for the tenth? There are plenty of subjects that do not require this complication of speeds, so he simply passes up those rare ones that do. His lens doesn't work at a very high speed; and, if it did, he would have to have these high shutter speeds that he doesn't care to bother with. By actual test the drug store on the corner gives him within two per cent of the results he secures from an "expert", and the expert can do much better than he can himself, so the drug store gets his work. And you don't catch him going off miles looking for subjects, there are too many right in his section of the town, all waiting for him. Very few of them are too fast for his one "instantaneous" speed, and those he passes up. In fact, by taking only the "easy ones" he reduces to a minimum his chances of failure, with the result that his stock of negatives will show a smaller per cent of undesirable results than almost any other collection of negatives that one could hope to find. Quite true, he loses a lot of fun that the experimenter gets out of spoiling good material, but it is safe to say that, working within the limitation that he has set for his camera work, he is about as expert as one can be, and this only after a few months' practice, simply because he has not dissipated in his experimenting. His is not the popular or even the usual course, but it suits him and that is the main thing, when all is said and done.

Finding the Focal Length

One way to find the focal length of a lens is to put it on a camera that will permit of its being run out far enough to copy same size, which means running it out to twice its focal length, and then proceeding as follows: Take a dark card and punch two small holes therein, placing the holes about one-fifth of the estimated focal length apart. Using this card as a stencil, make two dots on the ground-glass focusing screen to correspond to the two holes. Put the card up in front of a good light and then focus the holes so that their images come directly over the two marks made on the screen. Then mark the position of the camera front on the run of the camera, remove the card and focus again

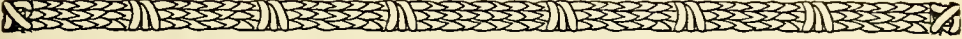
on some object a few hundred feet away, again mark the position of the front on the camera run, and the distance between that mark and the one previously made will be the focal length of the lens. This does not give absolutely accurate results because of the difficulty of determining the exact infinity point for focusing, but it is accurate enough for all practical purposes and generally quite easily carried out.

Moonlight Exposures

A correspondent in Illinois writes to ask what exposure should be given for moonlight, explaining that the books tell him that moonlight has one five hundred thousandth the intensity of sunlight. The book may be all right, but I am afraid following out its suggestion would be rather tiresome. According to that, an ordinary landscape in bright moonlight, using f-16 stop, would require about three hours. Possibly the subject would stand three hours, quite likely that length of exposure would give a result much like daylight, but what is wanted is more of a moonlight effect, I imagine, and therefore if we estimate the required exposure in sunlight, with the stop to be used, and then multiply that exposure by one hundred thousand instead of five hundred thousand, I think the chances of success would be somewhat better.

A Seattle Exhibition

Quoting from the prospectus: "The Wanamaker series of exhibitions has done much to elevate the standard of photographic art, as practiced in the Eastern States. Frederick & Nelson invite photographers to join in a similar enterprise in the belief that Western enthusiasts and Western subjects present equally splendid possibilities for the advancement of the art, and will produce, too, results admirably typical of the West we love so much." The proposed exhibition, their first, will be held at the Frederick & Nelson Auditorium, second floor of their store, Fifth Avenue and Pine Street, Seattle, Washington, November first to thirteenth, inclusive, closing date for entries being October tenth. There will be eighteen cash prizes ranging from one hundred dollars downward, and our readers should write the firm at the address given, asking for prospectus and labels in order that they may try for recognition and a possible prize.



CLUB NEWS AND NOTES

California Camera Club

Thirty years ago a disagreement arose, as disagreements are prone in any large organization, and the late George W. Reed with a number of sympathizers, seceded from the old Pacific Coast Amateur Photographer's Association; and, in company with other local photographers, organized the California Camera Club with headquarters in San Francisco. Mr. Reed, the maker of a beautiful photograph of the Golden Gate, had violated one of the Association's rules by selling a print, thus causing the upheaval; but, with a charter membership of seventy-seven, the new club rapidly outstripped the older one in popularity and soon occupied the field alone.

The aim of the California Camera Club has been to form a scientific, social and art center for photographers, and to this end lectures, demonstrations and entertainments have always been forthcoming. Today outings, dances and card parties are also on the social programme. Its work-rooms and equipment have always kept pace with the development of photography. In the old days when

Solio and blue printing were the only methods mostly employed in printing, an assembly hall, studio, general work-room with lockers, plate-loading room, two developing rooms, two daylight printing rooms, a lantern slide room, and one daylight enlarging room later supplemented by a bromide room equipped with an arc light, constituted the club's quarters, then located in the Academy of Sciences. Destroyed in the fire of 1906, the next and present permanent headquarters were located in the Commercial Building, in the heart of the business district, making the rooms a most convenient rendezvous at all hours. Increased facilities as afforded by three enlarging rooms, five combined developing and printing rooms, with lantern slide, loading, general work-rooms, dressing rooms, studio and assembly hall, all testify to the club's growth.

The club was incorporated on April five, 1890. On April sixth of this year a Bohemian dinner-dance, attended by about one hundred and fifty members and friends, was given to celebrate the anniversary.



OUR BOOK SHELVES

"Penrose's Annual, 1920"

This, the "Victory" volume, the twenty-second issue, is indeed welcome after the break in the continuity of the series, due to the war and its disturbing influences upon the publishing and allied industries. Like the others, the present volume is edited by William Gamble, and meritorious as were its predecessors, we need only add that a new standard has been established. Artists, engravers, illustrators, photographers, printers and publishers have combined with the contributors of the text portion to give us an annual that shows quite comprehensively the remarkable advance that has been made in all these lines. The contributions are from the pens of some thirty or more workers and the illustrations are given in even more generous number than heretofore. Photography, in all its applications, receives

the fullest consideration and none of the reproductive processes are overlooked. The book is published by Percy Lund, Humphries & Company, Limited, 3 Amen Corner, London, E. C., England. For sale in this country by Tennant & Ward, 103 Park Avenue, New York. Price Five Dollars. The book can be obtained locally through Hirsch & Kaye, 218 Post Street, San Francisco.

"Airplane Photography"

In this book, Herbert E. Ives, major in charge of Experimental Department, Photographic Branch, Air Service, U. S. A., gives us a survey of the development of airplane photography that is as entertaining as it is instructive and informative. Every phase of apparatus and production is covered, making the book a thoroughly practical and up-to-date manual, such a one as only the author's

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wide experience and knowledge could make possible; and while this knowledge has been drawn from military experience, the peaceful application of aerial photography has been kept constantly in mind. There are seven general headings: Introductory; The Airplane Camera; The Suspension and Installation of Airplane Cameras; Sensitized Mate-

rials and Cameras; Methods of Developing Plates, Film and Papers; Practical Problems and Data; and, The Future of Aerial Photography. The book has over two hundred Illustrations, is handsomely bound, and sells for four dollars, net. Published by J. B. Lippincott Company, Washington Square, Philadelphia, Pennsylvania.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, Evergreen, Jefferson County, Colo.

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A. E. Davies, Director Western Lantern Slide Division, 1327 Grove St., Berkeley, Cal.

Arthur H. Farrow, Director Eastern Lantern Slide Division, 51 Richelieu Terrace, Newark, N. J.

NEW MEMBERS

4724—J. M. Goldberg, Y. M. C. A., Wilmington, N. C.

Post cards only, on developing paper, of landscapes, marine, aeroplanes, buildings, etc.; for same. Class 1.

4725—Willard H. Dickinson, East Pleasant Plain, Iowa.

1½x2½, 2½x4¼, 3¼x5½, on developing paper, of miscellaneous subjects for landscapes, mountain scenery, genre, historical, marines and foreign views. Class 2.

4726—B. C. Eddy, 840 51st St., Oakland, Cal.

5x7 and smaller, on developing paper, of general and floral subjects; for subjects of special interest, historical and floral. Good work only sent and received. Class 1.

4727—William Johnson, 500 Park Ave., Effingham, Ill.

5x7, on developing paper, for some artistic portraits or something with "pep". I desire to exchange views or lantern slides.

4728—F. L. Evans, 848 Beach St., Manchester, N. H.

2¼x3¼ to 8x10, on developing paper, of genre, figure studies, landscapes and general pictorial work; for anything of an artistic or interesting nature. I desire to exchange only work of merit. Class 1.

4729—J. Wilbur Read, 3024 Taylor St., Chicago, Ill.

Stereoscopic views on gaslight and printing-out paper, of South African subjects, kaffirs, mining and scenery; for stereoscopic views of historical, genre and marines; all to be first class; will exchange lantern slides providing I can get slides to suit me. Class 1.

4730—A. Araiza, Box 10, San Luis Potosi, Mexico.

6x9 and 4x6½ cm. on developing paper of street scenes, landscapes, buildings and miscellaneous subjects; for anything of interest. Class 1.

4731—G. Myron Allen, 25 Mettowie St., Granville, N. Y.

2x3¼ up to 8x10, on all grades developing paper, of landscapes, mountains, genre, historic and stereoscopic, for aboriginals, still life, genre, historic, old ruins, marines and stereoscopic. I desire to exchange only post cards, except by agreement. Class 1.

4732—W. B. Meacham, Jr., Fort Mill, S. C.

Any size up to 3¼x5½, on developing paper, of national scenery, classic and statuesque female poses; for like pictures. Class 1.

RENEWALS

3541—B. F. Smith, Tygh Valley, Ore.

4154—B. F. Loomis, Anderson, Cal.

4269—W. A. Gillespie, Box 156, Stamps, Ark.

3¼x5½, post cards and prints, on developing paper, of aeroplane views, a few beach scenes, child snaps, portraits, bathing girl and figure studies; for same, but will only exchange same class for the class I receive. Class 1.

4288—E. O. Hoffman, North Liberty, Ind.

4446—Bayard Shields, Box 753, Eureka, Cal.

4330X—O. L. Wahlgren, Box 36, R. F. D. 9, Fergus Falls, Minn.

3¼x5½ and 2¼x4¼, on various developing papers, of Fergus Falls, cyclone views, farm crops and interesting miscellaneous matter; for statuary, monuments, wild mountain scenes, marines, etc. I desire to exchange only first class work. Class 1.

4540—John Stimpff, care Alexander Hamilton Institute, 13 Astor Place, New York, N. Y.

2½x4¼, on developing papers, of landscapes, park scenes, and miscellaneous views; for same and mountain scenery. Class 1.

4561—R. O. Shillinger, Box 364, Youngstown, Ohio.

2¼x3¼, 4x5, 2½x4¼ and 5x7, on developing paper, of local scenery, etc.; for draped and undraped figure studies, etc. Class 1.

4567—G. W. Johnson, 30 Mitchell St., Jackson, Ohio.

4571—Jos. H. Moore, 4025 Warwich Bldg., Kansas City, Mo.

3¼x5½ and 2¼x3¼, on developing paper.

Class 2.

4572—W. K. Van De Grift, 218 W. Berry St., Fort Wayne, Ind.

Class 2.

4587—J. L. Geistwite, 155 R. R. St., Bloomsburg, Pa.

NOTES AND COMMENT

A Department Devoted to the Interests of Our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

Miss Owens is the life of Ing & Allee's photographic department in their Sacramento drug store.

Fred Seylor of the Taprell Loomis Mount factory was again on the Coast during February. We always enjoy his visits.

Wolff & Dolan have bought Mr. Mandeville's interests in Probus-Mandeville oil colors. They are prepared to fill all orders promptly, although they are so busy the factory is working nights.

Woman's Auxiliary of the P. A. of A.

At the International Convention of the Photographers' Association of America, at Cedar Point, Ohio, last July, the Woman's Federation was disbanded and the Woman's Auxiliary of the P. A. of A. formed to take its place.

The purpose of the Woman's Auxiliary is to look after the comfort and welfare of the women attending the International Conventions, and to show how well it succeeds in doing this we quote the following extract from a letter recently sent to the chairman from a well known manufacturer:

"I am especially grateful for the good time the ladies showed Mrs. ——; she had such a delightful experience. She declares she will never miss another convention. This is pleasing to me, as she never would attend one before, and it did us so much good to meet so many charming people."

The dues are one dollar per year and the entire amount paid for dues is to be expended for the comfort and welfare of the women attending the conventions, of whom it is hoped that you will be one. Will you not become a member by sending one dollar to the Secretary-Treasurer?

Women's Auxiliary of the P. A. of A.

ALICE W. CHAMBERS,
Secretary-Treasurer.

7321 Boyer Street, Mt. Airy,
Philadelphia, Pennsylvania.

Well Worth-While Walks

The Sierra Club recently issued its twenty-sixth schedule of local walks covering the period from May first to November first of this year. The walks may be divided into three classes; the overnight trips, which cover Saturday and Sunday, also Monday, when Monday is a holiday; the Sunday trips and the "afterday" trips, two of which are listed for moonlight evenings and for short distances. Probably the most interesting of all the trips will be the trip to Vancouver Pinnacles, May twenty-ninth to May thirty-first. These gigantic monoliths, near the border between Monterey and San Benito Counties, are seldom visited by tourists or even by our Californians, although their rock caverns, gigantic boulders and spectacular cliffs certainly give them just claim to be classed among California's wonders.

This local walks schedule is rich in its expression of the spirit of outdoors and carries an appeal to Californians who love to visit beautiful places away from the traveled road. It should carry a similar appeal to visitors to our State who may attain through such local walks a unique intimacy with our scenery and topography.

The Sierra Club gladly welcomes any and all who may desire to come with them because the desire to come is an expression of a spirit kindred to that which inspires the club members. Copies of the schedule may be obtained through the office of the CAMERA CRAFT.

C. P. Goerz American Optical Co.

The German ownership of the C. P. Goerz American Optical Company, consisting of five hundred and forty-nine shares of its common stock out of a total of six hundred shares, together with all its photographic patents, trade names and other valuable concessions, was sold by the Alien Property Custodian on March 5, 1920, to a syndicate of Boston financiers, composed of members of two important

CAMERA CRAFT

banking houses. The office and factory of the company will continue to be maintained as previously at 317 East Thirty-fourth Street, New York, and the company proposes to continue the manufacture of photographic lenses of the highest quality, as an American enterprise entirely. A force of highly skilled workers, together with the same supervising staff of experts with their many years of practical experience in the making of anastigmat lenses, and under the management of Mr. Fred Schmid, who has been connected with the company in executive positions for twenty years, will give full assurance that the standard of quality of the celebrated Goerz lenses will be fully maintained.

The demand for Goerz lenses continues to be very strong and the present facilities of the factory are taxed considerably to meet the urgent demand. The company has lately succeeded, however, in furnishing the well known Goerz Dagor, Dogmar and Hypar lenses in fairly good quantities, and there is every prospect that the volume of production of the many different types of lenses will soon greatly increase. The prospects for a healthy growth of the company seem very bright and we may look forward to an increased activity of the company in the near future.

The New Heyde Meters

Herbert & Huesgen Company announce that they anticipate a shipment of Heyde Meters at a very early date, no doubt arriving in this country before the next issue of CAMERA CRAFT is published. They are, at the present time, compiling a special booklet that will treat on the uses of the new Heyde Exposure Meter, which is much more simplified than the former model that the firm had on the market prior to the World War. Instead of having twenty divisions for measuring the light on the subject, it now employs eight divisions only, while the new meter is of such a size that it can be carried in a vest pocket. The booklet will contain a special chapter on the use of the meter in copying photographs and also on enlarging on bromide and chloride papers. The old models that were formerly on the market have been discontinued, being superseded by the one model only that is advertised by this firm.

Herbert & Huesgen Company desire this point emphasized as they understand that a quantity of the old models have been pur-

chased abroad and offered in this market at about the same time as the new models are available.

Haloid in Chicago

The Haloid Company announces the opening of a branch office in Chicago, at 68 West Washington Street, under the management of O. C. Busch. Mr. Busch brings to the Haloid sales organization a wide acquaintance among Chicago photographic interests. A full line of Haloid Quality Papers and Haloid Guaranteed Chemicals will be carried at the branch from which Chicago and the Middle Western trade can be promptly and effectively served. The Haloid Company also maintains a distributing branch at 235 Fifth Avenue New York City. Its factory and main offices are located at Rochester, New York.

The Relio Exposure Meter

We have had the pleasure of examining, and of trying, one of the new "Relio" exposure scales and have found it excellent. It is very simple in use, but one setting of the scale or slide giving the exposure for all stops and plate or film speeds at a glance. It is so arranged as to take into consideration different latitudes, showing the exposures for the several states. Another good feature is the fractional exposures being in those figures that appear on shutter scales, and still another and even more unique idea is the listing of the irregular lens stops on some of our best anastigmats, made necessary by their speed, such as $f-4.5$, 6.3 , 6.8 and 7.5 , as well as those special stop systems on the two single lens systems used on some of the smaller cameras. While the new "Relio" is the one examined, it is only an improved form of the original meter which was first placed on the market in 1911; so it has had the test of time that should to no small degree vouch for its merit. They can be obtained from most dealers or direct from the manufacturers, Dotterweich Brothers, Dunkirk, New York. Price one dollar, postpaid.

Illinois College of Photography

The College Camera Club is now enjoying prosperity as never before. Four of its members have been fortunate enough to secure the contract for the photographic work in connection with "The Signet," published by the Senior Class of Effingham High School.

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CAMERA CRAFT

A Photographic Monthly

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Expirations—Subscriptions to Camera Craft are discontinued on date of expiration. The date on the address label on the wrapper shows the time to which each subscriber has paid. Thus: Nov. 09 means that the subscription expires with the number dated November, 1909. ¶**Renewing**—In renewing a subscription, do not fail to say that it is a renewal, giving name and address just as now on the address label. ¶**New Address**—In notifying us of a change of address, give both the old and new address. Should you miss a copy through change of address, advise us of the fact, and another will be gladly sent. ¶**Dealers**—All photographic supply dealers and news dealers are authorized to receipt for subscriptions in our name.

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Japan	Waterworths Limited, 53 Queen St., Auckland
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IN

High Grade Lenses and Cameras

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Some Things We Must Learn

By J. Walter Doubleday



With Illustrations by the Author

We all like to be asked for advice; and, being asked, try the best we know how to gratify the expectations of the one who flatters us by a request for information. A reader of one of my former articles, an article dealing with a more concrete subject, has asked me to write something along the line of improving one's work generally; as he expresses it, "making one's general work more satisfactory". This was some months ago, and I have delayed fulfilling my promise with the intention of going through my negatives and making up a set of illustrations to fit the various points thought worthy of mention. But this has been found impossible, and consequently, I am simply sending the only prints I have available, an album containing some of my Yosemite prints, in order that, while having no particular bearing upon my subject, they may serve to lighten up the pages, and perhaps give the reader the impression, a perfectly correct one, that I am but an ordinary worker such as the most of us are, without any very burning desire to be ultra-artistic, or any great fear of being too utterly commonplace.

To start with, I fear too many of us fail to see the subjects that present themselves to our cameras in just the way we should. The eye sees form, of course, but the satisfactory impression is heightened by reason of the perspective, the sense of distance, being well conveyed by the visual image, while it is not so shown in the lens image produced in the camera. As we look at a pleasing landscape, with the sun at our back, the several planes, ranging from the foreground through the middle distance to the distance, all take their natural posi-

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tion. A clump of trees in the middle distance is seen to be well in advance of another group further back, but photographed with the light flat upon both, they merge into one flat mass without any relief whatever. To get relief, to get perspective, the light must come from the side, so that the dark side of the nearest group is outlined against the light side of the further one. This simple matter of the lighting has much to do with other desirable elements in our work. With the light from the side we have shadows, shade and half-shade, and these give us a variety of tones instead of one flat expanse of tone that is broken only by such slight variation as the color of the several objects may introduce. And what is more, any dependence upon color variation for the pleasing distribution of tone variation in our pictures is almost sure to be disappointing. We must have light and shade. We can no more make a pleasing camera picture without light and shade than we can draw a pleasing crayon picture on a sheet of white paper with a light gray crayon alone.

If you wish to prove to yourself the importance of light and shade in your pictures, try the extreme case of a few distant buildings photographed from an elevation such as a hill affords, working with the light flat upon the scene. It is hard to time such views exactly right, for the reason that they provide little contrast, so it will be better to make two or three exposures, varying the time. Otherwise you will be inclined to think that the excessive flatness is due to incorrect exposure. Then make the same or a like view with the light well from the side, and notice the difference. And particularly observe the difference in the solidity or form of such buildings as present a corner to the camera. In one case they show a uniform flat surface, as if only one side was presented; in the other, there is form, because one side is light and the other dark. In fact, one can quite easily learn this same lesson by taking a corner view of a more near building, one occupying the principal portion of the view. In a flat light the two sides presented might as well be but one unbroken expanse, were it not that the form of the roof, or some other detail, tells us that what we see represents two sides of a building. And getting our light from the side not only gives a more correct idea of the form, but it makes a better picture. We can, furthermore, here make the suggestion that in taking such a side view of a building, it is nearly always advisable to show much more of the front than of the side, in other words, take the picture from such a position that the near corner does not divide the picture into two equal halves. This brings us to another matter, that of realizing that every building, as a building only, has one certain most favorable aspect, the particular one the architect selected, or rather, used, in designing the structure. This does not mean that the building may not present favorable aspects from other viewpoints, particularly if trees, other buildings, or even favorable lighting and cloud effects may influence the scene.

You have, no doubt, seen pictures reproduced in the magazines, pictures that showed a very pleasing arrangement of light and shade in the foliage behind some figure or group that served as the subject-matter of the composition. These are always well worthy of study. To be really capable as a photographer, we should be able to pick out such settings for our pictures; in fact, we should be able to pick out such pleasing arrangements of light and shade in pure land-

SOME THINGS WE MUST LEARN



A STREAM IN THE HIGH SIERRAS



WHERE THE RIVER LOVES TO PLAY

scapes where no figures were involved. We pose a couple of our friends, as walking towards us along a pretty pathway, only to find, on developing the negative, that the pretty roadway, reproduced on a flat surface, is simply a chaotic mass of spots and streaks of light and dark, with our subjects hardly distinguishable from the general mass. And while we were doing this there might have been, directly to the side of our camera position, masses of foliage that were so lighted as to give a pleasing effect in the picture, although far less inviting to the eye than the pathway we selected.

This all goes to show that we must acquire what we might call a "photographic eye". We must learn to see the scene before us in terms of light and shade, influenced somewhat by the way in which certain tones and colors photograph. We must learn to do this, rather than continue the normal practice of seeing color and perspective and being influenced thereby. Color we do not get in our photographs, and perspective or a pleasing separation of the different planes is far from being a matter of course. Such perspective as we do get, such separation of planes as we must have in our pictures, must be secured by the right distribution of light and shade, by a proper arrangement of the different degrees of sharpness, and by seeing that the softness due to intervening atmosphere is graduated according to the demands of truthfulness.

Quite often we find a bank of distant trees, particularly if situated across a body of water, coming out almost coal black in the print. This is all wrong, as the most superficial observation will show. Even a huge pile of the blackest coal, at such a distance, would appear several shades lighter than our trees in the photograph. A color filter will help this some, proper exposure helps also, but one may have to resort to slightly staining that portion of the negative in order to prevent too dark printing. As against this our foregrounds are nearly always too light in tone. They may, perhaps, be quite true to nature, or at least as true thereto as other portions of the print, but yet too light to satisfy the eye as being a proper support for the picture above. If one will take an ordinary landscape negative and print therefrom in such a way as to give the foreground more depth, the distance less, and the top portion of the sky again a slightly deeper tone, he will be surprised at the increased stereoscopic effect secured. Instead of the middle distance appearing to rise as a wall, set off with the trees in the distance appearing as small plants growing from the top of this wall, the scene will take its horizontal position and the distance appear as such.

We must learn, further, that with the tendency of our photographic productions to present the material before the camera as if all ironed out flat on one plane, the surface of the print, we must be quite careful to secure this effect of receding distance. Go over any collection of landscape prints that you may have available and observe how few, if any, of them are pleasing except as they show the foreground, the middle distance and distance, all clearly defined. What we call a "short" view may be pleasing as a background for some predominating subject, some picture of action, or something of that kind, perhaps an interesting bunch of ferns beside an old stump of tree trunk, something of pictorial value in itself. Such subjects may be perfectly satisfactory with little

SOME THINGS WE MUST LEARN



THE INCOMPARABLE YOSEMITE

more than the foreground on which they stand out against a solid middle distance mass of shrubbery, buildings or the like. But the average landscape must present all three of the planes mentioned and must also afford the eye an easy passage from one to the other into the distance. Find, if you can, a picture



A VISTA OF THE HIGH SIERRAS

in which the entire middle distance, or the distance, is cut off from the view by reason of the conformation of the foreground, or of the middle distance if the latter, and I think you will find an unsatisfactory composition.

Giving the eye an easy route to travel from the foreground into the distance, is another of those requirements that we must learn to see and use. Too many good pictures are spoiled by a failure in this direction. Instead of the eye being led into the picture, it is led quite directly and abruptly to one or the other side of the picture-space, most generally by some well defined line that is formed by a roadway, a stream or even by a strip of light upon the ground. Not only is the eye carried out of the picture, but the beholder is given a feeling that something has been cut off, something removed, solely by the abrupt ending of this leading line. A picture that is right can never have this effect. The beholder is never given any cause to feel that there is something outside of the picture-space that would in any degree add to his enjoyment of what is shown. There is no feeling that his eye is confined by the boundaries established by the edges of the print. It should, as presented, satisfy him as being whole and complete.

This consideration of ill-placed paths for the eye to travel, as the eye certainly will, if the path is sufficiently prominent by reason of its contrast with the rest of the picture, be it a shore line, a wall, or simply a streak of light along the grass, brings us to still another point having to do with contrast in other than the form of a path. Take any picture that may be handy and observe how the eye returns again and again to that point where the most decisive contrast of light and shade exists. The portrait photographer early learns that he can use this arrangement of contrast to his great advantage, or by neglecting it, can destroy much of the charm that his work might otherwise possess. We have all seen portraits in which the subject was so lighted and so relieved by the background that some quite unimportant portion, perhaps some objectionable outline of an unimportant portion of the figure constantly fought with the features of the subject for eye attention. Quite frequently an otherwise pleasing landscape is utterly spoiled by this strongest contrast being allowed to assert itself at one side of the picture, entirely apart from the logical eye-focus of the composition, the real point of interest in the picture.

We must learn, or perhaps I should say, we will learn, that there are no hard and fast rules governing any of these matters over which we give ourselves so much concern. One teacher will tell you that the normal focal distance of the eye is so many inches, and for that reason any picture taken with a short-focus lens is all wrong. In fact, the human eye sees sharply, without shifting, only a very narrow angle, I have forgotten just how narrow, and therefore lenses of that narrow angle only should be used. All very good, all very logical, but not all so very hard and fast as we might be led to suppose. Imagine yourself standing opposite a large, imposing edifice in which you are interested. Your eye travels, quite unconsciously, over the entire front. Quite truly, the eye, kept stationary, does see only a portion of this front, but our eyes are purposely so constructed that they do shift about and with such ease that we are hardly aware of their so doing. The mind does not register the fractional part of the view that the stationary eye can see, but instead, what the mind does

SOME THINGS WE MUST LEARN



THE RUGGED SIERRAS

record is a very wide angle view of the scene presented. A picture of the building, taken with a wide angle lens, may be false in perspective, but it is truthful as a representation of what the mind saw.

On the other hand, the view presented may be a roadway along which we are progressing. The mind concerns itself with the vista directly ahead. The foreground concerns us only in a superficial way, just enough to avoid stumbling^o should the roadway be other than smooth. We do not even see the tops of the trees that border our road well into the middle distance. We are looking ahead, we are interested in what the road presents in the distance. To show this picture that the mind finds interesting, we require a lens of very narrow angle, perhaps one of even less than the one specified by the rule based on the angle of the eye. Instead, we get, with our ordinary lens equipment, a wide and generous expanse of light, uninteresting foreground with the most prominent feature in the picture, the outline of the tree tops against the sky, a feature that did not interest us in the least as the scene itself was viewed. The remedy is to trim away these tree tops, this foreground, and the unnecessary material at the sides and enlarge the small portion remaining to a suitable size.

But, the maker of a picture often argues, trimming off this side, or that, takes away a most interesting bit of subject-matter, perhaps a pretty clump of vines or other foliage against one of the tree trunks or a fence corner in the immediate foreground. Granted, but we must learn that our pictures must have concentration. Entirely too often our negative contains the material for two or more pictures, perhaps somewhat overlapping each other, but two or

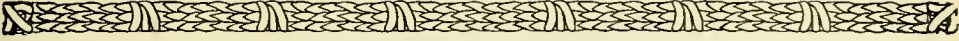
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more pictures just the same. No doubt, by going a few feet to one side so as to make our roadway vista a secondary consideration, quite a pleasing picture could have been evolved from the fence-corner material that is so interesting but so out of place in our roadway scene. And this does not mean that our foregrounds must be flat and uninteresting. Just the opposite is the case. They should, as a rule, be broken up and fairly strong in their distribution of light and shade; in fact, such shadows as the foregrounds contain, should be darker than the same class of shadows further back, for so they appear to the eye.

While on this subject of foregrounds, it might be well to call attention to another point that is frequently overlooked, namely, some sort of an indication that the beholder could, did he so wish, walk safely into the pathway we have urged should be provided for the eye. Or at least, that he himself could have come upon the same scene without recourse to an aeroplane or a high scaffolding. Too often we are shown pictures, generally those taken in a mountainous country, with the extreme tops of quite realistic trees rising from the lower boundaries of the print. These seem to suggest that the photographer had evidently descended from a balloon, by means of a rope, just far enough to allow him to photograph the scene over the tops of these trees. We at least find it difficult to view the pictured scene with the same free mind that we would have were we to visit the spot and come upon it, tree tops and all, from a perfectly safe and stable standpoint, such as a roadway might provide.

And right here is where our main efforts to learn must be made. We must learn that what we really see is more a matter of mental impression than it is of an optical one. We look upon one scene and the impression is that of "all outdoors" inviting us to wander afield. To represent such a scene the same impression is best conveyed by a quite generous amount of sky being allowed to occupy the upper portion of the print. And yet, turning about and viewing the roadway by which we have come, the impression is entirely different. To photograph the latter with the same lens and camera would give us a picture that, to record our impression, would require that a generous portion of the sky be trimmed away. Instead of the "all outdoors" effect, there is a feeling of being restrained, though not unpleasantly so, by the boundaries of the roadway and by the trees that perhaps overshadow it. One bit of water may give us an impression of a surface much greater than it actually presents, while another bit of the same area may seem quite narrow and confined. We should learn to see and record these differences, realizing fully that our lenses, having no mentality, cannot be expected to, in the slightest degree, indicate even an approach to a normal mental image. Its work is purely mechanical, and to that extent we must learn to guard against its shortcomings. And to do this we must learn to distinguish between what it would give us and what it can be made to give us if used with an understanding of what is really required.

No good or lovely thing exists in this world without its correspondent darkness; and the universe presents itself continually to mankind under the stern aspect of warning, or of choice, the good and the evil set on the right hand and the left.—RUSKIN.



What To Enlarge

By Edgar Felloes



With Illustrations by the Author

“Take it small, then enlarge; the popular photographic method of today. Consider this matter of enlarging, so universally practiced, yet with advantages so unappreciated. The general idea is, to enlarge from our negative and have a bigger print; what we should do, is to enlarge from a portion of our negative and have a better picture. The object of this article is not to induce the worker to succumb to a siege of enlarging and thereby to clutter the walls of the home, but to speak of enlargements of small size, 5x7 inches, or thereabouts.

The following remarks do not apply to commercial photography so much as to pictorial. In the former case we are bound to certain set requirements which govern our undertaking; while, in pictorial photography on the other hand, we have no such trammels and a better understanding of the reason for doing things will add zest to our hobby. Just “shooting” to shoot ends in shooting to kill: it’s our hobby we kill; we tire of it.

Authorities tell us that the eye, when stationary, has a visual angle of about thirty degrees, and only half of that angle is really clear to the vision. Granting this, is there any good reason to offer the eye, in a photograph, more than may be seen in thirty degrees? Should we not rather approach fifteen degrees than exceed the thirty? What do you think about it?

A narrow angle in a lens means a lens of long focus; yet that does not imply you must have such a lens. You probably know the angle of your lens is measured by the size of plate it will cover. If, for example, you have a 3A or post card camera with a seven-inch lens, that lens on that plate at seven inches focus, gives an angle of forty-four degrees on its greater base; now, half of that angle, which also means half of that plate, at the same focus, gives us twenty-two degrees. If we use a narrower angle, which means the same as a smaller portion of the plate, we are working, relatively, at a still longer focus, though our lens remains just the same, seven inches.

Some may say: “But under these conditions the picture will be quite small.” That is true, but that part of the negative is just “What to enlarge”. On the other hand, others might argue, on account of its greater length of focus, “Why not use a single combination of the lens and get a larger picture direct?” There are three objections to this. The first is, hand cameras rarely have sufficient draw of bellows. The second objection, the foreground, if close, would be out of focus from the same station point, although this might be remedied with the swing-back did hand cameras usually have swing-backs. The third difficulty is, the lens is slowed down considerably, because the diaphragm openings have an altered value by reason of the increased focal length, making a quick exposure

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out of the question. If what I have written is new to you, you may, perhaps, realize that your own lens is quite a wonderful little instrument.

Today, the best examples of pure photography are to be found on the moving picture screens. The reader must have been impressed with the wonderful realism shown in some of the best work. The size of the little positive on the celluloid film is only one inch wide, while the lens most used to make the negative is two inches focus. This means that the focal length of the lens is equal to twice the width of the picture.

Thinking along these lines we might conclude that our post card camera, with its seven-inch focus lens that covers the five and one-half inch plate, should be of eleven inches focus, or twice the greater dimension of the plate, but this would be impractical. Had the manufacturers supplied this little camera with such a lens it would certainly have been a clumsy outfit, and the lack of depth of field would have made it almost useless as a hand camera.

From what I have written, you may know how to encompass the question of angle of view, but I will repeat, in another way. As the focal length of the moving picture lens was twice the width of the picture, we can, if we wish, take three and one-half inches out of our post card plate; as twice that measurement gives us seven inches, the focus of the lens we are using. The angle of view then becomes exactly the same as that of the two inch lens. Our picture is larger, of course, but that is the only difference, and it is quite an advantage. A two-inch lens on a one-inch film, gives us an angle of a little less than thirty degrees, which comes quite near to the number of degrees an eye is capable of seeing. Hence the satisfactory mental impression our smaller pictures will give.

In pictorial photography, mental impression is everything; a natural perspective is of infinitely more importance than results achieved by flirting with fads. The majority of photographs show considerably more of the view than can be included in the angle we have been considering. Some may contend that such photographs are perfectly satisfactory, for the reason that the eye can see the whole picture. Yes, the eye can see it all because the subject is portrayed in miniature; but, because of that, the picture suggests only littleness, the mental impression is still handicapped by reason of the excessive angle. It is a common assertion by artists that photography does not give correct perspective; the trouble is really with the photographer and not with the lens.

The advantage of the narrower angle is apparent and there is no more work or expense involved in producing such results, if the suggestion given later is followed. We are all possessed with an instinctive desire to fill up the picture space with the object, to get it as big as we can in the picture; but, if we work under these conditions our perspective becomes distorted and the result is cramped. There is a "bigness" more important than the area of inches, and that is the impression of bigness; and we can strive for it if we realize that it lies in the path of the narrower angle. Light and shade also play a part, but that is dependent upon the hour in which we may happen to work.

And these dictums are equally applicable to portraiture, the fault being very noticeable in large heads or "close-ups", where the features are made to occupy the whole plate. Where the worker is restricted to a lens of too short a focus for

WHAT TO ENLARGE

this class of work, he should keep back and trust to later moderate enlarging. The outdoor portrait here shown was made with a seven-inch lens, the distance from the subject was about seven feet, although nine or ten would have been better, and the portion of the negative shown was enlarged two diameters. A negative giving a contact print of the same size of picture as the enlargement, would have required a fourteen-inch lens used at the same station point. Now, there is quite a difference in the price of these two lenses, assuming that the camera would accommodate the longer focus one, and I think the seven-inch lens did very well. All retouching and dodging has been purposely avoided, as I wished to show what a medium-priced lens would do. This portrait was made with the ordinary f-7.7 anastigmat, on a post card camera, used in the open.



The reader's attention is drawn to the accompanying picture of a church. It will be noticed that the first and third views are of the same size; they were taken by the same lens at exactly the same focus; yet the third print has half the angle of view embraced by the first picture. To get this latter reduced angle I merely moved back to twice the distance from which the former was taken. The second print shows how the view looked from this more distant station. It was simplicity itself to enlarge the central portion from this negative by two diameters, or what some might understand as twice the size, and thereby secure the third picture, which may be called "the same, only different" view of that church. Examine the first picture and notice the following results: The central dome appears taller than the corner spires, and as such is not the case in reality, a wrong impression is given. In the third or last picture, the rela-

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tive height of the dome and spires is maintained. In the first, the trees dwarf the building and rob it of much of its dignity, so that here again our impression suffers. In the third picture, the effect is far more satisfactory. There are other points, but I will leave the reader to study the two prints in comparison with each other.

The advice to trim down prints is very, very old, and it still holds good; but I feel pretty sure that the possessor of a vest pocket camera, or a $2\frac{1}{2} \times 3\frac{3}{4}$, would be justified in assuming that such advice was never intended for him. He might well ask: "What would I have left?" A better way than either trimming the print or leaving it entirely untrimmed, is to mask the negative and enlarge the desired portion. The improved results ought to make one's heart glad; for, if the masking be sufficient, our enlarged picture will, as a certain writer once said, "Loom up with a great loomness." And again, we sometimes discover a picture located at some little distance, or so located that to approach the point of interest may detract from our picture, or it may even be impossible to get nearer. A telephoto lens might help us and then again it might not, for the attractiveness of our view may be owing to the combination of the near and distant subject-matter that such a lens would not encompass. Let us see what our "old standby" can do for us in such a case. For this work we need a color-sensitive emulsion and a yellow screen. In my own work I favor a panchromatic plate and a Wratten's K3 filter, made by Eastman. Owing to the distant view, the timing need not be greatly increased, and the negative should show, quite clearly, all that is wanted.

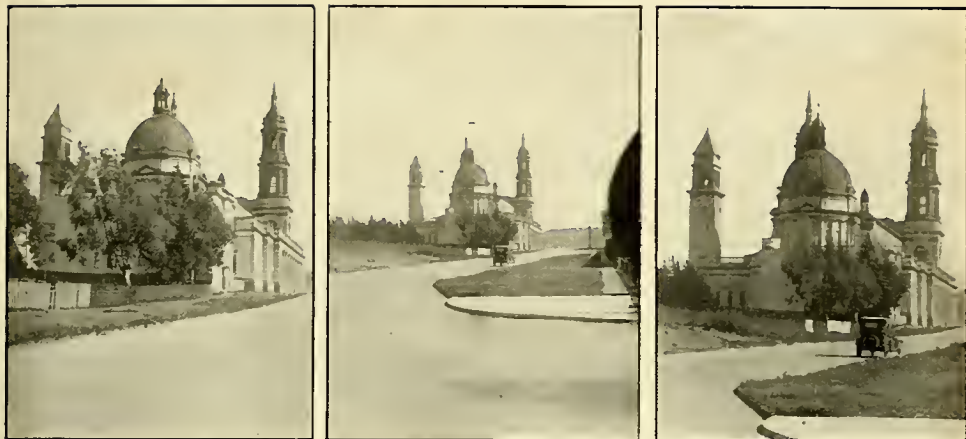
CAMERA CRAFT has published articles on home-made enlarging outfits, and while they are good, some perhaps cannot avail themselves of so much apparatus. Anybody, though, can have one of the set-focus Brownie enlarging boxes, and to enlarge with one of these outfits is no more difficult than to make prints by contact. There is no setting up, no focusing. They are calculated to give an enlargement of two diameters and they do the work well.

As some reader might wish to know how much view angle is included in the selected portion of any picture, I have drawn a chart that will make such calculation easy. All one need do is to copy it and from the negative have a bromide enlargement made of sufficient size to suit their particular lens; if enlarged to 11×14 , the diagram will serve for all hand-camera negatives.

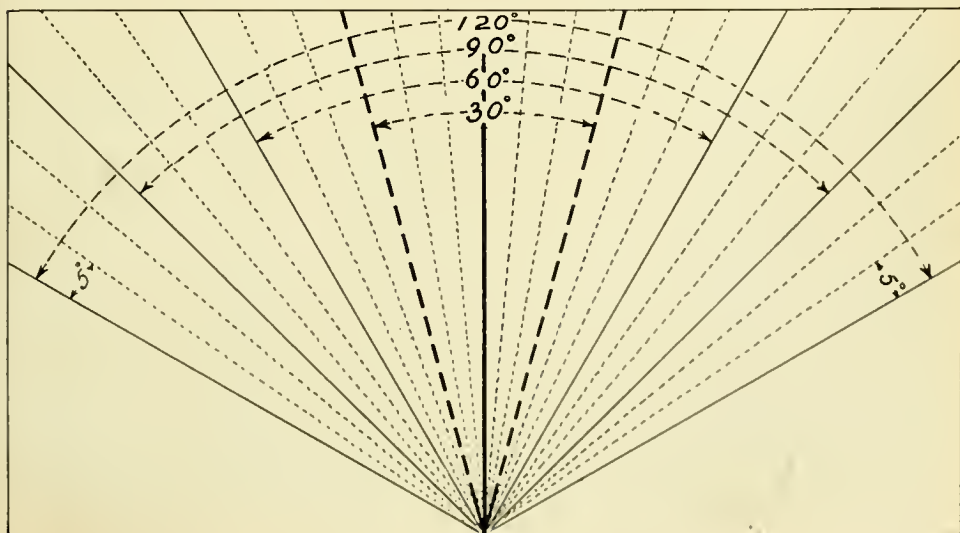
To use the chart, first ascertain the approximate focal length of your lens. In Bausch & Lomb's catalogue are given the focal lengths of their Tessar, Series IIB, f-6.3, which I think will be found to pretty closely agree with the measurements of other manufacturers' lenses: $2\frac{1}{4} \times 3\frac{3}{4}$, $3\frac{1}{2}$ inches; $2\frac{1}{2} \times 3\frac{1}{2}$, $4\frac{5}{8}$ inches; $3\frac{1}{4} \times 4\frac{1}{4}$, $5\frac{1}{4}$ inches; 4×5 , $6\frac{1}{4}$ inches, and $3\frac{1}{4} \times 5\frac{1}{2}$, $7\frac{1}{8}$.

From the base line of the chart measure upwards the focal length of your lens, mark the point, and through that point draw a line across the chart, parallel with this base line. Lay your negative on the chart, allowing its base to rest on the line of focus just drawn, sliding it to the right or left until the perpendicular center line of the chart show through the center of the negative. The radial lines intersected by the base line of the negative will designate the angle of the subject-matter of the negative. On each side of the center line is a heavy

WHAT TO ENLARGE



broken line, and between these lies our limit of thirty degrees, the limit within which lies that portion of the negative to be enlarged. Some may, at first, rebel at masking off from the negative the beautiful things shown beyond that angle; but after a while one will, instinctively I believe, find within the angle that thirty degrees will include, the very thing that prompted him to make the exposure. This, I admit, cannot always be done; but, out of doors, at least, such cases are the exception. Wherever possible, do not forget to step back and get the pith of your subject well within thirty degrees, and then, if necessary, enlarge. Enlarging does not alter your view angle, it merely makes the picture larger. My hand camera, being a 3A, is almost invariably used upright, that is, the base line of my film or plate is three and one-quarter inches, this with a seven-inch lens gives me an angle of view of a little less than thirty degrees. The camera, turned the other way, is very rarely used: I do not seem to find a need for it.





Practical Retouching

By Emerson Beers



With Illustrations by the Author

The chief aim of the retoucher should be to correct and improve, where possible, the work of the operator, and for that reason some knowledge of operating is of value to the retoucher. If it is not possible to secure the help that actual operating brings, one should secure a plaster cast of a head and study it, under various lightings. Much can be learned through this study of the lights, half-tones and shadows, particularly their distribution as influenced by form.

There is a tendency on the part of some retouchers to overdo the work, and thereby lose character, and there can be no good portraiture if character is not retained. One should study faces, on the street car, in the street, and at home. Observe how the light falls, where the shadows come, how a change of position alters the effect. One can learn much of value by following this plan, be he either an operator or a retoucher.

In the work itself, be stingy with the lead. There are places on a negative that do not call for lead, so why put it there? Do not try to make a youth out of a middle-aged person, or a middle-aged person out of an elderly one. Use judgment in handling the pencil; study the face before applying the lead, but do not study too minutely. Eye strain is usually the result of too close contact between eye and negative. Closing the eyes for a few seconds, at intervals, will be found a great relief. The eyes need this rest and, if they do not get it, glasses will eventually be found necessary. A good method of putting new life into a tired and strained eye is to bathe it in hot water. One cannot realize how beneficial this is until he tries it. The retoucher can keep his eyes in good condition by bathing them daily. The one who hopes to make good in this profession must have a strong eye, a steady hand, and a world of patience.

Study the smiles, the frowns, the sneers and the corners of the mouths that droop. In other words, study the varying expressions and the distribution of the lights and shadows that cause these effects, and you will then learn how to correct these unpleasant features. And at the same time study character as shown in the face. A good chance to study character, why not? One has the baby, the child, the youth, the middle-aged and the elderly; some with faces full of character; other faces that are almost blank. Some faces may need brightening up, perhaps a little sadness removed. Study how this can be accomplished by a few strokes. It may be a case of that objectionable stare so often seen. Even this may sometimes be corrected. There are innumerable shortcomings in the negatives that the retoucher can improve if he or she is a careful observer.

PRACTICAL RETOUCHING



ORIGINAL PROOF



PROOF RETOUCHE



FINISHED WORK

The operator, frequently, is pushed for time, the sitting is made hurriedly, and some things are overlooked; the hair, the drapery or something else. Here is where the fine work of the retoucher's hand can be shown, and particularly if he has some knowledge of operating, for that better places him in a position to correct and improve. Retouching will be found interesting indeed, if the retoucher cares to have it so. A touch of lead here or a touch of lead there, if properly placed, sometimes brings a wonderful result. Study where you can improve on a negative and you will make yourself more valuable in the retouching world. The best retouchers are those who retain the character. Place your lead where it is needed and do not make any unnecessary strokes.

Study your negative before starting to work on it. Why do some retouchers persist in creating white-faced ghosts with their pencils? They are not trying to retain character; the lead is piled on, all the plate can stand, until the face resembles a billiard ball and has that ghostly appearance that characterizes



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the over-retouched portrait. This manner of working is incorrect. Preserve the half-tones and do not destroy the shadows, simply soften them. If a well-modeled portrait is to result, this method will have to be followed. Do not copy someone's stroke, but cultivate one of your own; no two retouchers work alike. The main thing is to place the lead correctly, as little as it is possible to use, for by so doing one can retain the character. Far too many faces are flattened by too much lead being used.

With these few general instructions, I will consider the actual requirements for the work. We will start with the retouching stand. One can be purchased or made to suit the user. I have seen some very good home-made ones. One with a surface about 16x20 gives good air space, and an angle of about forty-five degrees will be found most convenient. A 3x3 opening is usually preferred; and to work to the best advantage this opening should be on a level with the eye. I have seen many retouchers strain their eyes and neck, because the opening for the negative was not in the proper place. Wire racks attached to the stand are convenient for holding pencils, and some simple devices for holding the negative in place can easily be arranged. A light wire frame, attached to top and sides of the stand, covered with black cloth to shut off light from top and sides, completes the stand.

Three grades of leads are generally used. These, for the soft, ranging from B to 6B, then the medium or F, and the hard ones, ranging from H to 6H. A medium lead is perhaps the best for a novice to start with. Usually when one first takes up retouching, he finds his touch a trifle heavy, and that is why I would recommend the use of a medium lead in preference to a soft one. After a light touch has been acquired, a soft lead may be found more practical. Some professional retouchers use soft leads exclusively; while again, others have a greater success with the hard ones. There are parts of a negative and there are defects to be remedied in which the soft lead works to better advantage than the hard. Retouching varnish or "dope", as it is called, seems at times to take one grade of lead better than another. Damp weather has its effect and other conditions vary. All these things must be carefully considered and the work handled to the best advantage. One of the best retouchers I ever knew used an F lead for most of his work. Use the lead, be it soft, medium or hard, with which you can accomplish the best work. It does not pay to buy cheap lead; get the best. Paste or glue a piece of fine emery or sandpaper on a piece of wood or cardboard for a pencil sharpener. If the pencil is allowed to roll slightly between thumb and forefinger while sharpening it will have a more uniform finish at the point.

Retouching fluids, or "dopes", play an important part in the work, being the medium which insures the leads adhering and remaining on the negative permanently. A mixture of rosin in turpentine is largely used, prepared by simply dissolving rosin in turpentine until it becomes of the proper consistency, about that of light varnish. Practice will enable one to apply it properly by means of a small pad used with a circular motion. It must not be applied too thin or too thick, and one must blend off the outer edge of the part covered or it will show in the print or enlargement. Some dopes have a tendency to soften the retouch-

PRACTICAL RETOUCHING

ing, while others do not, and those that catch and hold dirt and dust should be avoided.

A north light, that from a north window, used to be the preferred one, but artificial light is now employed to a greater extent. One cannot always secure a north light, and then again, daylight is always changeable. Artificial light is steady, and the blue Mazda is easy on the eyes and a fine substitute for daylight. Do not use a light that is too strong or too weak. Of course, a dense negative needs a stronger light than a weak one, so that it is best to have a reserve. But this reserve can be softened down with opal or ground-glass beneath the opening for general work. If the opal is not obtainable, two thicknesses of ground-glass will answer the purpose. If a yellow light be used, soften it with white or blue tissue.

It is of vital importance to have a correct light, as many eyes have been strained by using an improper one. Working with a poor light will soon bring on glasses. The tendency is to use more lead when working with artificial light, and this should be guarded against. One is inclined to see more than they should. The work should be finer, and it should be done faster. Some retouchers work with a great deal of light coming in on their negatives from the sides and the back of the stand. This should not be done, as reflections are caused and eye strain results. The light should come from one source only. Where the eyes have been strained, perhaps by bad light, I have known retouchers to relieve the effect through the use of eye-glasses of a light amber shade.

The photographer, while operating, often fails to notice dearranged or stray strands of hair, and as a consequence the retoucher has extra work on his hands. The stray locks that look bad have to be removed with pencil or knife. Hair pins, where they show badly, have to be taken out. Perhaps there is a part in the hair showing too prominently. This is easily corrected. Sometimes the negative is under or over-developed, and a building-up or toning-down of the lights in the hair becomes necessary.

Much can be said about the use of the knife in etching. Make sure that the tool is a good piece of steel to begin with, and then keep it in good shape at all times. The use of the knife or etching tool is manifold. Too prominent features can be corrected or improved on in many instances; cross-eyes, false lights and other defects, can be remedied with a little work. There is also the double chin, too conspicuous dental work, stray locks of hair, dearranged drapery and the like, the special field of the retoucher capable of using the knife. The background, sometimes, needs attention. A light touch and lots of practice, together with a study of form and detail makes a good etcher. The work is very much neglected by the average retoucher. A good negative is often lost through the inability of the retoucher to do intelligent, careful work with the knife. The more proficient one becomes in the use of the knife, the greater efficiency he can achieve and the more salary he can command.

Again, the better pictures do not make their beauty felt so rapidly on those who have never seen them before, as pictures of more flashy or vulgar attractions; the latter would therefore be frequently chosen.—RALPH RADCLIFFE WHITEHEAD.



Intensification

By W. G. Earle



I believe that every photographic operator will admit that he frequently finds it necessary to intensify a negative in order to produce the best possible results on the grade of paper he prefers to use. He will probably also agree that he can get better results by strengthening his negative than he can by using paper of a harder grade, or one giving more contrast, and it often happens that a negative only needs a little added strength in certain parts, or local intensification.

Formulas for intensification are to be found in every book that claims to give general information on photographic manipulations, also in all of the photographic magazines. But I have never seen in print a formula that will produce results which, for convenience of operation and for effectiveness, to equal Victor intensifier and possibly other brands supplied by live dealers. Victor is my own favorite for either complete or local intensification, and for producing the exact degree of intensity desired, it excels anything I have been able to mix up for myself.

It is well known that about nine-tenths of the published intensifier formulas call for a double operation, the first of which is to whiten the negative film, either in mercury or by other means; and then, after thorough washing, to darken with sulphite of soda, ammonia, or other means. This method is only satisfactory when a medium degree of intensity is to be added to the entire negative. It is unsatisfactory when only a slight increase in intensity is needed, because of the difficulty of judging just the right moment to stop the whitening operation, with the resultant liability of unevenness. And again, it is wholly unsuited to local intensification because of the fact that it is almost impossible to blend the whitening operation imperceptibly into the unintensified portions, as is necessary in order to avoid harsh lines.

Hence a one solution preparation is far superior to any double operation method; because it can be stopped instantly, when the exact degree of intensity desired has been secured, and because for local intensification the edges can easily be blended imperceptibly into the surroundings. Often a very strong degree of intensity is needed, but I have never seen a formula in any photographic publication, or published by any plate maker, for either a single or double solution intensifier which would produce an intensity of more than half the strength of the ready made preparation mentioned. In my judgment, the man who mixes up his own intensifier is much like the one who makes his own apparatus, his own flash powder, his own mounts, etc., instead of buying such goods from those who are properly equipped for making them better than anything one can possibly make for himself.

It has long been noticeable that the successful photographer buys the best

INTENSIFICATION



THE WINDING ROAD

By ALBERT E. DAVIES

preparations and apparatus the market affords, while the one who never "gets anywhere" is generally the one who is always fussing and experimenting in making the things he needs. He may save a few cents, but he loses time, opportunity and money.



WIND SWEPT AND SAND STREWN

By ALBERT E. DAVIES

Under-Water Photography

By J. E. McCormick



One of the greatest accomplishments ever achieved with a camera was that of A. B. Barringer in successfully filming the under-water scenes for Annette Kellerman's film production.

Miss Kellerman's experience has involved every known type of photographic contrivance intended to secure the desired results, but none were found entirely satisfactory. Mr. Barringer has labored for over five years to achieve his ambition of devising a method of photographing her swimming accomplishments, so that they might live upon the motion-picture screen. This goal has now been reached. By means of his new photographic bell he is able to secure, for the first time in the history of photography, clear and sharp under-water stills, heretofore impossible.

The equipment is so constructed that it will work at any depth up to two hundred feet, the capacity of the three-cylinder, high-pressure air pump that supplies the chamber with air. The bell is so equipped that the operator may move it about on the bottom, just as he would move a camera about on a stage; the weight under water being about seventy pounds, as compared with eighteen



ANNETTE KELLERMAN IN HER ELEMENT

PARAGRAPHS PHOTOGRAPHIC



THE APPARATUS USED IN FILMING MISS KELLERMAN

hundred pounds, the weight of the bell at the surface. There is a microphone connection between the cameraman in the bell and the director at the surface, making the under-water work almost as simple as using a camera in the studio.

The allowable view angle is wide enough to embrace an extended field, and there has been fitted a special lens adapted to the greater density of the water, so that there is an excellent penetration of over one hundred feet. The picture of Miss Kellerman reproduced herewith has purposely been made somewhat soft, in order to give a more natural under-water effect.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

FIGURES IN LANDSCAPES: Quite often a certain landscape is pleasing enough to be worth recording on account of the appeal that it makes, but reproduced in monochrome it leaves something to be desired by reason of the diminished interest due to lack of color. The scene reproduced herewith is an example that I came upon recently. I liked it so well that I secured two subjects and returned to the spot, making two exposures without changing the position of the camera in the least. The first shows the original scene, and the second is exactly the same, except that the two figures have been introduced. I think the reader will admit that these last give increased interest, and



THE SAME LANDSCAPE WITH AND WITHOUT FIGURES

somewhat improve the composition of the picture. Where the landscape calls for assistance the proper use of figures will often save the day.—L. R. M., New York.

VARNISH FOR FILMS: Forty to fifty grains of best gum dammar dissolved in each ounce of pure benzole makes an excellent varnish for films, one that is applied by immersing the films therein and then pinning them up in a current of air to dry.—J. K. L., Oregon.

CLEANING STAINED BROMIDE PRINTS: The print is first hardened by soaking for about half an hour in diluted formaline and then immersing in a solution of one ounce of alum in ten ounces of water to which has been added four or five ounces of ordinary hypo solution and about twenty minimus of nitric acid. This bath is used hot, almost at the boiling point, and an immersion of only the briefest nature serves to remove yellow stains. If the immersion is lengthened to two or three minutes an excellent sepia tone results.—E. D. C., Vermont.

A Belgium Salon In August

The Federation des Circles Photographiques d'Anvers announces that it will hold an international salon of photography, under the high patronage of Her Majesty, the Queen of Belgium, co-incident with the Seventh Olympic Festival to be held in August at Antwerp, Belgium. We are assured that their artists, as well as the public will have the keenest interest in the examples of the work of our pictorial photographers that they trust will be forthcoming as a result of their urge to that end. With the efforts being put forth by those having the matter in hand, the event should prove one of no small importance to the pictorial workers of this and other countries, making it well worth our while to submit of our best. Conditions of participation can be obtained from the secretary, International Salon of Photography, Cafe Suisse, Place Verte, Antwerp, Belgium, or from this office as soon as the supply is received.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

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A Postal Magazine Club

One of our readers has suggested the formation of a postal club, made up of perhaps twenty members, more or less, associated together for the purpose of mutual helpfulness through the medium of a written discussion of some photographic topic each month, the discussion to be carried on through the medium of a letter or package circulated, by mail, amongst the members. For example, the first member on the route list prepares an article on some photographic subject with which he has had some experience, telling therein just how he goes about the work, perhaps combining therewith a few prints or rough drawings, or both, that may assist in making his explanations clear. The second member, upon receipt of the letter or package, adds thereto such suggestions on the subject as he may feel capable of offering, perhaps adding his own quota of prints, and sends all along to the third. As the original article reaches the last man the package should contain the combined good suggestions of all, or nearly all, members of the club, together with no small number of most interesting and informative illustrations. At a stated period, say a month later than the receipt of the first package, the second member on the list prepares an article on a different subject, furnishes such illustrations as he thinks necessary, and starts it along, the third member doing the same a month later, and so on. And let it be understood, that the ability to write a good article is not at all necessary. Anyone can write a letter to another worker and tell the latter how he proceeds to secure some particular photographic result. In fact, were any particular member to find himself unprepared when his turn came around, it would no doubt be perfectly satisfactory for him to simply indicate the subject in which he was interested, insert a few prints to show what he had been doing along that line, and ask the other members to tell how they secured the same class of results, together with constructive criticism of the prints enclosed. Doing this last, too often would of course subject the member so handling the matter to criticism more or less severe, as his seeming evasion of his share of the work might upset the more satisfactory working of the plan. Each article sent out, our correspondent suggests, would finally be returned to the member who started it over the route, and he, in turn, could no doubt make some valuable comments upon the suggestions added and criticisms made by the other members through whose hands his initial effort had passed. Doing this, the manuscripts and pictures could be sent to us where the material would have our best attention and care in editing, to appear in our pages as a contribution from the club, and a most valuable contribution it should prove. This suggestion of a postal magazine club appears to us to be the best one we have received in a long time, and we trust that the possibilities which it holds forth will be appreciated by enough of our readers to make the formation of such a club possible at an early date.

We will gladly do all in our power to make such a club a success, and we see no good reason why any great difficulty should be experienced in carrying out the plan. Send in your name and address, together with any suggestions you may have to make, particularly one as to an appropriate name for the club. Address your letter to the editor of *CAMERA CRAFT*; and, as soon as a sufficient number have expressed their willingness to assume the slight responsibilities involved, you will be advised as to the next step proposed, such further step being based upon the suggestions received. We want all the members to have their say as to how the club should be conducted; in fact, the above outline is but the tentative suggestion of our correspondent who wishes, for the present at least, to remain well in the background.

Mr. Willoughby Visits the Coast

Charles G. Willoughby, "Square Deal" Willoughby, of New York, paid our office a visit a few weeks ago and his optimistic and cheerful appraisal of the photographic business was as gratifying as it was satisfying and convincing. Everybody in New York knows that the Willoughby establishment is the greatest emporium of photographic supplies and the finest store for the sale thereof, and nearly everybody knows what an unassuming, approachable chap is the head of the institution. And the institution itself, smooth working as it is, stands as a monument to the success of the co-operative plan put into effect by Mr. Willoughby many months ago. This plan has worked out even better than expected and has proven exceptionally beneficial during the troubled times through which so many employers have had to pass, owing to the difficulty of securing steady and loyal assistance, a difficulty that the Willoughby house has hardly felt. Mr. Willoughby is not only enthusiastic in his appreciation of the situation he has created, but is even more appreciative of the loyal support he has been given by those connected with him in the corporation formed, a corporation in which all share and in which all are interested.

George Murphy In San Francisco

Everybody knows the firm of George Murphy, Incorporated, of New York, and no doubt the genial head of the firm is known personally by a larger number of photographers than any other dealer in this country. His keen interest in every branch of the photographic trade, his habitual activity and good nature, his almost religious regard for fair dealing and good fellowship, all combine to give him a personality that is as charming as it is hard to reconcile with his many years of continued service as a dealer in photographic supplies. He has certainly well earned a rest and relaxation, but to imagine such a condition in connection with a man of his personality and temperament is to somewhat stretch the resources of the average mind in that direction. Mr. Murphy looks forward to increased activity and improved conditions in photographic trading without in the least complaining of these through which we have just passed or those at present existing. His own house has enjoyed a very satisfactory increase of business and he looks forward to extended gratification in that direction.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

A Test For Fixation

It is not every photographer who knows that in the sulphide of soda solution used for bromide toning, he has at hand a simple and reliable test for the fixation of his prints, but such is the fact. If a piece of bromide paper be immersed without developing or fixing in the sulphide solution, it will turn to a deep brown color. If immersed in the fixing bath in steps, say for three, two, one and one-half, one, and one-half minutes respectively, the result will be a series of sepia tones on being transferred to the sulphide. The three-minute, and possibly two-minute sections will be white, the one and one-half minute deep cream, and the other two deeper still. It is therefore easy to judge of the time necessary to fix any particular paper in a certain bath. As a general test for the bath, a slip of undeveloped plate is as good as any. If this does not become clear in five minutes, the bath is not to be trusted and should be strengthened, or, what is better, renewed.

In order to avoid blisters, many makers recommend rather a weak hypo solution for bromide prints. Naturally this becomes exhausted much more quickly than a stronger solution.—*British Journal of Photography*.

Short-Focus Lenses

Owing to the lack of length in the studio it is sometimes necessary, in order to obtain full-length portraits, to use lenses having a shorter focal length than is desirable. The effect usually produced is very unpleasant to a critical eye, the principal faults being that the floor appears to be slanting upwards, the feet following the same direction, while the head seems to be thrown back. This effect can be reduced to a minimum by judicious arrangement of the apparatus. The camera should be kept lower than is usual for full-lengths, and the lens should not be tilted down more than can be helped, the figure being centered on the plate by means of the

rising and falling front. This will give better perspective in the lower part of the picture. To overcome the thrown-back appearance of the head the chin should be lowered more than is generally done. A short studio may be practically lengthened by fixing a large mirror at the end and pointing the camera at that. In such a case the glass side of the plate should be placed next the lens and the necessary allowance for thickness made when focusing, otherwise the image will be reversed.—*British Journal of Photography*.

Local Bleaching and Dyeing In Two-Color Photography

This process of making color photographs on paper or glass by a two-color process, which is the subject of British patent No. 131,319 of A. R. Lawshe, is deserving of record, chiefly for its abundant working details and for its recommendation of local means for remedying or correcting the color-rendering by the use of a tinting medium or an acid bleaching solution.

Two negatives are obtained, one of which is a record of the reds; the other of the greens and blues of the object photographed. From the negative of the reds, a positive is printed on blue carbon tissue, and is transferred in water, containing twenty per cent of glycerine, or in water made slightly acid, to a sheet of celluloid, glass or other similar transparent support, that preferably has been previously coated with a dammar or other resinous varnish to hold the transferred image firmly during development. As the blue carbon tissue, known commercially as tri-chrome blue, prints with considerable rapidity and with more contrast than is desirable, this is controlled by the addition to the sensitizing bath of a suitable dye or a non-actinic color. For this purpose naphthol B-green with amaranth is very satisfactory, if used in the proportion of five to ten grains of naphthol B and five to seven grains of amaranth to twenty-four grains of ammonium bichromate and one fluid ounce of

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water containing about twenty drops of ammonia to prevent precipitation of the dye.

From the negative of the greens and blues a positive is printed on red carbon tissue and transferred to a paper support. Both red and blue positives are now developed in warm water in the usual manner. The red positive is then placed face up in a tray of cold water, after which the blue one may, without injury to the delicate gelatine images, be placed in register upon it, the red image, for examination when that image which appears too dark may be removed and subjected to further development until the two images are of equal strength or density. In practice it is preferred at this stage of the procedure to develop the blue image somewhat further than the red image, as will be later explained. The blue image is now to be treated with a strong solution of alum for about five minutes and, after washing approximately forty-five seconds in cold water, it is dyed in yellow dye, preferably in a bath of alizarine yellow in the proportion of one or two grains of the dye to each ounce of water—the strength of the dye-bath depending upon the tint or hue of green desired, a strong bath giving a yellow-green and a weak bath a bluish-green image. After immersion in the dye-bath it is usually advisable to wipe the face of the image very gently with a tuft of absorbent cotton saturated with the dye solution to remove a scum of alizarine lake that forms over the thicker portions of the image, which, if allowed to remain, will prevent the dye from penetrating into and sufficiently coloring those parts. When the image is turned to the shade of green desired, which will be in from two to four minutes, the film is removed from the dye-bath, rinsed in the alum solution to further fix the dye and, after washing a short time, the picture may be examined again by superimposing in register the now green image upon the red image in the tray of water, and the latter developed further by immersion in warm water, if further development is needed. This is the reason for not developing the red image too far at the beginning of the operation, for if this were done it would be impossible to obtain a satisfactory picture, because after dyeing and fixing in alum the former blue, but now green, image cannot be further developed.

In order to simplify the process by eliminating the dyeing of the blue image, one may

print a red and green, instead of a red and blue image, this green image to be obtained by using gelatine carrying a blue and a yellow pigment so proportioned as to yield a bright grass or emerald green. Aniline blue lake or insoluble Prussian blue with alizarine yellow lake or naphthalene yellow lake may be used.

After proceeding as above described the green image on its celluloid support may be held up to the light, or be placed upon a sheet of white paper, and those parts of the image corresponding to the different shades of blue, lavender, purple, magenta, violet of the object photographed, if any or all of such colors were present in the original scene, brushed over with a weak acid, such as dilute muriatic acid, to decolorize the yellow dye or pigment and leave the blue intact. Now if this so prepared green-and-blue image be superimposed in register upon the red image we shall have, for example, purple in the combined picture where purple should be, for in this area the red image and the blue of the blue-and-green image will be sufficiently equal and intense to produce purple; we shall have blue where blue should be, for here the blue area will be more intense and will overcome the corresponding red area; and we shall have magenta where magenta should be, for in this part the red will be sufficiently in excess of the blue to produce magenta. This particular operation, simple though it is, is performed upon a green image that properly balances in intensity of color and degree of contrast with the red image made to go with it, is capable of producing results that equal those obtained by the more complicated processes of three-color photography in which three separate positives are made from three negatives. But it is necessary for the worker to use judgment and some measure of artistic skill. Those parts of the subject photographed which are blue, or which contain the color blue, are noted at the time of taking the picture by observing the object or scene itself, or as imaged upon the ground-glass of the camera, and from the memory of such observation, or preferably from notes made at the time of taking the picture the worker applies the acid where indicated. The strength of the acid is important. An application or two of a solution containing four or five drops of hydrochloric acid to one ounce of water will produce a greenish-blue; double or triple that

A PHOTOGRAPHIC DIGEST

strength should be used for lavender, purple and bright blue. Other dyes may be used for dyeing the blue image, for example, naphthol yellow or fast S yellow, alone or combined, but if these dyes are used, a weak alkali must be employed to remove the dye, which, however, is a less satisfactory procedure than the method of decolorizing as above described.

The decolorization of the yellow dye may, if preferred, be deferred until the picture is otherwise finished, as will be hereinafter explained.

Inasmuch as there is invariably some expansion, although not always an equal expansion in the length or the width of the red and green images, during the operations of transferring and development, it is desirable to use some sort of stretching device for the red paper print, in order to secure accurate registration, when mounting the green image upon it. It is satisfactory, having cut the pieces to be printed in the same direction from the roll of tissue, to swell the gelatine of the green tissue fully in the transfer water before transferring to the support, whereas the red tissue is not allowed to swell fully; it is transferred before the tissue is quite limp. In this way we get the green image somewhat longer or wider, as the case may be, than the red image on the paper support, rather than the reverse of this result. The purpose of this is obvious. The red paper print can be stretched to register with a slightly longer or wider green one, but the green image, on its support of glass or celluloid, cannot be stretched to register with a longer or wider paper print.

The blue-green image may also be made by printing in clear gelatine and dyeing the developed print in a dye-blue, such as methylene blue, to be followed by alizarine yellow and the yellow decolorized by a weak acid, where blue is wanted.

Transparencies or lantern slides are preferably made as follows: The red and blue gelatine papers are sensitized as for paper pictures and transferred while in the sensitizing bath to sheets of celluloid, having a suitably prepared surface to hold the gelatine coating firmly on the paper, which is then allowed to dry. It is well to prepare the surface of the celluloid, through grinding with an abrasive, by treatment with a solvent of the celluloid, such as alcohol, or by varnishing with a solution of caoutchouc or gutta

percha. The same end may be obtained without previous preparation of the celluloid by using an alcoholic sensitizing bath: one containing twenty-five per cent of denatured alcohol, will answer the purpose. The sensitized film is printed through the celluloid supports and developed as usual. After development the red print is placed face up upon a sheet of glass, and the blue one, after dyeing and fixing in an alum solution, may, for instance, be examined by placing in register over the red on the opposite side of the sheet of glass, and the alizarine decolorized where desired, as already explained. Very attractive pictures to be viewed by reflected light, as paper photographs are viewed, may be made by printing the images sufficiently thin to show properly when bound between a cover-glass and a white cardboard backing. It will be apparent that suitably prepared sheets of celluloid, thin glass, etc., can be coated with the red and blue gelatine emulsions, in which case the use of the emulsion-coated paper, as above, would be obviated. The merits of this particular method are that absolute registration is made possible with but little effort on the part of the operator, and a color photograph produced by simple manipulation, that any amateur in photography can grasp.

The hereinbefore described method may be employed to produce motion pictures in color, by first making the negatives of the reds on a red-sensitive, panchromatic film, and simultaneously the negatives of the green and blues on a green-sensitive orthochromatic film.

From the negatives of the greens and blues are made red positives and from the negatives of the reds are made green positives on gelatine-coated celluloid as already explained. The blues and all colors containing blue, as lavender, purple, magenta, are formed by brushing those parts of the green image where those colors are desired with a weak acid, as already described, and the positives are then superimposed in register and their celluloid sides are united together by passing the two films through a celluloid solvent, such as amyl acetate, followed by pressure, as by passing between rubber rollers. The film is then to be projected in the usual manner.—*The British Journal of Photography*.

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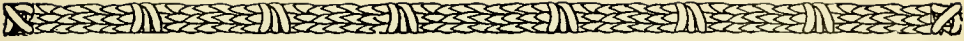
THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Test Exposures In Enlarging

It takes time to make and develop a test exposure and for that reason a lot of workers who really ought to know better, risk making a guess. To begin with, guessing at the exposure of an enlargement is much more difficult than guessing at a camera exposure. For one thing, there is only a fractional part of the latitude, and for another thing, the value of the stop is not constant except as the degree of enlargement is the same, which is rarely the case. Take an ordinary landscape in which the illumination ranges from bright sky to some deep shadow, and one twenty-fifth of a second may give a fair negative if we are not too exact about detail in the shadows, and we can perhaps give the same scene a full second before it will be more than what our detail-loving workers call fully timed. That is a difference of some extent and much more than the short scale of gradation of a negative will permit to be employed in making an enlargement. And with our enlargement we know, let us say, that a certain negative requires just so much exposure for an 11x14, but we want to make one about 20x24. The image looks fairly brilliant on the easel, yet we know we should give more time. We look up a table that tells us if a four-time enlargement takes a given time, an eight-time enlargement takes three and one-half times as long. And while our degree of enlargement does not fit these figures, they are somewhat approximate, and we confess to ourselves that we never would have guessed it required more than double the exposure, if that much. Suppose we have five enlargements to make, all different as to size and all from either different sized negatives or what would be the same, different sized portions of negatives of like or different sizes. And suppose we were guessing at the exposures. We could be quite well pleased with ourselves if four were all right and the fifth one just a little to the bad, just enough to be unsatisfactory. Would it not have

been better to have made trial exposures on strips of the paper and by so doing have gotten them all timed exactly right? And how much more so if our guessing was not quite up to this rather high average of four out of five absolutely correct? The man who is doing enlarging day after day, who is doing little else, can estimate the proper exposure fairly correctly nearly every time. He rarely wastes a sheet of paper. But the average amateur is not so fortunate. And when it comes to making these test exposures, let us do it right. We must select a portion of the negative that will include both a shadow and a high-light. And in giving this strip a series of exposures by the common plan of uncovering it by sections, let us make it a series of doublings, that is, secure exposures of ten, twenty, forty, eighty and one hundred and sixty seconds, respectively, instead of a series of ten, twenty, thirty, forty, fifty and sixty. In the first case we hold a sheet of opaque paper over the major portion of the strip pinned across the board, for eighty seconds, shift it down and give forty, shift and give twenty, again and give ten, and then give the whole strip ten seconds more. For the other and less desirable series we expose for ten seconds at each shift of the covering card downward. But one will have only to make one of each kind of trial exposure strips to find that the first described is much the best from which to decide the correct exposure. And when this scaled strip is made, develop it fully. Then one will be easily able to judge which of the several sections represents the correct exposure. And then, and only then, is one in a position to make the exposure with every confidence of giving the right time and securing the best possible result. True, we have wasted three minutes in making the strip exposure, and it will take a few more minutes to stick the strip down in the developer and await its development, but I am quite sure the average amateur will find this expenditure of his valuable time well worth while.



CLUB NEWS AND NOTES

Portland Camera Club

At the annual meeting of the Portland Camera Club that was held on May third, the following officers were elected for the season of 1920-1921: E. Roy Monroe, president; Roger Paul Jordan, vice-president; William T. Starr, secretary-treasurer; Harold E. Ayer, lantern slide director, and J. Ludger Rainville, print director.

California Camera Club

The California Camera Club has in its membership a score or more of professionals who are asking big prices for their portraits, and getting them. But there is still a sufficient majority of amateurs; and there are pictorialists, experienced and hopeful, who are submitting salon pictures, and it is good to say, getting them accepted. Not all, of course, but an encouraging number. As an incentive to making exhibition pictures the

Club has been holding monthly members' contests. At the present writing the subjects have included water scenes, portraits, architecture and landscapes, with and without live subjects. These are judged and criticized and the winning print becomes the property of the Club, forming a part of a permanent exhibit. The Associated Camera Clubs of America continue to exchange sets of lantern slides and prints, which afford frequent and ample opportunity to compare California methods with those of our fellow societies. Then, too, it is interesting to note the difference in context between those of East and West. Beyond the regular meetings and social activities of the Camera Club, the annual excursion to the Yosemite National Park, June twelfth to twentieth, is at present attracting most marked interest. The park is not only an ideal vacation spot for anyone, but it is doubly alluring to the photographer.



OUR BOOK SHELVES

"Inventions, Their Purchase and Sale"

In this book, William E. Baff, one of the best known and most capable of advisers in patent law and matters pertaining to the development and sale of inventions, gives the reader a vast amount of the most vital and important instruction. As he says in the preface, the book is essentially a manual on the marketing of inventions, but while that feature is given full consideration, the scope of the work is so wide that one is left to wonder what angle of the subject can possibly have been slighted in the twenty-four chapters into which the work is divided. It is really a guide to both inventors and those interested in the exploitation of inventions, setting forth the plans and procedures that cannot be of other than the greatest value to any and all interested therein. With the examples cited in support of suggestions

made, the book takes on much the charm of an interesting narrative that any intelligent reader can enjoy. Published by D. Van Nostrand Company, 8 Warren Street, New York. Price two dollars net.

"Here's The Answer"

This is the title of a very informative and instructive little booklet of nearly a hundred pages, dealing with seventy-five questions such as are constantly confronting the amateur photographer, and no doubt not a few of the professionals. It is as full of meat as an egg, and the style is so simple and plain that no mental indigestion need be feared. The price is thirty-five cents, postpaid, and if your dealer does not happen to have a supply, send direct to The Abel Publishing Company, 410 Caxton Building, Cleveland, Ohio.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

New Members

- 4733—Euclid Dennis Miller, Rock Island, War-
ren Co., Tenn.
6x13 cm. glass stereoscopic positives, made
in France, of convoys, shipboard, made from
airplanes, French life, etc.; for 6x13 cm. ster-
eoscopic positives of war subjects, especially
field artillery and airplanes; also anything
interesting; life, scenery, etc. I desire to
exchange only stereoscopic, 6x13 cm., posi-
tives.
- 4734—Edmund Russell, Russell Studio, Mont-
pelier, Ind.
5x7, some 8x10, and enlargements, on Ar-
tura, C and E grades and Carbon Black, por-
traiture and art prints, odd and fancy light-
ings, artistic posing of living models, for
figure studies, draped and semi-draped, genre
and anything considered artistic. Class 1.
- 4735—O. J. White, 1729 California Ave., St.
Louis, Mo. Class 3.
- 4736—John Hagman, Box 323, Westwood, Calif.
Class 3.
- 4737—R. Patterson, Nightingale, Alberta,
Canada.
4x5 and 2½x3¼, on developing paper, of
Western Canada, farm and ranch pictures;
for anything of general interest. Class 2.
- 4738—Geo. C. Bied, 1202 S. 12th St., Burlington,
Iowa. Class 3.
- 4739—Geo. Dempsey, B. & B. Dept. C. N. Ry.,
Saskatoon, Sask., Canada.
5x7 and 3¼x5½, on developing and Seltona,
of landscapes; for landscapes and portraits.
I desire to exchange only post cards.
Class 2.
- 4740—F. R. Seavey, Box 81, Milton, Pa.
Post cards, on developing paper, of scenery
and historical subjects for same or anything
interesting. Class 1.
- 4741—Nelson L. Ault, Box 376, South Bend,
Ind.
Any size up to 5x7, on developing paper, of
river views, local buildings and street scenes;
for any kind of pictures. Class 1.
- 4742—Steve Albasing, 404 S. 8th St., Milwaukee,
Wis.
Vest pocket, 2½x3¼ and 3¼x5½, on devel-
oping paper, mostly circus pictures and
places of interest from Coast to Coast, with
a few from Monte Carlo, France, Belgium
and "Over There"; for pictorial work.
Class 2.
- 4743—Rodney E. Null, Box 33, Athelstane, Wis.
Any size under 5x7, on various kinds of
paper, of scenes, bathers, and miscellaneous;
for anything of interest, art subjects, girl
bathers and the like. Class 1.
- 4744—Allen A. Deahl, Ontario, Ore.
3¼x5½, on developing paper, of landscapes,
general farming scenes and portraits; for
any subject of interest. I desire to exchange
only post cards. Class 1.
- 4745—Carl W. Beese, Fenwick, Ontario, Can-
ada.
2½x4¼, on developing paper; for same, no
larger than 3¼x5½. Class 2.
- 4746—L. C. Jones, Hillham, Ind.
All sizes, on all kinds of paper, of wide range
of subjects. Class 2.
- 4747—Geo. E. Lapp, 219 Chase St., Kane, Pa.
3¼x4¼, on developing paper. Class 2.
- 4748—Fred N. LaBarre, Box 2225, Sta. A.,
Waterloo, Iowa.
3¼x4¼ and 3¼x5½, on developing paper, of

children only, for children only, nude and
semi-nude preferred. Class 2.

RENEWALS

- 53X—Edward Heinel, Leopold, Wis.
188A—Edward Truman, Burton, Ohio. Class 2.
2479—Lois E. Gundelach, Box 94, Amboy,
Wash.
3¼x5½ on developing paper, of landscapes
and general subjects. Class 2.
- 2885—Geo. McCauley, 167 Allen St., New Bed-
ford, Mass.
1½x2½, 3¼x4¼, 3¼x5½ and 6½x8½ enlarge-
ments, developing papers and post cards of
marines and general views, also lantern
slides; for views of general interest, especi-
ally mountain scenery. Class 2.
- 3442—Henley H. Hall, 511 West 32nd St., South
Richmond, Va.
3½x3½ and 2½x4¼, on developing paper of
scenes from "The Front", Luxembourg,
France and Germany, scenes in the open,
most anything of interest. Class 1.
- 3852—J. W. Jeffers, Frankfort, Ky.
Vest pocket, 5x7 and enlargements, various
papers, of landscapes, genre, and a few
nudes of children only, also soft-focus work;
for anything in artistic line. Class 1.
- 4033—Richard S. Foster, Box 3106, Bridgeport,
Conn.
4112—Jas. F. Gifford, Letter Carrier, 142 Ben-
son Station, Omaha, Nebr.
Post cards only, on developing paper, of
park scenes, cyclone views and home por-
traits, for odd subjects, accidents or anything
of general interest. I desire to exchange post
cards only. Class 2.
- 4163—C. A. Heald, 127 Dexter St., Covina,
Calif. Class 3.
- 4419—Rev. C. Lillie, Persia, Iowa. Class 2.
4455—Jas. Dunlop, Motor Route A, Box 43,
Placerville, Calif.
4456—Harry J. Fromm, 170½ Catherine St.,
Elizabeth, N. J.
5x7 and smaller, portraits, landscapes, ma-
rines, beach scenes, nature and general
views, developing paper only, no postals,
Good work only.
- 4462—Edgar M. LeBaron, Box 617, Mesa, Ariz.
Any size up to and including 8x10, on devel-
oping paper, of studies, views of Arizona and
some few of California and old Mexico; for
draped and undraped figures. Class 1.
- 4589—J. Wm. Hazelton, 116 Monongalia St.,
Charleston, W. Va. Class 2.
- 4591—B. W. Moulton, Quincy, Ill.
General views, for same. Class 1.
- 4606—P. Van Denburgh, 4557 44th St., San
Diego, Calif.
- 4610—Arthur Kettner, Box 257, Morgan, Minn.
1½x2½, 2¼x3¼, 2½x4¼, 3¼x5½, on various
papers, of fall scenes, farm scenes, domestic
animals, children, etc. I also paint scenes
and will exchange same. Will exchange for
anything of interest.
- 4614—Edward Ament, Geddes, S. Dak.
4628—B. F. Willard, 339 Claymont St., Wil-
mington, Del.
1½x2½, 2¼x3¼, 3¼x4¼, few 5x7 and en-
largements, on all kinds of papers, of scenes
in and around this city, portraits, landscapes,
interiors, and lantern slides of the same for
the same, especially good interiors. I would
like to hear from members who have worked
with carbon and platinum processes. Class 1.
- 4660—Chas. D. Merservey, R. F. D. Whitman,
Mass. Class 2.

NOTES AND COMMENT

A Department Devoted to the Interests of Our Advertisers and Friends
In it will be found much that is new and of interest

The Royal Scientific Section

The Royal Photographic Society of Great Britain is holding their Sixty-fifth Annual Exhibition in September and October of this year. This is the most representative exhibition of photographic work in the world, and the section sent by American scientific men heretofore has sufficiently demonstrated the place held by this country in applied photography. It is very desirable that American scientific photography should be equally well represented in 1920, and, in order to enable this to be done with as little difficulty as possible, A. J. Newton, of the Research Laboratory, Kodak Park Works, Rochester, New York, has arranged to collect and forward American work intended for the scientific section.

This work should consist of prints showing the use of photography for scientific purposes and its application to spectroscopy, astronomy, radiography, biology, etc. Photographs should reach him not later than Thursday, July first. They should be mounted, but not framed.

Mr. Newton will be glad to have any worker who is able to send photographs communicate with him as soon as possible, so that he can arrange for the receiving and entry of the exhibit.

Reported by William Wolff

Berton Crandall's Kodak Shop in Palo Alto is a busy establishment with some handsome California beauties in charge.

Edward O. Webb of San Jose is still improving his developing and printing plant. He has recently installed three Pako printers.

W. T. Burhans of Modesto has bought the Tucker Studio in San Jose.

F. Flannery of the California Camera Club is running the Sherer Studio in Santa Cruz for the summer.

The Freeman Art Company, Eureka, is surging ahead; always making improvements.

A. Sallb of Petaluma paid us a visit recently, unattached, meaning alone.

T. J. Nelson's new studio in Santa Rosa is very nicely fitted up.

Modesto photographers are all busy. Scott Snowden, Sheffert and Broden are all working hard.

Tom Shorb is still doing big business in Turlock.

Ernest Forsmark and his charming wife are doing commercial work and some portraiture in Turlock. June, their daughter, also helps.

New Term Starts

The Sixteenth Annual Term of the Southern School of Photography opened April fifth, with an interesting program of music, songs and addresses, after which the students were organized into classes. This term starts with the largest enrollment on opening day in the history of the school. Fourteen states were represented, besides a number from Canada.

The Leading Light in the "Movies"

A list, recently compiled, and too long to reprint here, gives the names of forty-eight leading producers whose studios are equipped with Cooper Hewitt lamps. As a studio lighting with absence of eye strain, freedom from glare, and yet perfect diffusion, Cooper Hewitt lamps are particularly suited to the exacting requirements of this class of work, just as they are found ideal for the requirements of the portrait photographer who appreciates relief from the limitations imposed where daylight alone is available. An inquiry addressed to Cooper Hewitt Electric Company, Eighth and Grand Streets, Hoboken, New Jersey, will bring full information, together with name of nearest district sales office.

Two Excellent Utilities

A new advertisement this month sets forth the claims of the Perfection Roll Hanger and the Perfection Film Clip, manufactured by the National Novelty Company of Minneapolis, Minnesota, from which point we

CAMERA CRAFT

seem to be getting a wealth of good things for the finisher and general photographer these days. And the best part of it is they are all good things, well worth investigating by the progressive photographer who wishes to save time, trouble and expense; in other words, the one looking for greater efficiency. The Perfection Hangers, Holders and Clips are well made, well designed, and well fitted for the work intended and those interested in tank development should investigate their merits. These goods are carried by live dealers, but descriptive circulars will be gladly sent upon application to the manufacturers as mentioned above, should your dealer not be supplied.

The Angelus Film Tank

This tank, placed on the market by Howland & Dewey Company of Los Angeles, is giving universal satisfaction, the demand steadily increasing as its merits become known. A new size has been added to supply the wants of the users, those doing more or less amateur finishing and work of that character. They are made of stoneware, vitrified with a glazed enamel that makes them absolutely acid proof and exceptionally cleanly and satisfactory in use. Look up the advertisement in the front of this issue and write Howland & Dewey Company for their descriptive circulars containing complete

formulas and other information. If you are doing amateur finishing you cannot do better than invest in a set of these tanks, and by so doing relieve yourself of the care and worry involved in using tanks made of less satisfactory material.

Denver's "Circle Trip by Auto"

Out of Denver there is a wonderful sixty-three mile circle trip over the famous Mountain Park's Highway that no visitor to that section should miss. Despite the elevation and the variety of the scenery of this mountain fairy land, the maximum grade of this fine highway is only six per cent and the trip is easily made in four hours. Best of all, about midway, you will find the little town of Evergreen, destined to become the most popular summer and winter resort in that section of the Rocky Mountain region. But that is not all; for at Evergreen you will find Sunnyside, with its welcoming easy chairs and other comforts presided over by the genial and hospitable F. B. Hinman and wife. Soft drinks, ice cream, candies, light groceries, cigars, fruits and the like are obtainable and a fine luncheon can be made. All are welcome and if you happen to be an I. P. A. member—well, we do not know just what President Hinman might do. He will at least be doubly pleased to see you, and can, no doubt, give you much good photographic advice about the section.

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, for May 1, 1920, of "Camera Craft", published monthly at San Francisco, State of California, County of San Francisco.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Fayette J. Clute, who, having been duly sworn according to law, deposes and says that he is the Editor of the "Camera Craft" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

Publisher, Camera Craft Publishing Company, San Francisco, California; Editor, Fayette J. Clute, San Francisco, California; Managing Editor, Fayette J. Clute, San Francisco, California; Business Manager, Fayette J. Clute, San Francisco, California. That the owners are Camera Craft Publishing Company, San Francisco, California; Harriett E. Clute, Trustee, Hanford, California; Romaine F. Clute and Clifford H. Clute, Beneficiaries, Mountain View, California.

That the known bondholders, mortgagees, and

other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are none.

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(Signed) FAYETTE J. CLUTE, Editor.
Sworn to and subscribed before me this twenty-fourth day of April, 1920.

SID J. PALMER, Notary Public,
in and for the City and County of San Francisco,
State of California. My commission expires December
thirty-first, 1922.

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A Photographic Monthly

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Expirations—Subscriptions to Camera Craft are discontinued on date of expiration. The date on the address label on the wrapper shows the time to which each subscriber has paid. Thus: Nov. 09 means that the subscription expires with the number dated November, 1909. ¶Renewing—In renewing a subscription, do not fail to say that it is a renewal, giving name and address just as now on the address label. ¶New Address—In notifying us of a change of address, give both the old and new address. Should you miss a copy through change of address, advise us of the fact, and another will be gladly sent. ¶Dealers—All photographic supply dealers and news dealers are authorized to receipt for subscriptions in our name.

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 Camera Craft Publishing Company, Claus Spreckels Building,
 San Francisco, California

FOREIGN AGENTS

Australia	Harringtons, Ltd., Sydney
England	Kodak Australasia, Ltd., Sydney
Malta	Francis Collas, 3 Wine Office Court, Fleet Street, London, E. C.
	Do Agius Catania, 41, Sda. Reale, Valletta
New Zealand	Richard Hill, Matlock House, Devonport, Auckland
	Waterworths Limited, 53 Queen St., Auckland
Philippine Islands	Waterworths Limited, 286 Lambton Quay, Wellington
Japan	F. O. Roberts, Manila
China	K. Kimbel, Yokohama
	Squires, Bingham & Co., Shanghai

Extra Special JUNE BARGAINS

Here are a few of the Real Bargains
in Cameras and Lenses

LENSES

2¼x3¼ Euryplane, f-5.6, 3½-in. focus, in Compound shutter. List \$45.00., now	\$27.50
3¼x5½ Sylvar, f-6, 6½-in. focus, in Auto shutter. List \$36.50.....now	29.00
3¼x5½ Cooke Telar, No. 2½. List \$50.00.....now	37.50
4x5 Rodenstock Eurytar, f-5.4, 6½-in. focus.....now	33.50
5x7 B. & L. Tessar IC, 7-in. focus, in Auto shutter. List \$85.00.....now	60.00
5x7 Seneca Anastigmat, f-6.3, 7-in. focus, in Auto shutter.....now	32.50
5x7 B. & L. Tessar, Series IC, f-4.5, 7-in. focus. List \$75.00.....now	65.00
5x7 Ernemann Doppel Anastigmat, f-25.4, 7-in. focus, in Auto shutter.....now	40.00
5x7 Serocco, f-6.8, 7-in. focus, in Koilos shutter. List \$50.00.....now	23.75
5x7 Alfred Kohler Double Anastigmat, f-6.8, 7½-in. focus.....now	22.50
5x7 Turner-Reich Convertible, Series II, f-6.8, 7-in. focus, in Optimo shutter. List \$69.50 .....now	57.50
5x7 Goerz Celor, f-4.8, 7-in. focus. List \$65.00.....now	45.00
5x7 Plastigmat, f-6.8, 7½-in. focus, in Unicum shutter. List \$60.00.....now	38.50
5x8 Dagor, f-6.8, 8¼-in. focus, in Auto shutter. List \$85.00.....now	55.00

Continued on Next Page



THE HILLSIDE ROAD
By W. ZENIS NEWTON

CAMERA

CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

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JUNE, 1920

No. 6

The Way To Learn Something

By J. Walter Doubleday



With Illustrations by the Author

You, gentle reader,—and isn't it fortunate that all readers are so gentle, are of course an exception; but we all know not a few amateurs, well out of the beginner class if length of experience counts, who are stumbling along without any clear ideas concerning the selection of stops, duration of exposure, suitability of plate or film, requirements as to developer, remedy for the shortcomings of their negatives, and the like. They have perhaps used every one of their several lens stops on hundreds of different subjects, they have given every kind of an exposure on the widest variety of subjects and under all conditions, and so on through the list, but little of real value has been learned. They have gone about it in the wrong way.

The proper way is to learn one thing at a time and learn that one thing fairly well. And we can only do that by so conducting our study that the result will be real knowledge. And as our desire to use our cameras involves experience therewith, we have a good teacher almost forced upon us, if we will only learn from her. Take the matter of the stop to use for this or that scene or subject, and let us see what can be done, employing for the purpose the very next exposure we are tempted into making, be it what it may. Let us suppose it is an ordinary landscape, which is all the better for the reason that we will be fairly certain about the exposure. We know that every size smaller in stop diameter means doubling the exposure, so attention is given to that point. Then we make a series of four or five exposures, varying the stop each time, observing that while the large stops are used the exposures are short enough

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to permit of the camera being held in the hand, but the smaller one necessitates a tripod or other support. These exposures, developed and printed, will give us a basis upon which we can determine our course when a like subject is again presented. Of course, if our camera is a small one, the depth of field, that part of the view in good focus or apparently sharp, will be quite sufficient with a fairly large stop. The reason for this is; the depth of field depends upon the actual diameter of the stop, not upon its relationship to the other stops used with the lens. A stop that is half an inch in diameter may be the largest stop in our small lens and may have a working value of $f-5.6$, while on another lens, one of longer focus and covering a larger plate, it may be a medium-sized stop, say $f-16$, but on whichever lens it is used the depth of field will be the same; what will vary is the exposure time and the size of the image, although there is in this connection no relationship between size of image and exposure time.

If we study these four or five prints rather closely we will learn a few things further than that want of a tripod may necessitate a larger stop than we might otherwise see fit to use in order to get a desired amount of depth of field; and perhaps still further, that great depth of field is not always necessary. We will learn that as the stop is made smaller and the depth of field increased, the zone of sharp definition increases faster behind the point focused upon, the point sharpest with the largest stop, than it does in front of that point. We find that with our lens focused upon some point in the middle distance, decreasing the size of the stop carries the sharpness into the distance much faster than it brings it forward or into the foreground. Knowing this we can easily reason it out that if the foreground is wanted in sharp definition we can achieve that result with a larger stop if we will but shift our focus to a nearer point before stopping down. Doing this, the desired depth of field can be secured with a larger stop than would be the case were the focus set on a more distant point.

The next step will be to take a rather close-up subject and try the same procedure, the same series of exposures, starting with a large stop and working downward to one of the smaller ones. We will learn that the depth of field is much less with these near subjects and that it is necessary to focus more carefully, either with the focusing screen or the scale intended for the purpose. A good subject would be some obliging friend who would seat himself before the lens and occupy the time reading a favorite book or the daily paper. If there should be a background of shrubbery or even a wall, not too close, but just so the subject did not come in front of the unobstructed sky, so much the better. With a series of prints from these negatives, our study could be resumed. And, with each print marked as to the size of stop used, much could be learned; and what would be better, such information as our reading gave us would be of more value because understood more fully.

Convinced that we have gained some information concerning the why and wherefore of the various stops, let us proceed in the same way with the subject of exposure. In our last experiments we varied only the stops, the exposures being relatively the same, so in this series we will vary only the exposures.

THE WAY TO LEARN SOMETHING



THE FOREST GIANTS



TUMBLING WATERS

CAMERA CRAFT

We select one stop and use that throughout, making a series of varying lengths of exposure on two or three different classes of subjects, preferably subjects of the kind that give us the most trouble generally when it comes to determine the proper timing; any kind of an interior, a portrait in the shade, and perhaps a rather dark and heavy landscape. This will give us three series of negatives, each ranging from decided under-exposure to more than enough for best results. From these we should be able to learn more about the proper time to give subjects of like character than we could learn from years of indiscriminate guessing at the proper exposure. True, we are apparently wasting not a little perfectly good film or plates, but waste at this point will mean saving much more material in the future, besides saving disappointment attending mistakes that cannot be remedied.

And so we should proceed with our various efforts. We will find our photography taking on a new interest, the interest that always accompanies a feeling that results are being achieved. Suppose we wish to determine the suitability of a slower plate or film for our work. Nothing can be more conclusive than to expose three or four of them upon the same three or four subjects upon which we can immediately expose a like number of the plates or films with which we have been working. Of course, we increase the exposure for the slower emulsion in accordance with the instructions furnished by the dealer or manufacturer. We do the same when we desire to try a new brand of plates or film; and, doing this, we learn something really definite. All conditions are allowed to remain exactly the same, with the exception of the plates or film being tried. Too often the worker fails to make his experiments with any new material worthy of the name trial. He takes out some of the new plates and exposes them on all kinds of subjects; development proves that the proportion of unsatisfactory negatives is greater or smaller than usual, as the case may be, and the new plate is condemned or approved accordingly. In reality, nothing has been learned, his experience has gained him nothing; in fact, he has really denied himself an opportunity of learning something about the behavior of his regular brand of plates by changing to the new one.

We wish, perhaps, to learn something about reducing and intensifying. The usual procedure is to wait until confronted by a negative that refuses to give a good print, and then to turn to some formula in our favorite magazine, and give it a trial upon the negative in question. The result is almost sure to be a failure. The worker who is inexperienced in such manipulation is about as likely to succeed at the first attempt as would be an entirely inexperienced one trying to mix up a developer and develop his first plate. How much more sensible it would be for one to take a few of his waste negatives and devote an evening to putting them through the manipulation required by one particular formula, doing it often enough and with a varied enough collection of negatives to learn just how the solutions behaved under different conditions. He would learn just what kind of negatives were most amenable to the treatment, what kind were most susceptible of improvement, what resulted from slight changes in the strength of solutions or mode of application, and so on. The one process mastered, another like process could be tried with a much

THE WAY TO LEARN SOMETHING



IN THE PRIMEVAL FOREST



THE MOUNTAIN CASCADE

CAMERA CRAFT

greater degree of satisfaction, for the simple reason that the original experiments had provided one with a basis upon which to form, through comparison, some judgment as to relative value of the results.

Instead of this plan of procedure, we thrash around from one process to another, learning little or nothing, condemning them all, and possibly the journals from which the formulas were secured. And here is where we can say a few words for our friends, the men who get out the photographic journals, those journals that are worth so much to us if we would but make use of them. Let us suppose that each issue contains but one hint, help, formula, or process that fits into our practice and we make it a point to work out and make our own that particular one thing each month. At the end of a year we would be in possession of definite working knowledge of twelve individual methods or processes, enough to assure us almost the rank of an expert. But instead of this, we read over our favorite journal each month and glean but little real practical knowledge from the information published therein. What could be more interesting than setting ourselves the task suggested above, if task it could be called. It would furnish a most interesting occupation; one strictly photographic, and one that we could vary according as our time was limited or otherwise, according to our other photographic interests at the moment, and even according to the condition of our purse if that were necessary.

The real trouble with so many of us is that we are not willing to learn by expending a little time and thought in study and in working out our own problems. We make a portrait, for example, and because it is unsatisfactory, we assume, not that we have failed to give the subject the proper study, but that we should have had a regular studio skylight and a portrait lens. It is, of course, possible to produce better portraits of a certain size and quality with a portrait lens used under a proper skylight, but with the matter of lighting and posing understood, one can make better portraits out of doors or in ordinary rooms, with the most inexpensive apparatus, than is turned out in many studios, as our professional home-portrait workers are proving every day. The same thing applies to landscape work. We ascribe our own failures to score a success to a lack of proper equipment or to an insufficiency of suitable subject material. If we only had a better camera and lens, if the surrounding country was more picturesque and pleasing, what wonders we might achieve. But look over some of the simple landscapes that are put forward as salon pictures and ask yourself if they are distinctive by reason of the scenic beauty portrayed. Ask yourself if they possess any particular quality that could not have been secured with the most ordinary equipment. Face the matter honestly and you will find that the real lack is all within yourself, at least a very large part of it.

And this does not mean that I would urge every worker to bend his energies to the production of salon or exhibition work. His tastes and temperament may not favor such a course. But what I do urge is that whatever work is taken up it be given the ordinary care and study that one would expect to give any other line of endeavor, either as a pastime or otherwise. One worker will find his greatest pleasure in making simple records of the

THE WAY TO LEARN SOMETHING



THE LOWER REACHES OF THE MERCED

scenes and events through which he passes, but he should have an ambition and find pleasure and satisfaction in making them as perfect as he can and with as great a degree of certainty as possible. Another will delight in the production of one particular class of pictures, the portrayal of one particular class of subjects. Still another worker may really feel but little interest in any kind of picture production, his chief gratification being found in the successful manipulation of the factors involved in the production of a good negative; while here and there we find a worker who is interested mainly in the optical or the mechanical features that his photography involves. Why should we try to interest any of these perfectly sane and sensible workers in the artistic possibilities of photography, further than to advise them concerning the purely mechanical requirements of ordinary good composition?

But to return to our subject: The proper way to learn is to study. If we tire of reading we can turn to reproductions of good photographs and study them. If we have a good landscape before us, let us ask why it is good, or at least why it does not contain too many faults. The shadows show that it was taken with the light from well to the side. What would have been the effect with the light from directly in front? The shadows show good detail, the result of full exposure; but what would have been the result with the exposure cut somewhat short? What would be the effect of adding a generous amount of sky to the picture, an extension to the foreground, a strip to either side? Could the picture be trimmed at either top or bottom, or either side, to advantage? Look at the picture with the idea of learning something therefrom. Do not, as we are all inclined to do, look at it simply to pass judgment upon it as to its appeal or otherwise to our particular fancy. In other words, the publisher of the magazine does not put these reproductions before us simply that we may run over them saying: "I like that, I don't like this," in a "He loves me, he loves me not" sort of fashion and to about the same profit.

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And we must not forget that danger lies in trying to encompass too much in our easy, slipshod way. The vegetable grower does not try to rival the florist, the florist does not aspire to outdo the fruit grower, and the fruit grower does not dream of winning the world's record as a grain producer, yet the activities of them all deal with closely allied products of the soil. The painter does not concern himself with barns, fences, vehicles, furniture and the like, although the brushes and pigments employed are practically the same as those he uses in his appeal to our artistic side. But the photographer cannot tolerate any such restrictions. His equipment must enable him to produce orchids, radishes, or evergreen trees at will; his paints and brushes must enable him to apply a protective coating to a barn, a bungalow, or a baby's high chair, as well as to a piece of canvas stretched upon a frame of wood. The photographer wants to find out what lens and camera is best suited to all-around work, and in trying to get such an outfit he generally gets something that requires so much attention that the real work in hand, the making of a satisfactory photograph, must be denied some of the attention it should have.

And this brings me quite naturally to the matter of simple apparatus, the kind that is always the most advisable. Any one lens and camera has its limitations and the only difference between such lens and camera and any other combination is a difference in the kind and amount of such limitation. If we could properly estimate the disadvantage of complication, a factor that varies with the individual using the equipment, we would no doubt find that as simplicity was secured such disadvantage decreased and even disappeared long before the added limitations made any great inroads upon one's capabilities. In other words, the limitations of our simpler forms of cameras and lenses are fairly well balanced by their lack of complication in use. What we must learn is just what the limitations of our equipment involve and then satisfy ourselves with attempting only that which those limitations permit. And in investigating this side of the subject we will find, all too often, that the limitations that we feel hedge us about are really limitations imposed by a lack of knowledge such as I tried to set forth in the first part of this, that I fear the reader will find, a rather tedious article.



The Dynamic System of Symmetry

By Gustavus A. Eisen



With Illustrations by the Author

About three years ago I was invited to attend some lectures in the art studio of Edward B. Edwards, the well known New York artist. These lectures, by Jay Hambidge, on his rediscovery of the secret of Greek classical symmetry, were given before a small assembly of interested pupils; mostly artists, painters, designers, sculptors and architects. The writer was, I think, the only one not a professional artist in that audience, but not on that account the one least interested. Indeed, he had, in one respect the very great advantage over nearly all of the others, that he had nothing to unlearn before he could accept what was presented to all as new.

It need not be said that I became immensely interested, and fully realized, from the start, that this new discovery of an ancient secret was destined to revolutionize art the world over in a way that no one could have expected previously to this event. And it must be impressed upon the reader before doubts and objections arise, that this is not a new principle of art, as it consists simply of proportions in design based on the rules of the Greek standard. It may also interest the reader to learn that nearly all who attended these lectures began at once to use the system "each in his separate star", and with such success that a year later an exhibition of their work was held. This should suggest the importance of the system; and should there still be doubt, the testimony of such men as Edward B. Edwards and Professor Caskey of Boston must convince us that those who do not properly appraise this new discovery may find themselves left somewhat in the rear.



THE GREAT CHALICE OF ANTIOCH

Copyrighted by KOUCHAKJI FRERES

This symmetry of the Greeks, which Hambidge has named the Dynamic System, came to them from the Egyptians, who had constructed temples and decorations, even their hieroglyphics, upon this principle, three thousand years before our era. But it was only in the sixth century, B. C., that the Greeks began to know and apply the system, and there can be little doubt but that it was this same system that caused their art to rise, in less than a century, from mediocrity to the acme of perfection.

After the wars of Alexander, the Greek influence began to decline, and with it the employment of the Dynamic Symmetry. The latter, however, survived in Asia Minor, Syria and Alexandria until the end of the first century A. D., when it finally disappeared. It was at first thought that this symmetry was disregarded as early as the fourth century B. C., but researches during the last two years have revealed a great many vessels, especially from Pompeii and Syria, having their form accurately based upon the same system as the vases of the Greek classical period. The most famous of these vases, and probably the most remarkable object of art now known, is the Great Chalice of Antioch in Syria. This vase, a photograph of which is reproduced herewith, is a particularly suitable subject for study by those interested in the rudiments of the dynamic system.

It is rarely that a great discovery in archaeological art is of such character as to be capable of affecting photography, and thereby prove suitable for discussion in a magazine of the scope and aim of CAMERA CRAFT. The Dynamic Symmetry or system is, however, equally applicable to any art, craft or trade that concerns itself with man-made objects. And while the characteristics of this system are as yet practically unknown to all but a few devotees, the time is undoubtedly near at hand when it will again be employed in every department of art, architecture, painting, sculpture and manufacture, the designing of costumes, the forming of household utensils, the arrangement of type forms in circulars, advertisements, catalogues and books; these and endless other different forms of craftsmanship may readily be brought under the influence of this system and be greatly improved thereby.

For instance, if one be called upon to design a vase, a chair, a house, a picture of human or other figures, a landscape with trees, or even a photographic landscape with the moon included, a subject so familiar to the members of the California Camera Club of twenty-five years ago, he will, nearly always, hesitate and be undecided as to where he should place the most important point or line in the composition. In order to arrive at a determination as to the best arrangement, he proceeds to cut away or add to height or width, now and then holding the composition up at some distance before his eyes, all the time looking wise, still perhaps with little success. If he be a great artist he may succeed in the end, although even Michel Angelo and Raphael were not always successful. But if one will take the trouble to learn a little of Dynamic Symmetry, he will not alone save time in constructing his compositions, but he will have found a rule or rules by which he can understand the cause of his previous want of success. He will, in addition, learn the proper procedure and be able to show possible critics that they know not whereof they speak. ☺

THE DYNAMIC SYSTEM OF SYMMETRY

To facilitate their work in this very line of proportions and pose, the Renaissance artists based their designs upon various geometrical diagrams, a general favorite being a construction based on triangles and squares. This is now called the Static System by Hambidge; and, while it is better than no system at all, it certainly is greatly inferior to the dynamic system of the ancient Greeks.

Instead of triangles and squares the dynamic system makes use of a peculiar set of rectangles, known as root rectangles, in the subdivision of which squares do enter, but always as a part of a root rectangle. These rectangles are divided, interiorly, by diagonals, and by lines drawn from the angles of the rectangles, perpendicularly against the

above diagonals; that is, they always form, with them, right angles. By drawing horizontals and upright lines from the nodes of the diagonals, a diagram is produced in which every single part or area possesses the same form and proportions as the whole rectangle. Every unit of these rectangles thus becomes a proportional part of the whole. The use of this diagram consists in employing its outlines as tangents to the design, and its nodes and inner lines as guides for the most important points and lines in such design. The construction of the diagram is simple, and its application is such that a child of ordinary mentality can learn it in a few hours. An artist should comprehend it, in the twinkle of an eye, at the first demonstration.

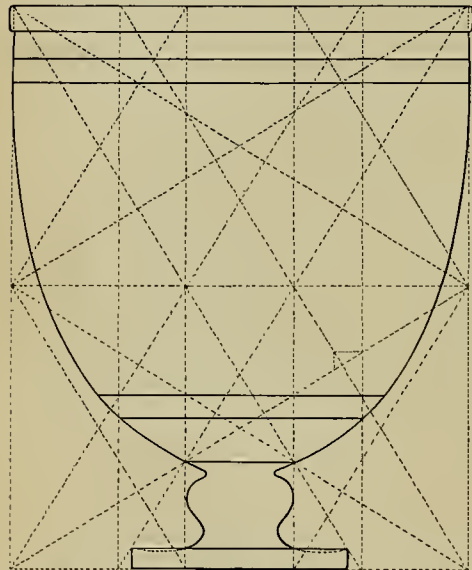
It is not possible to enter upon a full discussion of the manner in which these root rectangles are constructed; a few words must be made to suffice. A root 2 rectangle is produced from a square, from any square, by extending the base line of such square until it becomes equal in length to the diagonal of the square, and then constructing a rectangle on this line as base, with the same height as the square. Nothing can possibly be more simple and easily understood than that. A root 3 rectangle is constructed from a root 2 rectangle in exactly the same way, its base being the length of the diagonal of the root 2. The construction of these rectangles from 2 to 5, the highest ordinarily in use,



One of the Figures on the Antioch Chalice with its Dynamic Diagram Consisting of the Area of a Whirling Square Rectangle—The main parts of the body occupy the main areas of the diagram. Copyrighted by Kuchakji Freres.

is learned in ten minutes. In the construction of the whirling square rectangle, the diagonal of half of the square is used instead of the diagonal of the whole square. The mystery of these rectangles is fully explained by Hambidge in his magazine, *The Diagonal*, published by the Yale University Press, New Haven, Connecticut. The numerous numerals used by Hambidge in describing the rectangles, while of great importance to the student are not necessary to the beginner, and should not be allowed to deter him from learning the system.

The manner in which this system may be used is best shown by the diagrams reproduced with this article. One represents a sculptured figure from the Antioch Chalice, based on a whirling square rectangle, the outlines of which act as tangents to the body of the figure. At the same time the inner divisions of the rectangle correspond with the principal divisions of the seated figure. The other diagram shows the outlines of the Antioch Chalice constructed on



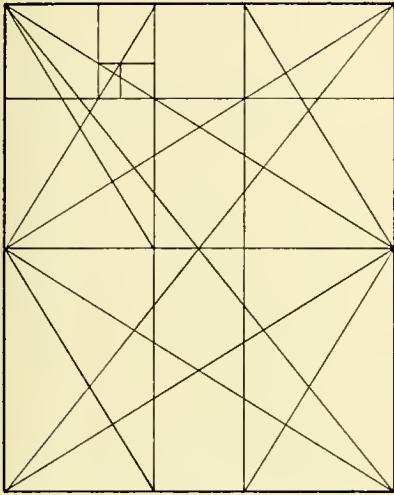
Outline of the Antioch Chalice and its Dynamic Diagram, a Rectangle Consisting of Two Super-Imposed Whirling Squares—The chalice itself having been compressed, differs from its original form, which is the one shown

on a rectangle that consists of two super-imposed whirling squares, each of the proportions of 1:618, the whole having the proportions of .809, as calculated after minute direct measurements, forming one area. It will be seen that the chalice form is determined by the lines of the diagrams. But the reader should understand that the same diagram could serve for the construction of almost an unlimited number of vases, each of different type, form and appearance. And this is true, not alone of vases, but of portraits, figures, landscapes and every other subject that achieves some portion of its beauty from proper posing, proper arrangement and harmonious proportions. This because, in these rectangles, every unit stands in relation and harmony to the whole.

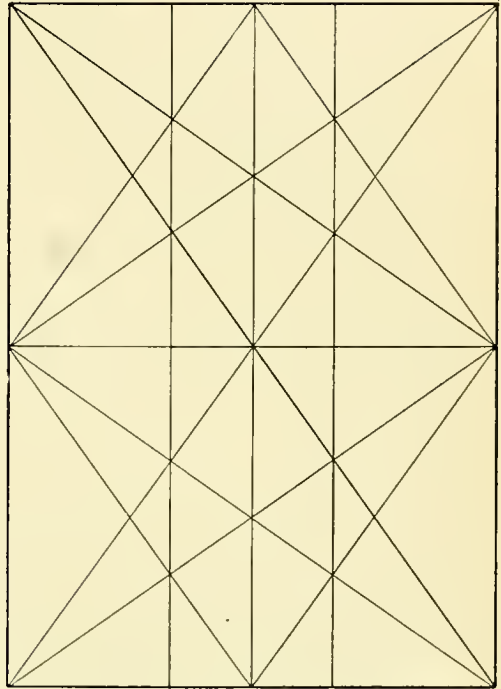
It is these characteristics of the root rectangles and their combinations that make them valuable to the photographer, and especially to the pictorial photographer awake to the demands of art. There are two simple and practical ways in which he can use the dynamic symmetry, but only a few words must suffice to point out their special merits. One is to mark, with black waterproof ink, a root rectangle on one's ground-glass or focusing screen, one which comes nearest in area to the glass itself, so that no unnecessary space may be wasted. A 5x7 focusing screen can, however, be used to good advantage as it is, because its proportions are very nearly the same as those of a root 2 rectangle, the excess area of the plate being but one millimeter at one end. After the rectangle is marked out with ink, draw diagonals, perpendiculars against these diagonals, from each corner, and mark the horizontals and vertical lines passing between the eyes of the rectangle. A few trials, with this diagram marked on the focusing

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screen, in taking a group, a landscape, or the like, will show the benefit that can be derived from its use. The photographer has but to arrange the most important points in his picture to coincide with the nodes in the diagram, the principal



The above shows a 4x5 focusing screen divided according to the Dynamic System. The area corresponds approximately to two whirling square rectangles. The subdividing can be done in different ways. At the right is a 5x7 diagram that very nearly corresponds to a root 2 rectangle



upright line in his picture to coincide with the principal upright line in the diagram, and the advantage is apparent.

Another way in which the system can be used is by constructing a similar diagram on transparent paper, corresponding as nearly as possible to the area of the paper to be used for the intended print. If you have an old print that, through seeming inharmonious as to form or proportion, you desire to cut down to better its shape, place one of these transparent outlines over it and see how near its important points coincide with those of the diagram. The best manner of improving the print will then suggest itself at once.

Even if it is found undesirable, for some reason or other, to cut down one's print or to mark one's focusing screen to fit a dynamic rectangle, one may still be greatly benefited by applying to either a diagram constructed on the same general principles as in the root rectangles. While these latter diagrams are of great value, they are defective in that but one-half of the resulting divisions will have the same proportions as the whole area of the print. But as the photographer is not always able to arrange every detail in his picture as most desirable, this may not be of vital importance. In a landscape of course one cannot control the outlines absolutely, but if, for instance, there is a tall tree or a church spire included, one might be able to so turn his camera as to place this object in coincidence with one of the main uprights, or with the main

areas, of the diagram; and doing this only will be well worth while, as the worker will soon learn. In photographing a figure the composition will always be benefited by arranging the pose so that arms and legs coincide with or at least parallel the diagonals in the diagram.

Those who may be interested in the Antioch Chalice and desire more information concerning this most wonderful object, are referred to the January, June and July numbers of this year's *New Era Magazine*. My reasons for illustrating this article with photographs and diagrams of this chalice is that I have been studying it in connection with the dynamic symmetry, and also because this object constitutes the most beautiful, as well as the most important, antique object known, one from which every artist might learn and profit. The chalice, made in the middle of the first century, was found in Antioch, in Syria, ten years ago. It carries twelve portraits of Christ, Apostles and Evangelists, the work of an artist who had known them personally; and who, besides being a student of the works of Scopas, had acquired a skill in sculpture unsurpassed either in ancient or in Renaissance times.

Camera Club's First Exhibit

The first exhibit of the members of the San Diego Y. M. C. A. Camera Club, recently held in the lobby of the Association Building, has just closed. The pictures were on display about a month. Members submitted as many prints as they desired, from which the committee on selection picked the three best from the number submitted by each member. In all about fifty prints were hung, these represented the best work of the Club. As it was an exhibition and not a contest, no awards were made.

At the last meeting of the Club, a committee appointed to select the four best pictures, decided upon the following: "The Thinker", by B. H. Haddock; "A Child Study", by Harold E. Lutes; "In the Cuyamacas", by H. L. Miller, and "Moonlight", by J. T. Nicholson, and "Eucalyptus", by Harold A. Taylor, was adjudged the most artistic piece of work submitted, but being president of the Club, and a member of the committee making the selections, Mr. Taylor's modesty caused him to protest its selection as one of the four. "Swiss Scenes", by Dr. R. L. Schneider and "A Foggy Morning", by I. N. Lawson, Jr., both showed excellent pictorial quality.

Much interest is being shown in this newly formed Club. Meetings are held every Thursday night, when many interesting phases of photography are discussed. "The Making of Autochromes" was the subject presented by Harold A. Taylor at the last meeting, while such subjects as "Aerial Photography", "Marketing Your Photographs" and "Press Photography" have been discussed up to date.

If top-notch efforts yields you no happiness, there's something wrong either with you or your efforts. Sit down and do some analyzing.—*Forbes Magazine*.

Some Constructive Criticism

By Edgar Felloes



Illustrations by San Diego Y. M. C. A. Camera Club Members

EDITOR'S NOTE: The pictures reproduced in connection with Mr. Felloes' article which follows, are the ones referred to in the notice of the San Diego Y. M. C. A. Camera Club exhibition on the opposite page. The original pictures were handed to Mr. Felloes without any explanation as to what they were or from where they came, but with the request he mentions. We feel quite sure that our good friends of the San Diego Club would welcome rather than resent the criticisms offered, particularly as such criticisms would benefit a large circle of our readers. Our making such use of the pictures is not intended as any reflection upon either the judgment of the committee that selected them or of the pictorial capabilities of the members of the Club. We simply felt that the pictures gave us an opportunity of presenting an article along the lines requested of Mr. Felloes, and that this in turn permitted us to carry out our plan of maintaining, as far as possible, some connection between our illustrations and the text that appears upon the same or intervening pages.

The photographs herewith reproduced were handed me by the Editor, with the request that I furnish him with a written constructive criticism, something that would be helpful to his readers, something not too dogmatic, not too much in the abstract, but something of a concrete nature that the reader could use and apply. What follows is submitted as the result of my efforts in that direction.



IN THE CUYAMACAS

By HOMER C. MILLER

CAMERA CRAFT

"In the Cuyamacas", a pleasing landscape; the photographer here shows appreciation of the pictorial possibilities of the scene and has made the exposure at an opportune moment. The direction of the clouds to the right is excellent. They repeat the line of the outreaching oak limb happily. From a memorandum on the back of the print I learn that the original negative was a $3\frac{1}{4} \times 4\frac{1}{4}$, made on a Standard Ortho plate, with the aid of a ray filter, and later enlarged with a soft-focus lens. Right here, I think the photographer did wrong in allowing his lens, in making the enlargement, to blur the trunk and limbs of the tree. As the smear of gray surrounding the darks is neither artistic or true to nature, what has it to recommend it? We are most of us familiar with the merits of backed and double-coated plates as a means of keeping the lights of our picture from encroaching on our darks; in short, to avoid halation we pay extra money for these plates. Does it show good judgment if, at the time or later, we permit our blacks to encroach on our lights by the abuse of a soft-focus lens? If one thinks along this line it may prove a wholesome check when focusing. Some subjects will lend themselves to "soft focus"; while, on the other hand, subjects of strong contrasts should be more carefully handled. In the reproduction of this picture, the blur I have alluded to will not show so plainly on account of the half-tone dot in the whites, but the reader will probably trace some of it. I hope he can, for what I have written is more especially for the new recruit to whom the hint may prove useful. I will now speak of a fault of construction. It is called construction because a picture is built up; it must be, if we are to get art into it; and there individuality comes in; individuality, the most precious thing in art; it is as important as the endorsement on a check.

In a photograph of a scene we cannot shift things as a painter can, but we can emphasize. A fault in this picture is, the eye is too quickly in it, as the foreground lacks interest the eye reaches the trees at once. A more interesting foreground would give added pleasure, the trees would be pushed back, the perspective would be increased. And now my memory trails back to a certain impatient photographer who said: "It's all very well to say do this and that, but how am I to know just what to do?" My reply was "Experiment". Though this was a good many years ago, I cannot advise better now; but we can do a little experimenting on this picture; it will help in building up pictures of our own. We should, of course, do a little practical reading on art subjects, also collect some reproductions of pictorial work of known merit; still, from these last we will not learn much until we have "learned to see"; so it's the reading first.

For our experiment we shall need a tube of black crayon sauce, a stick of soft white chalk and two paper stumps, to be procured at the art store. To return to our picture: On the extreme right are some patches of sunlight, also the cast shadow from the oak limb. Why smother the patch of sunlight with a nondescript shadow? The photographer, when enlarging, was more proud of his lens than he was of that shadow. Now, the shadow counts; any particular make of lens does not count. Let us place a little of the black chalk on a piece of paper, touch the stump in it, and on a clean part of the paper work the

SOME CONSTRUCTIVE CRITICISM



CHILD STUDY

By HAROLD A. LUTZ



THE THINKER

By E. H. HADDOCK

loose chalk off the stump so that there is only a small trace of the pigment left, and that should be evenly spread. With the stump, darken that cast shadow a little, about half as much again; but be very careful not to lose the "drawing", and by that is meant the various shapes of our shadow. Do not try to improve it, just follow copy exactly, and immediately the light patches will look brighter. In the left hand corner of the picture an irregular line, perhaps caused by a depression in the ground, has its beginning. Follow that line and develop it with the chalk; make it a little darker, but do not make it one continuous line. Follow that line to its end and that will lead the eye right across the foreground, from the lower left corner to the patch of sunlight. Between the second and third rock farther in the picture there is a space like a path; from this there is a curve that swings centerwards, coming forward to and connecting with our first line. Develop this curve in the same manner, and when this is done the eye will follow it around that rock and reach the trees.

There are other bits in the foreground that can also be assisted. Now, by scraping some of the white chalk and dipping the second stump into both the white and black, various shades of gray will be obtainable. With a light gray, touch up the lights of the nearer of the two bushes near the center of the picture. The shadows of this bush should be left entirely free from the gray; they might need a little strengthening with black on the under side because, where light is strongest the shadows are crispest and darkest. There are a lot of photographers who fail to realize this. With them it is blend, blend; they are eternally blending, and that kind of work is never virile, it is anemic and reminds me of that timid type of man who always "ventures to suggest". With this bush brightened it will be detached from its mate, which should be left as it is, and it will be found that we are getting more space around our objects.

With the mixed chalk we gray the distant hill, but the bushes along its base should be left; they are fine as they are.

Having got this far in our experiment, place the picture at a distance and study it. Perhaps that line of light at the top of the bank could be brightened a little with the white chalk; this is good in practice, because, for effect, our strong light should be near our deepest dark. I will now remind the reader that this worked-up print was our experiment; we did our thinking on it. If we liked the result it is easy to make changes on our negative; the parts we wish darkened we will reduce locally, and the parts to be lightened must be intensified, also locally. In both cases use the solutions weak so that the chemical action will not be too rapid. A couple of hours will be sufficient time to experi-



EUCALYPTUS

By HAROLD A. TAYLOR

ment with the picture and make changes on the negative, and that would be time well spent on a picture intended for exhibition. If, on the other hand, from any cause, our work on the photograph was unsatisfactory, sprinkle bread crumbs over the surface of the picture and with the palm of the hand lightly roll the crumbs over the print; by this means the chalk will be all removed.

“Eucalyptus”. Another soft-focus landscape, but in this case the lighting lends itself to this treatment. If we cover the picture down as far as the hills we can enjoy the very pleasing effect of aerial grays; but remove the cover and the white sky is brutally harsh. I am not a cloud crank, clouds are not so effective here as a tint in the sky. If we were to apply a graded tint from the top down, the print would be greatly improved, for we should then have an atmospheric effect over the whole picture. This is not a difficult thing to do, and I think this attractive picture is worthy of the trouble.

“Moonlight”. Most of us have made a moonlight at some time or other:

SOME CONSTRUCTIVE CRITICISM



MOONLIGHT

By J. T. NICHOLSON

we can't avoid it; like the measles, it just gets us. But I am willing to admit I am not proof against another attack of moonlight. Had I been along with a camera when this picture was made, I also would have used a plate, not altogether for the scene alone, but for its possibilities. That strip of black along the bottom of the picture should have been avoided. If the bit of land it represents contained anything of interest, a second plate should have been exposed on it, giving plenty of time, and then the picture could have been made from the two negatives, the combination would have been easy.

Supposing such a combination was satisfactory, I would repeat a light, only one quite subdued, close to the right hand side of the picture near the bottom, the object being to attract the eye over in that direction. Most of the interest in this picture lies to the left of the center line; there is not enough interest to even detain the eye on the right half. When looking on this picture the eye will possibly be attracted by the two patches of light and it will be puzzled between the two. This is wrong; there should not be two climaxes in a picture, as it is disturbing and confusing. We must sacrifice one, and as the upper light patch is more easily handled, we can trim it off or we can break clouds over it. The chalk and stump will quickly show the effect of the latter remedy. By reducing the area of bright light in that manner we accomplish our end by causing one of them to take second place.

I spoke of the possibilities of this scene as a subject for a composite picture,

mainly because so little work in the way of registering would be required. By putting a dark object before the sky on the right of this picture, that wide expanse of gray paper would immediately appear as a sky full of subdued light, the contrast with the dark object making it so. A suitable rocky foreground could be found almost anywhere; preferably one in which some of the rocks pile up pinnacle fashion; or one might select a tree for the purpose. This should be taken so that the pinnacle or tree will occupy a position near the right hand end of the picture, and be high enough to project into the sky. Experiment will show how high this object, whatever is used, should stand. This determined, the negative should be printed in as a silhouette; not black, but as a dark gray. A black silhouette will destroy the effect of air in the foreground, not so a gray. The lighter patch of water across the picture, near the front, is beautiful, and on that account can be advantageously accentuated by local intensification. By these means the picture can be built up; but remember, whatever is added or emphasized must not challenge that light patch on the water.

"Child Study". This could have been greatly improved by liberal trimming. The mass of black like a letter L printed backward, is unsightly; a better effect would have resulted by holding this part back in the printing, and thereby obtaining a gray. Still another improvement would be achieved by using the irregular vignette. The magazines are full of examples of these. *The Saturday Evening Post* gives at least a dozen examples each week, and it seems strange that photographers do not avail themselves of the advantages offered by this easily secured vignetting effect. I have also noted another peculiarity, and that is the neglect, in home portraiture, of the possibilities of the use of combined daylight and flashlight. While examples of this sort of work are not common, they are easily made and effective. Anyone interested in indoor portraiture will find experimenting along this line, using the ordinary Eastman flash sheets, if more elaborate equipment is not available. With the subject placed near a window and the flash sheet located back in the room where it will light the shadows, results may be secured that are very pleasing.

"The Thinker". The charm of this portrait lies in the husky little chap himself. I presume the print was made from a snapshot, as very little thought seems to have been given to its production. The child is of heroic proportions, owing to the nearness of the camera, while the background is uninteresting. The white sky being so near in tone to the child's white jacket, tends to flatten the picture; and, had the rock occupied the entire background we would have had a more forceful result.

While this picture ends my undertaking, I hope that some of my readers will be tempted to do a little of the suggested experimenting on some of their own photographs, for much may be learned by so doing. If photographers will only look upon their negatives much in the same way that authors regard their collected notes, not as the finished story, but as a valuable aid to it, photographic work must improve. This, because the photographer would become the master, instead of as would seem from most of the work that is offered for our approval, the negative is a despot of whom its creator is too often afraid.

Developing in the Tropics

By A. Charcois



With Illustrations by the Author

For over thirty-five years I have practiced photography in North Queensland; most of the time as a traveling photographer, my business taking me into bush towns and little farming centers, where the only available water supply was the nearest muddy water-hole. My old silver prints, produced under these conditions, are good today; and I am often called upon to copy an old photograph I had taken "way back" over thirty years ago. After so many years fighting and overcoming the numerous unfavorable climatic conditions, the following plan of development has been evolved.

The requirements are: The coolest part of the day, the coolest obtainable water and solutions, a make of plate that will stand solutions at eighty degrees Fahrenheit without giving trouble, and an acid-alum-hypo fixing bath that must not be overworked. As to particulars; the coolest period of the day is early morning, when, generally, plates may be developed, washed and dried before the heat of the day become excessive. To cool washing water I use a canvas bag, hung up in a draught. With the temperature of the atmosphere at ninety to ninety-five degrees, and the temperature of the water almost as high when placed in the water-bag, the early morning temperature of the latter will be found, after all-night cooling, to be from sixty to seventy-five degrees, according to the dryness of the atmosphere. The plates I have used mostly have been Ilford's, and these easily stand a temperature of solutions and wash water up to eighty degrees. As to developer, I can recommend no special formula, but I have been using pyro-soda; and, while of later years I have been using acid-alum-hypo of usual formula, for many years I used only plain hypo. My alum bath is the ordinary saturated alum solution.



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My procedure is as follows: In the evening I prepare for the morning's development by filling the water-bag, or bags, and hanging them in a draughty place. The solutions, the pyro-soda, the hypo and the alum, are in bottles that are loosely covered with a cotton cover, such as the top of an old sock or sleeve of an old cotton singlet. These are placed in a pie dish, half filled with water, and this, like the water-bag, is placed in a draught. These preparations made, I go to bed with the idea of getting up early.

Up in good time, I proceed to develop as usual. I always transfer the negatives direct from developer to fixing bath. My developing dish is made of sheet zinc, which will stand pyro and M-Q, but not amidol. The fixing bath is in a granite ware pie dish of such a size that negatives will lie across the narrow way with a space of half an inch or a little more between the film and the bottom. When fixed, the negative is held in the hand, while cold water is gently splashed over the film to rinse off the bulk of hypo; and then, held more horizontal, the saturated solution of alum from the pickle-bottle is flowed over several times and the negative laid, film up, on the side of the dish for five or ten minutes to permit the alum to soak into the film. This done, the negative is rinsed as before by splashing on cold water and allowing it to run off; the object of working in this way being to economize the supply of cold water.

The real washing is effected in a similar pie dish, the negatives being placed, film down, across dish and covered from the contents of the water-bag. Soaking in this position allows the heavy hypo solution to sink away, and as this method of washing, film down, very efficient, fifteen minutes should suffice. When washed, wipe both sides of the negative free from surface water and place in draught to dry.

The first illustration herewith shows the method of cooling the four solutions by standing the cotton swathed bottles in a dish of water and placing the whole in a shady place where there is a breeze. The other shows the pie-dish used for washing, with a negative that has been flowed with alum solution resting on the edge, another in position for washing, and a third lying face up on the bottom of the dish.

If a fresh fixing bath is to be used, it is advisable to mix it up just before it is required, so as to take advantage of the reduction in temperature that results. The use of formalin is unnecessary; and, my experience convinces me that it is almost certain to result in a film that is inclined to perish in the course of a few years.

The day returns and brings us the petty rounds of irritating concerns and duties. Help us to play the man; help us to perform them with laughter and kind faces; let cheerfulness abound with industry. Give us to go blithely on our business all this day, bring us to our resting beds weary and content and undishonored, and grant us in the end the gift of sleep. Amen. ROBERT LOUIS STEVENSON.

CAMERA CRAFT

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Camera Craft Is Late

Difficulties, obstacles, troubles and the like, hinging on paper shortage, transportation shortcomings, and other things, all combine to delay us for the last few issues until we are now over a month behind in our date of issue. This we shall endeavor to make up, a little at a time, until our regular schedule is again resumed. We could, of course, do as so many of the larger publications have done, combine two issues, but that creates an endless amount of trouble for the future, owing to the large number of our readers who preserve and bind their copies. A volume made up of eleven issues would create endless confusion. Our magazine is one of the few that can furnish any back number ever published, and one of the few such that has maintained a uniform size of page throughout its life, thus rendering itself particularly suited to the purpose of being bound up and preserved as a history or compendium of photographic advancement for the twenty years during which it has been published.

We trust that our readers will bear with us in our difficulties and feel assured that only time and physical endurance prevents our replying to all their letters of inquiry as to the cause of its failure to arrive as it should. But we would like to call the reader's attention to one important matter, and that is this: It is only the date on the cover, the contents page, the first reading page and the editorial page that is untimely. Every line of printed matter, every advertisement is just as up to the moment as if the magazine was dated two months ahead of the date actually given. In fact, our being somewhat off our regular publication date has enabled us to place some advertising in the hands of our readers a week or more sooner than would have been the case were we on our usual schedule.

Understanding this, and the further fact that such a small part of our reading contents contain any of the "news" element so important in publications of a different character, we believe our readers will feel that our unavoidable delay in getting out the last few issues can be overlooked, or at least considered as but an unavoidable inconvenience that deprives them of but little, if any, of the returns they quite rightfully expect for their subscriptions so generously sent in. It is hardly necessary for us to do so, but we hereby give you our assurance that being late is more distasteful to us than it can possibly be to the most impatient and exacting reader we may have on our long list. And this does not mean that our readers have displayed impatience; rather, their letters, abundant as they have been, have expressed a kindly interest, coupled with their concern, lest they had missed a copy that should have been received. And this kindly spirit and evidence of appreciation has made our inability to reply to all such letters more regrettable than would otherwise have been the case.

The Pacific Northwest Convention

The Photographers' Association of the Pacific Northwest will hold its next convention at Tacoma, Washington, September fourteenth to seventeenth, inclusive. This association is made up of photographers from Idaho, Oregon, Montana, Washington and British Columbia, and they are showing unusual interest and enthusiasm in the matter. Never before has the request for dues met with such a prompt and hearty response, and the officers are more than gratified at the prospects of a rousing good convention. The National Association has advised that a charter would be granted, thus assuring the latest and best work. Diplomas and ratings will be awarded by a competent jury and each member is requested to submit an exhibit, details of which can be obtained from the Secretary, Frank J. Lee, 1535 Commerce Street, Tacoma, Washington. Photographers within the territory covered by this association should not miss this opportunity of measuring up their work with the others, and they should not overlook this opportunity of enjoying displays, demonstrations and the like, all of a helpful and educational character.

The Fourth Los Angeles Salon

The Fourth International Salon under the auspices of the Camera Pictorialists of Los Angeles will be held, as before, in the Fine Arts Gallery, January third to thirty-first, 1921. As the same thorough and painstaking effort, as heretofore, is to be expended, such effort, reinforced by the quite enviable reputation already established can hardly do less than assure a most successful exhibition. As last year, our office will be supplied with entry blanks that we will be only too glad to hand out or mail to those requiring them, it of course being impossible for the committee to assure all desired contributors being reached by even their generous sending of prospectuses to their carefully compiled mailing list.

The Canadian International Exhibition

The Toronto Camera Club will again hold an international exhibition of photography at the Canadian National Exhibition in Toronto, from August twenty-eighth to September eleventh, 1920. The success of last year's international exhibition has justified the hope, then expressed, that it would become an annual event.

The Canadian National Exhibition Association has made available two rooms in the Applied Arts Building in which the committee hope to hang between three and four hundred prints, and they appeal for the support of the pictorial photographers of the United States, so generously forthcoming in past years. Entry forms giving particulars of the exhibition can be obtained from L. J. Geddes, Secretary, 2 Gould Street, Toronto, Canada, or from CAMERA CRAFT office.

Our Postal Magazine Club

Turn to our editorial under the above heading last month, read it over, and let us hear from you if the idea appeals. We want suggestions and want your aid.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

Logical Sizes For Plates

When a responsible committee of a large industry issues a new standard series of sizes or gauges for their commodities, some orderly method of relation or co-ordination between such sizes is looked for. One looks in vain for any trace of system in the list of standard sizes for small plate cameras issued by the British Photographic Manufacturers' Association in April last. There are probably good reasons why well known old but haphazard sizes must be retained, but it is impossible in the list of new sizes to find any trace of aiming at a definite principle. The new sizes are in metric measurement, but so far from introducing any co-ordination they actually destroy the old relation of "whole," "half," and "quarter" in the Continental series of 9x12 cm., 6x9 cm., and 4½x6 cm. by altering the two former to 8x12 and 6½x9.

I can only trace three aims in this list. "Let's chuck out a few sizes." "Let's give the Decimal Association a lift by shelving inches." "Let's number the list to give some appearance of order." It is safe to say that such numbers will always be ignored outside the catalogues.

The object of this paper is to give the result of an investigation into the possibility of providing a theoretically logical and co-ordinated series of sizes.

In the evolution of plate sizes a certain co-ordination was aimed at in the old series of whole-plate, half-plate and quarter-plate. There are clearly great advantages in having a series in which the larger size, cut exactly in half, provides a standard smaller size, and this advantage is very apparent in the matter of sensitive paper. It leads to economy of glass and paper, both to manufacturer and user. It is fairly clear that the first "half-plate" must have really been half of 6½x8½, namely 4¼x6½, which is still a stock size. Why, then, was half-plate altered to the present 4¼x6½? The answer lies in the

proportion between the two sides of the plate, and as this matter of proportion is a vital one, I must examine it more carefully. The ratio of short to long side in the whole plate, evidently thought satisfactory by old workers, is 1 to 1.3. If cut in half the ratio of the new plate becomes 1 to 1.53, evidently much too lanky a plate for the taste of those days, and it was accordingly altered to 4¾x6½, which is 1 to 1.36. The true quarter of a rectangle always retains the same ratio as the large size, and therefore the quarter-plate cuts four out of a whole plate to this day, and has the same ratio of 1 to 1.3.

Many workers, myself included, prefer a plate of good length in proportion to width, and 5x7½ with a ratio of 1 to 1.5 is my favorite. Two of the new sizes have this proportion. Now, if plates of this proportion of 1 to 1½ are cut in two, the new size has a proportion of 1 to 1⅓, which, if cut in two, again results in 1 to 1½, and so on alternately.

Here let me diverge from the main theme to see what ratios appear to be favorite ones. Leaving out such special-purpose sizes as stereo and lantern, and keeping to sizes of whole-plate downwards, the range is from the dumpy 4x5, 1 to 1.25, to the lanky post-card, 3½x5½, 1 to 1.58, the average between these two being 1 to 1.415, which, as will be seen presently, is almost exactly the ratio I ultimately arrive at for a standard. But in large sizes, 8x10 upwards, the present sizes in use are all dumpy, chiefly a ratio of 1 to 1.2, or 1 to 1.25. Whether this is from a real need or from custom I cannot say.

To come back to the problem of devising a logical series.

At first sight a series of 1½x2, 2x3, 3x4, 4x6, and so on, is good. Each plate cut in two provides a smaller size. This principle, I may say at once, seems inevitable as conferring economy in many ways in plates and paper. Then the plates are alternately of the simple 1 to 1½, and 1 to 1⅓ ratios. But,

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unfortunately, this does not give the user a choice between squat and lanky sizes, for the 3x4 size man can only use a long-shaped plate by getting one of double or half the area of what he wants. It would be possible to give such free choice by adding another series of $1\frac{1}{2} \times 2\frac{1}{4}$, $2\frac{1}{4} \times 3$, $3 \times 4\frac{1}{2}$, $4\frac{1}{2} \times 6$, etc. But this, while doubling the number of sizes to be provided, would yet not provide intermediate half-way areas.

On the whole, I found it worth while investigating whether there was not some value between $1\frac{1}{3}$ and $1\frac{1}{2}$ which would provide a ratio between the shorter and longer side of a plate which would remain constant when the plate was cut in half.

I soon found this perfect ratio to be square root of 2 or 1.414, which is almost exactly the average of favorite small plate sizes, and therefore a reasonable compromise between advocates of squat and of lanky plates either of whom will only have to sacrifice a small strip of the surface of their plate, at top for the "squat" man, and at sides for the "lanky" man, to get their desired print.

It is unfortunate that this ratio is incommensurable, for whether we give sizes in inches or centimeters, it is inconvenient to have them in other than whole numbers or very simple fractions.

But in setting a slide rule to this ratio of 1 to 1.414, it is soon found that the simple numbers, 6 to $8\frac{1}{2}$, almost exactly represent it, and can therefore be taken as a standard rectangle which, when halved, will provide two rectangles of half the area but of the same proportions.

Such a series I, therefore, think to be best for standard sizes of plates, although there remains the doubt whether the jumps to half or to double any one area of plate are not too great.

Another glance at the slide rule shows that 5x7, a ratio of 1 to 1.4, is the next nearest available to 1 and to the square root of 2. If cut in half this becomes $3\frac{1}{2} \times 5$, which has a ratio of 1 to 1.43, and halved again the ratio comes back to 1 to 1.4.

I will label this series D, and the $6 \times 8\frac{1}{2}$ series C.

It is a fortunate fact that the area of plates in the series D comes almost exactly half way between the area of those in series C, and that if both series are adopted within the range of most used sizes, there will be a far

more uniform series in areas than ever yet provided, without, I think, providing an excessive number.

There are only eight sizes from "whole plate" to "vest pocket."

It is a minor tragedy of photographic science that the early divisors of whole plate size only missed adopting a perfect ratio by half an inch in one dimension.

A table, made up of these two logical ranges of sizes, would form a series as follows:

D series	.....$1\frac{3}{4} \times 2\frac{1}{2}$	7	x10
C series	.....$2\frac{1}{8} \times 3$	8	$\frac{1}{2} \times 12$
D series	.....$2\frac{1}{2} \times 3\frac{1}{2}$	10	x14
C series	.....$3 \times 4\frac{1}{4}$	12	x17
D series	.....$3\frac{1}{2} \times 5$	14	x20
C series	.....$4\frac{1}{4} \times 6$	17	x24
D series	.....5×7	20	x28
C series	.....$6 \times 8\frac{1}{2}$	24	x34

Any plate cut equally in two provides the next but one smaller size, of half its area.

All in the series have practically the same ratio of width to length, namely, not less area of the two nearest sizes.

Each plate is in area near to the average than 1 to 1.4, not more than 1 to 1.43.

Three plates in the series, 5x7, $4\frac{1}{4} \times 6$ and $2\frac{1}{2} \times 3\frac{1}{2}$, are already stock sizes in inches.

The present $17\frac{1}{2} \times 24$ sheet of printing-out paper, after taking half an inch from the edge, gives all the sizes in C series without waste by halving repeatedly; and all the D sizes can be cut without waste from a stock width, 20 or 40-inch, of bromide or printing-out paper.

The same series is theoretically perfect as standards in the printing trade for books, etc., quite apart from photography.

The proportion of the rectangle which is the basis of this series is the only proportion which remains unaltered when the rectangle is halved. Its length to its width is as the diagonal of a square is to the side of the square.

In conclusion, I repeat that such a series is equally applicable to inches or centimeters, the latter taking the higher numbers. As, however, British plate users have only bought plates in centimeter sizes for use with cameras of foreign origin, I can see no reason for abandoning our British inch.—ALFRED WATKINS, F. R. P. S., in *British Journal of Photography*.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Actinic Value of Light

Two or three recent queries have been concerning the term actinic light, or rather, actinic value. Even a recently published explanation fails somewhat to clear up the matter, because it compares the exposure necessary for an object in shadow and one in sunlight, thus implying that illumination and actinic quality are alike. As the term is used in photography, the degree with which any light will affect the sensitive emulsion of a plate, film or paper is a measure of its actinic value, a value that may not be apparent to the eye as is ordinary illuminating value. For example, photographic emulsions can be safely exposed to an amount of orange or ruby light in which ordinary print can be easily read by reason of the illuminating value, while the same emulsions would be strongly affected by a blue light of such low illuminating power that the same print could hardly be distinguished. And aside from this lack of relationship between illuminating value and actinic value, there is another reason why the eye cannot be depended upon to judge in the matter, namely, its power of adaptability to the strength of the light. We all know how dark a room may appear as we enter it from bright sunlight out-doors; but, as our eyes become accustomed to the decreased illumination, the light seems quite strong and satisfactory. It is this adaptability of the eye that makes it so hard to judge exposures, even where there is no marked variation between actinic value and strength of illumination. We may learn that red and yellow objects reflect light that is weak in actinic value and make allowance therefor, but even then it is almost impossible to recognize quite marked differences in the light falling upon the object being photographed; as for example, the decided red or yellow tint of the light that sometimes prevails near sunset. While of course the light sensitive ratio of printing-out paper and plate or film emulsion is not

exactly the same, the relative sensitiveness is about the same, so that one really does not need the special prepared paper, used in some forms of meters, in order to test the actinic value of a given light. For example, a piece of Solio paper, exposed under a small star or diamond-shaped hole cut in the corner of a memorandum book cover, will show a faint outline of the opening, in strong light during the middle of the day in June and July, in practically one-fourth second. This can be used as a standard and when working late in the day, in winter, under overcast sky, or indoors, the increased exposure needed to produce the faint star outline on the Solio paper under the memorandum book cover will show just how much less actinic the light is under one or more of these, or other, factors tending to decrease the actinic value of the light. If it takes two seconds to get the star outline just faintly visible, the light has just one-eighth the actinic value of sunlight at noon in mid-summer and an eight times longer exposure is required. The apparent or illuminating power of the light may seem to be such as to suggest only a doubling of the exposure, but the testing of the light as described will be found a most accurate guide. This is really the foundation of the Steadman system and we have mentioned it here as the most simple way of explaining the relationship between actinic value and length of exposure, as this last is what our correspondents wish to have made clear.

Exhausted Fixing Bath

Another Illinois subscriber wants to know how he can tell when his fixing bath has become too weak, by means of a hydrometer; or rather, he wants to know what will be the hydrometer reading for a bath that has become too weak. There is really no connection between the fixing strength of his used bath and the readings on a hydrometer. Aside from the alum and acetic acid the bath perhaps contains, fixing plates or paper

therein adds silver thereto, so that the density is not a measure of the hypo content. In addition, the hydrometer known to the photographic trade, was originally made to indicate grains of silver per ounce of solution, and is not a true density measuring instrument. Our correspondent can understand from this that there could hardly be any method of determining the fixing value of any used bath by means of this hydrometer, although the hydrometer could be used to determine the strength of a fresh bath, and is so frequently employed. The procedure for the latter is as follows: Make up a plain fixing bath of a definite desired strength, allow it to come to a convenient temperature (it will be quite cold when first mixed up), and then test it with the hydrometer. The reading secured will be the proper one to use in making up any future plain fixing bath of the same convenient temperature. For example, one can keep his hypo dissolved in a more or less strong or concentrated solution and make up a fresh bath very quickly by simply adding water to a portion of this stock solution until the determined hydrometer reading is recorded. Then the hardener can be added, if required, and the fixing bath is at once available without waiting for the hypo to dissolve or for the solution to fall in temperature to correspond with the developer and wash water being used; fresh mixed solution, as we have explained, being quite cold.

Forms of Sodium Sulphite

An Illinois correspondent asks us concerning the strength of the two forms of sodium sulphite and sodium carbonate, anhydrous and crystals. A good quality of the anhydrous is practically twice as strong as a good quality of the crystals, but of course different samples of both forms vary not a little in their purity. In sodium carbonate we have three forms, the anhydrous, the crystals and the granular, the latter being perhaps the most dependable for the reason that the anhydrous takes up moisture in a damp atmosphere and the crystals tend to become anhydrous in a dry atmosphere. There is practically little or no question as to the purity of the carbonates offered, but their strength may vary according to the amount of moisture content. In normal condition, the granular is twice as strong, and the anhydrous somewhat more than twice as

strong as the crystals. That known as monohydrated or pure photographic granular is no doubt the most dependable, as long as it is not allowed to become exposed to the action of the air enough to change its water content.

Dissolving Metol

An Oregon reader complains that in mixing up his pyro-metol developer there is sometimes an undissolved sediment that no amount of shaking will dissolve. This is, no doubt, due to his failure to entirely dissolve the metol before adding the sodium sulphite, a common mistake with those making up a metol developer. If the metol is not completely dissolved or taken up by the water before the sulphite is added, a precipitate is quite likely to form, and once the sulphite is added, this precipitate will not dissolve.

"My Scars of Battle"

Some years ago we published, as a part of an article by one of our contributors, a few lines of verse, containing the above words. A New York correspondent asks us to repeat them or give him the source. The stanzas in question read as follows:

TO A PHOTOGRAPHER

I have known joy and woe and toil and
fight;
I have lived largely, I have dreamed and
planned,
And Time, the Sculptor, with a master hand,
Upon my face has wrought for all men's
sight
The lines and seams of Life, of growth and
blight,
Of struggle and of service and command,
And now you show me this—this waxen
bland
And placid—unlined, untroubled white!

This is not I—this fatuous face you show
Retouched and prettified and smoothed to
please.
Put back the wrinkles and the lines I know,
I have spent blood and brain achieving
these;
Out of the pain, the sorrow and the wrack,
These are my scars of battle—

Put them back! BERTON BRALEY.

The above was originally published in *Harper's Weekly*, about six or seven years ago; and, I believe, was not as fully appreciated as it should have been, by the photographers.



OUR BOOK SHELVES

“The Photographic Researches of Hurter & Drifffield”

This is no doubt the most notable photographic book published since Hunt's "Researches on Light" in 1844. It has been gotten out by the Royal Photographic Society of London, and has received the highest praise from the British press. The society has appointed Tennant & Ward, 103 Park Avenue, New York, selling agents for this country and a supply is expected by the time this reaches our readers' eyes. The price will be nine dollars, postpaid. A more extended mention will be made as a copy becomes available for examination.

“Motion Picture Photography”

The full title "Condensed Course in Motion Picture Photography" suggests more fully the wide scope of this handsome volume, edited by the well known authority on the subject, Carl Louis Gregory, F.R.P.S., formerly chief instructor in Cinematograph Signal Corps School. Chapters by Charles Wilbur Hoffman, formerly with Pathe, Edison, Thanhouser and the like, and others by specialists of the research laboratories of the Eastman Company, add to the value of the book. In fact, the editor acknowledges not a few most authoritative sources of information, all going to show that no pains has been spared to make the work as exhaustive as possible along the lines of practical instruction. A wealth of illustrations are provided, and as the work is just off the press, the reader can be assured that the best and latest information is presented; or rather, that the very full and complete information that is given on every phase of the subject is not old or obsolete. We should, however, qualify our description of the book by explaining that natural color work, photomicrography with the motion picture camera and a few special subjects of that nature are not touched upon for the simple reason that

to do them all justice would be out of the question in one volume, and to do them less than justice would mean to slight or reduce the space devoted to the fundamentals of regular motion picture work. Educational and industrial work, animated cartoons, trick work, double exposures, submarine and airplane photography, are all covered. Published by the New York Institute of Photography, 141 West Thirty-sixth street, New York.

“Photography and Its Applications”

This is a neat little cloth bound book of some one hundred and twenty-five pages, the text by William Gamble, F.R.P.S., and the cuts from various sources. The history of photography and its various applications are treated in a full, yet concise form, giving the reader, unacquainted with the subject, a quite general survey of the field covered. The book is one of the series entitled "Common Commodities and Industries," originating in England, and obtainable from Isaac Pitman and Sons, 2 West Forty-fifth Street, New York. Price one dollar, postpaid.

“Practical Studio Advertising”

About the best two dollars' worth of good advertising ideas that we have ever had the pleasure of seeing. Any professional photographer who has in mind the spending of even only a few dollars in the most modest amount of advertising will add many dollars to the value of such publicity by acting upon the advice and using the ideas furnished by this compilation. Striking and attractive advertisements in generous number, letters to be sent out to present and prospective customers, business cards, circulars, booklets, even collection letters, are all shown in the best and most attractive forms. Merely as a saver of time, thought and trouble, this compendium is worth many times its cost. Send two dollars and get a copy, addressing: Abel Publication Company, Caxton Building, Cleveland, Ohio.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

New Members

- 4749—J. T. Gilseth, Box 25, Pine Creek, Minn. $3\frac{1}{4} \times 4\frac{1}{4}$. Class 3.
- 4750—Morton W. Elliott, Dillon, Mont. 3×5 , 8×10 and enlargements, on developing paper. I desire no exchange at present, as I am just starting in business. Class 1.
- 4751—C. H. Foster, Box 92, Kerrwood, Ont., Canada.
 5×7 , on developing paper, of Ontario views and portrait work to a limited extent; for general views and figure poses. Class 1.
- 4752—Walter Henry, 215 N. Main St., Butter, Mo.
 Exchange notice later.
- 4753—John J. O'Doran, 2147 Richmond Terrace, Port Richmond, Staten Island, N. Y.
 Exchange landscapes only.
- 4754—Louis Kuno, Box 63, Hemlock, Ohio. $3\frac{1}{4} \times 5\frac{1}{2}$ and $3\frac{1}{4} \times 4\frac{1}{4}$, on developing paper, of scenery, landscapes, buildings and portraits, of any kind, of interest. Class 1.
- 4755—A. C. Yuill, East Moline, Ill. Class 3.
- 4756—J. William Hazelton, Box 196, Charleston, W. Va. Class 2.
- 4757—Gunder Omland, McIntosh, Minn. Class 2.
- 4758—H. B. Romane, 708 Willamette St., Eugene, Ore.
 5×7 or smaller, on developing paper (no glossy), of Oregon views, marine landscapes etc., for other marines, landscapes and views in general. Desire to exchange only 5×7 or $3\frac{1}{4} \times 5\frac{1}{2}$ prints; no post cards. Class 1.
- 4759—George E. Arms, 136 Riverside, Owatonna, Minn.
 $2\frac{1}{4} \times 3\frac{1}{4}$ and 4×5 , on developing paper, of everything under the Southern Minnesota sun; for scenery from different parts of the United States. Desire to exchange only post cards. Class 2.
- 4760—H. B. Rood, Church St., Granville, N. Y. Class 2.
- 4761—W. S. Turner, 3006 Landis St., Pittsburgh, Pa.
 All sizes, on developing paper, of marines, landscapes, old mills, bathing girls, etc., also lantern slides; for same class of subjects. All photographs to be sent by first class mail. Class 1.
- 4762—Count G. De Miro, 3706 Delmar Blvd., St. Louis, Mo. Class 3.
- 4763—George A. Smith, 1677 Palmwood Ave., Toledo, Ohio. Class 3.
- 4764—David Forrest, Box 25, Willits, Calif. $3\frac{1}{4} \times 5\frac{1}{2}$, on developing paper, of water scenes, landscapes and portraits. Class 3.
- 4765—Charles A. Ehren, 18 Hill St., Mechanicsville, N. Y.
 $3\frac{1}{4} \times 5\frac{1}{2}$, on developing paper, of landscapes and post card views; for all kinds of subjects. Class 2.
- 4766—U. A. Donafi, Santa Fe, N. M.
 $2\frac{1}{4} \times 3\frac{1}{4}$ to 8×10 , of Indian studies, Indian pueblos, art, portraits; for night pictures and draped and undraped figure studies. Class 1.
- 4767—Hartley L. Emerson, 315 Pool St., Biddeford, Me.
 5×7 and smaller, on developing paper, of pretty girls, river scenes and historical subjects, for the same and mountain views. Class 1.
- 4768—N. V. Virkar, Girgaon Road, Bombay, City, India.
 $6\frac{1}{2} \times 8\frac{1}{2}$, and post cards, on developing paper, of landscapes, seascapes, portraits, etc.; for subjects of general interest. Class 1.
- 4769—Edward A. Mueller, Jr., Box 20, Newark, N. J.
 Any size up to $6\frac{1}{2} \times 8\frac{1}{2}$, on all kinds of paper, of Indians, horses, dogs, lions, views and pictures of general interest; for figure studies and anything of interest, not mounted. Must be first class work.
- 4770—Andrew Petos, Box 42, Windsor, Vt. $2\frac{1}{2} \times 4\frac{1}{4}$, on developing paper, of scenery, etc.
- 4771—George W. Nichols, 179 Madison St., Chicago, Ill. Class 3.
- 4772—Will R. Kubley, Argos, Ind. Class 3.
- 4773—Charles E. Fisher, Box 426, Taunton, Mass.
 $3\frac{1}{4} \times 5\frac{1}{2}$, on developing paper, of locomotive and train; for the same class of subjects. Class 1.
- 4774—Sanjiro Kaneko, care Suduki & Co., Wakamatsu, Fukuokaken, Japan.
 $2\frac{1}{4} \times 3\frac{1}{4}$, $3\frac{1}{4} \times 5\frac{1}{2}$, and $4\frac{1}{4} \times 6\frac{1}{4}$, on developing paper; for all kinds of photographs. Class 1.
- 4775—Edward M. Crumley, 145 Wilson St., Hartford, Conn.
 $3\frac{1}{4} \times 5\frac{1}{2}$ and enlargements on bromide and developing paper, of scenery, marine views, and fancy poses of children; for same and landscapes. Class 1.
- 4776—G. Dempsey, B. & B. Dept., C. N. Ry., Saskatoon, Sask., Canada.
 $3\frac{1}{4} \times 5\frac{1}{2}$, 5×7 and $3\frac{1}{2} \times 12$, on self-toning and developing paper, of landscapes and miscellaneous subjects; for landscapes. Exchange only post cards. Class 2.

RENEWALS

- 1172—R. Weaser, 533 West St., Bloomsburg, Pa. $3\frac{1}{4} \times 5\frac{1}{2}$, 5×7 and 8×10 , on printing-out and developing paper, of landscapes; 5×7 stereoscopic views of mountains, rivers, lakes and snow scenes. Exchange anything good. Only good work sent and received. Desire to exchange only post cards and 5×7 stereos. Class 2.
- 2095—G. G. Stortz, 2424 Germantown Ave., Philadelphia, Pa.
 $3\frac{1}{4} \times 5\frac{1}{2}$, on printing-out paper, of historical views in and around Philadelphia; for all kinds of views; no portraits. Want prints only. Class 3 for present.
- 2533X—Wilmer Winston, care Union & Planters Bank & Trust Company, Memphis, Tenn. Class 3 for present.
- 3329—George R. Bunn, 1571 W. First St., Los Angeles, Calif.
 •Class 3 for present.
- 4090—John W. Cook, Kingsburg, Calif. Class 3 for present.
- 4132—C. S. Carlsmith, Hilo, Hawaii, T. H. Class 3 for present.
- 4236—Tom Rocamp, Asheville, Man., Canada. Class 3 for present.

NOTES AND COMMENT

A Department Devoted to the Interests of Our Advertisers and Friends
In it will be found much that is new and of interest

Reported by William Wolff

The Eastman School of Professional Photography has come and gone. Many visitors from the interior of the state attended.

A. C. Henline and family of Klamath Falls, Oregon, motored to San Francisco and remained about two weeks.

Stanton Rowell of Grants Pass, Oregon, was a visitor in San Francisco recently.

Geo. A. Dolan of Probus fame has returned from three weeks sojourn in Mendocino County. Caught many fish, so he says.

Roscoe Perkins of Honolulu called on the writer while in San Francisco.

L. M. Powell of Hanford and J. A. G. Brown of Fresno attended the Eastman school.

H. A. Parker of Pasadena, California, and the writer will motor through Lake County and to the south for a few weeks during August.

Scott Snowden of Modesto visited the city recently.

W. S. Valentine of Redding was in San Francisco for the Eastman school.

C. R. Mandeville, formerly of the Palace Hotel Studio, is now located at 220 Post Street, San Francisco.

Victor Flash Cabinet Popular

Fred Hartsook, a popular photographer of this city, who controls and operates a number of studios throughout the state, has recently placed an order for an additional seven Victor flash cabinets for some of the studios, increasing his present supply which numbers eleven. It is obvious that Mr. Hartsook would not be purchasing a further supply of these cabinets were they not found perfectly satisfactory. Photographers interested in a practical method of making themselves independent of unfavorable light, or have inconvenient situations, will do well to investigate the merits of the Victor flash cabinet as manufactured by James H. Smith & Sons Company, 3541 Cottage Avenue, Chicago, Illinois.

"Pictorial Composition In Photography"

In this work, the author, Arthur Hammond, associate editor of *American Photography*, gives the reader much that is instructive concerning the many phases having to do with the production of pictorial work by photography. There are nearly fifty full page reproductions of the author's best pictures, used as illustrations, and these are real illustrations, being used to point out or make clear the meaning of suggestions and instructions given in the text. Chapters are devoted to spacing, mass, linear perspective, simplicity, line composition, tones in portraiture, art requirements and pictorial technique. Such practical subjects as outdoor portraiture, night photography, bromide enlarging, retouching and the like, are all covered by informative discussion based on the author's own work and experience. All in all, the book is one that should be studied by every photographer interested in the pictorial possibilities of the camera, particularly the one who desires information that is practical and concrete, not theoretical and abstract. Published by American Photographic Publishing Company, 17 Columbus Avenue, Boston, Massachusetts. Price three dollars and fifty cents.

The New Verito Lens

During the past ten years the Wollensak Optical Company of Rochester, New York, has done much to popularize soft-focus photography. In making their Verito, Diffused-Focus, f-4 lens, and by encouraging and instructing the photographic profession in its correct usage, they have established, in the minds of the general public, a genuine appreciation of the quality of image rendered by the soft-focus type of lens.

The advantages of the old Verito lens are already well known. Its convertibility, with a rear focal length of about half again as long as the doublet; its high speed of f-4; its great reduction in the amount of retouching necessary; its suitability for Graflex or

studio use, or for enlarging where soft-focus effects are desirable; were all appreciated by the progressive photographers.

Despite its popularity, the experimental department of the Wollensak Company has been constantly on the alert for any possible improvement, with the result that a new Verito has been developed, one having all of the characteristic good qualities of the old lens, but so improved as to practically eliminate the slight halation that was sometimes apparent. Furthermore, this new lens gives a softness at f-4 that is about equal to that given by the old lens at f-6. The result is that the professional and the advanced amateur using the soft-focus type of lens can employ this new objective at its widest opening without obtaining a displeasing fuzziness. The new construction makes possible high speed exposures with no danger of double line, halo or mushy appearance. Unlike other soft-focus lenses, the new Verito gives the same image on the ground-glass that it does in the finished negative.

In enlarging with the new Verito, it is unnecessary to use diffusing stops, as with the old form. The construction is such that a beautiful degree of softness is obtained without the stops, and the diffusion can be varied to suit the preference of the user by simply using f-8, f-9.5 and f-10 in place of the old diffusing stops that were numbered 1, 2 and 3. Doing away with the old stops means that exposure is more than four times as rapid. An inquiry addressed to the Wollensak Optical Company, Rochester, New York, will bring full particulars.

Greatly Increased Business

Since control of the Cooper Hewitt Electric Company, Hoboken, New Jersey, was assumed last June by the General Electric Company, new business of the company has more than doubled. The plant has been running to capacity and working overtime in an effort to catch up with orders. In order to meet the increased demand for industrial lighting outfits, as well as motion picture apparatus, the Cooper Hewitt Electric Company has recently purchased some adjoining property. This will eventually give more than double the present floor space. Rapid strides have been made in the improvement and development of the Cooper Hewitt lamp, chief among which is the standardization of the new eighty-five per cent power factor outfit. Some

radical improvements are under way which will materially increase the efficiency of this lamp. The engineering and sales department have been materially increased by the acquisition of new men.

In Their Own Building

The Bulletin of Photography and *The Camera*, will, in the future, be issued from their own building, located at 636 Franklin Square, Philadelphia. With his own printing office located in his own building, the publisher, Frank V. Chambers, is to be congratulated upon the enviable position enjoyed by his two excellent photographic magazines. *The Bulletin of Photography* is published weekly, dealing almost exclusively with professional topics, while *The Camera*, published monthly, concerns itself with subjects of interest to amateurs and the more general photographic field.

Illinois College of Photography

President L. H. Bissell has the honor of being a charter member of the Rotary Club, recently organized in Effingham. The organization will be a great help as a "Booster Committee" for the city, and needless to say, Mr. Bissell will be among the most energetic.

Percy C. Raymer of Detroit, Michigan, is now one of the College Faculty as instructor in the etching department. Mr. Raymer is a photo-engraver of considerable experience, and comes highly recommended.

Some new equipment has been added recently for the operating department: a large Hadaway Double Arc lamp for artificial lighting, and a studio mirror; while the printing department has come in for its share with a heater for sepia work, an automatic print washer, and an embosser.

The Bissell Colleges are now enjoying the largest attendance in the history of the institution. The enrollment for the month of January alone was fifty-two, which is not so bad for a single month. At that rate, 1920 should be a record year.

Amateur Prints Wanted

Ten dollars for the best photographic print, unmounted, of a current big news event taken by an amateur photographer, and two dollars each for any prints used, with the return of any not used if postage is sent is offered by the *Mid-Week Pictorial*, 1708 Times Building, New York.

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CAMERA CRAFT

A Photographic Monthly

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Expirations—Subscriptions to Camera Craft are discontinued on date of expiration. The date on the address label on the wrapper shows the time to which each subscriber has paid. Thus: Nov. 09 means that the subscription expires with the number dated November, 1909. ¶Renewing—In renewing a subscription, do not fail to say that it is a renewal, giving name and address just as now on the address label. ¶New Address—In notifying us of a change of address, give both the old and new address. Should you miss a copy through change of address, advise us of the fact, and another will be gladly sent. ¶Dealers—All photographic supply dealers and news dealers are authorized to receipt for subscriptions in our name.

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 San Francisco, California

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	Kodak Australasia, Ltd., Sydney
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	Richard Hill, Matlock House, Devonport, Auckland
New Zealand	Waterworths Limited, 53 Queen St., Auckland
	Waterworths Limited, 286 Lambton Quay, Wellington
Philippine Islands	F. O. Roberts, Manila
Japan	K. Kimbel, Yokohama
China	Squires, Bingham & Co., Shanghai

SEPTEMBER BARGAINS

The Cameras and Lenses listed herewith are guaranteed perfect and as represented. We do business on a strictly money-back basis and will cheerfully return your money on any purchase if goods are returned within five days after the receipt of same. We pay spot cash for Used Cameras, Lenses and Photographic Equipment, either Amateur or Professional. We buy and sell everything photographic, from a Brownie Camera to a Complete Studio.

LENSES

1 $\frac{3}{8}$ -in. Heliar Motion Picture lens, f-4.5, in focusing mount; perfect.....now	\$37.50
2-in. Bausch & Lomb Zeiss Tessar, 50-mm. Motion Picture lens, Series Ic, f-3.5-in., home-made focusing mount; absolute perfect condition.....now	30.00
2-in. Bausch & Lomb Zeiss Tessar, 50-mm. Motion Picture lens, Series Ic, f-3.5, in Compound shutter; like new	48.00
2 $\frac{1}{4}$ x3 $\frac{1}{4}$ Euryplane, 3 $\frac{1}{2}$ -in. focus, in Compound shutter; perfect condition. List \$45.00	27.50
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Ross Goerz, 5-in. focus, f-6.8, in Optimo shutter; new. List \$59.00.....now	38.75
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Ross Goerz, 4 $\frac{3}{4}$ -in. focus, f-4.8, in focusing mount; like new. List \$60.00...now	39.00
3 $\frac{1}{4}$ x4 $\frac{1}{4}$ Voigtlander Dynar, 4 $\frac{3}{4}$ -in. focus, f-6.8, in Koilos shutter; like new.....now	35.00
4x5 Ross Homocentric, 6-in. focus, f-6.3, in Wollensak Auto shutter; new.....now	42.50
3 $\frac{1}{4}$ x5 $\frac{1}{2}$ Sylvar, Series III, No. 3A, 6 $\frac{1}{2}$ -in. focus, f-6.8, in Wollensak Auto shutter; new	29.00
5x7 Verito, No. 3, 9-in. focus, f-4, in Studio shutter; perfect condition. List \$60.00,now	37.50
5x7 Goerz Syntor, 7-in. focus, f-6.8, in barrel; like new. List \$40.00.....now	27.50
5x7 Heliar, No. 3, 7-in. focus, f-4.5, in sunken mount; perfect condition.....now	65.00
5x7 Ernemann Doppel Anastigmat, 7 $\frac{1}{4}$ -in. focus, f-5.4, in Auto shutter; like new. Special	40.00
5x7 Ross Wide Angle Anastigmat, 4 $\frac{1}{4}$ -in. focus, f-16, in barrel; new.....now	21.00
5x7 Bausch & Lomb Zeiss Protar, Series V, Wide Angle lens, in barrel; perfect condition. List \$31.00	20.00
5x7 Bausch & Lomb Tessar, Ic, 7-in. focus, f-4.5, in Auto shutter; like new. List \$87.00	60.00
5x8 Goerz Dagor, Series III, No. 3, 8 $\frac{1}{4}$ -in. focus, f-6.8, in new Ilex Acme shutter; perfect. List \$97.50.....now	80.00
5x8 Bausch & Lomb Zeiss Protar, Series VIIa, No. 10, eqv. focus 7 $\frac{7}{8}$ -in., in Ilex Universal shutter; new. List \$121.00.....now	95.00
5x8 Bausch & Lomb Plastigmat, 8 $\frac{1}{4}$ -in. focus, f-6.8, in barrel, and Optimo shutter; like new; list \$93.00.....now	59.00
6 $\frac{1}{2}$ x8 $\frac{1}{2}$ Bausch & Lomb Portrait Unar, 16-in. eqv. focus, f-4, in barrel, with dif-fusing attachment; like new	145.00
6 $\frac{1}{2}$ x8 $\frac{1}{2}$ Verito, No. 4, 11 $\frac{1}{2}$ -in. focus, with Wollensak Studio shutter; like new. List \$62.50	47.50
6 $\frac{1}{2}$ x8 $\frac{1}{2}$ Bausch & Lomb Plastigmat, 11-in. focus, f-6.8, in barrel; like new.....now	65.00
6 $\frac{1}{2}$ x8 $\frac{1}{2}$ Crown Anastigmat, Series III, 9 $\frac{1}{2}$ -in. focus, f-6.8, in Wollensak Autex shutter; like new	47.50
6 $\frac{1}{2}$ x8 $\frac{1}{2}$ Scientific Anastigmat, f-6.8, 11-in. focus, in barrel; perfect condition.....now	47.50
8x10 Ideal Portrait and View lens, 12-in. focus, f-6, in barrel; new. List \$42.50....now	28.50



"ETHEL,"—A HOME PORTRAIT
By SIGISMUND BLUMANN



CAMERA



CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

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JULY, 1920

No. 7

More About Kallitype

By Sigismund Blumann



After years of experimenting, spoiling good chemicals and paper and wasting much time, I have graduated into the class of adepts in Kallitype, and now use one sensitizer, and one developer, which I compound with scrupulous care in just one way. And the formulæ and the modus operandi are those given by James Thomson in the postscript to *Photo-Miniature*, No. 69. This is a confession and a tribute. After giving help and instruction to others I have, in fact, had the final lesson waiting for me all these years.

About a month ago, having spare time I thought it should be fun to try the Thomson way of doing the thing. It is the only way. By it one may make prints as easily as by the blue print method, and almost as cheaply. It works on any old paper, though variously, and on very thin onionskin or parhymn; or best, on papier mineral it gives something that works in my hands better than the hard-to-get and costly ready sensitized paper of like nature.

The only ingredient that is at all expensive is the nitrate of silver, but as one ounce of it will make one quart of sensitizer, and another ounce will make about a gallon and a half of developer. Even at the present price of silver, a dozen 5x7 prints should not cost over fifteen cents; paper, sensitizer and developer included. It is easy to coat the paper, easy to print, and easier to develop than gaslight paper. There is nothing to it. All one needs is cleanliness, care to follow directions explicitly, and fairly good negatives.

Mr. Thomson recommends sizing, which I never bother to do. I use good paper, and the makers have already sized it just suited to my purpose. Whenever the surface suits as well I use Strathmore papers. There seems to be none so good for the final tone. Any Strathmore works. In one evening by

CAMERA CRAFT

plenty of light I coat as many as a gross of 5x7 sheets; that is, I coat a larger sheet and cut it to size when dry. Then, wrapped in red glazed paper and tightly packed between cardboards in another wrapper of black paper, I keep the sensitized stock for weeks.

This is how it is done. Take a piece of old film and cut it to a strip two inches wide and six inches long. Also cut a piece of stiff bristol board the same size. Get some double faced canton flannel and cut a strip two and a half inches wide and seven inches long. Lay this bit of cloth on the table before you, put the celluloid over it so that an equal length of the cloth projects at each end. Put the bristol board exactly over the celluloid, turn the ends of the cloth over the end of the film and board and bring the whole together. Catch this in place with a clothes clip and you have a fine spreader, blender, or what you may choose to call it.

Take a medicine dropper and fasten a wad of absorbent cotton over the end tightly, so that it will not come off. This will be your filtering device.

Put a dozen sheets of newspapers on the table before you and rip the folds so that you make take away each sheet as it becomes soiled. Now you are ready to sensitize. That is all the preparation.

You squeeze the air out of the medicine dropper, put it in the sensitizer and let go, as the cotton batting gets saturated it draws the liquid into the tube. When this has taken place, supposing you have a sheet of the paper you intend coating ready on the newspaper before you, you squeeze a little pool in the center of that nice white (or tinted) paper, and quickly proceed to mop it evenly up and down and crosswise and diagonally on that paper. You spread it with a light motion and try to avoid scraping it into the paper. It is on the surface that you want it. You do this with speed and evenness, after several



A STORMY DAY—LAND'S END

MORE ABOUT KALLITYPE



EARLY MORNING ON SAN FRANCISCO BAY

tries. At first your fingers and the newspaper underlay will get liberally daubed, but after a bit that will be easily avoided.

As each sheet is coated, lay it aside to surface dry and try another. When you have as many as you shall use within a week, take the first sheet coated and hold it over the gas plate or kitchen stove, no nearer than your hand can bear with comfort, and only long enough to dry. Proceed with all the paper similarly, and as they are dry, lay them face to face. Then cut away the edges that probably were not coated or show brush marks, and trim to size. Do this at night and pack the sheets away with the consciousness that you now have a real photographic paper and one worth respect.

Ah, yes! The formulæ. As simple as the rest. I quote Thomson literally:

Citrate of iron and ammonia.....	25 grains
Ferric oxalate	15 grains
Copper chloride	8 grains
Oxalate of potassium.....	33 grains
Gum arabic	10 grains
Distilled water	1 ounce

Mix these in the following way, and no other. Your way may be as good, and this way may seem foolish, but this works out just right and will give you no cause to write in that you do not seem to get results.

In half an ounce of the water, put the nitrate of silver. Let that stand while you measure out the other ingredients, which you will put into a wide necked brown bottle such as metol comes in, for instance, and in which you have already put the other half ounce of water. When the chemicals are all

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in the bottle and the silver has been dissolved, pour the latter into the bottles and cork. Do not shake or agitate it in the least. Put it away in the dark for at least twenty-four hours, and when you are ready to use it you may shake it up and trust to the medicine dropper to filter it properly. Do not fear the sediment nor strain it off. That is the essential part of this sensitizer.

The developer is even simpler to compound, as follows:

Silver nitrate	40 grains
Citric acid	10 grains
Phosphate soda	2 grains
Distilled water	1 ounce

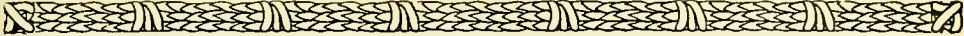
This is a stock solution. For use take one dram and add to it one ounce of water. And to each ounce so mixed add one grain of oxalic acid.

Pages might be written telling just how deeply to print and how to proceed. But you are now ready to try for yourself and one or two trials will give you the knack. Whenever results do not come as they should I wash out the trays clean my hands, and start all over. Cleanliness is one of the essentials.

Art and the Daily Life of Man

If you accept an art, it must be a part of your daily lives, and the daily life of every man. It will be with us wherever we go, in the ancient city full of traditions of past time, in the newly cleared farm in America or the colonies, where no man has dwelt for generations to gather round him; in the quiet countryside as in the busy town, no place shall be without it. You will have it with you in your sorrow as in your joy, in your work-a-day hours as in your leisure. It will be no respecter of persons, but be shared by gentle and simple, learned and unlearned, and be as a language that all can understand. It will not hinder any work that is necessary to the life of man at the best, but it will destroy all degrading toil, all enervating luxury, all foppish frivolity. It will be the deadly foe of ignorance, dishonesty and tyranny, and will foster good-will, fair dealing and confidence between man and man. It will teach you to respect the highest intellect with a manly reverence, but not to despise any man who does not pretend to be what is not.—WILLIAM MORRIS.





Carbon Prints by Artificial Light

By Ralph Stuart Browne



With Illustrations by the Author

Did you ever try to print carbon tissue with artificial light? If you haven't you've missed something. If you have you are almost as bad off as the fellow who didn't try, but you have the advantage of him in at least one respect for, although like him you have also missed something, you know what it was.

Every fellow who goes in for artificial light carbons misses something. What is it? Well, I'm not going to tell. You see I'm one of those chaps who fell for the game and I feel so dod gasted mean about my experiences that I want to see some other fellows get stung. And you will be, unless—Well, unless you believe what I am going to tell you about how to make them. And I know you won't.

So go to it. But first hear me through, and then when all is said and done, just go and try to make some of the gol darned things in the good old fashioned way, and—then you'll know what you missed, as all good men and true have learned who have trod the path before you. Welcome little brother to our midst. The clan greets you.

When did I try to make my first carbon by artificial light? Well, I can't say just exactly, for I have tried hard to forget the details of that first experience; but roughly I should say that it was about two years ago.

A year later—the interval being spent in trying to recuperate from that strenuous ordeal—I made a second attempt. Hurrah! Victory cast her gracious mantel o'er my receptive shoulders. I produced a tolerable print after three hours of painful waiting in front of a light that was trying to make a record for continuously hitting on all four cylinders.

Remember now, that was a year ago. I was making progress. The year before I had experimented with a light that would have gazed with envy on a single-lunger that never missed more than three out of a possible five.

I was elated with my success, and decided to continue my experiments. In time, I argued, I might be able to produce fully timed prints in not to exceed an hour and a half. The future looked rosy, and insatiate ambition lured me on to further efforts. That was a year ago.

A few days ago I produced some carbons by artificial light with three minutes' exposure. I was bored. What! Three whole minutes necessary to print tissue only seven years old, I exclaimed. I looked at my watch a second time to make sure that I had not made a mistake. Alas, it was only too true. I turned and gazed at the offending forty-eight cylinder light which had replaced the little one-lunger with which I had made my original experiments and made a mental resolution that at the very first opportunity I would put in one of those

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new eight hundred and sixty cylindered lights that I had recently been reading about. Then I might hope to turn out some three-second carbons.

"Three-second carbons!" you will exclaim. "Preposterous, man. Cut out the mince pie and caviar, and get to bed earlier and you won't have such dreams."

"Nothing to it," I will return with becoming nonchalance, completely overlooking the insulting reference to my diet. "I have rediscovered the secret of making carbons by artificial light, which every one has known since the dollar watch made its first appearance. "All you have to do is to use lots of light—oodles of it."

Let me repeat the latter part of that statement, so that you won't by any chance overlook it. You need oodles of light. That means light to the n th power. Nothing more—nothing less.

You can't pull a long, heavily laden freight train up a stiff mountain grade with a little one-lung engine and expect to get there on schedule time. But if you hitch on a pretty good forty-eight cylinder power producer and step on the gas, you will come pretty near to keeping appointments. What would happen if you switched on an eight hundred and sixty cylinder lighting producer, I leave to your own imagination. My private opinion is that the consignees of the goods on the train would be down at the station looking for their freight the day before the shipments were made.

The Editor of the CAMERA CRAFT has seen some of my three-minute carbons, and has asked me for details regarding the making of them. There is very little to be said about them. They were produced in precisely the same manner as other carbons are produced, with the single exception that I employed artificial light in printing them.

The tissue was manufactured by the Autotype Company of London, and was about seven years old. It was sensitized in a five per cent solution of commercial potassium bichromate for a period of three minutes and then permitted to dry over night in the dark-room. It was then placed in a printing frame and exposure made in the ordinary manner.

It is quite possible that in using artificial light, the manner of sensitizing exerts an influence on the time of exposure. That is a question, however, to which I have not been able to devote any time as yet. I have had troubles enough with my light without going into this phase of the subject, but some day I intend to look into the matter.

Now, one point about the tissue before I go any further. In using artificial light in the manner in which I will later describe, it is absolutely essential that the tissue be perfectly dry. It becomes very hot during the process of printing, and if there is the slightest trace of moisture present, it will make its presence manifest either through causing the gelatine to adhere to the negative or the production of an effect on the finished picture very much of the character of reticulation.

It is essential, therefore, that every precaution be taken during the drying period to remove the last trace of moisture. I suggest that before the tissue be placed in the printing frame it be further dried by means of a current of air



A TREE-ARCHED ROAD



A SHELTERED WATERWAY

generated by an electric driven fan. Usually I keep my tissue for at least two days after fan treatment, in a tightly sealed jar in the bottom of which is an open bottle of calcium chloride. Tissue prepared in this manner may be regarded as absolutely free from moisture.

Sometimes as a further precaution I play a stream of cold air on the plateholder while it is in front of the printing light. This, however, is seldom necessary, and is resorted to only where the condition of the tissue is regarded as doubtful.

And now for the light—the key to the whole process. It must be powerful—very powerful. I would like to see those words, very powerful, set in heavy type to help impress the reader with their importance.

Let me ask again: Did you get it? Very powerful. If you did, then you don't need any further help from me in your effort to produce three-minute artificial light carbons; or, for that matter, three-second carbons.

All that I can do now is to explain what I mean by very powerful light, and how it can be produced. Did you get that too? How it is produced. Those words are important. You have probably produced very powerful light suitable for carbon printing lots of time without actually knowing it.

And now let me tell you how it is done.

You use condensers. Simple, isn't it? Yes, but it took me a long time to discover it, notwithstanding the fact that I had had condensers in my dark-room for years and had used them frequently for enlarging.

From the introduction of the condenser into my problem, my troubles began to vanish. It only remained for me to find a suitable source of light. At that time the question resolved itself into a choice of one of two types of

lamp—the arc and the Mazda of the concentrated filament type. I eventually decided on the Mazda, for the reason that it was steadier and subject to better control. The lamp with which the three-minute carbons were printed was a thousand-watt, concentrated filament lamp of the type commonly known as a stereopticon.

Before leaving the subject of lamps, I wish to say that although I have chosen the type of lamp described above, I feel that ultimately I will supplant it with a new type of arc lamp, which I have recently seen described in a technical journal. The life of large Mazda lamps is limited, and the thousand-watt lamp seems to be about as powerful as one is warranted in using. An arc lamp, on the other hand, is more economical in point of cost, and it is possible to obtain types capable of producing a far greater amount of light than the Mazda.

And now a word as to the arrangement of the light, the condenser, and the printing frame. In using condensers for enlarging it is necessary to readjust the distance between the condenser and the source of light for every change in the position of the enlarging easel. Not so in carbon printing, for the reason that there is no enlarging lens used. Place the light as close to the condensers as safety permits, for the closer they are the greater will be the amount of light which you will be able to bring to bear on the printing frame. For the same reason use as large condensers as are available. The source of light being the same in both cases, a large condenser will give more light than a small one.

Now as to the position of the printing frame. The light transmitted by the condenser is in the form of a cone. By introducing the frame into this cone in such a way that the circle of light just clears the corners of the tissue, practically every available ray is brought into play and made to do useful work. If the frame is too close, a portion of the light is lost and the time of exposure correspondingly increased.

This is all that there is to three-minute, artificial light carbons. The rest is merely the old details of development and transfer with which all carbon workers are familiar.

Three-second artificial light carbons is another story, and to be frank, I don't expect to have the pleasure of writing it. I'm going to leave that to someone else. I have blazed a portion of the trail; let others continue the work.

There are many who, after reading what I have written, will think that I have done exceedingly well in producing the three-minute carbon, and that I have actually reached the practical limit in printing these pictures with artificial light. To them, and also to those good friends of mine who have followed the trend of my experiments with questioning eyes, let me say this: The three-second artificial light carbon can be produced. It is only a question of light and cooling. Both problems can be solved. The real question is: Is it worth while? I think so.

But before we reach the three-second carbon we must produce the two-minute carbon, and then the one-minute carbon. I don't regard the production of either of these pictures as much of a problem. It is the old question of getting a suitable source of light.

CARBON PRINTS BY ARTIFICIAL LIGHT



YELLOW PINE



REDWOOD

I have said that the three-second carbon was merely a question of light. Before closing this article I wish to amend that statement. We have been accustomed to considering the speed of carbon tissue as a fixed thing. If it is really so, then my former statement might stand; but I am of an inquiring disposition, and somewhat of an optimist. I can conceive of no reason why carbon tissue should not at some future time be made more sensitive than it now is. If the Autotype Company and others interested in the development of the carbon process would turn their attention towards this phase of the problem, the three-second artificial light carbon might not be so impossible as many now seem to regard it.

O man, joy taken from another cannot live. It dies when it leaves the victim, and hangs a dead weight upon your soul. It is only when we give, that we really live. It is only when a man forgets himself . . . that God assesses him. "The Foot of the Rainbow."

Hence it is that the search in common for certain qualities, constitutes a real school, as distinct from a set of imitators. The Dutchmen tried together for the same things for what has been called a portraiture of nature; for accuracy and subtlety of painting upon an accuracy and subtlety of drawing which serves as a base.—JOHN LA FARGE.

Don't simply see how you can "put in the day"; see how much you can put into the day.—*Forbes Magazine*.

An Amateur In Tennessee

By Bruce Stone



With Illustrations by the Author

I am an amateur photographer, living about two miles from town, out here in the hills of East Tennessee, so the reader can judge how often I find someone to talk photography with, someone to swap experiences with. Quite naturally, the magazines come in as a means of keeping in touch with what others are doing; and, of course, they have kept me out of many pit-falls that lie in the path of the amateur, particularly the isolated one who must depend upon his own resources to a greater extent than the town or city dweller.

For a number of years I did all my developing and finishing in a room in my dwelling, but it is quite difficult to keep such a room at the proper temperature and free from the dust and lint that will float about in a furnished house. In addition, I had to do all my work at night, because of the difficulty of making the room light-tight without being air-tight as well. Furthermore, the room was really needed for other purposes, precluding any idea of fixing it up permanently as a photographic work-room.

As my father has a saw mill, making a supply of lumber available, and as I am capable of doing fair carpenter work, I decided to build a small house for my photographic work and devote a little more time thereto. The structure is 10x16 feet, boarded on the outside and plastered within, making it easy to keep clean and free from dust or lint. It has hinged wooden shutters on the outside of the windows and these are fitted so that I have only to close them



MY PHOTOGRAPHIC HOUSE IN THE MOUNTAINS

AN AMATEUR IN TENNESSEE



A GROUP POSED IN MY OUTDOOR STUDIO

to have a perfect dark-room, both these windows and the door being fitted with shades on the inside as a double precaution.

Good ventilation is achieved by a trapped grill over the door in front, and another under my developing table at the rear, inside. This last is really a shelf of good proportion, hung to the back wall by two strong hinges that permits it to be turned up out of the way when not in use. To the right of this is a sink and to the left, against the side wall, is a tier of shelves, about eight inches wide and eight feet long, on which are kept my bottles, trays and photographic supplies. In winter the ventilators are partially closed and a small stove installed in the center of the room. From a fine, cold spring, just above the house, I have piped the water into my sink; and, as the temperature of the water is the same, or nearly so, summer and winter, I am more than fortunate in this

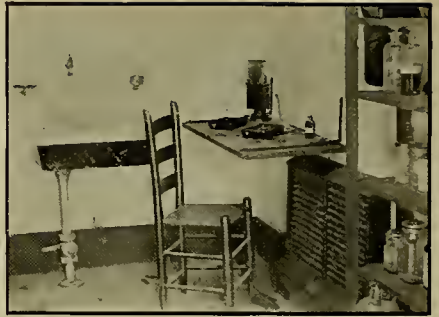


SOME OF MY EVERYDAY POST CARD WORK

CAMERA CRAFT



READY TO MIX MY DEVELOPER



MY DEVELOPING TABLE

respect. It is easy to see the advantage of my present quarters over those afforded by the room in the house.

While my camera is adapted to use both plates or film, I use plates almost exclusively, developing by the tray method. My favorite developer is pyro, the formula being as follows:

- | | |
|-------------------------------|-------------|
| A: Pyro | 1 ounce |
| Water | .28 ounces |
| Oxalic or sulphuric acid..... | a few drops |
| B: Sulphite of soda | 3 ounces |
| Carbonate of soda..... | 2 ounces |
| Water | .28 ounces |

To develop, take one-half ounces of A and B and add four ounces of water. If I have none of the above stock solutions made up and wish to develop only one or two plates, I take five ounces of water, add five grains of pyro, twenty-four of sulphite and sixteen of carbonate, and I am ready. A ten per cent solution of potassium bromide is always close at hand, and if a plate develops too fast, I add from five to ten drops to the developer.

I get rather lonesome out here in the country and would like to hear from any of the readers who might care to write. I don't like to make any rash promises, but I will try and answer such letters as my limited time away from a busy farm life will permit. My address is R. F. D. 1, Box 98, Jacksboro, Tennessee.

Learn the technique of photography well, then use it wisely.

Learn to look and choose subjects for their simplicity of form.

Then, having learned to see, choose your own material, and deal with it according to your own lights and taste.

Never forget the limitations which necessarily hedge in photographic and other methods of monochrome art.—W. THOMAS.

You cannot build up an altogether new system of architecture or of morality; all that you can do is to slightly modify the forms which your fathers have left you, by the occasional introduction of new ideas.—RALPH RADCLIFFE WHITEHEAD.

More About Light and Exposure

By L. E. Rea



With Illustrations by the Author

A number of years ago, in company with a friend who was also a photographer, I was walking down the beach in order to reach a ship that had drifted ashore in the fog of the night before. The question arose as to the proper exposure under the conditions prevailing at the time, a mist-laden atmosphere still enveloping the scene to some extent. According to my friend's exposure meter, one of the sensitive paper type, one twenty-fifth of a second at $f-11.3$ was correct, while my own good judgment, supplemented by a rapid mental calculation, told me that at least one-fifth of a second would be necessary with such a stop.

We both made several exposures on the wreck and later returned home, both perfectly satisfied that some good pictures would result. To put it mildly, I was somewhat crestfallen to find, upon developing my plates that the exposures given were entirely wrong; and still more chagrined when I learned later that my friend had secured some beautiful negatives. I am relating this simply to show that an atmosphere surcharged with moisture, yet fully illuminated by sunlight, is nearly as strong in actinic quality as direct sunlight. Since learning this fact myself I have made many exposures along the beach under like condi-



A RIVER VISTA

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tions and always with the best of success; all harshness being subdued, and even the deepest shadows fully illuminated.

In direct contrast to the above we may call attention to the lack of detail or illumination so common in pictures taken of rocky or precipitous subjects in high altitudes. But if one will stop and consider the matter, the difference between the perfectly dry atmosphere that allows the light to pass directly on its course and the moisture-laden atmosphere that disperses and distributes the light, the reason becomes quite clear. In the case of the clear atmosphere, there is nothing to break up the light and deflect a portion of it into the shadows, while in the other case the atmosphere vibrates with reflected and re-reflected illumination.

And from these examples it is but a simple matter to understand why an out-door portrait taken on a foggy or overcast day is much more soft and agreeable than one made in direct sunlight. Under the first conditions the results are soft and harmonious, while under the latter they are contrasty and harsh, the nose and chin, for example, standing out against their own dark shadow like a protruding rock in the side of a cliff in our mountain scenery.

One can, if he will but form the habit of connecting up his exposures with the results brought out by developing, learn much that will be of value to him, particularly when working under other than the usual light conditions prevailing with a clear atmosphere and normal sunlight. If one has, as most of us have, a certain standard set of exposure for ordinary conditions, it is only necessary to remember that under a certain unusual condition the exposure was increased or decreased by a certain per cent. We go afield and find streamers of sunlight penetrating the mist that has collected amid the trees on the edge of an open space. We say to ourselves that these trees would, under normal conditions, require a half second exposure at stop f-11.3; but owing to the heavy mist, almost a fog in fact, we decide to give fifty per cent more exposure, or one and one-half second. This is not difficult to remember, the fifty per cent increase of exposure, and when the plate is developed we know whether our calculation was a right or wrong one, and we continue to remember both the fifty per cent increase and the result thereof, long after we would have forgotten the exact exposure and stop used had we tried to remember them in connection with this particular atmospheric condition.

Light conditions in the early morning hours are generally much as they appear to the eye, and exposures made at such times require only the lengthening of the exposure necessary to compensate for the lack of light. But the evening hours are an entirely different matter. It is not at all unusual for the light, near sundown, to be of such a decided yellow tinge as to make necessary an almost unbelievable increase of exposure. This condition of the light is not always easy to identify or measure by the eye alone, and yet, if one will but form the habit of watching the color of the sky, a close approximation of the amount of this yellowness can be made. With the light clear, the sky is blue; but as the light becomes yellow, the sky takes on more of a green tinge, due to the admixture of the yellow light through which it is observed.

By following the plan suggested of coupling up one's exposures with the

MORE ABOUT LIGHT AND EXPOSURE



A ROADWAY



THE BIRCHES

results secured, a great deal can be learned as to the effect produced by slightly over or under-exposing different subjects. Quite often one wishes to secure a certain effect that a departure from correct exposure will help him to achieve. The subject may be somewhat flat and slight under-exposure will result in a few dark accents that greatly improve the picture. Again, the subject may be one having excessive contrasts that slight over-exposure will greatly minimize, particularly if development is rightly carried out.

By this time the reader has no doubt wondered why I have neither recommended or condemned the exposure meter as a means of securing correct exposure. Let me say right here that exposure meters are all most excellent guides in their way. Some are better than others, some are best suited to certain workers, and others to workers of a different temperament. But in no cases should they be employed as crutches upon which to lean, else the party so using them will soon become a cripple, unable to get along without one, progressing with more or less difficulty even with their aid. Excellent as they are, some judgment must be used in connection with them. As an example, I recall an incident that happened a few years ago. A certain exposure meter had just come upon the market in this country, and my two companions on a photographic expedition were both quite enthusiastic over its merits, both having purchased and both having used it with the best of results. During our search


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for pictorial material we came upon a pretty bend in a small tree embowered stream, a point from which the view, both up and down stream, lying at right angles to each other, were both worthy of a plate. Getting out their meters my two friends promptly discovered that the view up stream required an exposure of a certain duration with a stop decided upon as the one most suitable. Each made an exposure, and then their attention was turned to the other view, the one down stream. The question of exposure again came up, but as the light was exactly the same, and as the scene presented the same kind of material, the exposure must be exactly the same. But was it? Most decidedly not, for the simple reason that the view up stream had the light almost flat upon it, while the other down-stream view, with the sun at the side, presented the trees on one entire side as a mass of deep shade. As soon as their attention was called to the matter, they at once realized the difference, but they had been so dependent upon and so confident in the infallibility of their meters that they had entirely overlooked this matter. Both views presented near-by trees and dark shadows, but in one case the dark shadows only showed their edges, while in the other case the same dark shadows occupied the major portion of one side of the view.

For that reason, much as one may favor the use of an exposure meter, may habitually use one himself whenever in the least doubt as to the exposure, he is justified in hesitating to recommend one to another worker without making sure that the user will not ask too much of it. They are not automatic, they are not endowed with reason. If they were, we could no doubt attach them to some part of the camera and forget all about length of exposure. But they are, quite a number of them, capable of rendering one almost invaluable assistance in the matter of determining the correct exposure, particularly under abnormal conditions such as those mentioned in the opening paragraph of this little article.

Taste, if it mean anything but a paltry connoisseurship, must mean a general susceptibility to truth and nobleness; a sense to discern and a heart to love and reverence all beauty, order, goodness, wheresoever found and in whatsoever form and accompaniment.—CARLYLE.





Using Stale Developing Paper

By F. R. Roddier



All unused photographic paper that has been sensitized with silver salts, will, with the lapse of time, become what is known as stale. This condition makes itself manifest on developing by the darkening of the high-lights, sundry irregular blackened areas along the borders and across the face, and by a general muddy appearance.

The time required to bring about the changes that produce these effects varies with the character of the paper and the conditions under which it is kept. Speaking generally, the more the paper is exposed to the action of the air the sooner will it deteriorate. Dampness is particularly detrimental to photographic paper, while gasses of almost any character will likewise have an important influence on its life.

For this reason it is advisable that unused photographic paper be kept in a box as nearly damp-proof and air-tight as it is possible to make it. Boxes such as carbon workers frequently provide themselves with, form admirable containers. A small open bottle of calcium chloride to absorb any moisture which might possibly find its way into the box, is a wise investment. Sensitized paper kept under such conditions has a surprisingly long life.

Paper that has become stale is not necessarily valueless. With a knowledge of how to handle it, it is quite possible to produce prints fully equal to those obtained from fresh stock. My attention was recently directed to the problem of using some of this old paper by a friend who had accumulated quite a lot of it in the course of years, and who had hesitated about throwing it away, thinking that possibly it might have some value.

The subject interested me, and after obtaining samples I set about seeing what could be done with it. The paper for the most part was what is known as developing-out or gaslight paper, and consisted of various grades of Velox and Azo brands.

Looking up the subject in various books and magazines I came across several formulas which it was claimed would give excellent results with this particular kind of paper. They could be grouped under two heads; those calling for the addition of large quantities of bromide of potassium to the regular developing solution, and those calling for the bromide with a small quantity of potassium permanganate.

Either my paper was too old or else the writers had been over zealous in their claims regarding the merits of their various formulas, for I was unable to substantiate any of the statements made by them.

Then one day I came across a brief note in a photographic journal in which it was stated that a writer in the *Amateur Photographer* (England) had sug-

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gested the addition of both bromide and cyanide of potassium to the developing solution in the handling of stale paper.

Being in that particular frame of mind in which I was willing to try almost any suggestion, I decided to make some experiments along the suggested lines. My very first prints demonstrated very clearly that I was on the right track, and after a few trials I was able to so compound my solutions that I had not the slightest trouble in producing bright, sparkling prints from this hitherto valueless paper, prints that were in no ways distinguishable from those obtained from fresh stock.

The two prints which accompany this article were made from some of this paper, and in order that no question might arise as to the genuine value



ORDINARY DEVELOPER



RESTRAINED DEVELOPER

of the process, both were made from portions of the same sheet. One was printed and developed in the ordinary way without the addition of the extra bromide and cyanide of potassium. The other was printed for exactly the same length of time as the first one, and then developed in the same solution to which had been added the bromide and cyanide in the manner in which I will hereafter describe. Each print tells its own story. The paper bore the expiration date "Feb. 1, 1910."

Now, as to the method of manipulation. The developing solution recommended by the manufacturers is first prepared. To this is then added, in small quantities at a time, equal volumes of ten per cent solutions of bromide and cyanide of potassium. The quantity to add can be determined only by making test exposures on small strips of paper and then developing. When the high-lights show clear and bright the solution is ready for use.

Now for a few details. Do not add too much of the bromide and cyanide. The cyanide is a powerful solvent for silver, and it is quite possible to add an amount that will prevent the appearance of the image. The developer must be a fairly rapid one, not requiring much over thirty seconds for complete

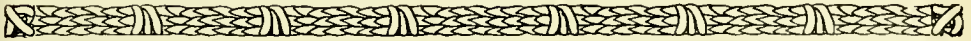
TRANSPORTATION OF EXPOSED PLATES

development. Slow development permits the bromide to produce secondary effects. One of these makes itself known by the coloring of the image a disagreeable olive green.

The cyanide also tends to produce disagreeable colors. Under some conditions it will give a pink coloration with mottlings of various shades from orange to brown. Sometimes a combination results in which all these colors appears and then the paper resembles the work of a three-year-old colorist trying to give an imitation of a futurist. When any of these effects appear, the experimenter may feel assured that he has not added his bromide and cyanide solutions correctly and steps should be taken at once to remedy the trouble.

My experiments were confined to the type of paper mentioned above. I would have liked to have continued the work with bromide and printing-out paper, but not having suitable samples at hand was compelled to defer the matter.

The treatment of stale bromide paper has evidently received more attention at the hands of investigators than the kind that I worked with, for in the course of my investigations I came across a great many suggested ways of treatment. In the near future I hope to be able to report on some of these and also the possibility of adapting the process described above to these two types.



Transportation of Exposed Plates

By Thos. Farwell



Those who have had occasion to carry exposed plates around with them on long trips can well understand some of the difficulties which this apparently simple problem presents. For a number of years I have been a member of the fraternity that, with the advent of spring, bids a merry adios to the comforts of civilization, and then for many long, care-free weeks, joyfully tread the strange paths that lead through our little known mountain defiles, and who, when the days begin to grow shorter, returns with a heterogeneous collection of undeveloped plates—and all the troubles which millions of pin-holes, scratches and cracks can create in the mind of your true enthusiast, who, when he beholds the damage wrought, gnashes his teeth in impotent rage at the crudity of the tools of man.

Time and again I have studied the problem of transporting plates safely, and many a fantastic scheme have I evolved of carrying them through the dangers which beset them from the instant they leave the box in which they were originally packed until they reach their ultimate destination in the crowded confines of civilization—the developing tray.

One year I provided myself with a large number of old and otherwise useless plateholders; thinking that after exposure the holders could be relied

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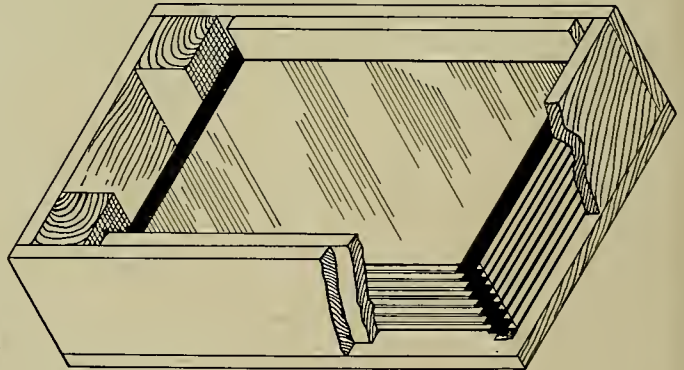
upon to ward off accident. But the scheme was a failure. Not only were the holders bulky and undesirable impedimenta, but they proved to be fine dust collectors, the joltings which they received brought the covers into frequent contact with the tender emulsion and the very effects were produced that I was trying to guard against. Again, the slides being fragile, were frequently broken, and I had to write "total loss" more often than was good for my peace of mind. I abandoned the slides as safe and sane carriers with a mental note that they were a delusion and a snare.

On another occasion I provided myself with a large number of the original boxes in which the plates came and tried, after exposure, to repack them, even using the identical end strips which serve to protect the sensitive surfaces from injury. I still have painful recollections of the many hours that I passed in hot, stuffy tents trying to make those plates fit into place, and still more painful twitches when I recall their appearance when weeks later they came from the drying racks. No more original boxes for me.

But I was not discouraged. I simply had to solve the problem. And I did. I have just returned from one of my annual trips, a little ahead of time so that I might determine whether or not my scheme was a success, and I can say confidently that the transportation of exposed plates in the field need have no terrors for anyone who will follow the procedure that I have worked out.

I felt that the solution of the problem lay in a strong, light-tight, dust-proof box that would permit of the insertion of the fingers for the handling of the plates, with some provision that would keep them from touching. I drew up designs for a large number of such boxes, and after some experimenting, selected the one shown in the sketch herewith. For convenience we will assume one to take 4x5 plates.

The box may be constructed of either heavy cardboard or any light wood. For plates 5x7 or larger, wood, because of its greater strength, should be chosen. In the left hand corners two small blocks, as shown, are first glued into place. These serve as guides and also create a space at that



SHOWING STRIPS IN POSITION

end which permits of the introduction of the fingers for the handling of the plates. Along the sides are two flat pieces, three-sixteenths of an inch thick. These serve as additional guides, and, being a little less than a half inch shorter than the distance between the blocks and the other end of the box, provide pockets into which the ends of the strips of cardboard, shown as black in the sketch, are held in place. These cardboard strips are three-sixteenths of an inch wide and four and three-eighths of an inch long. They serve to keep

PARAGRAPHS PHOTOGRAPHIC

the plates from touching, and should be of fairly heavy material. The space between the side guides and the end blocks, the space in which the plates rest, is made one-sixteenth of an inch larger than is ordinarily necessary in order to take care of any oversize variation in the plate.

When a plate after exposure is taken out of its holder to be packed for transportation, two of the cardboard strips are first placed in the bottom of the box in the position shown in the drawing. The two corner blocks and the side guides prevent their lateral movement. A plate is then placed in position with the emulsion side down; the two ends resting on the strips of cardboard. As a precaution against the leakage of light, a piece of black paper, cut to 4x5 size, may then be placed on top; and if one so desires, another slip containing a record of the plate and any useful information regarding it that one may desire.

This done, two more of the cardboard strips are placed in position, and the box is ready for another plate. The work of packing continues until all of the exposed plates are safely disposed of. It may so happen that a box is only partially filled. In such a case, to prevent movement of the plates during transportation, blanks of either cardboard or light wood should be carried along to help fill in.

The height of the box may be varied to accommodate from one to three dozen plates. Personally, I prefer those holding an even dozen as the most convenient to transport.

Naturally, in order to make the container light and dust-proof, it must have a cover. It may be a single one which slips completely over or it may be a double one, constructed precisely as are the original boxes in which the plates are packed. That is a matter of individual choice and depends largely on how tight the first cover is made to fit.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

MAKING UP M-Q DEVELOPER: Occasionally I have trouble in making up my metol-hydroquinone developer; or rather, did have, sometimes securing quite a deposit in the bottom of the bottle, a deposit I knew should not be there. A demonstrator gave me the following method, and since then I have had no trouble. I first dissolve the metol in one-third of the water and then add half of the required sulphite. In another bottle or graduate I dissolve the other half of the sulphite, then the hydroquinone and bromide; dissolving the carbonate in a third bottle or graduate containing the remaining one-third of the water. With all dissolved in these three solutions, I pour the hydroquinone into the metol solution, and lastly add the carbonate solution.—T. G. B., New York.

DOING AMATEUR FINISHING: I do quite a little of this work and find it pays well to cultivate the confidence and good will of my customers in that line. If the business that resulted was to stop with that class of work it might

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be different, but not infrequently I have good customers come to me through the flattering recommendations of my amateur friends. Near at hand to the counter where my finishing orders are handled, there is a series of three cards, one showing three prints from a good, normal negative, printed on fast, medium and slow paper; one showing a print from a too thin negative, made the best I know how, and another on wrongly selected paper; and the third the same treatment of a hard, undertimed negative. The first card enables me to ascertain whether the particular customer is partial to hard or soft results, and the other two are quite convincing as to my ability to secure the best possible results.—T. G. B., New York.

INTERESTING WINDOW DISPLAYS: The average professional photographer never thinks of using anything except samples of his work as a display. I have found that something different makes an interesting change. Not long ago I borrowed an old lens, somewhat of a curiosity, from my stockhouse, and displayed it alongside of one of my best lenses, shutter and all. The first bore a card explaining that such a lens was used in grandfather's day, necessitating several seconds exposure with a head-rest to prevent motion; the other calling attention to the superiority of the present-day instrument, requiring only the fractional part of a second for the securing of much better results. Another time I borrowed an old-time Daguerreotype from one of my customers and labeled it: A picture taken in grandmother's day; each one costing three dollars and the inconvenience of a long sitting. This was shown in connection with one of my own popular styles bearing a suitable explanation covering the price and simplicity maintaining today. Another pair showed the way an artist draws a horse running and the actual position of the horse's legs as proven by photography. In addition to the interest the show-case has for the passer-by, I find it not at all difficult to secure somewhat extended comment upon the point brought out, in the local paper, by simply explaining to the editor, a little of the technique involved.—E. D. C., Vermont.

CUTTING PRINTING MASKS: I do not believe in using set sizes of masks, preferring to mask each negative as best suits its individual character of composition. The result is that I cut a large number of masks in the course of a year. My method is as follows: All old mounts, soiled cardboard, and even pasteboard boxes, are saved to provide material from which I cut pieces the size of the openings desired, using my print trimmer to insure absolutely square corners. A form so cut is placed on a sheet of mask paper and with a sharp pencil a mark is made all around. Then placing this marked paper on a sheet of glass I cut around the four sides, using a ruler and a sharp knife, always with the ruler on the outside so that should the knife slip the cut will be where it will do no harm and also because this allows me to see the position of the corner lines. Should the knife pass beyond the corner it is a simple matter to paste a strip of gummed black binding paper across the false cut. I find this method quick and simple; in fact, it is easier to cut a new mask than it is to search out one of the proper size, although the masks are generally gummed to the negative edges and put away therewith.—C. V. B., New York.

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A PHOTOGRAPHIC MONTHLY

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San Francisco, California, July, 1920

No. 7

The I. P. A. Circulating Albums

Now that the war is over and a more normal condition prevails, it would seem a quite opportune time to get together the loose ends and systematize, as far as possible, the circulating album activities of the International Photographic Association. The growth of other interests has prevented Mr. Winchell from giving his office, that of Chief Album Director, attention, and not a few of the State Album Directors and Secretaries have had to give up the work, for various reasons. We must, practically, form almost an entirely new organization, and to that end would be pleased to hear from members of the I. P. A., or readers who might become members, who would care to take up the work. And there is some work connected with it, and some little expense. Letters must be written and postage paid thereon. The truth of the matter is, about all that the acceptance of a State Directorship or Secretaryship for the I. P. A. has to offer is a better opportunity for getting out a circulating album than the individual would enjoy were he working independently; working along lines such as are usually followed. By having a State Album Director and a State Secretary the work can be divided up, and should at any time, one or the other find that he had to give up the work for any reason, his co-worker could carry it right along, and thus avoid the disappointment that has resulted from such discontinuance where only one officer was in charge.

The idea was, and I see no reason why it should be changed, to have two members located in some central city in each state, get in touch with the other members in their state and start a circulating album therein. One, the Album Director, would be charged with the work of making up the albums and route list, and starting them out, while the other, the Secretary, might make it his work to see that each one on the route list reported the album as being received, and later sent forward; in other words, keep the albums from becoming delayed or lost. Both officers could write an occasional letter in an effort to secure the interest of new members joining from their state, or perhaps to old members whose interest might be enlisted. These various state officers would conduct their several circulating album routes much as they saw fit, and later we might, by asking for the opinion of them all in turn, secure a sort of combined opinion on the best plan, something that would result in a standard that could be adopted by all.

The duties of the Chief Album Director were supposed to be the making of equitable exchanges of albums between states, the inspection of the work shown in all the albums with an eye to inviting certain ones to contribute to a set of foreign albums and certain others to contribute to a pictorial portfolio, and otherwise use such effort as he could to further the interests of the Album

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Division. With everything in good working order, a State Album Director would only have to get out about three albums a year. His own state album would go over the route made up of the names and addresses of those he had induced to contribute thereto. Then the album would be sent to the Chief Album Director, who would send him, in exchange, an album of equal interest from another state, and this in turn could be exchanged for a second and the second for a third. The State Album Director would, therefor, be sending out only one album of his own state, followed at monthly intervals by albums from three other states. Any reasonable member would, we feel quite sure, be perfectly willing to contribute prints to one album in exchange for the privilege of seeing his own state album and three others of like good quality, an advantage that he could not expect to derive from a circulating album club conducted in the ordinary manner. And, of course, this advantage lightens the effort required on the part of the officer or officers having charge of the albums without in the least detracting from the interest and enjoyment one can find in the work of keeping such an album club running along nicely, particularly if one has the time and an appreciation of the pleasure to be derived from the correspondence with congenial spirits that the work involves.

Our Postal Magazine Club

Six of our readers wrote in as ready to join and help along such a club as we outlined in our editorial in the May issue, and two called in and did the same. And we wanted at least twenty. But the showing is not as discouraging as it might seem because nearly a hundred wrote in to explain that they feared their experience was not wide enough, that their time was too limited for special experimental work, that they would join but did not like the idea of what they wrote being quoted in our pages, that only the last man on the route list would get an opportunity of seeing what all had written, and so on. We have not had time to answer all these letters, and therefore will try to explain matters here, doing so in the light of the many good suggestions made by those few who were ready to join at once. To be a helpful member, one need not have wide personal experience in every line of work that may come up as a topic; one cannot help but have some ideas on the subject, and he might even quote some advice thereon from some article he can easily locate. There will be no call for any special experimental work; in fact, there will not be time, as a rule. When the combined club letters are finally worked up into an article on the subject, there will be practically no mentioning of names except as some member is commended for a specially good suggestion. The club letter or "magazine" will continue on its route until every member has seen the entire contribution; and further, it is our intention to furnish the postage required to take the "magazine" over its route, doing this as a partial return for the material the combined efforts of the members will provide us for what we feel quite sure should make a good article on each subject discussed. So please turn back to the May editorial on the subject, read it, and then write and signify your willingness to at once take part, at the same time, offer any suggestions that you may think worth considering.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

Problems In High-Power Photomicrography

The following is a paper presented at a joint meeting of the Faraday Society, the Royal Microscopical Society, the Optical Society and the Photomicrographic Society, by R. E. Slade, D. Sc., F. I. C., and G. I. Higson, M. Sc., A. I. C.

In an investigation of photographic emulsions we have found it necessary to take photomicrographs, using the greatest resolving power which we could obtain. In our attempts to overcome various difficulties inherent in different forms of apparatus, we have constructed an apparatus which we believe contains some novel features.

The source of illumination is a one hundred candlepower "Pointolite" lamp contained in a light-tight box, a light-tight connection being made between this box and the sub-stage condenser of the microscope, which is used in a horizontal position. Although this box is not ventilated, we have not been troubled by heat from the lamp. No optical system or heat-absorbing cell is interposed between the Pointolite lamp and the condenser, but an arrangement is fitted for introducing a color screen in this position. The microscope is used with or without an eye-piece in a room which is totally dark, and the image is projected on to the plate, placed in a holder about one foot from the microscope, no camera being used. The whole apparatus is mounted on a solid block of ash. Focusing is done direct on to a piece of white card placed in the plateholder, a shutter is then brought down just in front of the eye-piece of the microscope, a plate put into the plateholder, and the exposure made.

This shutter, which is mounted quite separately from the base of the apparatus, consists of a roller-blind shutter release, the teat of which is attached a flap of black card, which is lifted clear of the path of the light rays by pressing the bulb of the release,

exposure thus being made with complete absence of vibration.

In order to surmount the difficulty of imperfect achromatization of the lenses, a green filter is used and photographs are taken on process plates sensitive to this light. In all apochromatic lenses there is always a good deal of curvature of field, and we should like to suggest that for photomicrographic purposes it would be useful to have a lens without any color correction, if the elimination of other forms of aberration and curvature of field would be thereby facilitated.

The illumination used is always what is usually termed critical: that is to say, the light-source is in focus on the plate at the same time as the object being photographed, this being rendered possible by the uniformity of illumination over the whole of the light-source. In this connection we should like to put forth a theory of the well known phenomenon of the flooding of light over the image at critical illumination when the aperture of the condenser is fully open. We believe that the explanation, at any rate of this, is that the image of the light-source which lies in the plane of the subject is not an infinitely thin plane, and there is so little depth of focus with a high-power objective that we have the effect of the image of a bright surface lying just in front or just behind the object and out of focus on the plate, producing the so-called flooding effect.

If we cut down the aperture of the condenser we eventually use only light which is almost parallel, and therefore obtain a shadow photograph which is absolutely free from flooding. If we cut down the aperture only a small amount we may do so sufficiently to make the effect of flooding negligible. In support of this we may mention that flooding is not obtained if the image of the light-source is very much out of focus. In the "Pointolite" lamp the curvature of the light-source will contribute to this effect.

In some of our earlier work we used an achromatic lens between the "Pointolite" lamp and the condenser, but it was the light-source which was always brought to a focus on the screen, and not the image of a diaphragm over the lens, as is sometimes done. This lens was used to magnify the image of the light-source so that a larger part of the object could be illuminated, but the same effect is now secured by bringing the lamp as close as possible to the condenser. In this way we can illuminate an area of the object, which is a little larger than the flat part of the microscopic field. This increases the ease of aligning the optical system, and moreover, slightly increases the working distance of the condenser, which, however, is never more than one millimeter.

The exposure with the orthochromatic process plates in use, with the green filter and a magnification up to four thousand diameters, varies from two to ten seconds. In this connection it is important to note that for all work requiring the greatest resolution process plates, that is, plates with a hard-working emulsion must be used.

Re-Wetting Negatives

To judge from the number of inquiries we get on the applicability of intensification and reduction processes to finished negatives, it is evident that a great many amateurs do not realize how very undesirable it is to re-wet a negative which has once been dried. The negatives about which we are asked are usually described as valuable or irreplaceable; and, if this description is correct, the last thing that should be attempted with them is one of these processes. Even when the intensification or reduction has been carried through properly, there is always the risk of the negative being injured while wet; but a still stronger argument against the practice is that one can seldom be sure that the negative is in a condition to undergo one of these operations successfully. Insufficient fixing or insufficient washing may cause an unsuspected irregularity in its composition, which will show itself in uneven action; and when once this arises, the negative is definitely ruined. Much better is it, if the negative is really valued, to make from it a positive by contact, and from this a fresh negative. Contrasts can be increased or decreased while so doing. Alternatively, an enlargement may be made, worked up, and 240

rephotographed. Such methods have the very great advantage that, if the photographer fails in the first attempt, he can go on repeating the process indefinitely until he succeeds: and yet all the time he has the certainty that, at the worst, he will leave the negative in its original condition. If he must intensify or reduce a valuable negative, at least he should first make a good positive from it as he can manage, so that, should anything go wrong, he has this to fall back on for producing a fresh negative. —*The Amateur Photographer.* *

Bromoil Trans-Rhine

Apparently the Germans have been occupying themselves a good deal with the Bromoil process during the war. In the list of photographic text-books published by the Halle firm of Knapp, in the years 1917-19, we see four on Bromoil, one a fifth edition of Dr. Emil Meyer's text-book, another on the home-making of Bromoil inks, another on the Bromoil transfer process, and a third edition of Dr. Eder's treatise on gum-bichromate, oil, Bromoil, and other pigment processes. In a recent issue of *Photographische Rundschau*, Dr. Meyer describes a new species of "fake" in Bromoil printing. It consists in creating a fine grain over the picture by applying a fine spray of an alkaline solution to the print which has been allowed to swell as much as it will in cold water. The alkaline solution is one of five per cent potassium carbonate, and it would seem that its application is a delicate business, requiring to be done under conditions of illumination which allow of the fineness and evenness of the spraying being very closely observed. The print must then be left to itself for a time, which depends on the temperature and on the kind of paper which is being used. It is then either rinsed or allowed to dry, and subsequently inked "up" in the usual manner, when, for the first time, the graining effect of the alkaline spraying becomes visible. It can easily be imagined that a process such as this very successfully adds to the uncertainties of the Bromoil process, but perhaps this is a recommendation rather than the reverse to the enthusiastic exponents of the process.—*British Journal of Photography.*

"Economy is too late at the bottom of the purse."—*Seneca.* Save first with W. S. S.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Answering Your Queries

This department might be headed: "Answers to Correspondents", or something like that, but we have never really liked the idea of such a department or rather of a department in which all inquiries were answered. Too often the answers, while of vital interest to the ones making the inquiry, have little interest for the general reader. In addition, keeping the inquirer waiting for a reply until the next issue of the magazine does not seem quite fair to him, particularly as he may want the information at once. Right here we must confess that while we try to answer all inquiries promptly by letter, the last few months have been quite busy ones, and owing to the rush a few inquiries have been neglected, in some cases because the query and an order for a renewal of a subscription were all in one letter, and that failed to be returned to us from the subscription department. If those who have been neglected will forgive us and repeat their inquiry, we will be only too glad to give them prompt attention. We want all our readers to feel at perfect liberty to write us at any time and we shall do all in our power to keep up our end of the correspondence. Such answers as seem of more than individual interest we will repeat in this department to the extent that space permits, but that will not delay the regular answer being sent forward by letter.

Local Intensification With Varnish

The well known ground-glass substitute, made by dissolving forty-five grains of gum sandarac and ten grains of gum mastic in each ounce of ether and then adding one-half the amount of benzol, will, if tinted with a yellow aniline dye, serve admirably as a means of strengthening definite portions of a negative by holding back the remainder. It should be flowed over the glass side of the negative, where it dries almost instantly, and then scraped away from over the high-lights and those parts of the

image that are not to be held back in the printing. The usual directions given with the formula for this varnish is to modify the fineness of the grain by increasing or decreasing the proportion of the benzole, adding from one to six ounces of the benzole to each eight ounces of the gum in ether solution, the mean being four ounces as advised above.

Black Stains In Reducing

An Iowa reader writes that he has been using Belitzki's reducer with a great deal of satisfaction, but when employed on negatives developed with pyro he gets ugly black stains that seem almost unremovable. The trouble is that most writers, in giving the formula, advise that the negatives can be reduced directly from the hypo bath. If the hypo bath contains any small amount of pyro, that amount combines with the iron salt in the reducer and forms black ink, in fact, our best black writing ink is made of practically the same chemicals, namely, gallic and iron compounds. With negatives developed by any of the modern developers there is not this difficulty; and in the case of pyro, it is only necessary to wash out the possibly pyro contaminated fixing bath before immersing in the reducer. The formula is a simple one. Twenty-two grains of ferric oxalate and eighteen grains of sodium sulphite are dissolved in each ounce of water, forming a deep red solution. To this is gradually added some oxalic acid, and as the color turns green the solution is decanted off and to each ounce is added a half ounce of a fifty per cent solution of hypo, completing the reducer, which keeps for months and can be used over and over. It is also excellent for bromide and gaslight prints.

Latitude of the Plate

One of our correspondents recently became interested in the comparative amounts of latitude possessed by different plates, not only plates of different speed and quality

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by the same manufacturer, but plates of different manufacturers. Applying to us for information, we could only advise in a general way, qualifying such advice by the suggestion that in different hands, different procedure in developing might give different results. What we advised was that he try out the desired plates himself, suggesting a plan that he proceeded to carry out. The equipment consisted of six pieces of good dense press board, just the width of his dark slides and about an inch longer, in each of which was to be cut a perpendicular, inch wide slot, each such slot being in a different position as regards its distance from the end, these to be used in making repeated exposures on one plate. With the plates to be tested in his holders, the camera was set up facing an ordinary landscape, one of an even character from side to side, the lens opened to the largest stop and the shutter set to one twenty-fifth of a second. The first plate to be tested, in position in the camera, the original slide was withdrawn and the press board substitute with the inch slot nearest the end, inserted, and an exposure made. Then the next substitute slide was inserted, the one with the inch slot a little farther from the end, the stop reduced to the next smaller, and another exposure given, and so on until all six press board slides had been used and the original solid slide placed in position at the end of the procedure. This gave him his 5x7 plate carrying six exposed strips, all having one twenty-fifth second exposure, but with stops ranging from f-5.6 to f-32. Three holders had been loaded with six different kinds of plates and all were exposed upon the same scene and in the same manner, in rapid succession. To be sure that all would receive exactly the same treatment they were developed at the same time in a large tray used for enlargements. The individual plates were removed from the developer as they seemed to show the best possible average quality throughout the six strips. As it so happened, all six of the plates were of approximately the same speed. Had there been any having somewhat slower or faster speed, it would obviously have been better to have varied the shutter speed accordingly, at least approximately. At any rate, our correspondent is satisfied that he has secured

an amount of knowledge as to comparative behavior of different emulsions well worth the cost of the plates, the time consumed, and the slight disadvantage of having on hand eleven plates of six different kinds. But even this last he claims is not so great a disadvantage as might at first appear, because he knows just how each kind works under his method of development and he can use them to good advantage for work to which their differences adapt them. As we have already hinted, it is obvious that no good would result from publishing his findings; in fact, harm might be done.

Light Fog

We all know what happens when the camera bellows suddenly develops a tiny hole which can scarcely be seen, but causes such disaster to the sensitive plates, yet exactly similar conditions often obtain in many photographers' dark-rooms, causing mysterious marks on sensitive material.

When printing bromide papers, some workers are apt to regard the process as one that can be worked in a flood of yellow light, and that a little stray reflected white light does no damage. The working light should be of an amber color rather than canary yellow, and it would well repay any worker to test the safety of the light in the following way: Place a piece of rapid bromide paper film up at the usual working distance from the light, put a couple of coins on the sensitive surface, and leave for say ten minutes. Then develop the paper for the usual time, and note the result. If no fog appears the light is reasonably safe, but many workers will be surprised at the amount of light fog given by what was hitherto considered a safe light.

Another prolific cause of fog is white light coming under or over a badly hung door, but we think that perhaps the largest amount of damage is done by printers who open the package of bromide paper, place the pile handy, and then switch on white light in their printing box to adjust the negative. The reflected white light causes fog on the edges of the paper. The remedy is to always use a light-proof box which can be quickly opened and shut, to hold the paper before and after exposure.—*Trade Notes*, RAJAR, LIMITED.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, Evergreen, Jefferson County, Colo.

J. H. Winchell, Chief Album Director, R. F. D., No. 2, Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Claus Spreckels Building, San Francisco.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

John Bieseman, Director Post Card Division, Hemlock, Ohio.

James B. Warner, Director Stereoscopic Division, 413-415 Claus Spreckels Building, San Francisco.

A. E. Davies, Director Western Lantern Slide Division, 1327 Grove St., Berkeley, Cal.

Arthur H. Farrow, Director Eastern Lantern Slide Division, 51 Richelieu Terrace, Newark, N. J.

NEW MEMBERS

4777—Souhei Nakano, 969 Handa-Cho, Aichiken, Japan.

$4\frac{3}{4} \times 6\frac{1}{2}$ and smaller, on gaslight, bromide and carbon, of pictorial or artistic subjects, landscape, portrait, landscape with figures and portrait with landscape settings. Class 3.

4778—F. C. Greene, Box 75, Columbia Falls, Mont.

$3\frac{1}{4} \times 5\frac{1}{2}$, smaller and enlargements, on all kinds of paper, of mountain views. Class 2.

4779—John L. Grupe, 809 Courtlandt Ave., Bronx, N. Y.

$3\frac{1}{4} \times 4\frac{1}{2}$, 4×5 , 5×8 and 8×10 , on developing paper, of portraits and scenery; for anything of interest. Class 1.

4780—John J. Leeflang, 2140 Verbeng St., Oakland, Calif.

$3\frac{1}{4} \times 4\frac{1}{4}$, of general subjects. Class 2.

4781—L. R. Smith, 2609 Grant St., Berkeley, Calif. Class 3.

4782—Walter Saunders, 215 Church St., South Williamsport, Pa. Class 2.

4783—Patsy S. Coloni, Personnel Office, U. S. A., Balloon School, Fort Omaha, Nebr.

Any size up to $3\frac{1}{4} \times 5\frac{1}{2}$, on glossy developing paper, of views, parades, and general; for anything of interest. No postal cards. Class 1.

4784—Irving Miner, Cornell, Ill.

$2\frac{1}{2} \times 4\frac{1}{4}$ and $3\frac{1}{4} \times 5\frac{1}{2}$, on developing paper, of landscapes and still life. Class 2.

4785—Kenneth McLean, care Miss Scheuble, Caledon, C. P., South Africa.

$2\frac{1}{4} \times 3\frac{1}{4}$, on developing and self-toning paper, of miscellaneous subjects; for same, beach scenes and engineering subjects. Class 1.

4786—Otto Bower, Montesano, Wash.

$4\frac{1}{4} \times 6\frac{1}{2}$ (10x16 cm.), on semi-matt developing paper, of typical scenes, landscapes, etc.; for miscellaneous subjects. Class 2.

4787—Gunder Omland, McIntosh, Minn. Class 2.

4788—John C. Clement, Seal Harbor, Me.

$3\frac{1}{4} \times 5\frac{1}{2}$ to 8×10 , on developing and bromide paper, of landscapes, marines and mountain views; for same. Class 2.

4789—Lewis F. Hile, care Intake P. H., Groveland, Calif.

$2\frac{1}{4} \times 4\frac{1}{4}$ and $3\frac{1}{4} \times 5\frac{1}{2}$, on printing-out and developing paper, of snow, mountain, wild flower, marine and figure studies, draped and undraped; for same class of subjects. My best collection is in the $2\frac{1}{4} \times 4\frac{1}{4}$, made with Graflex. Class 1.

4790—G. E. Bowman, 228 N. F St., Tulare, Calif.

5×7 , on developing paper, of mountain scenery and miscellaneous subjects; for miscellaneous. Class 1.

4791—J. C. Mortensen, 215 Pope St., Benton, Ill.

$3\frac{1}{4} \times 4\frac{1}{4}$, on developing paper, of pure bred animals, rural views and some historical; for pure bred animals, field crops and rural views. Class 1.

4792—Fred C. Gorham, 1203 $\frac{1}{2}$ Court St., Saginaw, Mich.

$2\frac{1}{2} \times 4\frac{1}{4}$, on various papers, of views, groups, portraits, babies, parades, etc.; for athletic sports, figure studies, parade and action pictures. Class 1.

4793—Roland O. Hammond, Jr., 4127 Berenice Ave., Los Angeles, Calif.

4×5 and 5×7 , on developing paper, of shipping and marine. Class 3.

4794—Paul J. Standar, Dunsmuir, Calif.

$3\frac{1}{4} \times 5\frac{1}{2}$, 5×7 , and $6\frac{1}{2} \times 8\frac{1}{2}$, on developing paper, of scenery, mountains, etc.; for scenery, bathing girls, draped and undraped figure studies. I desire to exchange only up to $6\frac{1}{2} \times 8\frac{1}{2}$. Class 1.

4795—Stanley L. Chisholm, 128 Melrose St., Melrose Highlands, Mass.

Up to 5×7 , on developing paper, of miscellaneous subjects. Class 3.

4796—Alfred Rizzoli, 40 Douglas St., San Francisco, Calif. Class 2.

4797—C. H. Swarbe, Fort Thompson, S. Dak.

$3\frac{1}{4} \times 5\frac{1}{2}$, on developing paper, of Indian life, outdoor scenes and landscape; for scenery and outdoor views. Prints only. Class 1.

4798—Chas. B. Shepherd, Traer, Iowa. Class 3.

RENEWALS

2198—B. B. Sprout, 216 First Natl. Bank Bldg., Williamsport, Pa.

$2\frac{1}{4} \times 3\frac{1}{4}$ to 5×7 , and enlargements to $6\frac{1}{4} \times 8\frac{1}{2}$, of miscellaneous subjects; for same. Class 1.

3908—S. J. Anderson, Box 32, Bellaire, Ohio.

$3\frac{1}{4} \times 5\frac{1}{2}$ and 5×7 , on developing paper, of Cuban views, lake views, historical subjects, bathing girls and other subjects of interest; for like good work. All photographs to be sent by first class mail. Class 1.

4273—Jack Massey, Box 316, Dade City, Fla.

$4 \times 6\frac{1}{2}$ cm. up to 8×14 cm., on developing paper, of Florida landscapes, for California landscapes, bathing girls and pretty poses. Class 1.

4355—C. S. Beardsley, Box 573, Vallejo, Calif. Class 3.

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- 4447—G. W. Grant, 3817 E. 14th St., Oakland, Calif.
4488—Walter Saunders, 215 Church St., South Williamsport, Pa.
Class 3.
4615—Bruce Stone, R. F. D. 1, Box 98, Jacksboro, Tenn.
3¼x5½ and 2¼x3½, on developing paper, of mountain and railroad scenery and groups of children and pits; for good interesting pictures. Class 1.
4634—Chas. N. Fenton, 203 Copster Hill Road, Oldham, England.
2½x3½, 3¼x4¼, 3½x5½, on various papers, of landscapes, marines, portraits and general

- subjects; for anything of interest; also lantern slides. Class 1.
4639—Linn Ricketts, Box 14, Mason, Nev.
Class 3 for present.
4665—Tom Kildoye, Esq., care Int. Tdg. Corp., Ltd., 225 Yamashito-Cho, Yokohama, Japan.
Class 3.
4692—Benjamin Beauchamp, County Monaghan, Castleblayney, Ireland.
4¼x6½ on printing-out and developing paper, of views of Castleblayney and Irish homes and peasants; only the one size exchanged; for views of Niagara Falls, American cities, life and typical subjects.
Class 1.



CLUB NEWS AND NOTES

Associated Camera Clubs

Notice has been sent to all the camera clubs known to the secretary, and it is desired to reach all others as well, announcing that the date of entry of print and lantern

slide sets for the interchanges closes November tenth next. All clubs are urged to take part and details can be obtained by addressing Louis F. Bucher, Secretary, A. C. C. of A., 878 Broad Street, Newark, New Jersey.



OUR BOOK SHELVES

"Finishing Prints In Black and White, and Colors"

This book, by G. Hammer Croughton, an artist, critic and judge at many prominent photographic exhibitions, is of no small value to the beginner, as well as to the finished artist. Work in conte crayons, castell polychromes, pastel, transparent oil colors, oil colors on gelatino-bromide papers, transparent water colors, permanent water colors and concluding advice, make up the first part. The second part of the book is devoted to retouching, preparing the negative, retaining the modeling, the use of the knife or etchet, treatment of the background and the like. While not a bulky volume the instruction given is full and complete; and what is more, can be considered authoritative and well worth being carried out to the letter by the worker desirous of perfecting himself in this branch of art. The book is one of the Abel Publications, published by The Abel Publishing Company, Caxton Building, Cleveland, Ohio. The same firm publish other good things for the photographer as well as the popular little *Abel's Weekly*, a magazine that should be in the hands of every professional photographer.

"If You Don't Write Fiction"

In this handsome little volume Charles Phelps Cushing, himself a "free lance", writes for the magazines, gives us a wealth of good suggestions that will do much to help us avoid disappointment in our efforts to market our photographic skill in the form of illustrations to more or less ambitious "stories", as all the non-fiction or feature articles are called. The importance of the camera in this class of work is clearly set forth, and somewhat in contrast to the unimportance of literary skill, any lack of which is so easily supplied by the always available "re-write" man. The book does not aim to achieve the impossible, to tell one just where he can send anything he may produce and expect a check in return; but it does tell one how he may avoid a deal of useless sending and how he may improve his chances of acceptance as a result of his more judicious forwarding. The book is one that we can recommend to such of our readers as may be contemplating the offering of their camera products to periodical publishers. Published by Robert H. McBride and Company, New York. Price one dollar, net.

NOTES AND COMMENT

A Department Devoted to the Interests of Our Advertisers and Friends
In it will be found much that is new and of interest

The Victor Projector Catalogue

Catalogue No. 19, carrying revised price list of Victor projection apparatus and supplies, should be in the hands of all those interested in reliable yet moderate priced equipment, particularly that of a portable nature, for the projection of lantern slides. The Victor line includes a wide variety, ranging from the compact and efficient little Viopicon to the Victor high power dissolving stereopticon. Storage batteries, rheostats, lamps, screens, carriers, cases, stock slides, etc., are listed. Victor projectors are used in large numbers by Y. M. C. A.'s, state universities, large business firms, lodges and educational bodies, over twenty-five thousand being in use. Address Victor Animatograph Company, Davenport, Iowa, and ask for this interesting catalogue.

New Gundlach-Manhattan Catalogue

This new catalogue lists the Korono series of cameras, the Korono and Criterion view, Korono home portrait outfit, Korono panoramic and the Korono banquet cameras. Equally interesting, if not more so, is the section devoted to lenses, headed by the well known convertible anastigmat, the Turner-Reich, that gives the worker three different focal lengths in the one lens. Besides lenses of usual form, this firm manufacture and list several that should be given more consideration by the photographers, particularly as their price is quite moderate. These are the Achromatic Meniscus portrait lens for soft effects, the Pancratic Telephoto and the inexpensive wide angle that comes in so handy for special work. Send for a copy of this new catalogue, addressing: Gundlach-Manhattan Optical Company, Rochester, New York.

An Attractive Bargain List

Attractive in the matter of prices and further so because of the reputation for fair dealing of the firm behind it is "Bulletin No. 135", just gotten out by Willoughby's, Incorporated,

110 West Thirty-second street, New York. It contains some excellent bargains in cameras and lenses, and such of our readers as are interested in good used apparatus should send at once for a copy. The firm makes an offer to repurchase any Graflex, Kodak or Anastigmat lens any time within three months, paying seventy-five per cent of the purchase price, of course equal in condition less reasonable wear, and this is indeed good evidence of their confidence in their goods and the prices made.

New Lens Prices

The Wollensak Optical Company of Rochester, New York, announces that, owing to further increase in cost of raw material and labor, they find it necessary to increase their list prices in accord with a new list being sent out. They sincerely regret this action, but in order to give to the trade the best that can be produced, the best of product must be used and the highest type of mechanic employed, leaves no alternative. Revisions have been very moderate in some cases, in others in proportion to the increase in cost.

The Wynne Exposure Meter

The accuracy and reliability of the Wynne meter is hardly open to discussion at this late date, when so many workers have placed their dependance upon it for so many years, only to recommend it more strongly as the years pass along. While not absolutely new, the hunter case style is a great improvement over the older form and makes an ideal pocket companion on one's photographic trips. Closed for the pocket it has the size and appearance of a thin, small lady's watch; and when, like several that we have recently seen, the case is embellished by a neatly engraved monogram, costing but a small sum at any jeweler's, the satisfaction of carrying such a reliable exposure calculator becomes a double pleasure. Ask your dealer to show you one, and if he does not have them in stock, get him to order one for you from

CAMERA CRAFT

the American agents, George Murphy, Incorporated, 57 East Ninth Street, New York. This firm will gladly send you free descriptive circulars upon request.

Illinois College of Photography

A recent arrival is Usaku Tojo of Kojimachi, Tokyo, Japan. Being a professional photographer, he is here for a post graduate course. Upon completion of his work he will go to Europe for a visit, after which he will return to his native land.

Convinced that there is money to be made in the photographic profession, Fred W. Daglish has opened a studio in Calgary, Ontario, Canada. Since leaving the College, he has been employed in the Finley Studio there.

Secretary LeGrand A. Flack has just returned from East St. Louis, where he attended the Semi-Annual Conclave of the Mississippi Valley Consistory, at which he was made a Thirty-second Degree Mason. He speaks of the work in the highest terms.

Professor D. J. Cook is in receipt of a letter from Mr. and Mrs. P. A. Kingsbury (the latter better known as Miss Olga I. Marohn), asking that he O. K. the "great event" in their lives, as he formerly did their negatives. They will make their home in Cleveland, Ohio, and our wish is that they may "live happily ever after".

Lloyd I. Snodgrass of Auburn, New York, and Herbert Anderson of Milwaukee, Wisconsin, have just been added to the instructional force. Both these men are skilled workmen and artists.

An excellent showing for the Photographer's Association of America has been made by the students. At present there are thirty-five who are members, and others are planning to enter. All students are urged to join this worth-while organization.

Since the beginning of the new year, seventeen have been granted "sheepskins". Many others who have taken shorter courses than the one required for graduation, have been awarded certificates, according to the workmanship ability.

George Graham Holloway of Terre Haute, Indiana, the foremost photographer of that city and a past president of the P. A. of A., was in Effingham recently for a talk to the students. The Camera Club rooms were filled with students desirous of profiting by his

interesting talk to the students on Photo Miniatures. The student body is ready to recommend Mr. Holloway as an instructive lecturer at any time.

Trade Printing

The season which has now started promises to be a record one for those who specialize in developing films and plates, and supplying prints therefrom. It is lamentably true that the bulk of amateur "snapshots" are underexposed, with the inevitable result that the images are thin and weak.

Gaslight paper with its characteristic brilliance and increased contrast is a valuable aid to the printer who makes a point of always producing the best possible print from every negative. Negatives of all kinds, soft, hard, thin, and dense, have to be dealt with, but none of them should present any tenors to the worker who takes care to choose the correct grade of paper to suit the negative.

We think that there is not sufficient attention given to the all-important question of choosing just the right grade of paper to suit the negative. We hold no brief for the printer who claims to produce his results by tricks in development. The development of a print should, excepting in certain circumstances, be purely a mechanical operation of full development of all light action..

As regards developer, either amidol or M.-Q. can be used, but we prefer the latter. The formula we give below is particularly suitable to the trade printer for use with plates, films and papers:

M.-Q. ALL-PURPOSES DEVELOPER

Metal	½ ounce
Sodium sulphite	1 pound
Hydroquinone	2 ounces
Sodium carbonate	1 pound
Potassium bromide	160 grains
Water to make.....	2 gallons

In making up this developer, put the water, warm, in a two-gallon jar and add about one ounce of sodium sulphite. When dissolved, add the metal and then the balance of the sodium sulphite. The other ingredients should be added in the order given.

This developer is double strength and should be used with an equal amount of water for films, plates and bromide papers. For gaslight paper it should be used full strength.—RAJAR LIMITED, Moberly, England.

CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA



ANSCO
5 x 7
PRINTING
MACHINE

Price: \$10

This Ansco Printer takes the bother out of printing. The amateur photographer who uses it gets more uniform results, more conveniently, and in shorter time. It makes printing sure and simple in any kind of room that has electric current. It is especially well adapted to the requirements of the commercial photo-finisher.

DETAILS: Takes negatives up to 5 x 7; has ruby glow and uses a standard 40-watt Mazda lamp as the printing light; lower window provides orange light for developing prints, and ruby safe light for developing plates and film.

Built with the same care for essential *lightness* that has made Ansco camera famous.

AnSCO Company
Binghamton, N. Y.



CAMERA CRAFT

A Photographic Monthly

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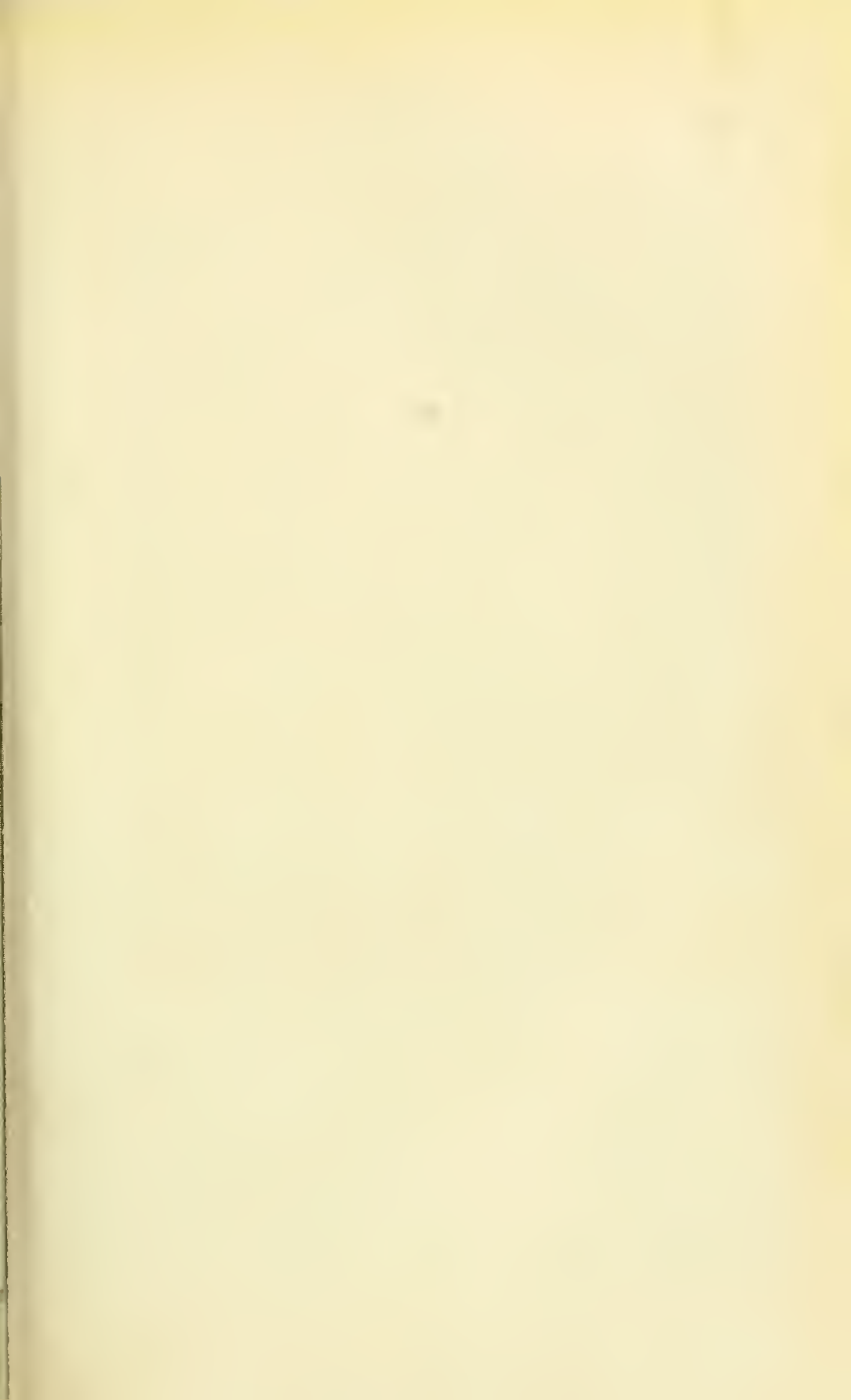
Australia	- - - - -	Harringtons, Ltd., Sydney
England	- - - - -	Kodak, Australasia, Ltd., Sydney
Malta	- - - - -	Francis Collas, 3 Wine Office Court, Fleet Street, London, E. C.
	- - - - -	Do Agius Catania, 41, Sda. Reale, Valletta
New Zealand	- - - - -	Richard Hill, Matlock House, Devonport, Auckland
	- - - - -	Waterworths Limited, 58 Queen St., Auckland
	- - - - -	Waterworths Limited, 286 Lambton Quay, Wellington
Philippine Islands	- - - - -	F. O. Roberts, Manila
Japan	- - - - -	K. Kimbel, Yokohama
China	- - - - -	Squires, Bingham & Co., Shanghai

NOV. DEC. BARGAINS

The Cameras and Lenses listed herewith are guaranteed perfect and as represented. We do business on a strictly money-back basis and will cheerfully return your money on any purchase if goods are returned within five days after the receipt of same. We pay spot cash for Used Cameras, Lenses and Photographic Equipment, either Amateur or Professional. We buy and sell everything photographic, from a Brownie Camera to a Complete Studio.

LENSES

2¼x3¼ Cooke Kodak Anastigmat, f-6.3, 4½-in. focus; in Optimo shutter. Like new.....	Price	\$39.00
2¼x3¼ Euryplane, f-5.6, 3½-in. focus, in Compound shutter, first class condition. List \$45. Now		27.50
3¼x4¼ Hemi-Anastigmat, f-7.5, 5½-in. focus, in Ibsco shutter, good condition.....	Price	15.00
3¼x4¼ Celor, f14.8, 4¾-in. focus. In focusing mount, like new. List \$60.00.....	Now	39.00
3¼x4¼ Dynar, f-6.8, 4¾-in. focus, in Koilos shutter; first class condition. List \$40.00.....	Now	35.50
3¼x4¼ Ross-Goerz, f-6.8, 5-in. focus, in Optimo shutter, good condition. List \$59.00.....	Now	38.75
3¼x4¼ Ross Homocentric, f-6.3, 5-in. focus, in Koilos shutter; first class condition. List \$44.80	Now	27.50
3¼x4¼ Ross Homocentric, f-6.3, 5-in. focus, in Koilos shutter; like new. List \$44.80.....	Now	36.50
3¼x5½ Velostigmat, f-7.5, 6½-in. focus, in Auto shutter; like new. List \$17.50.....	Now	15.00
3¼x5½ Cooke Kodak Anastigmat, f-6.3, 6⅞-in. focus, in Compound shutter; like new.....	Price	35.00
3¼x5½ Vlostigmat, f-6.3, 6½-in. focus, in Auto shutter, in good condition. Lise \$50.00.....	Now	37.50
4x5 Ross Homocentric, f-6.3, 6-in. focus, in Auto shutter; like new. List \$56.15.....	Now	46.45
4x5 Ross Compound Homocentric, f-6.8, 6-in. focus, in Ilex Universal shutter.....	Price	35.50
4x5 Versar Portrait and View, f-6, in Regno shutter; like new. List \$27.50.....	Now	15.00
4x5 Protar, Series V, No. 2; good condition. List \$22.00	Now	15.00
4x5 Turner-Reich, Series III, f-6.8, 6¼-in. focus, in Volute shutter; like new. List \$55.00.....	Now	47.50
5x7 Protar, Series V, No. 2; good condition. List \$31.00.....	Now	25.00
5x7 Ross Wide Angle, 4½-in. focus; like new. List \$25.00	Now	21.00
5x7 Protar, VII A, No. 8, in Ilex Universal shutter; like new. List \$121.00	Now	95.00
5x7 Ross, f-8, 8½-in. focus, in barrel; like new. List \$35.50	Now	26.50
5x7 Collinear, Series III, f-6.8, 7-in. focus, in Compound shutter; good condition. List \$75	Now	45.00
5x7 Plastigmat, f-6.8, 7-in. focus, in Unicum shutter; good condition	Price	38.50
5x8 Celor, f-5.5, 8¼-in. focus, in barrel; good condition. List \$67.00.....	Now	47.50
5x8 Scientific Anastigmat, f-6.8, 8½-in. focus, in Regno shutter; good condition.....	Price	35.00
6½x8½ Crown Anastigmat, f-6.8, 9½-in. focus, in Auto shutter.....	Price	47.50
6½x8½ B. & L. Tessar, f-6.3, 9½-in. focus, in Volute shutter; first class condition. List \$132.50	Now	118.50
6½x8½ Conley Anastigmat, f-6.8, 9½-in. focus, in Auto shutter; good condition.....	Price	55.00
6½x8½ Plastigmat, f-6.8, 11-in. focus; in barrel	Price	65.00
6½x8½ B. & L. Portrait, f-4, 16-in. focus; good condition. List \$208.00.....	Now	145.00
8x10 Scientific Anastigmat, f-6.8, 13-in. focus, in Auto shutter; good condition.....	Price	68.00
8x10 Ideal, Series D, f-6, 12-in. focus, in barrel; good condition. List \$42.75.....	Now	28.50
10x12 5A Dallmeyer, f-4, 22-in. focus, Waterhouse diaphragms; good condition. List \$380.00.....	Now	220.00





"LOST HIS DOG"
By LOUIS FLECKENSTEIN

CAMERA

CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXVII

AUGUST, 1920

No. 8

An Attractive Field

By a Red Cross Worker



Illustrated by Typical Photographs

Unlimited variety, and poses rich in beauty and sentiment, are available to the photographer who keeps himself informed as to the functions of the American Red Cross in his community.



THE PURITAN FATHERS — A PAGEANT PUT ON BY THE RED CROSS JUNIORS

It needs only the realization that the peacetime program of that organization is one of public health service, together with sufficient familiarity with the scope and kind of activities therein represented, to demonstrate the wealth of material in situation and suggestion provided.

Numberless variations of the conventional "Mother and Child" theme are suggested in the field of Baby Welfare and Child Hygiene. With the vast network of Chapters, branches and auxiliaries that extends from Coast to Coast, and from Canadian to Mexican borders, committed to the campaign of teaching health conservation and disease control by means of Health Centers and Teaching Centers, established in every community, what more appropriate impetus could be given to the movement than that afforded by photographs, showing local women, young girls and children, engaged in various phases of this health education work.



"PLAYING INDIAN" ON A RED CROSS PLAYGROUND—A FAVORITE PASTIME

A society matron, for example, attired in the attractive simplicity of the regulation apron and cap, bathing a smiling cherub, every baby curve beguiling in evidence, would not only be a charming picture, but would undoubtedly find a place on the society page of the leading newspaper, as a graphic example of the way the Red Cross prescribed that baby's bath should be given.

Or the changes could be rung on the always popular pose showing a nude infant, by posing him in a weighing basket with a background similar to that to be found in the Red Cross Health Center, where every mother is encouraged to bring her baby regularly, to test his weight and measurements and regulate his diet and habits.

AN ATTRACTIVE FIELD



RED CROSS INSTRUCTION IN THE CHILDREN'S HOSPITAL—AN INTERESTING POSE



THE HOME VISITING RED CROSS NURSE—INSTRUCTING THE YOUNG MOTHER

CAMERA CRAFT

Delightful poses featuring the unstudied grace and eager curiosity of childhood are suggested by First Aid pictures. The need of scrupulous care for such minor injuries as slight scratches, cuts and burns is well illustrated by grouping a family so that a mother can be shown painting a rosy limb with iodine, or bandaging a pudgy finger, the child subject watching intently, while the other children cluster about in poses of frank curiosity.

A little girl looking at her Red Cross Scrap Book, or an older girl engaged in finishing a toy, suggests the activities of the Junior Red Cross children in making picture books and toys for the less fortunate children at home and abroad.

Every young girl loves to see herself in the guise of a ministering angel. The appeal to the adolescent mind of the Red Cross Nurse is very often due as much to the picturesqueness of the uniform and the sentiment it represents as to her desire to bind up the wounds of suffering humanity. This naive attitude may be made an asset without affront by persuading the young lady that other garbs, indicative of her own actual participation in Red Cross work are equally as attractive. In the becoming garb which she wears as she bakes and brews under the direction of the Dietitian in her Home Dietetics Class, and posed in a characteristic phase of that instruction, she may display her beauty as well as her proficiency. The model young woman of today delights in her efficiency and versatility, so that the subject will not have been exhausted with the Dietetics. Home nursing, Home and Community Hygiene, Domestic Science, and again First Aid suggest endless varieties of interesting poses. Moreover the family group may be introduced in the same series. Big sister may preside at the stove or demonstration table, preparing for the edification of other members of the family some dish or drink she has learned to make at the Red Cross Teaching Center while the younger kiddies pore over a cook book or diet chart in the foreground.

In every community ex-service men are to be found, who will gladly co-operate with any Red Cross undertaking. So that if a pose requires the portrayal of a soldier or sailor, such atmosphere may readily be supplied by the young man himself, attired in his discarded uniform, or by some proxy to whom the uniform has been lent.

Often realism may be lent to Nursing or First Aid pictures by photographing a hospital. And from this type of indoor photography even the amateur need not shrink, inasmuch as the white walls and abundance of light provided in most institutions makes the taking of interiors comparatively simple. Of course in such cases tact and common sense should be exercised in obtaining the consent to such a proceeding of the proper hospital authorities and trustees.

As a business proposition, it might pay the ambitious young photographer who has recently set up shop, to proffer his services to the publicity chairman of the local Red Cross Chapter, for any group pictures desired to feature the Public Health Service Program. Probably the percentage of orders received from the members shown in the group would prove that it

AN ATTRACTIVE FIELD



TYPICAL TENEMENT KITCHEN--CHELSEA



A JUNIOR TOY MAKER--MALDEN, MASS.



RED CROSS TREATMENT AT THE SOUTHINGTON, CONNECTICUT, HEALTH CENTER

CAMERA CRAFT

pays, in cold cash, as well as in self-satisfaction and altruism, to lend a hand to the Red Cross.

The photographer should keep in mind the fact that any group picture or single subject, taken in costume, has a far wider appeal when the pictures show plainly WHY the group is assembled; why the costume is worn. A pretty girl in a nurse's uniform is not half so compelling or alluring, for example as when she is shown performing some characteristic service associated with the uniform.

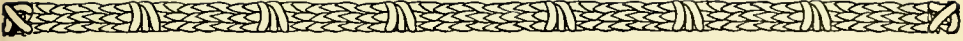
Group pictures destined to adorn the walls of the homes of those therein depicted as well as for display in Chapter Headquarters, offer many opportunities for out-door photography. Motor Corp members, engaged in disaster relief, or in the service of carrying out patients to and from hospitals, give an opportunity to bring in local color as well as to feature the diversity of service performed by that body.

Interesting work in First Aid, in which High School boys or girls may pose a companion in a litter, or other phases of First Aid work, requires no professional artifices in the use of interiors, flashlights, or expensive lenses.

Costumed poses by small boys are suggested by the pageants and playlets frequently given by Junior Red Cross members, where Indian regalia or garbs of all nations are factors.

In short, the fertility of resources of the American Red Cross connote a corresponding fertility of subjects in the field of photography, which the professional or amateur alike may seize upon, always secure in the knowledge that the subject is universally popular, and often lucrative. For not only will the local Red Cross activities find frequent mention in the public press,—the pictures accompanying them, advertising the photographer in the case,—but the practice of popularizing a new function of Red Cross work, by means of window displays and pictures of local members exhibited in local public places, will bring increased patronage to the photographers who avail themselves of the new field.





The Anaglyph

By B. H. Winters

It is to the late Ducos du Hauron that we are indebted for the anaglyph—the stereoscopic lantern slide. Although the process is well known and details are available for the preparation of the slides, very little use has ever been made of it. This is due to the fact that it has been looked upon more or less, as a scientific curiosity.

In reality it is anything but that. It is a thoroughly practical process and when the anaglyphs are properly made and projected they give pictures of extraordinary beauty. There is nothing difficult about the making of the slides. There are a few things that one must guard against, but the trouble one encounters is more apt to be due to the inability to procure suitable dyes for staining the images and viewing filters than to inherent defects in the process itself.

Although primarily intended for lantern slide projection, the anaglyph with slight modification is adapted for ordinary stereoscopic work and it is with this phase of the subject that this article will deal.

In order to understand the optical principles on which the obtaining of the effect desired is based, let us consider a simple case.

Take a green print made from the right hand side of a stereoscopic negative and examine it through a piece of green glass. If the green in the picture has the same absorption power as the glass, nothing will be visible. Now take a red print made from the other side of the negative and examine it through a piece of red glass. As before, nothing will be seen, provided the glass has the proper absorption qualities, which we assume it has.

Now reverse the pictures and examine the green print through the red glass and the red print through the green glass. There is now a different story to tell. In both instances you will see a picture, the lines of which will be black.

Mount the two pictures together and you will have an anaglyph. If this has been done properly, the eyes looking through glasses of different color will see, not two, but a single image in monotone as in viewing an ordinary stereoscopic picture.

In one particular the anaglyph differs from the stereoscope very materially. Whereas in the latter it is customary to preserve a distance of about two and three-quarters of an inch between centers, in the anaglyph the distance is reduced to a quarter of an inch or even less. This is practically superimposing one picture on another and because of this the top picture must have a transparent support. How this may be done will be described later on.

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One of the most difficult things that one has to contend with in the making of anaglyphs is the procuring of suitable colored glass. Many workers use stained film for the viewing glasses and, generally speaking, it is the most satisfactory solution of the problem.

As a matter of convenience, the glasses or film, as the case may be, are mounted like a pair of ordinary spectacles and used in much the same way. There is no particular rule as to which eye is to have the red or green filter. The essential thing is, that having determined upon the arrangement, to see that the pictures are properly placed for viewing. If the right eye has the red filter, then the right hand picture must be green, and the left eye having the green filter, the left hand picture must be red. Each eye will then see but one image and if these have been reversed, as is customary in ordinary stereoscopic work, the effect will be that of a single picture standing out with all the life and naturalness that is characteristic of views of this type.

A few words of explanation may make some of the details of the process a little clearer. First of all, let it be understood that the worker is not confined to the two colors red and green. Any two colors may be used, provided they are complimentary. Red and blue are frequently used and are preferred by a great many.

Let us assume that we are about to make an anaglyph using these two colors and that the blue will be used on the right hand side and that it will form the background on which the red is to be superimposed. If we decide to make the blue image on paper, as is frequently done, several processes are open. We may make a cyanotype or blue print or we may employ carbon. Or if not satisfied with these we may make use of one of the many toning processes which will give the desired effect.

If instead of an opaque background we decide on a transparency, still other ways are opened up of which the pinatype process is unquestionably the best, and for that matter the only one which the worker should use if he is seeking the best results obtainable. Descriptions of this process have appeared in CAMERA CRAFT from time to time and to these the reader is referred for details.

The background having been obtained, the next step is to secure the second image on a transparent support. Carbon tissue such as is used in tri-color work is admirably adapted for this purpose when mounted on thin celluloid.

If one does not wish to employ carbon, he may make use of a piece of negative film. The unexposed film is first sensitized in a bichromate solution in precisely the same way that one would treat carbon tissue. When dry it is exposed under the negative in a printing frame with the gelatine side reversed. At least five or even ten minutes' exposure to the sky is desirable. The object is to tan or render insoluble the gelatine. Those who have worked with carbon will understand what is wanted. The film is now placed in warm water and the soluble parts removed by gentle laving; a soft brush, if necessary, being used to hasten the action. It is then fixed, washed and dried, after which it is ready for dyeing.

THE ANAGLYPH



HOME PORTRAITURE—LINE LIGHTING

By F. MORRIS STEADMAN

The dyeing is really the rock on which the anaglyn is either shattered or finds a firm support. At the present time it is extremely difficult to find suitable organic dyes, but here and there one may run across some and when this happens it will well repay any one interested in the subject to look into the process.

Robert W. Chambers, in an interview, was asked: "What is your definition of Art?"

"Oh, d—n art! The men who counted never bothered their heads about art. The old masters were artisans first of all — good workmen, honest workmen. What amazes me about them was their honesty. They were in business—artists, sculptors, goldsmiths, architects—and when they had commissions to execute they merely did their very best and emitted no whine about 'what is art?' The art took care of itself, after an honest job had been executed. Some of these jobs were artistic, some commonplace, varying according to the intelligence and executive ability of the workman. That's all I know about art."

Now is there, is there, a more welcome sight on the footstool than the man who does his work well, and does it well because he likes to do it well, because he is proud to do it well, because it is right that he should do it well? No, there is not.—Henry B. Fuller.



Cyanotype Plates

By Hugh Wensfield

Although the cyanotype process is almost invariably associated with the making of blue-prints, it is quite possible to employ it in the production of transparencies and lantern slides. With some subjects, such as snow scenes and moonlight effects, the results are of extraordinary beauty.

Cyanotype plates are of course unobtainable in the open market and if one wishes to employ them, he must of necessity prepare them himself. To start with it is necessary to have a plate coated with gelatine and free from silver salts. There are three ways by which such a plate may be obtained.

Stale plates which have not been exposed may be treated in an ordinary fixing solution and then hardened, washed and dried after which they are ready for sensitizing.

Another method is to take plates which have been developed, but which one does not care to retain and to remove the metallic silver from the film by means of one of the numerous reducers available for that purpose. In case this method should be employed care should be exercised to see that the last trace of silver present is removed. This is not as difficult an operation as one would imagine. It is merely a matter of allowing the plate to remain in the solution a sufficient length of time and to exercise due care in the subsequent washing operations. Another thing to guard against is the use of scratched or stained plates. Any little abrasion of the film or coloration due to pyro or other developing agent is sure to be productive of trouble. It is needless to say that plates that have been retouched or intensified are not likely to give satisfactory results.

The third method and the one which would naturally commend itself to the amateur who is interested in experimental work, is the coating of the plate himself. At first glance this would seem a very difficult thing to do, and yet it is a very simple operation. Collodion, gum and particularly carbon workers who have prepared their own tissue would find it mere play. Anyone wishing to go into the details of this method of preparation will find in any one of the numerous articles which, from time to time, have been written on the subject of home-made plates, full directions for the preparation of the gelatine coating. One has merely to take the formula as given and leave out the silver and sensitizing salts. In other words, proceed to produce a non-sensitive plate.

Having obtained a plate coated with gelatine, the first step is to see that the film is hardened. The ferricyanide solution has a tendency to frill the edges and although hardening makes it necessary to soak the plate a little longer, it is better to take the extra time than to risk losing the plate.



THE BEACH—BOLINAS BAY,

By ALBERT E. DAVIES

If old plates are used the hardening may take place before the final washing, but in the case where the worker has coated the plates himself, it is advisable to let the gelatine set first and to harden afterwards. While any bath may be used, the chrome alum formula is to be preferred. Washing must always follow at this point.

After drying the plate is ready for the sensitizing solution. Any of the numerous formulas for the preparation of blue-print paper may be used. The following, taken from the "British Journal Photographic Almanac," is one of the best:

A:

Ferric ammonium citrate (green) 250 grams
 Water1000 cubic centimeters

B:

Potassium ferricyanide 90 grams
 Water1000 cubic centimeters

When ready to sensitize the plates, take equal parts of A and B and filter just before using.

It might be well to note here that ferric ammonium citrate comes in two varieties. The formula given above is for the green salt. If the brown kind is used it will be necessary to modify the formula as follows:

A:

Ferric ammonium citrate (brown) 188 grams
 Water1000 cubic centimeters

B:

Potassium ferricyanide 137 grams
 Water1000 cubic centimeters

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In other respects the procedure is the same as previously described.

Sensitizing is a simple operation. A tray of ample capacity is selected and the plates placed on the bottom. Solution is then poured on top until the plates are covered. Another way it to use one of the rubber fixing boxes with vertical grooves which will hold the plates in an upright position. When this is done care must be taken to see that every trace of hypo has been previously removed.

The gelatine having been hardened, the solution is slow in penetrating. For that reason three or four hours may elapse before the film becomes saturated. Prolonged immersion is not injurious and that being the case it is well to play safe and allow the plates to remain in the sensitizer as long as possible.

When it is thought that the plates have absorbed sufficient solution they are removed and given a hurried rinse under the tap. In doing this care must be taken not to remove too much of the solution from the film. If this happens, the printed image will be weak and it will be a hard matter to strengthen it.

The object of the washing is to prevent the salts from the bath from crystalizing on the surface. If care is exercised this will not occur. Drops gathering on the surface and drying there favor crystalization and must be guarded against. They may be removed with blotting paper or a tuft of cotton.

While wet the plate is not particularly sensitive to the light and it is possible to conduct the operations up to this point in a yellow or amber light; but in drying, care must be taken not to expose it to a light stronger than one would use for lantern plates.

Drying must take place as rapidly as possible for slow drying is apt to cause crystalization and the subsequent formation of unsightly blotches on the image. Standing the plate on absorbent paper and drying it in a current of warm air is advisable if the proper facilities are available.

The dry plate has good keeping qualities and may be stored for several months without notable loss of its sensitiveness. The printing is done in a frame in much the same way as when making lantern slides by contact, but with this difference; the image is visible at all times and the end point can be readily determined by inspection from the back.

To develop, the plate is rinsed several times in water just as one would do when working with ordinary blue-print paper. It is then dried and when bound with a cover plate is ready for exhibition. If in the final stages of development it appears that the plate is lacking in brilliancy, a few drops of hydrochloric acid added to the rinsing water will do much to improve its quality.

A lantern slide lends itself to few modifications, but a positive intended for framing can be manipulated so as to give many beautiful effects. One of the methods frequently adopted is to place a piece of thin colored tissue paper between the cover plate and the positive. The result is as unique

CYANOTYPE PLATES



HALF DOME—YOSEMITE


By J. WALTER DOUBLEDAY

as it is striking, particularly if the color selected blends in harmoniously with the blue of the image. Workers in Doretype will recognize the similarity of the two processes at this stage.

A modification of the above which lends itself to even finer effects is to use as a cover plate a piece of glass coated with colored gelatine. Certain shades of yellow will change the blue of the transparency to greens that can be made to match perfectly the dominating note of many a woodland scene, thereby broadening the field of the plate. All in all, it is a beautiful and interesting process and well worthy of the time of the experimenter.

Choice in color corresponds to the degree of sensitiveness and education possessed by the eye. The barbarian and the infant seize only the most striking notes in the color-gamut. But as age, training, or civilization advances, the individual appreciates the semi-tones, the quarter tones, perhaps even the finer divisions of the chromatic scale.—“The Craftsman.”

Art deals with things forever incapable of definition, and that belong to Love, Beauty, Joy and Worship, the Shapes, Powers and Glory of which are ever building, unbuilding and rebuilding in each man's soul, and in the soul of the whole world.—Plotinus.



The Call of the Specialist in Modern Photography

By W. Clement Moore



In an interview which the writer once had with Cyrus W. Curtis of the Curtis Publishing Company, the latter made a remark in regard to special service which has always remained with me. He stated that his company and he himself, always employed special service for every branch of their work if possible, and he felt that much of the success of their concern had been due to the fact that practically all of their work was done each day by persons trained especially for it.

As he has found it in the publishing business, so it is in all lines of trade, business and profession. It is the special study, the special service and the specialist that united will bring about the desired success of almost any legitimate enterprise.

For instance, in the educational world, one may readily note the rapid improvements which have recently been made in schools, teachers and pupils, owing to the extension of the idea of special service for teachers and special classroom instruction for pupils. In the publishing world there has been a similar advance, and today we have hundreds of special class magazines and publications, where a few years ago we had practically none. Ideas and methods have been introduced in publishing and advertising by the many specialists who have been compelled to originate and produce new plans, campaigns and methods, because of the special demand which is growing to quite extensive proportions everywhere. A careful examination of a few of the leading class publications of today will give any person a fair idea of the magnitude of special work and the thousands of branches in which a person may specialize.

Photography therefore is no exception to the rule, and a host of opportunities for specializing in this work might be presented to the live photographer. Of course, if true specialization is to result and success follow, there will be need of an intense study of the special work which one may elect to follow. It is only natural you know, to expect much better work from the specialist than would result if an ordinary photographer should be employed. These standards one must determine to reach and maintain in all of his work; otherwise there is great danger of failure.

"What shall I elect?" This is the most natural question, and in this article a few suggestions will be made for the purpose of assisting one in arriving at a decision of his own. One must make his selection always from his own peculiar fitness for the work. In this he may be guided by his success along similar lines in the past. For instance, let me give a few of

THE CALL OF THE SPECIALIST IN MODERN PHOTOGRAPHY

the hundreds of branches of photographic art. Add to this list as many other classes as possible; one will be surprised at the size of the list when he is through: Art Study Work, Animal Photography, Amateur Finishing and Developing, Automobile and Auto Part Photography, Animated Life Scenes, Agricultural Photography, Book Illustrating, Baby Photographic Work, Biblical Scenes and Illustrating, Biological Specimen Photography, Botanical Pictures, Building Construction and Operations, Craft Work, Christian Illustrative Work, Childhood Scenes and Pastimes, Common Life Pictures, Collection Photography (antiques, etc.), Colored Photographic Work, Compiling Photographs for all purposes. You will note that the list extends over only three letters of the alphabet, and yet it suggests a number of different lines of photography in which a person may specialize.

Suppose one should select for his specialty a subject like Agricultural Photography. In this case, he would of course need to live in a representative rural district where there would be an abundant opportunity for constantly taking pictures of representative farm scenes and agricultural developments showing the planting, growth, habits and harvesting of the crops. This kind of work is very interesting and if one has a handy camera, one about 4x6, for all of the snap shot work, one will find results highly satisfactory. As a center from which to work, one could of course open a studio in a centrally located town, as large as could be found, surrounded by a fertile farming country. It is not a difficult thing to find towns of three to five thousand people in all of the Eastern states, located in the midst of a rich farming soil; and indeed, the Middle West offers many similar opportunities.

In a large city, one will find a most profitable special lines to be Baby Photography, because, while practically all parents realize the great difficulty which confronts a photographer in doing this work, they do also realize that if the results are perfectly satisfactory they will have walking and talking pictures while the photographer will have as representing his skill, pictures of every member of the family. This work will naturally require considerable study and experience, but it certainly can be mastered and the profits to be obtained from it are fine. When one is satisfied that he has ability for such work he should make it known by advertising cards, announcements and a slogan, somewhat as follows:

HAROLD HETRICH

“Photographer of Babies and Little Children”

At the Sign of The Teddy Bear

Greenwich Avenue

Woodhaven

The above is merely a suggestion and if a regular studio is conducted such a sign or card should also contain an announcement to the effect that photographs of “grown-ups” will also be part of your work. Catchy ideas like the above count and one’s slogans and advertising should fit your special line always.

Over The Jumps

By Capt. C. F. Armstrong



Illustrations by the Author

The accompanying pictures were taken for two reasons: to provide a record of progress of the rider, and to enable the rider to see her own position and thereby be able to correct defects in performance. They proved interesting from a photographic point of view, due to the condition under which they were taken. A 4x5 Graflex was used, with Eastman Commercial Ortho cut films, in combination with a Carl Zeiss Ic Tessar lens, working at f-4.5.

It will be noted from the shadows that they were taken against the light, therefore no detail in the face was obtained or expected. Only three



OVER THE JUMPS

By CAPT. C. F. ARMSTRONG

jumps were made and one picture was taken of each jump, the effort being to get different positions, and the reader can see to just what extent I succeeded.

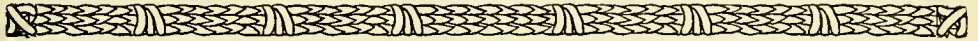
This horse is about five years old; and, when fully trained will be an excellent high jumper. The first picture shows him going up and clearing the barrier over two feet, the measured height of bar being three feet six inches, a total of five feet, six inches for the jump. The second caught the horse as he commenced to straighten the front legs and draw up the hind legs, while the last shows the clean jumping animal coming down. In each case he cleared the barrier by over two feet. From the study it would appear that such an animal will make a high but not a long jumper, as in this case he had less than fifty feet for a take off.

From a photographic point of view these pictures are interesting and the data is as follows: Bright sunlight, two p. m., August seventeenth, stop f-4.5; Carl Zeiss Ic Tessar lens eight and one-half inch focus, shutter speed one-one hundred and eightieth of a second; pictures taken against the

OVER THE JUMPS

light from a distance of thirty-seven feet from the bar. Focussed before the jump on a man standing three feet ahead of the bar, to give the moving horse a chance to come into focus over the jumps. The Commercial Ortho cut film was used and proved fast enough for the purpose. Developed in tray, separately, with Eastman A. B. C. Pyro formula.

The speed of shutter was computed beforehand on the basis of the tables with Wellcome Exposure Calculator and reduced from the exposure with a five-inch lens to one of eight and one-half inches. The light, considering the same tables, was judged as between A and B, and calculated to require an exposure of one-one hundred and fiftieth seconds; one-one hundred and eightieth was given, however, to better stop the motion. Only three pictures were taken; as, in the last jump the lady, who had been riding only six months, hurt her hand severely, necessitating a stop for the day.



More About Callitypes

By Sigismund Blumann



A Correction and an Apology

In the article bearing the same title, which appeared in the July issue of CAMERA CRAFT, it transpires that I did not give enough about Kallitype by two important ingredients. To the reader, to John A. Tennant, who was kind enough to interest himself in calling attention to the oversight, and mostly to Mr. Thomson, who must have been greatly annoyed to find himself so seriously misquoted, I offer sincere apologies. The compliment implied by the great number of protests is somewhat modified by the thought that a far smaller number should have been equally enthused had everything been right and they had succeeded in perfecting masterpieces of technique through this medium.

Lest this careless mind again offend I shall copy word for word from "Photo-Mineature," Number 69, postscript, page 507:

Citrate of iron and ammonia	25 grains
Ferric oxalate	15 grains
Merck's or Mallincrodt's chloride of copper.....	8 grains
Oxalate of potassium	33 grains
Silver nitrate	15 grains
Oxalic Acid	15 grains
Gum Arabic	10 grains
Distilled water	1 ounce

Measure out the water, and in half of it dissolve the silver nitrate. While that is dissolving, weigh the other ingredients into

the other half of the water, which should be in a dark colored bottle, such as the ferric oxalate is sold in. Add the chemicals as they are weighed, in the order given, without shaking up the bottle. When all but the oxalic acid have been added (the acid should be reserved for the last), pour in the silver solution and any undissolved crystals that may be remaining; then add the Oxalic acid and without shaking or agitating the bottle, put away in a dark place for twenty-four hours. Stir up the sediment at the bottom, then filter, discarding the gritty particles, after which the gum may be added, the solution now being ready for use."

I would again recommend the reader to follow Mr. Thomson's directions implicitly. After succeeding with these Mr. Thomson himself would probably approve the experimenter's trying ways and modifications of his own devising. I, for instance, do not filter away the sediment, but trust to the medicine dropper and its cotton pledget, as told in my article, to serve the purpose. Also, strictly in confidence, I leave out the oxalic acid. This omission has given me results that all beholders have praised. But I have been able to get a full pound of ferric oxalate in a lump crystal form that apparently is not generally available to others. This form of the chemical does not deteriorate like the flake or spangle and probably is richer in acid.

With the hope that this will once more rehabilitate me in the good graces of reader and all concerned, the experimenter is left to compare his successes and failures and discover where the potential fault lies.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

WATCH YOUR OVERHEAD—Very few photographers realize the importance of their actual overhead, or the importance of knowing what it figures. Known, and known definitely, there is a constant incentive to keep it down and to increase the amount of business done in order that it may be as small as possible in proportion thereto. It is not at all difficult to figure out one's overhead for the simple reason that most of such expenses are made up of rent, insurance, water light, telephone and other like fixed costs. If one's overhead is one hundred dollars a month and the income one thousand dollars for the same period, one knows that every dollar of income must pay ten cents before the difference between the remaining ninety cents and labor and cost of material represents actual profit. One can easily see that with labor and material costs remaining the same, and selling prices also, any decrease in the overhead or increase in the amount of business done will make quite a little difference in the profits.—C. B. M., Ohio.

CAMERA CRAFT

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One Cause of Failure

We have a frequent visitor, a kindly disposed veteran in the amateur ranks, who feels that he has discovered one quite common cause of failure with the beginner in photography. And it sounds so reasonable and conclusive that we want to pass it along as a possible warning to other beginners as a help to still others who, like our friend the veteran, tries to help every beginner with whom he comes in touch. The idea is this: The layman, as he takes up photography, finds that pictures can be taken with cameras varying in form from a simple box to an elaborate instrument somewhat bewildering to the novice, and the pictures will be just the same. He finds that pictures of an object can be secured in bright sunlight or almost darkness, and both will portray the subject. Pictures can be taken in a rain, they can be taken of objects moving at a high rate of speed, they can be taken at any hour of the day, practically any subject can be made to record its image on the sensitive plate. Everywhere there is the widest possible latitude. Even the prints can be made by sunlight or candle-light, and on an endless variety of surfaces. Nowhere does there seem to be imposed any limitations worth considering; at least, that is the subconscious impression. How then can the beginner be made to realize that the work is full of exacting requirements? Only by calling his attention to the difference between the exacting demands of many of the details of procedure and the wide variation in such procedure as it is made to conform to the requirements of decidedly different conditions. It is quite true that pictures are made with exposures ranging from fractional parts of a second to what are more like fractional parts of a day, but that does not mean that the exposure for a particular subject under its own particular conditions can be permitted to vary from a quite narrow standard. One could, for example, take ten cameras, each set with a different shutter speed, go out and find ten subjects or ten sets of conditions under which all ten cameras would produce, in turn, perfect pictures, but to go out and take all ten subjects with one camera would impose the necessity of correctly setting the shutter for each one. By the same rule, making one particular subject ten times, using each camera in turn, would impose again the changing of shutter speeds nine times, assuming that the set of one of the ten was the right one for the subject selected. This illustration is the one our friend, the veteran, uses to convey the ideas to the worker he seeks to enlighten, and he finds it quite helpful. At any rate, there is a well taken point in his contention and we are only too glad to pass it along for what it is worth.

Please Have Patience With Us

We are late and no one knows it better than we do ourselves. We have had our troubles, are still having them, and expect to have more, unless there is a decided change. It started with the heavy subscription business the first of the year. No available stencil blanks for the addressing machine made the work multiply; and, as our stencils act as our record keys, every complaint meant hours of search. And there were mistakes. New employees and an improvised makeshift system that had to be fitted in with the old, completed the trouble. Then a shortage of paper, then transportation troubles, then illness, and later trouble in the matter of printing conditions, all combined to delay. It seems that every individual reader missed the magazine enough to write in and advise, as was perfectly proper, that his copy was not reaching him. We tried to explain, as far as we could, but even our announcement in the June issue seemed to have been overlooked. And our advertisers, kind as they have been, have had their troubles in adjusting their advertising to our belated dates, troubles that have of course added to our own, despite their kind efforts to be as considerate as possible. We honestly believe that from now on there will be no delay and we hope, for the benefit of that large part of our subscribers who bind their copies, to be able to catch up a couple, at least, of the missing issues. Had it not been that we did not wish to give these appreciative readers a short volume for binding, we would have done as so many of the large publications found it necessary to do, omit or combine issues in order to overcome the handicap imposed by paper and transportation difficulties the past season. Please have a little more patience with us and be assured that we are doing the very best that our capabilities will permit.

The Next Pittsburg Salon

A preliminary announcement has been made that the Eighth Annual Pittsburg Salon of Pictorial Photography will be held in the Department of Fine Arts of the Carnegie Institute, Pittsburg, Pennsylvania, March third to thirty-first, 1921, inclusive. Prints entered will be passed upon by an impartial and competent committee of selection, and those prints possessing the highest merits in artistic expression will be exhibited. The last day of entry is February fifth and entry forms containing full information and conditions of entry may be obtained by addressing: Charles K. Archer, Secretary, 1412 Carnegie Building, Pittsburg, Pennsylvania, or by local workers direct from this office. It is needless for us to comment upon either the importance of, or the care and attention given this annual event in the photographic world. Every pictorial worker should use his best endeavor to secure representation with a full realization of the honor which his success therein will confer.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

Soft-Focus Light-Filters for Enlarging and Portraiture

The British Journal of Photography, in describing the new vertical self-focussing enlarger, introduced by the Eastman Kodak Company, fer in terms of especial commendation to the particularly neat optical device for introducing definitely graded degrees of diffusion into the enlargements, the device having the form of a flat piece of glass, one surface of which is provided with a series of fine corrugations. A paper giving a short account of the evolution of this device, was read before the Optical Society of America by C. W. Frederick, of the Eastman Kodak Company, should prove interesting. It follows:

In portarit work it is not always desirable that a lens should give sharp definition, because marks and blemishes are brought out too clearly. Lines and similar defects must be smoothed out to resemble more nearly what the casual eye sees under ordinary white light. This is usually done by retouching the negative or by employing a lens with soft definition, or both. Soft definition may be obtained in many ways, but its character makes a great difference in the appearance of a picture. It may be produced by merely throwing the lens out of focus, but the effect is not pleasing because the definition is obliterated too completely. We want something that will leave the main features of the picture clearly sketched and at the same time smooth out or obliterate unimportant or disfiguring details.

The usual method of producing soft definition is to modify the design of the lens so that it will fall off in spherical aberration. Thus the image formed by light passing through an outer zone of the lens will not be at the same distance as that formed by light passing through the central portion of the lens, and inter-

mediate images will be formed at intermediate points, so within a certain range a part of the light will form a sharp image and the remainder a series of superposed fuzzy images. The effect aimed at is definition with a mellow outline.

It may be readily understood that the character of the effect will depend upon the distribution of light in the sharp and the fuzzy images, which distribution may be influenced by lens type and different adjustments as to spherical aberration. But the nature of spherical aberration places certain limitations upon the problem. We cannot, for example, adjust the aberration of a lens so that three-fourths of the light will form a sharp image and the remaining one-fourth a diffuse image; thus we are cut off from many effects that may be desirable. It usually happens that there is too much light in the diffuse images, so that double lines appear in certain portions of the picture where there is a great change from white to black, as a white collar against a black coat or a well-lighted cheek against a dark background.

The natural distribution of light due to spherical aberration may be modified by interposing an opaque diaphragm with a small central opening to allow the sharp image to be formed, and radial openings to control the amount of light in the diffuse image. But such a device has the disadvantage of slowing down the lens to an inconvenient degree. However, it was a study of the action of such a diaphragm that suggested the new diffusing screen which is the subject of this paper.

The necessity for a means of diffusion independent of the lens arose in connection with a new enlarging camera which was being developed. This camera was fitted with a device which kept the lens automatically in focus as the enlargement was varied. It was to be used in enlarging portraits, and it was necessary that both

sharp definition and soft definition could be obtained at will. It would have been an easy matter to design a mount for the lens which, by unscrewing one component, would alter the relative positions of the lens elements and introduces spherical aberration. But this would cause a change in the focal length of the lens, and any change in this would prevent its proper functioning. Thus it was necessary to find something independent of the lens.

What at first appeared to be a hardship led eventually to emancipation. Many things were thought of and tried. Diffraction was invoked and rejected. Semi-transparent material such as cloth and ground glass were tried, but found to slow down the lens too much. Glass slides, coated with transparent varnish giving an undulatory surface, failed to prove satisfactory, because the diffusion was not controlled, some of the light being scattered so far that the entire picture was flattened.

We were finally led to try glass discs with fine grooves polished in them. If the grooves were accurately cut the diffusion would be controlled, so that no ray of light could deviate more than a limited angle, a few minutes from its undisturbed path, and thus the picture would not be flattened by stray light. Of course, the smoothing out of fine detail will give a certain appearance of flattening which cannot be avoided, but this is not noticeable in portrait photography. The discs were placed directly in front of the lens, and, being entirely transparent, caused no slowing down of the combination.

A great many experiments were tried with different devices for cutting the grooves, different depths and widths of grooves, and different patterns cut upon the disc. The possibilities were endless, and each change had an individuality of its own in its effect upon a photograph.

First we tried concentric circular grooves cut upon the outer portion of the glass disc, leaving the central portion clear for about half the aperture of the lens. The light passing through the central portion of the screen would give a sharp definition, and that passing through the outer portion of the screen diffuse definition. Then by merely stopping the lens the amount of

light in the diffuse image could be reduced, and the relative proportion of light in the sharp and diffuse images altered at will. But this screen proved unsatisfactory, because it was found to give double lines along boundaries of strong contrast, there being too much light in the rays of maximum deviation. Also the circular grooves were hard to cut.

To get around these difficulties we changed to cylindrical grooves ground in intersecting linear grooves. It was expected the intersecting grooves would diminish the area of maximum slopes, and thus reduce the amount of light of maximum diffusion. But this, too, was a failure, as it was found the successive systems of grooves simply superposed themselves under the glass surface, whether flat or undulating. At the intersection of two grooves the glass was abraded to twice the depth for one groove, and no advantage was obtained.

The grooves could be readily examined by means of interference fringes. When the ground surface of one disc was placed in contact with the unground surface of another, interference bands would appear, giving a very beautiful contour map of the whole system of cuts. When seen under a mercury lamp these contour lines became very sharp indeed, making it easily possible to estimate the depth of the cuts to one or to two millionths of an inch.

Finally, after many experiments, a screen was settled upon in which there were three systems of linear grooves ground at angles of one hundred and twenty degrees from each other, and the grooves of each system were spaced at equal intervals apart, but were progressively of increasing depth from the centre outwards. The finished pattern showed hexagonal areas of clear glass constituting about two-thirds of the area of the entire screen. Thus two-thirds of the light was allowed to form a sharp image, and the remaining one-third a succession of soft images varying in diffuseness according to the depth of the successive grooves of the screen. The screen gives soft effects without a trace of double lines, and at the same time it gives definition that does not fail under a magnifier. Its effects may be slightly modified by stopping down the lens.

CAMERA CRAFT

The results obtained with this screen were very good indeed, and distinctly better than anything that could be done with a soft focus lens. In fact, they were so promising that we hastened to apply for a patent upon the idea.

The screens are capable of many unusual effects. One screen was ground with a single system of parallel grooves, which when used with the diffusion vertical in a portrait had a tendency to make the face appear longer, or if the diffusion were horizontal the face would appear broader. In landscapes it gave similar effects. If the diffusion were vertical the corresponding detail, such as grass or tree trunks, would remain sharp in the picture, while horizontal detail as limbs and twigs of trees would be fuzzed out. Thus it is possible that with proper care effects could be obtained similar to those seen in the paintings of Corot.

A rectangular system of grooves gives a very satisfactory screen for landscapes, and also for portraits. If placed with the diffusion at about forty-five degrees the detail of a landscape will be streaked out in a way suggestive of etching. It is possible that a rectangular system with one set of grooves deeper than the other would be found useful.

One screen of the hexagonal type was ground with one system of grooves strong and the other two weak, but we have not had time to give it a serious test. It might be used to alter the length of a face, or might be turned so as to bring out better detail in hair, or to alter the appearance of cloth in a dress or coat. A satin dress should preserve its peculiar sheen much better if the greater diffusion were directed parallel to the grain of the cloth.

A fundamental peculiarity of all the screens consisting of systems of straight lines is that the diffusion occurs at right angles to the various systems, and does not occur equally in all directions. If a small hole be pricked in a negative its image in the enlargement will be seen to consist of a point with short radial streamers extending out from it in a star-like pattern. This is probably beneficial in helping to preserve the contrast between the blacks and whites in fine detail, as one set of streamers is likely to coincide

closely with the direction of the detail, thus adding to the already preponderant light in the sharp image, while subtracting nothing from the softening effect upon the picture.

While most of our efforts have been directed towards developing a diffusing screen for enlarging cameras, it is possible that they may be useful also in direct portrait photography. A few large screens for this purpose were ground at haphazard, and tried in a tentative way. The results seemed to indicate that the problem of direct taking was somewhat different from that of enlarging, and would require a different type of screen. In direct taking the screen causes the white areas to encroach upon the black, producing an effect similar to halation, while in the case of enlarging the black areas encroach upon the white and do not produce the effect of halation. Thus in direct photography a white collar will irradiate upon a black coat and spoil the appearance of the picture, while in an enlargement the black coat will encroach upon the white collar with no unpleasant effect. However, by limiting the diffusion and modifying its distribution it is quite likely that a satisfactory screen may be developed for direct photography. At least the action of the screen in this case is similar to that of the soft focus lenses now in use, and the greater adaptability of the screen should be in its favour.

Unsharp Negatives

There is considerable difference of opinion as to what constitutes sharp definition in a photographic image. Many people are satisfied with a result which others would consider undesirably soft, and for this reason it is difficult to judge of the capabilities of a lens from the photographs produced by the average user. Not long ago a question arose between the buyer and seller of a lens upon this point, the purchaser returning the lens on the ground that it was useless for his work, while the seller was so certain of its quality that he submitted prints to us for our opinion, which was, that the definition, judged from the optical, and not the artistic point of view, left much to be desired.

While there is no absolute standard of sharpness, it is, for the purpose of calculating depth of definition, generally accepted in this country that an image in which the smallest line or dot is not more than one hundredth of an inch across is considered sharp. But this is far from being so from an optician's standard; the Continental one of one two hundredths of an inch being as low as can be accepted. Many excellent anastigmats of large aperture, say $f-3.5$, do not give such definition until reduced to $f-6$, or even smaller, so that although satisfactory for direct portraiture, they are apt to be disappointing if enlargement be resorted to. Given a sufficiently finely ground focussing screen it should be possible to read the smallest type in the advertisement pages of a magazine printed upon "art surfaced" paper, the lens being at such a distance as to give an image one-fourth the scale of the original. If this can be done, and yet it not be possible to obtain the same definition upon a slow plate, we must look in another direction for the cause of the fault. This will probably be found in a want of co-incidence between the focussing screen and the plate, and, if the construction of the dark slide will permit, a second trial should be made, this time discarding the usual screen and focussing upon a piece of ground glass, which is put into the slide in the same way as an ordinary plate. If a plate be now exposed, and the resulting image is satisfactory, the register between the focussing screen and dark slide needs adjusting. A very useful depth gauge for this purpose may be made from a stout strip of wood rather longer than the width of the focussing screen, with an ordinary carpenter's screw driven through the center. Resting the wood upon the screen frame the screw is turned until it just touches the ground surface of the glass. A glass plate, an old negative will do, is put into the dark slide and the gauge is placed across the frame, care being taken not to shift the screw. If the point just touches the glass, then slide and screen are in correct register. If not, the difference must be noted and the ground glass packed up or sunk until it agrees with the plate. It sometimes happens with cameras to

which extra slides have been fitted that these are not quite in register, so that negatives taken in them with large lens-apertures are not as sharp as those taken with the original slides.

Correctness of register being established and unsharp negatives still resulting, the natural inference is chromatic aberration in the lens; that is to say, those rays which are most energetic in forming the image do not come to focus in the same plane as those which produce the greatest visual effect. To detect this defect it is only necessary to fix up a strip of printed paper at an angle of about thirty degrees to the axis of the lens, and after underlining, or otherwise marking a line of type in the centre, to focus this line carefully and expose a plate. If the marked line appears to be the sharpest in the negative there is no chromatic aberration, but if a line nearer to or farther from the lens is the sharpest, the lens is not properly corrected.

Sometimes the camera is at fault. If the focussing rack work is worn the back frame may move slightly when the slide is inserted, or the swingback may not be properly secured. The remedy is, of course, obvious. When using thin plates, especially in sizes over half-plate, too strong a spring on the partition may bend the glass sufficiently to impair the definition. This, however, can be detected by means of the depth gauge already described. Also unsharpness is often due to the improper use of orthochromatic screens. These should always be put in position before focusing, even if of good quality, while those of inferior make will often impair the definition, even if this precaution is taken. The definition of a lens may be seriously affected by a fall or blow, which imperceptibly distorts the mounting and thereby puts a strain upon the glass, while too tightly screwing up the counter-cell of lenses which are not burnished into their cells will have the same effect. It may be as well to point out that over-exposure should be avoided when making test negatives, as a fully-exposed negative always appears less sharp than one which is slightly under-exposed.—*British Journal of Photography.*

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, Evergreen, Jefferson County, Colo.

J. H. Winchell, Chief Album Director, R. F. D., No. 2 Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Claus Spreckels Building, San Francisco.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

John Bieseman, Director Post Card Division, Hemlock, Ohio.

James B. Warner, Director Stereoscopic Division, 413-415 Claus Spreckels Building, San Francisco.

A. E. Davies, Director Western Lantern Slide Division, 1327 Grove St., Berkeley, Cal.

Arthur H. Farrow, Director Eastern Lantern Slide Division, 51 Richelieu Terrace, Newark, N. J.

NEW MEMBERS

4799—Howard J. Hite, 1141 S. Fourth St., Terre Haute, Ind.

3¼x5½ and 5x7, on developing paper, of landscapes, marines, and miscellaneous; for animals or birds, mountain scenery, historical and notable persons. Class 1.

4800—Wm. R. Velt, 743 State Ave., Kansas City, Kans.

3¼x4¼, on developing paper, of Colorado mountain and snow scenes, etc. Desire prints only. Class 1.

4801—Gustave Korthals, 605 Sherman St., Milwaukee, Wis.

2½x4¼, on developing paper, of Northern Wisconsin views, etc., for views from different states, especially Western, landscapes, marines, etc. Class 2.

4802—Albert C. Groetschel, 831 S. 30th St., Omaha, Neb.

V. P., 4x5 and 6½x8½, on developing paper. Class 3.

4803—Abner J. Starr, Ross, Ohio.

4x5 and 3¼x5½, on developing paper, of miscellaneous outdoor scenes; for same. Class 2.

4804—William P. Mantai, 2939 A St., Philadelphia, Pa.

2½x3¼, 4x5 and post cards, on developing paper, of landscapes, aeroplanes and buildings; for the same and miscellaneous. Class 1.

4805—I. J. Livingston, Neshoba, Miss.

Class 3.

4806—Edw. L. Gilroy, Box 200, Aurora, Ill.

3¼x5½, on developing paper, of landscapes, river views and some figure studies; for same, also draped or undraped figures in classic or artistic pose. Class 1.

4807—Paul B. Irwin, Rio Vista, Calif.

2¼x3¼ and 3¼x5½, on developing paper, of river scenery. Class 2.

4808—Dean P. Holmes, 11 W. Second St., LaJunta, Colo.

2¼x3¼, 3¼x5½ and 5x7, on developing paper, of fires, wrecks, mountain scenery, and miscellaneous; for views of general interest, especially bench scenes, bathers, etc. Class 1.

4809—William Kildoye, Box 306, Yokohama, Japan.

Class 1.

4810—Crescenz L. Smith, 251 Union Ave., S. E., Grand Rapids, Mich.

3¼x4¼, 4¼x6½ and 6½x8½, on bromide and developing paper, of landscapes, genre and child studies; for like work or anything of interest. Class 2.

4811—Wm. J. McGowan, Ferrocarril, Tocopilla, Chile.

Stereoscopic views and lantern slides. Class 2.

4812—John S. Bowman, 432 Hammel St., Harrisburg, Pa.

2½x4¼ and 4x5, on developing paper, of landscapes and groups; for general work. Class 1.

4813—Leo E. Fitzgerald, R. F. D., Charlton, Mass.

2¼x3¼, on developing paper, of landscapes, buildings, animals, etc.; for mountain scenery, historical and landscape subjects. Class 2.

4814—Thomas Murphy, care Pen. Tel. Co., Tampa, Fla.

4x5, on developing paper, of landscapes. Class 3.

4815—Arnold Phillips, 99 Howich St., Launceston, Tasmania, Australia.

4¼x6½ and smaller, on developing paper, of Tasmanian landscapes and bush scenes, genre, sunset cloud scenes and aeroplanes; for large American buildings and places of interest, portraits, scenes and aeroplanes. Class 1.

4816—Abner J. Starr, Ross, Ohio.

4x5 and 3¼x5½, on developing paper, (no cards), of miscellaneous and outdoor scenes; for same. Class 2.

4817—J. J. Kimmel, Plainville, Conn.

Class 3.

4818—Simon Miller, Box 229, Archbald, Pa.

3¼x5½, on developing paper, of landscapes, portraits, family groups, etc.; for anything of interest. Class 2.

4819—Chas. P. Roberts, 5667 La Mirada, Los Angeles, Calif.

5x7 or smaller, on developing paper, of pictorial work; for same. Class 1.

4820—Wm. F. Bevan, Box 6, Romney, W. Va.

Post card, cabinet and 5x7, on developing paper, of portraits and landscapes; for same. Class 2.

4821—Ivy Morgan, Sylvan Grove, Kans.

2¼x3¼, 3¼x4¼ and 3¼x5½, on developing paper, of landscapes chiefly; for miscellaneous subjects. Class 1.

4822—Lawrence McClelland, Amegard, N. Dak.

3¼x5½ to 6½x8½, on developing paper, of landscapes, railroad scenes, farm scenes, etc.; for landscapes, seascapes, mountain scenes, or anything of real interest. Post cards only. Class 2.

4823—J. H. Enloe, 7½ N. Broadway, Oklahoma City, Okla.

Mostly post card size, on developing paper, of views; for same line. Class 1.

4824—Harry P. Hartson, General Delivery, White Plains, N. Y.

Class 3.

4825—George Miller, Jr., 24 East 55th St., New York, N. Y.

4x5, on developing paper, of Graflex pictures, landscapes, general outdoors, N. Y. and other city views, etc.; for portraits, foreign, city and general outdoor views. Class 1.

4826—O. H. Hornung, 2466 Mnuai St., Honolulu, Hawaii.

Prints up to 8x10, lantern slides, and bromide enlargements, of general Hawaiian scenery, volcano views, beach scenes, natives, airplanes and balloons; for views of general interest and figure studies. Class 1.

4827—Christian Nicholas Walker, Chief Yeoman, U. S. S. Hopewell (181), Care Postmaster, New York, N. Y.

3½x4¼, on developing paper, depicting life aboard destroyers, general views of U. S. N. battleships, destroyers, subs, etc.; for views of ports, landscapes and farm life of the West or foreign countries. Class 1.

- 4828—Robert F. Dickerson, 603 W. Leigh St., Richmond, Va.
Class 3.
4829—Daniel Holcomb, R. F. D. 2, Cogar, Okla.
2¼x3¼ and 4x5, on various papers and of various subjects; for all kinds. Class 1.

RENEWALS.

- 1771—Burton H. Allbee, 724 East 22nd St., Pater-son, N. J.
Lantern slides, particularly of historic buildings, picturesque old houses, and similar structures; for same. Class 2.
2645—Hugo H. Schroder, 303 E. State St., Bettendorf, Iowa.
2¼x3¼ to 5x7, lantern slides and enlargements of birds, nests, eggs, wild flowers and nature subjects; for same, and wild animals. Class 1.
3394X—George B. Ley, Box 101, Firestone, Park Sta., Akron, Ohio.
Post cards of anything of interest, except nude studies; for same. Class 1.
4126X—John Bieseman, Box 136, Hemlock, Perry Co., Ohio.
Mostly post cards, some 4x5 and 5x7, on developing paper, of outdoor portraits, landscapes and water-scapes, genre, flowers, birds, and other outdoor subjects; for same. Class 1.
4427—George W. Fry, La Honda, San Mateo Co., Calif.

Any size above 3¼x4¼, of general interest. About October first, will mail out an album containing samples of all prints available for exchange. I. P. A. members who would like to see this album, please send in names at once.

- Class 2.
4661—T. L. Budd, Watervidet, Mich.
Prints of landscapes and art subjects; for same. Class 2.
4677—Arthur Craff, R. F. D. 1, Lockridge, Iowa.
2¼x4¼, on developing paper, of farm scenes, landscapes, and a few historical views; for anything interesting. Class 2.
4682—A. G. Cronacher, 1065 S. Howland St., Kenosha, Wis.
5x7, of landscapes and marine views; for same. Class 1.
4761—W. A. Turner, 3006 Landis St., Pittsburg, Pa.
Until further notice I desire to exchange only prints in the 2¼x3¼ size, of bathing girls, genre, landscapes, old mills, etc., on glossy paper. I desire and will send out only first class work.
Class 1.
CHANGE OF ADDRESS
4646—Carl Brame, Le Roy, Ill.
(Was Eagle Pass, Tex.)
4726—B. C. Eddy, 625 Central Bldg., Los Angeles, Calif.
(Was Oakland, Calif.)
4752—Fred C. Gorman, Swan Creek, Mich.
(Was Saginaw, Mich.)



OUR BOOK SHELVES

"The Fundamentals of Photography"

In this book, the author, the well known authority on matters photographic, Dr. Mees, has given us the theory and the working principles of photography in a clear and concise form and in the simplest possible language. Numerous diagrams and illustrations help largely in making the work informative and instructive without needless waste of words. Simple as it all is, there is much between the two covers that will be new to even the well-informed for the simple reason that Dr. Mees has not followed the too common practice of repeating the matter from other elementary books, but has incorporated in his work the "reason why" for the many puzzling, or at least little understood, phrases of photographic phenomena. The book, published by the Eastman Kodak Company, has the same high value as others from the same source and is more than worth the dollar at which it is sold. It can be ordered direct or through your dealer and should not be overlooked by those desirous of informing

themselves correctly concerning the theory on which photography is based.

"The Gentle Art of Photography"

Under this title, with the addition: "A Sane Man's Guide to a Hobby," as a subtitle, the author has given us a book that is really a guide to what a sane person really desires to know about the photography that is suited to his purpose. The book is intended for those who would take up photography if they had a little clearer idea of what they could expect, and it is also for those who have a camera but feel that they are not getting the satisfaction and enjoyment that they should from it. The book is new; it is instructive and readable; it is direct and to the point. None of the one hundred and sixty pages are wasted and the illustrations are all good examples of snapshots taken under ordinary conditions with an amateur's hand camera. The book sells for seventy-five cents a copy, postpaid, supplied by Hirsch & Kaye, 213 Post street, San Francisco, California.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

California Camera Club

With the appearance, during July, of the new bulletin of the Pictorial Photographers of America, the CALIFORNIA CAMERA CLUB finds itself represented in the national society by F. Bauer, Frank Flannery, John A. Hickey, Dr. E. O. Jellinek, Charles A. Love, Frederick H. Morley, Edward Ross Shirley and Walter H. Stephens.

With increased activity, both photographically and socially, the Club calendar grows in interest each month. The one for August listed, as the principal events, an interesting exhibition of photographic enlargements, by Anson Herrick, a local pictorial worker; the monthly business meeting; the selection of the winning prints in the Members' Competition; an illustrated talk by H. S. Lawton, on the Feather River Canyon; an outing to picturesque Coyote Point, followed by a swim at San Mateo Beach; an All-Members' exhibit at the club rooms; a whist party with photographs by Paul G. Greve as prizes; a hike to Big Lagoon; a club dance; a demonstration on Photo Engraving and Three Color Process Reproduction, by Carl Abell; an illustrated lecture by P. J. Haltigan, reading clerk of the House of Representatives, and a moonlight outing to the Greek Theater.

A Noteworthy Exhibit

At the Oakland Art Gallery, Municipal Auditorium, an exhibition of Pictorial Photography in Oil from the Allen Art Studios, was held the latter part of September and the first part of October. Some sixty pictures comprised the exhibition, made up of tree studies, seascapes and the nude, with a wide range of effects. And speaking of the latter, the catalogue says: "There is, of course, a fine distinction between the non-essential nude and the true nude. The non-essential nude is a picture which has no message to speak, while the true nude gives a vision of beauty, both

physical and spiritual—two great needs of humanity." Albert Arthur Allen, painter and pictorial photographer, finds a wide sale for his nude and landscape studies, particularly in the form of the Alo Studies, procurable in book form.

Officers Elected

.... The Associated Camera Clubs of America recently elected the following officers for the term ending September twentieth, 1921. President, Julius F. Graither; Secretary, F. Bucher, Treasurer, Herbert C. Brewster, all of Newark, New Jersey, and Vice-President, Todd Hazen of Portland, Oregon. The organization now comprises twenty-five active clubs, and these maintain an interchange for print exhibitions and another for lantern slide sets, both of which are being routed for the 1920-21 season. Information can be secured by addressing: Louis F. Bucher, Secretary, 678 Broad Street, Newark, New Jersey. The clubs making up the Association are as follows: Photographic Society of Baltimore; Boston Y. M. C. A. Camera Club, Chicago Camera Club, Photographic Society of Cleveland, Detroit Overseas Camera Club, Grand Rapids Camera Club, Dartmouth Camera Club, (Hanover, New Hampshire), Elysian Camera Club, (Hoboken, New Jersey), Indianapolis Camera Club, Kansas City Camera Club, Southern California Camera Club, (Los Angeles), Newark Camera Club, New Britain (Connecticut) Camera Club, New Haven Camera Club, Pictorial Photographers of America, (New York), Orange (New Jersey) Camera Club, Columbia Photographic Society, (Philadelphia), Photographic Society of Philadelphia, Portland (Maine) Camera Club, Oregon Camera Club, (Portland), Reading (Pennsylvania) Camera Club, California Camera Club, (San Francisco), St. Louis Camera Club, Waterbury (Connecticut) Camera Club and Yonkers (New York) Camera Club.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Making Cloth Fireproof

Our New York correspondent must understand that there is no known method of rendering fabric actually fireproof; all that can be done is to so treat the cloth that it will simply smoulder and not burst into flame. It must also be remembered that the protective quality of any treatment gradually decreases and the application should be repeated from time to time. One recommended treatment consists of immersing in a solution made by dissolving two ounces of borax and a pound of ammonium phosphate in five quarts of water, wringing out and then hanging up to dry. Another good formula is that recommended for treating tents by "Hensley's Twentieth Century Formulas," with the glue water omitted, which reads as follows:

	By Weight
Water	100 parts
Ammonium sulphate, C.P.....	14 parts
Boracic acid	1 part
Hartshorn salt	1 part
Borax	3 parts

Boil the water, put the ammonium sulphate into a vat, pour a part of the boiling water on and then add the remaining materials in rotation. Next follow the rest of the hot water. The vat should be kept covered until the solution is complete.

How One Man Learned His Lesson

His name is not Brown, but we will call him that. He was always running to another friend, let us call him Jones, with his tale of woe about stains on his prints. Jones tried to help him, but it seemed time wasted. Finally, on the plea that what was wanted was some nice warm blacks and pyro was the proper thing, he got Brown to use a pyro developer for his gaslight prints. And a howl went up that could be heard for three blocks that intervened between the two homes. Never such a crop of stains before. So Jones goes over and starts in to show Brown how stains are

produced. He takes a print out of the developer and holds it in a strong light while he examines it, decides it is done, then chucks it in the fixing bath, explaining that so doing allowed the developer in the emulsion to work on the light exposure given and stains will result despite the care given to keep moving a few seconds upon immersing in the fixing bath. Then he takes another out of the developer, one that is a little wrinkled, and without exposing to light, simply exposes to the air a few seconds, and then into the fixing bath. This will have stains because developer oxidised in the emulsion unevenly owing to the different amounts of solution covering different portions by reason of the wrinkled surface. Even a flat surface would secure stains, but perhaps not so well outlined. Then he takes another developed print and puts it at once into the fixer, but in such a way that a large bubble of air is confined underneath. That spot covered by the bubble has the same air bath as the previous print held in the hand, and a spot results. Then he takes another developed print and slides it into the fixer in such a way that one corner rests quite in contact with the print last put in. The fixer does not penetrate at that point and in the meanwhile a stain is developing. Then he pours some of the developer into the fixing bath, explaining that is what happens when a little developer is carried into the fixing bath with each of a lot of prints, and putting in a newly developed print he gets another nice brown stain, almost uniform, over the entire surface of the print. While these four or five prints are washing he has Brown mix up a new fixing bath, while he exposes another print. This time the print is judged for completion as it lies in the developer; in reality, knowing that it was rightly timed, Jones simply took it out when it seemed to stop developing, as a rightly timed print will.

This was rinsed about in a tray of clear water and then into the new fixing bath, with a little swishing about to make sure that no bubbles or pockets of air were in contact, and the result was a stainless print a few minutes later. Then Brown makes a print in the same way with like results. He is told that if he can use pyro without getting stains he can use any of the other developers, and as he has learned how to make stains, he ought to know how to avoid them. And Jones thinks he does know because that was some time ago and there's been no howling to disturb the peace of the neighborhood.

Make Some Night Pictures

This is perhaps the best season of the year for this class of work. If one is going to give a few lengthy exposures, darkness comes early enough to permit of the work being done before the hour becomes so late that a part of the lights are turned off. The idea prevails quite generally that town and city scenes are the only kind that are suited to night work, but this is somewhat of a mistake. True, the illumination that the open door or lightly curtained window of a country residence affords, is hardly sufficient to insure good results, but it is not at all difficult to replace what would be an inordinately long exposure with a quite brief one made by a flash fired inside the door or window that may be playing an important part in the picture. In fact, it would seem that one could easily secure a street lamp effect by firing a flash at the proper height but just outside the range of the lens. By firing a small flash in each room on the near side of a building, the effect of a brilliantly lighted residence could be easily secured. A standing automobile can be so placed as to suggest both its use as the means of making a visit and the effectiveness of its lights in illuminating the doorway at which the visitors are met by the host. Or, returning to the use of a flash, and a flash sheet or two ought to be about the right thing, we could have the departing guest taking leave of the host at the open door, silhouetted against the supposed lamp-light illumination within. But returning to the regular thing, the city resident really has the advantage although his subjects may not have the attractiveness of the quiet,

shady streets of the small town. In fact, it would seem that subjects can be found in any locality if we will but look for them. All that is needed is a little ability in the matter of selection and the proper treatment when a good subject is found. As to exposure, it is practically impossible to give any advice that will be of any value because the conditions vary to such an extent. Fifteen minutes may be sufficient in one case and in another an exposure of ten times that duration may be required. One should, however, try to avoid the inky blackness that some seem to find the inky tition in presenting as a representation of a night scene. The negative should have not a little detail; and then, if increased blackness is thought more effective, it is only a matter of deeper printing. On the other hand, with little or no detail secured, blackness is not avoidable without a foggy, smoky result that is undesirable. A few trials will teach one more concerning length of exposure than would pages of suggestions on the subject.

Making Corks Acid Proof

Some years ago a subscriber asked us how to make corks less inclined to decomposition when used in bottles containing acids. We gave him the following instructions, based on the recommendation of a foreign exchange: One-half ounce of gelatine is swelled in some water and then dissolved in enough warm water to make sixteen ounces; to which six drachms of glycerine are added. This must be kept at a temperature of one hundred and thirty-five degrees Fahrenheit, while the corks are soaked therein for some time. They are next allowed to dry and then placed in a bath consisting of five ounces of vaseline and sixteen ounces of paraffine, which must be kept at a temperature sufficiently high to maintain the paraffine in a melted condition. Another plan is to add a small amount of ammonium bichromate to the first solution and then expose the corks to sunlight for some time, thus rendering the gelatine coating insoluble and making the second bath unnecessary. We were advised by our correspondent, a few months later that the process worked admirably, but he failed to say which one of the two plans he had used.

NOTES AND COMMENT

**A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest**

Reported by William Wolff

All the San Diego dealers report business as very good.

William H. Wonfor, the English bird photographer, is with Leon Dawson at Santa Barbara.

Frank Aston of San Luis Obispo was in Los Olivas recently, photographing a big ranch.

John T. Hall of the same place is as busy as ever, and John works, I'll say.

Mrs. Dora Warren at Paso Robles is doing some very fine work in portraiture.

H. Vassar is running two studios in Salinas now.

Ossian Hagman of Watsonville, has moved into his new and up-to-date studio.

Wm. Horwarth of San Jose, has just returned from an Eastern trip, stopping at the Grand Canyon on his way back.

W. F. Burhaus, formerly of Modesto, is now operating the Tucher Studio in San Jose.

Mr. Green, the new owner of the Riverside Studio, Reno, Nevada, spent a few days in San Francisco recently, "honey-mooning."

Roy Curtis has a well equipped finishing plant in Reno.

The Reno Studio recently added an Eastman Projecting Enlarger to its already fine equipment.

The Hammer Advertisement Last Month

Our being behind with our date of issue last month resulted in the announcement of the Hammer Dry Plate Company being a little untimely for some sections of the country. Hot and humid weather conditions were not prevailing in all sections during the middle of September and calling attention to the excellence of Hammer plates under those conditions was much like advertising overcoats as warmth conservers during mid-summer days. Such advertising would not detract from the value of the overcoats and it might be

urged that the reader might appreciate the cooling effect, just as the plate user might be supposed to appreciate the suggestion that any trouble he may have experienced, still fresh in his memory, could be avoided next year. Hammer plates are certainly worthy of praise on this score as well as on a number of others; in fact, they are exceptionally trustworthy and dependable under all conditions. Find a user of Hammer plates and you will find a man who is consistent in the matter of the material he uses, a man who uses what he has found best suited to his purpose, and uses it continuously. He is neither the man who is chopping around from one make to another because none of them satisfy him or the man buying any brand that is offered because all of them are satisfactory to him. There are several special brands of Hammer plates and one will do well to acquaint himself with them and their uniform good quality.

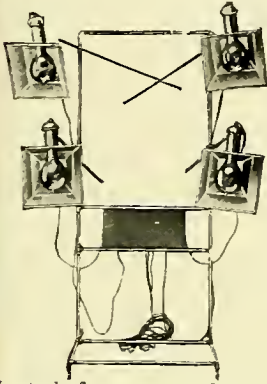
Send That Stamp

The Japanese Water Color Company, Rochester, New York, advertise on another page that it will send an illustrated catalogue for a two cent stamp. It is full of useful information and now that the winter months are upon us, the camera worker with a receptive mind will welcome the excellent suggestion that it makes. And as he will learn from the circulars also sent, these colors are not a stereotyped "set" or "outfit" put up for convenience in manufacture and marketing; but, while they can be bought in made up selections ranging in price from forty-five cents to four dollars, they are of wide application, of the highest quality and of undeniable merit. They are used in art and technical schools, used by architects and draughtsmen, used by government departments and used by motion picture producers. The ease with which they can be used is re-

markable and their use assures pleasant results, so that one is neither wasting the color or spoiling his prints by giving the work a trial as he should.

A Convention Winner

The utility that won an unusual amount of interest and approbation from the photog-



tographers attending the last National Convention was the Breiloff Universal Studio Lamp, shown by the Prosch people. The strength and uniformity of the light, the ease with which it could be controlled and ad-

justed for any style of portrait or any form of group work, its general utility and efficiency, commended it to all who saw it in operation. The Breiloff Spot Light also came in for its share of appreciation because of its value in the making of fancy lightings, a line of work that every portrait man realizes is made more easy of achievement by having the proper equipment. Our readers should get in touch with this firm and acquaint themselves with the excellent line of photographic utilities turned out. Address Prosch Manufacturing Company, Department S, 61 Fulton Street, New York, N. Y.

The Wynne Infallible Meter

About the best thing we can offer as proof of the good quality of the Wynne Infallible Meter is the uniformity with which it ends the search of the average worker for an exposure determining device that is convenient and dependable. When you find a worker using the Wynne Meter, you find one that is satisfied and happy in his choice. He has something that fills the requirements, something that is neat and compact, something that will last as long as his camera lasts, something that it is a pleasure to consult and display, something that is so little of an inconvenience that it is always carried, perhaps at the end of a watch chain, as some carry a pencil or other convenience. One

dealer that we know makes a practice of suggesting the engraving of the customer's initials on the case, this costing only a small sum and adding greatly to the appearance; adding anything to the utility of the meter, being another question. If you want something really worth while in the way of an exposure meter, write George Murphy, Incorporated, 57 East Ninth Street, New York, and ask for circulars describing the Wynne Infallible Hunter Meter, or ask your dealer to show you one.

"Agfa" and "Sagamore" Products

The large, bold advertising that is being done by Mr. Barrows in behalf of his firm, the Sagamore Chemical Company, Incorporated, is quite indicative of the success the firm has achieved with the two lines of photographic chemicals being marketed. "Agfa" products, for which the firm is American agents, need no introduction or recommendation from us, it being sufficient to announce that they are again obtainable in this market. "Sagamore" products have made a name for themselves since their introduction a few years ago when they were first put on the market to supply the deficiency caused by war conditions. Both lines are carried by many of the best dealers and the number is constantly increasing as a result of the increased demand due to the growing popularity. Ask your dealer about these two lines and if unable to give them the trial you would like, write direct to the Sagamore Chemical Company, Incorporated, 120-122 West Thirty-first Street, New York, and ask for information and prices. They will be gladly sent.

An Exceptional Opportunity

The Photographic Section of the Oakland Art Association has arranged with Director W. H. Clapp, of the Municipal Art Gallery, for a course in Pictorial Compositions specially arranged for Photographers. Of special interest to those interested in pictorial work, it will be of great value to any one interested in even "press-the-button" photography. Semi-monthly meetings and lectures will be held, and the field work of the members of the class, demonstrating the application of the subject of the previous meeting, will be criticised by the Director. Monthly exhibits

of the work of prominent pictoralists are hung in the Gallery, and will be available for study in connection with the course.

Twenty members only will be enrolled, to allow of proper individual attention, and the fee for the course of ten lessons will be ten dollars. There are a few openings for non-members of the Section, and applications for membership in the class will be received by the Secretary of the Photographic Section, Municipal Art Gallery, Civic Auditorium, Oakland, California.

Off for Florida

H. James, the popular landscape, portrait and miniature artist, so well known to many of our local readers, recently departed for Florida where he will spend the winter months, part of the time on the Bahama Islands. He was accompanied by his able assistant, Miss Ashworth; and a large number of their friends assembled at the station to bid them farewell and wish them an enjoyable and profitable visit. Mr. James expects to secure a number of new pictures to add to his already famous collection of subjects secured in all parts of the world.

Henry G. de Roos Enlarges Business

Henry G. de Roos, the well known Pacific Coast photo supply dealer, has made some vast changes in his business, the firm being now known as Henry G. de Roos, Inc. Mr. de Roos is the president and G. A. Glover, for many years connected with the Pacific Coast Branch of the Eastman Ko-

dak Company, is vice-president and treasurer of the new organization. Both of these gentlemen are considered as among the best posted men in the photographic supply business in the West. The company is now carrying one of the largest and most complete stocks of photographic goods in this section of the country. The professional department, which has recently been opened, is in charge of men well versed in the needs of the professional photographer, and there is carried all the latest equipment, as well as a large and complete line of plates, portrait film, papers, chemicals, mounts and folders, and sundry supplies. A complete catalog is now under way and is expected to be ready about the latter part of November. Send in your name and address to Henry G. de Roos, Inc., 88 Third Street, San Francisco, to assure being on their mailing list.

Death of Mrs. Lively

Not a few of our readers will be pained to learn of the death, on September second, last, of the good wife of our esteemed friend 'Dady Lively of the Southern School of Photography, McMinnville, Tennessee. Mrs. Lively was known to a number of our readers who have attended the school, so well known throughout the country, and particularly in the South. "Dady" himself is no stranger to an army of photographers, all of whom will join us in extending sympathy to one so well liked wherever known.



Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, for October 1, 1920, of "Camera Craft," published monthly at San Francisco, State of California, County of San Francisco.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Fayette J. Clute, who having been duly sworn according to law, deposes and says that he is the Editor of the "Camera Craft" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

Publisher, Camera Craft Publishing Company, San Francisco, California; Editor, Fayette J. Clute, San Francisco, California; Managing Editor, Fayette J. Clute, San Francisco, California; Business Manager, Fayette J. Clute, San Francisco, California. That the owners are Camera Craft Publishing Company, San Francisco, California; Harriet E. Clute, Trustee, Hanford, California; Romaine F. Clute, and Clifford H. Clute, Beneficiaries, Mountain View, California.

That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent

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That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain, not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

(Signed) FAYETTE J. CLUTE, Editor.
Sworn to and subscribed before me this thirtieth day of September, 1920.

SID J. PALMER, Notary Public,
in and for the City and County of San Francisco,
State of California. My commission expires December thirty-first, 1922.

CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA



ANSCO
5 x 7
PRINTING
MACHINE

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This AnSCO Printer takes the bother out of printing. The amateur photographer who uses it gets more uniform results, more conveniently, and in shorter time. It makes printing sure and simple in any kind of room that has electric current. It is especially well adapted to the requirements of the commercial photo-finisher.

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Built with the same care for essential *rightness* that has made AnSCO cameras famous.

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CAMERA CRAFT

A Photographic Monthly

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We wish to extend to our many friends

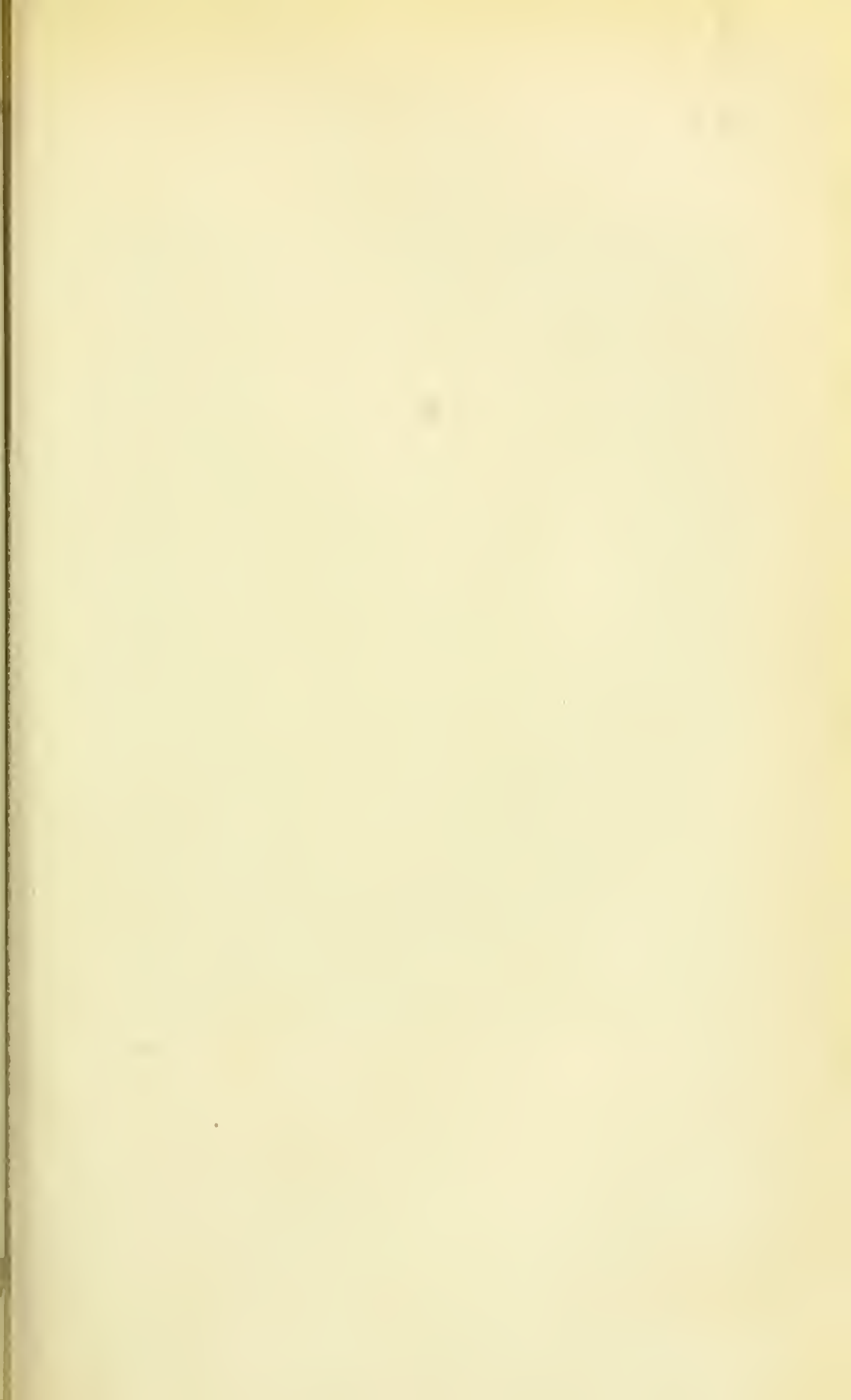
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the Season*



The year just closing has proven the most successful of our career, and we can only thank our good friends, our customers, for our remarkable growth.

We hope for a continuance of your patronage as liberal as in the past, which we assure you, is appreciated.

HENRY G. DE ROOS, INC.
SAN FRANCISCO, CALIF.





"THE VALLEY BEYOND"
By OTTO C. SCHULTE

CAMERA



CRAFT

A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

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SEPTEMBER, 1920

No. 9

A Profitable Side Line

By E. P. Bradley



Once in a while a photographer is called upon to make a series of small portraits to be used upon plant passes, admission cards and authorizations of various kinds. These are to be pasted upon cards, printed or engraved as the case may be, and that is as far as the photographer interests himself. Why not go a little further and secure all that is in it? Why not develop a real side line and build up a connection that will assure a steady demand? Passes, membership cards and the like are generally printed on paper that soon becomes soiled and broken through frequent usage. To obviate this they are placed in leather or imitation leather cases, the face of the pass showing through a transparent cover.

A substitute for the more or less cumbersome leather case is desirable, and a means is now provided by which it can be dispensed with very nicely. This consists of simply cementing the card or pass between two pieces of thin, transparent Pyraline or celluloid sheeting, manufactured by the Du Pont people of Wilmington, Delaware. It comes in various thicknesses and a variety of shades.

The method of practice in a large way is as follows: Spray the Pyraline sheeting with a mixture composed of one-third wood alcohol and two-thirds amyl acetate, allow to dry for about ten minutes so that it will not blur the ink used in printing the cards and then bringing all into contact with hydraulic pressure, each card between two sheets of the prepared Pyraline. For the photographer's use, satisfactory results will follow a somewhat simpler procedure. He has but to coat both sides of the cards with a celluloid or pyroxaline solution, using a camel's hair brush, and then secure adhesion by means of a heated hand roller or one of the

old photographer's burnishers that can be picked up so cheaply now that burnishing is no longer in vogue. A piece of blotting paper should be placed between the sheeting and the roller. The pyroxaline solution can be made by dissolving old negative film from which the gelatine has been cleaned, in amyl acetate. Cut the celluloid into small strips, place in a bottle and cover with the solvent; the solution should be of a cream like consistency.

The face of the pass now shows through the sheeting. The card can not be torn, soiled or creased, and owing to the toughness of the sheeting, it is very difficult to break it. If it becomes dirty it is easily washed; water does not injure it. Photographs or practically any flat paper can be protected in the same way, and this may suggest to the photographer the application of the process to the protection of the surface of photographic souvenirs of various kinds, being much more suitable than mounting on glass and no doubt find more favor with tourists who buy such things. More on this later.

Let us consider the question of preparing samples for securing orders, and these will provide the talking points with which to approach prospective customers. We have always one thought to encourage us; people want "something different" and will pay a little more to get it. The neatness of our celluloid covered card, together with its lasting quality, strongly recommends it, and coupled with a distinctive design, the making of a sale is not difficult if there is something along that line required. Let us take a membership card for some lodge or club; it is but natural that this particular organization would prefer a card distinctive from others. Most of these cards, being printed from type, have a sameness that is easily avoided by the more free treatment of hand lettering. To make our sample card, we will find, unless we are good at lettering, it is better to avail ourselves of the assistance of a professional card writer. All we need to do is to supply him with a general idea of the desired design in a rough sketch, showing the location of the blank space for the portrait or other embellishment. Provided with this "copy," the cost of the card should be about a dollar and a half and that is not too much for good work. The design can still be simple and yet have that quality called "class." Be wary of too much ornamentation as it often tends to vulgarity. The lettered card should be considerably larger, though of the same proportion, as the copy, so that when reduced by the camera the lettering will have all the clearness and sharpness of a well executed engraving. The work may be done with white letters on a black card, or vice versa, according to requirements.

Having secured our original, we have only to place a suitable portrait in the blank space provided therefor, and copy to the size required. It must be understood that for a regular order, the written or hand lettered card is for constant use and the portrait should not be pasted thereto, but merely laid in the proper place and the back of the copying frame closed down upon all, the portrait being changed for each card. The possibilities of securing portrait orders from the members of associations that adopt this form of card is too obvious to need comment here.

A PROFITABLE SIDE LINE



FIELD KICK. STANFORD VS. U. C. GAME

By S. M. CROW

There is another form of card in which the emblem of the lodge or the trade mark of the firm may be wanted as a prominent feature, perhaps taking the place of the portrait. The most effective way to handle such a subject is to model the emblem or device in plastecene, in relief on a board foundation, making it fairly large, and this, with a little care the photographer can do for himself. Photographed down, under a nice side light, the great reduction makes the work appear very effective; in fact, it would take an expert draughtsman to equal it in a drawing. There is, of course, two steps to the reduction; one in making the negative from the model of such a size as to fit the space left for it on the lettered cardboard and another in copying the lettered card down to the size of the actual membership card

While these cards, reduced down from hand-lettered originals, are very effective, they somehow lack photographic quality, due no doubt to the lack of half tones and gradation except in the portrait or emblem insert. This can be overcome and a card turned out that has a quality of its own, if the photographer will go to a little extra trouble in making his reproduction, making a second copy, in fact.

This method consists of using a print bound in contact with its negative but out of register and then make a working negative from the combination. This dodge gives striking "shade" effects in lettering and could be used advantageously in certain designs. As some readers may not be familiar with this novelty, working particulars are here given, which will be found quite simple. To secure black letters edged with white on a grey ground, proceed as follows; make the lettering with white paint on black railroad board; from this a negative on a slow or process plate, expose fully to secure, in the negative, solid black letters on a clear ground. Working

from copy of nine diameters reduction, an exposure of thirty seconds in a good light will be sufficient, stopping down to about f-16. A short immersion in a weak solution of a red prussiate of potash and hypo reducer, will clear the negative beautifully and if the plate is developed in hydroquinone, the letters should show intensely black on clear glass. From this negative a print is made on developing paper, but that print should be so timed, or rather, undertimed, and developed to give a grey and not a black ground upon which perfectly white letters appear. When dry, this grey and white print should be affixed, with a strip of gum paper at one edge, to the film side of the negative, but the two should not be in perfect register. Shifting the negative to the right and downwards results in black letters showing white along their left hand and upper edges while the grey ground gives relief to the work. This leaves only the work of placing the portrait or decoration in its proper position and make a working negative from which to print the membership or other finished card. Other combinations of variations, such as black letters on a white card, or the use of different shades of gray for the cards or ink will suggest themselves.

To those photographers who cater to the view trade a variety is suggested by the addition of flowers appropriate to the views shown, especially such as grown in the locality. Picture cards, Christmas or Easter, offer many suggestions of such combinations. Then again more use can be made of local toning than is done, and if the combinations are simple the time involved is not great. These views, when mounted between transparent sheets as described at the beginning of this article, will have a distinctive appearance. Though they cost more they have much to recommend them, especially if this treatment is reserved for one's choice scenes only.

You cannot build up an altogether new system of architecture or of morality; all that you can do is to slightly modify the forms which your fathers have left you, by the occasional introduction of new ideas.—Ralph Radcliffe-Whitehead.

O man, joy taken from another cannot live. It dies when it leaves the victim, and hangs a dead weight upon your soul. It is only when we give, that we really live. It is only when a man forgets himself . . . that God assesses him. "The Foot of the Rainbow."

Hence it is that the search in common for certain qualities, constitutes a real school, as distinct from a set of imitators. The Dutchmen tried together for the same thing for what has been called a portraiture of nature; for accuracy and subtlety of painting upon an accuracy and subtlety of drawing which serves as a base.—John La Forge.

Taste, if it mean anything but a paltry connoisseurship, must mean a general susceptibility to truth and nobleness; a sense to discern and a heart to love and reverence all beauty, order, goodness, wheresoever found and in whatsoever form and accompaniment.—Carlyle.

Don't simply see how you can "put in the day;" see how much you can put into the day.—Forbes Magazine.

Slow Plates and Soft Negatives

By Louis R. Murray



Illustrations by the Author

The opinion seems to be more or less general that a slow plate is bound to give a contrasty negative. This is not quite true. If a contrasty effect is desired, a slow plate adapts itself to the production of such a negative better than a fast one. But a slow plate can be made to yield as soft a negative as the fastest plate made. It is merely a matter of development, presupposing of course a suitable exposure. A little consideration of the subject will make this point clear.

The difference between a soft and a contrasty negative lies in the number of gradations between the highlights and the deepest shadows, and not, as too many suppose, in the degree of density of the silver emulsion. A very dense negative may be a soft one because it has a wide scale of gradation, while a thin one, showing a few only of the gradations possible, may be quite hard. In a soft negative we would therefore find soft, luminous shadows showing a wealth of fine detail in the tones of varying density bridging the spaces between the shadows and



MOONLIT WATERS
A SNOWY PATHWAY

THE LANDMARK
A WOODLAND STREAM

the high-lights. In a contrasty negative the gradation between the two extremes, even when these extremes are not widely separated, would be more abrupt with the detail that characterizes the soft negative largely absent.

When a sensitized plate is exposed in the camera, the fine, shadowy details imprint themselves only on the surface of the emulsion. This is because the light rays reflected from the shadows have not sufficient strength to penetrate deeply like the more powerful rays sent out by the high-lights. Of course, with too short an exposure, this shadow detail may not have the time to impress itself even upon the surface of the emulsion as it should, but we are assuming fairly correct exposure in any case. A long exposure for the slow plate and a shorter one for the fast emulsion.

Before starting to develop our slow plate for a soft result, let us look into the behavior of fast and slow developers. Aside from a slight inherent difference in speed such as that that exists between metol and hydroquinone for example, it is the amount of alkali in the developing solution that regulates the speed. This is almost invariably sodium carbonate, although others are sometimes used.

As we all know, the emulsion with which the surface of the plate is coated, consists of sensitive silver salts imbedded in gelatine. It is a peculiar property of gelatine that when brought in contact with a solution containing alkali, such as sodium carbonate, it at once becomes soft and porous, and in our case this action is taken advantage of in order to allow the developer proper, the blackening or reducing agent, to penetrate the entire thickness of the emulsion and build up the image. If one does not quite understand this action, let him try soaking an exposed plate in his favorite developer, minus the soda. After an hour or so of waiting, add the soda and the result will be both interesting and instructive.

But to return to our plate, suppose we start it out in a developer containing only one-fourth of the usual quantity of alkali. The instant the solution comes in contact with the gelatine emulsion, the soda attacks, but being quite weak, its action is correspondingly slow. Now, as fast as the developer, be it pyro, metol or what it may, finds the gelatine softened by the alkali, it will build up the image, its action being more or less delayed according to the slowness or speed of the soda in opening up the channels through the emulsion. While waiting for the soda to complete its work let us look into the zone of maximum development. This must necessarily be the surface of the plate and the strata directly adjacent to it, for until the soda has completed its work here it will not be possible for the developer to proceed into the underlying emulsion in which the high-lights are imbedded. And in as much as the speed of the image builder is proportional to the speed at which the soda penetrates the emulsion, that portion of the latent image lying in the zone of maximum development must be developed to a point much further than the part lying at a lower level. We must remember that the shadowy detail is to be found on the surface of the plate, the zone of maximum development.

SLOW PLATES AND NEGATIVES



THE SHORE OF THE LAKE

By LOUIS R. MURRAY

When finally the soda penetrates the bottom or lower layer of gelatine, the developer, the image builder, enters the pores and completes its work. Examining the completed negative we first observe this matter of shadow detail, the plate showing it everywhere. Not only that, the shadows are characterized by a wide range of gradation from light fugitive greys to heavy blacks, fulfilling in every particular our definition of a soft negative.

Here is where the conclusion is formed that results are due to the peculiar properties of the slow plate and the timing of the exposure. The inference is entirely wrong. They were brought about by the system of development employed. Almost any plate, if treated in a similar manner, could be made to give precisely the same type of negative.



AN AEROPLANE ACCIDENT

By S. M. CROW

CAMERA CRAFT

Tank development, as everyone knows, tends to give added detail and consequently softer negatives. It is because the developer, bulk for bulk, contains a smaller amount of alkali. Take any solution and extend the time of development and the result will be a softer negative. Conversely, to produce a contrasty negative, use a quick acting developer; or, in other words, so hasten the action that the plate can be removed from the developer with the high-lights in the lower stratas developed to good density before the mass of fine detail in the upper stratas have built up too fully.

Now it must not be thought that it is advisable to work for a soft negative by following blindly the procedure outlined above. Other things must be considered before cutting down the alkali in the proportion stated. Usually, if the alkali is reduced to one-half, excellent results will be obtained. The worker is advised to experiment a little before he risks a valued exposure to a method of treatment with which he is not quite familiar. The character of the subject itself may be such that it is desirable to increase rather than decrease contrast. The subject is one concerning which we can hardly know too much.

If you accept an art, it must be a part of your daily lives, and the daily life of every man. It will be with us wherever we go, in the ancient city full of traditions of past time, in the newly cleared farm in America or the colonies, where no man has dwelt for generations to gather round him; in the quiet countryside as in the busy town, no place shall be without it. You will have it with you in your sorrow as in your joy, in your work-a-day hours as in your leisure. It will be no respecter of persons, but be shared by gentle and simple, learned and unlearned, and be as a language that all can understand. It will not hinder any work that is necessary to the life of man at the best, but it will destroy all degrading toil, all enervating luxury, all foppish frivolity. It will be the deadly foe of ignorance, dishonesty and tyranny, and will foster good-will, fair dealing and confidence between man and man. It will teach you to respect the highest intellect with a manly reverence, but not to despise any man who does not pretend to be what he is not.—William Morris.

Our lives in every direction, every occupation, are filled with the presence and influence of Art; and as every day of our lives, we are called upon to exercise a choice or to express an opinion bearing on the subject, does it not become a moral obligation to exercise a wide choice, to express a just opinion and since there is a good and bad, a true and false in Art, to learn to distinguish them?—Lucy Crane.

Learn the technique of photography well, then use it wisely.

Learn to look and choose subjects for their simplicity of form.

Then, having learned to see, choose your own material, and deal with it according to your own lights and taste.

Never forget the limitations which necessarily hedge in photographic and other methods of monochrome art.—W. Thomas.

Percentage Solutions

By H. T. Dobson



Being a chemist and thoroughly familiar with the advantages of the metric system, it is very difficult for me to understand the motives which influence those who oppose its adoption by the photographic world.

Many arguments have been advanced both for and in opposition to its use. Of the former I have nothing to say, except that they can be summed up in a single word: Simplicity.

Of course the system possesses other advantages, but I sometimes think that if those genuinely interested in its adoption would occasionally forget them and concentrate their efforts into driving home the fact that it is its simplicity that warrants its universal adoption by photographers, more progress would be made with much less effort than is now being spent on this campaign of education.

It is as a contribution to this phase of the subject that this paper has been prepared.



ELDERBERRY PIE FOR DINNER

By LOUIS R. MURRAY

One hears a great deal about percentage solutions when talking with photographers, and judging from the frequency with which the subject is

CAMERA CRAFT

discussed in the photographic press, there is a great deal of misconception regarding them. As a matter of fact, there is nothing simpler to understand; nothing easier to prepare, if you employ the metric system of weights and measures.

The fact that so much confusion exists is conclusive proof of the obsolete character of the various systems of standards employed by photographers both in this country and in England. The chief cause of this lack of understanding is, without doubt, due to the fact that few realize that the percentage is always based on the weight of a compound present in a given weight of liquid.

There is no way of correctly determining the percentage of solids dissolved in liquids other than the one just mentioned; determining the ratio of the weight of the solid to the weight of liquid and conversion to percentages.

Various writers whose contributions to the literature of the subject are interesting more for the ingenuity shown, than the precise knowledge exhibited, have described other methods. I shall merely mention in passing that years ago the standardization committees of our great scientific societies both here and abroad settled the method of making all such determinations. If anyone imagines that he is right and that they are wrong, I suggest that he take the matter up through their respective secretaries.

Returning again to the subject in hand, I think that one of the factors contributing to the almost general confusion on the subject is the frequent mention of volumes in connection with the weights when instructions are given for the preparation of these solutions. In the case where the fluid ounce is spoken of in connection with either the avoirdupois or apothecaries system I can readily see that there is a great opportunity for misunderstanding; for unless one is well up in his subject, the connection between the fluid and the other ounces is not at all clear.

In the metric system if one keeps in mind the fact that one cubic centimeter (1 c. c.) of water weighs one gram, and that the graduate is employed merely as a convenient "weighing" instrument, the preparation of percentage solutions is a very simple matter. Yet, until one gets so that he can think in grams and cubic centimeters, there is an opportunity for wandering off into strange paths.

In looking over an article on the preparation of percentage solutions, I recently came across instructions for the preparation of a ten per cent solution of potassium bromide. After explaining the nature of a percentage solution; which, by the way was quite correct, the writer went on to say: "Weigh out ten grams of potassium iodide and then after dissolving in a small quantity of water, dilute to exactly one hundred cubic centimeters."

For all practical purposes such a solution is a ten per cent solution; but from a scientific point of view it is not. Had the solution been weighed

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immediately after its preparation it would have been found to possess a weight slightly in excess of one hundred grams. This error would have been due to the fact that the dissolved potassium iodide has a higher specific gravity than the water which it displaced. Of course, the error would have been practically negligible and mention is made of it only for the reason that unless an explanation was made some one might raise the point.

It is extremely desirable that some unit be taken as the basis for the preparation of all photographic solutions. In the case where the avoirdupois and apothecaries systems are employed, such a thing is obviously impossible. The ounce lacks suitable subdivisions and is therefore impracticable. Some effort has been made in this country to employ the pint of sixteen



SNOW BIRDS

By LOUIS R. MURRAY

fluid ounces, but although it is extremely widely used, like its English cousin of twenty fluid ounces, it tends to produce confusion, not to alleviate it.

In the metric system we find two convenient units; the liter (1000 c.c.) and the deci-liter (100 c.c.). The editors of the "British Journal Photographic Almanac" have adopted the former in many of the formulas published in their annual. There are a great many points about it that commends it for the purpose, but I believe that the deci-liter would be more convenient, for it permits of the reading of the strength of the solution direct as percentages.

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Let me quote a case in point: In the 1918 "Almanac" there is given, on page 574, a formula of which I quote a portion:

Pyro	100 grams
Sodium sulphite	400 grams
Distilled water	1000 cubic centimeters

For all practical purposes we can assume that when the solution is made up it will weigh one thousand grams. To determine the percentage of pyro and sodium sulphite present we must make use of some of the simple rules of arithmetic which we learned in our grammar school days. We learn then that the solution consists of ten per cent pyro, forty per cent sodium sulphite and fifty per cent water by weight.

Hitherto I have dealt only with chemicals capable of being weighed out. When the formula calls for the addition of liquids, such as sulphuric acid, the procedure is practically the same. One has merely to measure out the specified number of cubic centimeters of acid of the requisite strength and add it to the mixture; always assuming that the weight of the acid, like that of the final solution, weighs one gram per cubic centimeter.

A case in which the metric system tends to simplify calculations is that in which a formula is specified as made up of so many parts of certain chemicals. If we consider the gram as the unit of measurement the preparation of such a solution is a very simple matter. Substitute the word gram for the word part, and the difficulty disappears.

Inasmuch as the metric system has been practically universally adopted by the scientific world, it seems rather odd that photographers should be so slow in recognizing its merits. One reason for this, I think, is the difficulty of obtaining the necessary weights and measures. Photographers, as a rule, go to the photographic supply houses for their equipment, and these establishments, owing to the demand being neither often nor insistent, rarely, if ever, carry the metric standards. But if one insists on having them, it is not so hard to obtain metric measuring and weighing apparatus as one might imagine. If application made at the usual place is unavailing, there are, in every large city, a number of houses which deal exclusively in chemical ware. Any one of these concerns will supply the photographer with anything wanted in the metric line, and at a price that is no greater than for similar weights or glassware calibrated for other systems.

In the smaller places where there are no dealers carrying this class of ware, an order can usually be placed through a druggist for the procuring of the equipment. It may interest many to know that drug stores now make up all their preparations according to metric standards. This is because the "American Pharmacopoea" the alpha and omega of the druggist business, now employs the metric system in all of its formulas.

In stating that the druggist employs the metric system in his business, I feel that I must qualify this statement slightly. He compounds his preparations according to the metric standard, but sells them according to the ancient system of weights and measures which bears the name of his trade: apothecary. This is because the public has not been educated up to the

PERCENTAGE SOLUTIONS

point where it can do its thinking in metric terms. When this point has been reached, the fluid ounce will go the way of all obsolete inventions.

In conclusion, let me state, as showing the trend of the times, that in England, the land of ultra conservatism, the Association of British Plate Makers, have adopted a new series of standard plate sizes. These plates are all centimeter sizes. The old full, half and quarter plates, together with those measured in inches, have, so far as they are concerned, gone the way of the Dodo.

Let us suppose that instead of using the liter as our unit of measure we employ the deci-liter. Our formula then reads as follows:

Pyro	10 grams
Sodium sulphite	40 grams
Distilled water to.....	100 cubic centimeters

Or we could have written it:

Pyro	10 per cent
Sodium sulphite	40 per cent
Distilled water	as required

It will be seen from this that if we employ the deci-liter as our unit for writing formulas, the percentage of any particular chemical present can be read off directly without the necessity for any mental calculation.

Regarding the many advantages of employing percentage solutions in photographic work, a great deal might be said. I shall, however, confine my arguments to just one point, the ease with which various formulas might be compounded from a solution which one has perhaps found unsuitable after a brief trial.

Consider the pyro formula quoted above. Let us assume that after trying it we have four hundred and fifty cubic centimeters of it left, and that we desire to prepare five hundred cubic centimeters of new solution of the following composition:

Pyro	15 per cent
Metol	2 per cent
Water	as necessary

Inasmuch as the original formula was a percentage solution we know at once that the four hundred and fifty cubic centimeters contain forty-five grams of pyro and one hundred and eighty grams of sodium sulphite. We also know that the five hundred cubic centimeters of new solution must contain the following amount of chemicals:

Pyro	75 grams
Metol	10 grams
Sodium sulphite	200 grams
Water to	500 cubic centimeters

We therefore add to the four hundred and fifty cubic centimeters of old solution thirty grams of pyro, ten grams of metol, twenty grams of sodium sulphite and water sufficient to bring the total volume to five hundred cubic centimeters.

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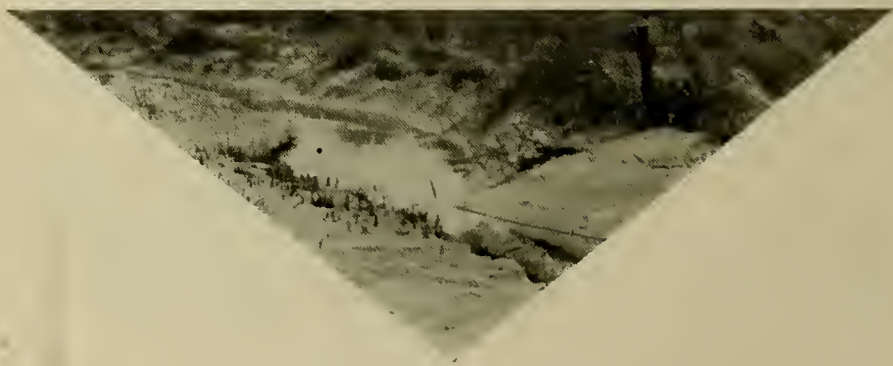
Someone will say, of course, that it would not have been a different matter to take a solution compounded according to the avoirdupois system and have altered it in like manner. Yes, it would be a simple matter if one is thoroughly conversant with such calculations, but I am inclined to think that the average photographer is not and that after a brief attempt at calculating the quantities to add, he would be tempted to discard the old solution and make a fresh one.

In the case quoted above I have dealt with a very simple problem. It sometimes happens that we wish to reduce the percentage of a chemical present in a solution. Let us assume that we wish to change the sulphite contents in the above formula from forty to twenty per cent. Nothing could be easier. One has merely to dilute the solution with water until the percentage required is reached and then add the other components of the formula until the proper strength is obtained.

Natural beauty is again represented by the production of the commonplace scenes in landscape with which we are all familiar. They correspond to the studio model, regarding whom we have just been speaking. A familiar scene—a valley, lake, mountain, or brook-side—is chosen, and painted as it is, with lack of thought and want of feeling, painted simply that you may have a facsimile of what you possibly may not possess in reality. Such pictures are good reminders of the places we have visited, like the photographs we buy along the line of travel, and they may not improperly serve to conceal a break in the wall paper of the drawing room; but they scarcely add to the world of art.

So, then, it is not a little part of the artist's aim that he discover and interpret to the world new beauty, and the value of his work may be estimated by the importance of his discovery. This is the rendering of objective beauty, tintured, perhaps, by the painters' individuality, method, or feeling; but there is a higher beauty in the subjective of which it is necessary to speak. The most perfect beauty lies not in external surroundings, but in the conception of the human mind. There is nothing in nature that may be compared with it; beauties of form, texture, or quality sink into insignificance beside it; it is predominant and omnipotent.

—John C. Van Dyke.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

Some Suggested Business Builders

By W. Clement Moore.



In this article we shall consider some ideas and plans which have proven successful for others, and consequently should prove profitable for all. They may be varied in their purpose and application, but that does not depreciate their real value in the least.

In cities and communities where photographic competition has been very keen, the writer has often been asked to suggest plans for winning out in the face of such competition; and, as a rule, the plans and methods which have been tried in such cases, and which have proven the most successful, have been those which offered the greatest variety, and were therefore completely out of the ordinary. Sometimes they were simply plans for a new series of advertisements, sometimes a new plan of reaching possible patrons through circular letters, and again an entirely new system of business methods would be necessary; but in all cases the photographer who could really produce good work and then back it up with novel ideas in mounts, finishes, ideas or uses of photographs, would be the fellow who would go far above his competitors.

One of the best, most original, dainty and attractive things in the line of photographic productions, something for you to advertise and to bring to your patrons' attention, is a photographic book-mark. If you will feature this in your advertising and have a drawing or engraving made of one of them for illustrating a couple of thousand circulars, you will be able to develop a lot of very good and profitable business. The plan is to purchase cream color, pink, white or gray print paper or cardboard, similar to the photographic cardboard stock, and cut into strips about two inches wide by eight inches long. This will represent your mount. The size of the photograph should be about one by two inches only, and simply be a bust picture in all cases. After the photograph is taken it is to be printed and attached to one dozen of the mounts, about three inches from the top, after which the top of the mount is folded over about one and a half inches. This will give you the finished photographic book-mark which makes a very dainty and attractive gift for any time of the year or for any occasion.

In order to create some good business with the book-mark, you should issue illustrated circulars, and insert in leading newspapers an advertisement similar to the following:

CAMERA CRAFT

YOUR PHOTOGRAPH ON A BEAUTIFUL BOOK-MARK

will make an attractive gift for that friend of yours. A useful novelty which will bring the bonds of friendship closer. One dozen handsome photographs with one or all mounted on book-marks, only \$2.00. Visit our studio.

Another money making plan which may be used to good advantage by any photographer at this particular season of the year, is that of arranging a large white artificial lily, either as a background or as an accessory with an opening on the center through which a person may thrust the head, or, if desired, both head and shoulders. Such a background for the Easter season, either for postcard work, novelties or even the more expensive work, will bring one many orders. A similar plan may be arranged in double form for wedding couples at this season. A little thought will suggest many other ideas which will catch the newly-weds, such as two bells on a post card or mount, a Cupid arrangement, etc. etc.

Such plans, as soon as you have finished a few samples, should, of course, be featured in your window, for in this way you will draw the attention of passers-by and catch many orders which would not develop from other forms of advertising. Then again, if a person has read your advertisement and sees your window display, he becomes doubly interested, and an order is pretty sure to result.

A special effort may also be made to secure the photographs of the children in your locality at Easter time by arranging attractive floral backgrounds or novelties, permitting them to have their photographs as Easter gifts.

Several photographers have asked for more information regarding the establishment of a mail order photographic business, and a few claim that the advertising is such an expensive proposition, that it takes quite a large capital to make a success of the work.

The following plan will help those who have only a limited capital, and as practically all newspapers and periodicals have good use for seasonable photographs, it will prove popular enough to secure for the advertiser a large amount of valuable advertising space at very little expense. The plan is not like some used by concerns who are looking for space for nothing, as you actually offer the publisher full value for his space.

First make a list of all of the negatives you have which will make photographs suitable for publication and print this complete list with a few words of explanation at the top, on a 6x9 circular, using a good quality paper.

Next print a card with the following form on one side and your return address on the other:

PARAGRAPHS PHOTOGRAPHIC

Dear Mr. Publisher:

We are not looking for something for nothing, but we want to offer you your choice of two high grade photographs of illustrations or subjects which you can use to advantage for illustrating your journal, if you will insert the advertisement on this card one time in your journal. You will find a list of photographs enclosed. If you accept, sign this card, mention photographs wanted and mail it to us.

(Your address)

Dear Sir: We have inserted your advertisement and proof will be sent you. Kindly send us the following photographs:

Date..... Name.....
Address.....

Of course, you can vary any of the above plans in many ways, but all are good ideas, if properly worked.

AN AMATEUR FILING SYSTEM — Envelopes having an end instead of a side flap, can be obtained of a size to fit almost any of the small negatives turned out. A pine box, easily made, serves as a container. This should be, inside measurements, a trifle wider than the envelopes, about three-quarters of an inch deeper than the envelope length, to accommodate the flaps, and about twelve inches long to hold about one hundred glass negatives or perhaps four times as many films. Division cards should be cut to fit the box and these can be lettered on the top edge with the name of each group, say: Portraits, Flowers, Buildings, Landscapes, etc. As one's negatives increase in number the system can easily be expanded by adding other boxes and perhaps additional division cards to make the classifications more narrow or by using sub-heads within the general classifications. On the upper end of the blank envelope, as it stands vertically in the file, should be written the name of the group or class to which it belongs, with a few descriptive notes below to more closely identify each particular one. To hold the negatives upright when the container is not quite full, the two inside sections of the empty plate boxes will be found to just fit. A cover of either wood or pasteboard will serve to keep out all dust. Extra prints can be filed with the negatives and in that way be more easily available than if tossed promiscuously into some drawer or other convenient hiding place.—
C. A. H., California.

DRYING FILM-PACK NEGATIVES — If one is using the popular film-pack he has no doubt had one of these little "sessions" with the lady of the house when he wanted to pin thirty or forty of them to the edge of the kitchen shelves for drying. The other day one of my customers brought in three of these packs to be developed; and, as our kitchen does not contain enough of these shelves to accommodate that number, I was forced

AD

CAMERA CRAFT

to improvise some arrangement that would answer the purpose. Rum-maging around to see what I could find, I came across an old frame about two feet square that was originally intended for a window screen. Taking this I drove small nails, about three inches apart, along two opposite sides, and then, beginning at one corner, I strung a stout cord over these, backward and forward, across the opening. Placing one edge of this frame on the chair rail of the kitchen and supporting the other or outer edge by means of a piece of string from a nail in the wall above, the films were pinned to the cross strings for drying. This frame holds thirty or forty films and occupies only four square feet of floor space. Placed higher it would answer for roll films; if placed in a room not used for household purposes it could have one edge hinged to the wall so that it could be turned up entirely out of the way when not wanted. The construction is so simple that a drawing is not needed, the construction requiring less than the time of washing the three packs.—V. W. H., New Hampshire.

TONING BROMIDES—Take a good strong print, one that has been well fixed in a plain hypo bath, then well washed, and bleach it to a very light yellow in a bath made by adding twenty grains of lead nitrate and thirty grains of potassium ferricyanide to each ounce of water. Then give a good washing. By adding thirty grains of perchloride of iron to each ounce of water a bath is made that will give a rich blue image. A bath of the same strength of chloride of copper will give good brown tones. A bath composed of twenty grains of neutral potassium chromate to each ounce of water, used for five minutes between the bleaching and washing, will cause the iron perchloride solution given above to produce a green instead of a blue image.—A. D. G., Iowa.

IF YOU DO ANY COPYING — It will no doubt surprise you to find out what a difference there is between your estimated exposure and the proper one for any particular piece of copying; in fact, the difference between the exposure you give and work to produce a print from and the exposure you should have given. You make the mistake and fail to realize it because you overlook the difference in the way the image should come up, as compared to a regular exposure. The next time you have a copy to make, waste a small plate by making trial exposures of strips, the result of pulling the slide out an inch at a time between exposures of a definite know duration. The average worker will find that a longer exposure than he is inclined to give will often result in a much better negative if development is carried along as it should be without fear of flatness from overexposure which the even appearance of the image suggests.—R. T. Y., Utah.

USE A RUBBER SPONGE—These soft rubber sponges that are sold in the drug stores are just the things for wiping off the surface of film, plates and enlargements as they come from the wash water. They do not get lumpy, will not make scratches and work much better than absorbent cotton, ordinary sponges, and other material.—V. U., California.

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A PHOTOGRAPHIC MONTHLY

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No. 9

How We Can Learn Photography

The average photographer has a wonderful opportunity to learn, to add to his stock of knowledge, and in so doing improve the quality of his work, as compared with many other craftsmen. Experiments that new material may suggest or new formulas invite, cost him but a trifle, in addition to the necessary spare time, the latter nearly always available. It is true, our average photographer does try an endless amount of new material and innumerable new formulas, but he too often fails to learn, fails to add any definite knowledge to his store, and fails to improve his work thereby. Let us say a new plate is offered, perhaps not new on the market, but one that he has not tried before. A dozen are loaded into the holders, they are used during the day, given the same treatment as the ones used regularly, but the prints for that day do not happen to average as well as usual. The plates are condemned as not equal to those previously employed. It never occurs to him that possibly the day's work might have been, through some unsuspected cause, even more unsatisfactory had not the new plates been used for a portion of the work. He never stops to reason that, through some variation from good practice in lighting, timing, developing, or printing, an inferior plate might respond to his methods better than would a plate of higher quality, better than would a plate capable, with right methods, of greatly improving his work. It is not hard to imagine a photographer using a certain plate that, unless timed with great care to avoid over-exposure, gave too soft effects with his light. This tendency he may be unconsciously counteracting with a developer that lacks the balance necessary to the very best results. Let us imagine that he is the photographer suggested above as trying a new plate and finding it lacking, something we can do quite easily. Suppose, instead of making such an unsatisfactory, unreliable, slipshod excuse for a trial, he had gone about it in a more understanding manner. Suppose he had invited one of his assistants under the skylight and made four exactly like exposures, two on the old plates and two on the new, then developed one of each pair in the old developer and two in a developer modified to correspond more nearly with the requirements of the plate being tried. It is easy to imagine that this more exact test would teach something of value. Our photographer might find that the new plate, even under the favorable condition granted by the altered developer, did not rise superior to the old. On the other hand, he might find that the new plate, used with its own proper developer, not only gave him better negatives but removed the necessity of such exact timing, always a greater or less handicap to the operator. In either case the man

making the test would have added to his fund of exact knowledge of materials available, and in case of the latter result, he would have improved his methods and the quality of his work. We have mentioned plates simply as a peg on which to hang a supposed case. In reality, we do not believe there are any poor plates on the market today. They all have their own peculiar characteristics, minor variations, and all of them capable of producing good negatives. But supposing there was a great difference, would the ordinary procedure of the average photographer when making a test, enable him to determine which was really the best of any given number he might try? And when it comes to giving attention to a new formula, matters are even less intelligently handled, as a rule. The solution is mixed up, it is used, and the results are not satisfactory. Another opportunity presents and an entirely new test is made; perhaps a third. The results all vary, none being pleasing, and the formula is condemned as unworkable. Let us say it is a developer for gaslight paper. Why not make the test in a systematic manner? The first result being unsatisfactory, let us assure ourselves that the print was timed correctly by exposing a sheet of the paper and developing it in another developer, the one previously employed. This will bring the trouble directly home to the developer. Then, in order to determine just what is wrong with that, let us alter but one factor at a time instead of making an entire change. If the alkali in the developer be suspected, a new solution made up with another sample of that chemical, but with all else the same, will lead to a determination that will be final. If it is thought there may be too much or too little of any certain component of the developer, altering the amount of that chemical accordingly, leaving all other factors the same, and either a remedy is found or one more source of error eliminated. And in doing one's experimenting in this systematic manner the photographer is simply practicing what many other craftsmen have always done. The farmer, for example, if he may be called a craftsman, does not plant a certain kind of wheat in a certain way at a certain season and in a certain location, one year, and the next season use a new kind of seed planted differently at another season and in an entirely different section of the country, in order to find out how to get a good crop of wheat. His failure the first year leads him to suspect the fertility of the seed used and he therefore carefully tests the germinating power of a new lot for the second season, allowing other factors to remain the same unless convinced that they also can be improved upon. Would it not be a good plan for the average photographer to adopt much the same course in his own practice, particularly as he has so much to gain by so doing?

"Art passes—art alone
 Enduring lasts to us;
 The bust outlives the throne;
 The coin, Tiberius."

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

Enlarging to Scale With Supplementary Lenses

That well-known investigator, Dr. H. d'Arcy Power, described in 1909, a vertical daylight enlarger in which a series of positive "spectacle" lenses were used, in conjunction with a seven-inch focus objective, to obtain different sizes of enlargement, while with the objective alone a still larger picture was secured. The objective was kept at the same distance from the negative throughout, namely, eight and one-half inches, and the supplementary lenses were mounted round a rotating disc placed behind the objective.

With such an arrangement, the various positions for the board holding the bromide paper had to be found by trial, and the supplementary lenses were apparently selected by experiment.

The present writer has, however, worked out an extremely simple rule by which enlargements to almost any desired scale or ratio can be produced by the use of a suitable supplementary lens or "magnifier," with an exact knowledge beforehand of the necessary distance for the board or easel.

The rule is as follows: With the enlarging objective at its principle or infinity focus from the negative, and with the supplementary lens close to it, the scale of enlargement will equal the focus of the one divided into the focus of the other, while the distance from supplementary lens to bromide paper will equal the focus of the supplementary lens.

For example, suppose the enlarging objective is of eight-inch focus, and it is desired to enlarge to three diameters, then $8 \times 3 = 24$, and a convex supplementary lens of twenty-four-inch focus will give this size of enlargement on bromide paper placed twenty-four inches distant.

Or, again, suppose we wish to enlarge to four diameters with the same eight-inch

focus objective. Here, $8 \times 4 = 32$, and a thirty-two-inch focus supplementary lens is called for, with the paper thirty-two inches away from it. Intermediate sizes may be calculated in the same manner.

This is easily proved by the familiar rules for combining lenses, $F = \frac{f_1 \times f_2}{f_1 + f_2}$, where f_1 and f_2 = the focal lengths of the respective lenses, and F = the focal length of the combination. The figures, in the first instance given, would be $\frac{8 \times 24}{8 + 24} = \frac{192}{32} = 6$ inches. the combined focus. Now, with a six-inch lens and a three-diameter enlargement, the necessary conjugate foci are eight and twenty-four inches, and these conditions are evidently secured by the infinity focus of the objective being eight inches and the distance from the magnifier being twenty-four inches.

Similarly, in the second instance, the combined focus of an eight-inch focus objective and a thirty-two inch focus supplementary lens is six and two-fifths inches. With a lens of six and two-fifths inch focus and a four-diameter enlargement, the necessary conjugate foci will be eight inches and thirty-two inches, which exactly correspond with the infinity foci of the objective and the "magnifier."

No doubt, someone will hastily remark, "Oh, there is a flaw here! The separation has been overlooked." That is not so. With the objective at its infinity focus the rays issue parallel, and remain parallel till they reach the magnifier which is itself at its infinity focus from the paper. Hence, there is, strictly speaking, no separation to be considered, and the distance between the objective and the magnifier may even be varied in reason without affecting the result, provided the bromide paper is kept at a distance from the magnifier equal to the focal length of the latter.

Ordinary convex single lenses, as used in

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various optical instruments, may be obtained to practically any focus in inches, or will be specially ground to order by a manufacturing optician. These are non-achromatic, but nevertheless work very well with a good objective, if used intelligently. "Spectacle" lenses are mostly stocked in diopters and quarters of a diopter, and are not always of the most convenient foci for the purpose under consideration. The ratio, however, may be worked out in just the same way with diopters as with inches. Thus, with a six-inch focus objective and a two-diopter spectacle lens (nineteen and sixty-eight one hundredths inches), the scale of enlargement will be $19.68 \div 6 = 3.28$, or practically three and one-fourth diameters, the easel being nineteen and sixty-eight one hundredths inches from the spectacle lens.

It is obvious that the foregoing method lends itself to the construction of a new type of enlarging lantern, in which the positions of the negative carrier and objective are rigidly fixed at a distance apart equal to the infinity focus, while a number of supplementary lenses are carried on a rotatable disc pivoted in front. If made commercially, it would be possible to pay extra attention to the quality of the magnifiers, in the direction of achromatism, etc. A simple gearing, too, might be devised whereby the distance of the easel is automatically regulated to agree with the focus of the selected magnifier when this is brought into position, thus doing away with any necessity for focussing or measuring. A further merit is that a fixed illuminant could be employed, such as a half-watt lamp with a reflector and a diffusing screen.—A. LOCKETT, in *British Journal of Photography*.

The Paget Color Plate

The following correspondence may be of interest to users of this excellent plate.

The Paget Prize Plate Co.,
Watford, England.

Gentlemen:—When your color plate was first made available, I had some correspondence with you and also gave considerable notice to the plate in my department in "Camera Craft." The interest acquired at that time has maintained, but conditions arising, I am prompted to write you again.

Firstly, why can we no longer obtain these plates? I have had them on order for months without either getting them or any explanation as to their non-delivery. Secondly, the viewing screens which I still have show considerable alteration in color where they have been accidentally exposed to a very moderate amount of light, and the same is true of some of those in register. Other transparencies, under the same conditions, are as brilliant as when first bound up. Can you give me any explanation for this? Thirdly, is there any objection to the recommendation recently made to protect the film surfaces by varnishing? If not, would dammar in benzol or a celluloid varnish be better? Fourthly, I think it was proposed originally that you should put out a single combination plate after the type of the autochrome. There is no question to my mind that for many purposes, especially photomicrographic, the accuracy of registration and simplicity of handling such a plate, would be of great advantage. If you can make me some, lantern slide size, I would be glad to publish a technical report on their use in "Camera Craft." Finally, might I suggest that the viewing screens be cut a trifle smaller than the negatives plates. Failure to maintain registration is often due to one plate projecting over the other. I have a great belief in the value of the Paget Color Plate and am anxious to further its development in any way.

Very truly yours,

H. D'ARCY POWER.

Sept. 7th, 1920.

H. D'Arcy Power, Esq.,

San Francisco, Calif., U. S. A.

Dear Sir:—We are much obliged to you for your kind letter of the 7th inst.

With regard to supplies of Colour Screens and Plates, we have not been able to supply, other than small special orders, for some time past, as we were entirely reorganizing our colour works and putting in specially designed machinery in order to increase output and improve and standardize the quality of our screens. However, by next spring we hope to have abundant supplies on your side.

We are unfortunately compelled by our method of manufacture to use basic dyes in our Screens and these are far from per-

A PHOTOGRAPHIC DIGEST

manent. That is why we do not care to make both screen and emulsion on one plate as by the separate method permanency is not so important as the screen can be so easily replaced.

Of course for lantern work for which this process is so suitable and is mostly used, this question does not arise as a projection light will never fade them. A dammar in benzol varnish can be used, but we do not find any advantage in it.

With regard to your note as to cutting Viewing Screens smaller, we quite agree and have given instructions to that effect.

Yours faithfully,

PAGET PRIZE PLATE CO.

27th Sept., 1920.

Printing Efficiency

A most important step towards efficiency in the printing room is the choice of the grade of paper to suit the negatives. In this note we will endeavour to explain why it is not practicable to manufacture an "all-in-one" paper of the development type that will give perfect prints from all kinds of negatives, from "ghosts" to "soot and whitewash." Our friends must bear in mind the fact that all development papers have, apart from their speed, a definite scale of gradation characteristic to the grade, some long and some short, and very little can be done in the way of modifying the developer to alter this scale, excepting at the expense of the color of the print.

Scale of gradation may be described as the rendering of steps of density, which are steep in the case of so called vigorous, hard, or contrast papers, and gradual in the soft papers. We are told that theoretically the best grade of paper to use is one that will correctly reproduce the actual gradations of the negative, but as we have not reached the stage when "perfect" negatives are the rule, we must perforce adopt another dictum. In our opinion the best rule to follow is to endeavor to reproduce the actual gradations of the subject itself, as we may very frequently require to purposely falsify the gradations of the negative. It may be that for some technical reason the negative is poor, under-exposed, or under developed, and in order to get a correct rendering of the subject recourse

must be had to the use of a vigorous paper. Similarly a negative that is harsh in contrasts will require a soft paper.

A great deal of misunderstanding exists amongst printers in connection with the words Vigorous, Hard or Contrast, Normal or Regular, and Soft, which are used in describing our own and other manufactures. The terms are intended to describe the actual scale of gradation given by each grade, and must not be confused with the appearance of the final prints. A soft paper will yield a print from a good strong negative quite as brilliant as a vigorous paper will produce from a thin negative. If a negative is very dense it does not always follow that a soft paper should be used, as perhaps much of its density may be due to inherent fog, or over-development, so that the actual scale of gradation may be long and require the use of a vigorous paper. Also, a thin-looking negative that has been developed with pyro-soda without sulphite may actually require a soft paper to produce good results.

Careful printers who are anxious to obtain the best prints from all sorts of negatives that come their way will have at hand all three grades, but considerable experience is required to choose correctly the grade which will give the best results. As a guide, Vigorous papers are suitable for very poor, thin negatives of weak contrast; Normal papers are suitable for negatives on the thin side, but with good detail and medium contrast, and Soft papers are suitable for negatives of harsh contrasts, and also for what is termed "good" negatives such as the high-class portrait photographer produces, all subject to the reservations above.

Most printers are now well aware of the great change that has taken place in the manufacture of slow development papers of the gaslight type. These papers have always been regarded as only suitable for printing amateurs' under-exposed negatives, and gave hard black and white results, but the modern gaslight papers will do as much, and more, than bromide, with many added advantages as to comfort in working, etc.—Trade Notes, Rajar Limited, England.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Intensifying Negatives

Since the negative making activities of the summer season has somewhat abated, enquiries concerning the process of intensification are becoming more numerous, and a few words on the subject should not be out of place. First, it is to be regretted that those workers who could most improve their negatives by some such process are the ones who would be most likely to experience failure through their lack of photographic skill. Intensification is a matter that requires an originally well fixed and well washed negative and one that is lacking in any suspicion of fog. We might also add that in order to be greatly benefitted by intensification, the shortcomings of the negative should be practically due to under-development only. If the negative is not well fixed and washed when originally made, it is quite difficult to make up for such shortcomings after drying, and any attempt to intensify will be quite sure to result in stains, or at least uneven density. If there is any fog, it, of course, is on the surface of the emulsion and is intensified as much, if not more, than the image proper. A skillful worker would remove this fog by a quick application of a reducer, but some experience is required to do this successfully. If the negative be one that is fully developed and yet lacking in detail, intensification is quite likely to only make matters worse. The proper thing to do, as I see it, is for the worker to secure a bottle of some good intensifier, such as that put up by James H. Smith & Sons Company, so that he need have no doubts on the score of the formula or the chemicals employed, and then experiment with a few of his waste negatives until some measure of skill is acquired, at least to the extent of knowing about what can be expected from different classes of negatives. Where the preliminary use of a reducer is suggested, the regular one-in-four

hypo bath tinted to a straw color by the addition of a little ferricyanide of potassium solution, may be employed, remembering that the mixture must be made at the time of using as the latter decomposes the hypo which necessitates strengthening the bath from time to time by fresh additions of the hypo solution. A strong solution, one of a bright straw color, acts quickly, and on a negative only slightly moistened, will act upon the surface quite strongly before attacking the detail in the lower stratas of the emulsion, thereby removing fog. Where it is desired to remove density in the high lights, a weaker solution allowed to work for a longer time will be more satisfactory. Best of all for such cases is an ammonium persulphate reducer which acts more strongly upon the over-dense portions of a negative. But the main thing is to acquire knowledge and experience, and for that purpose waste negatives can be employed to great profit. One should, when he finds an exposure shows movement or some other defect that makes it undesirable as a negative to be kept, carry it through fixing, washing and drying so as to have a few on hand for experimental purposes such as I have suggested.

Photographs in Decorating

I was out to a friend's house a few Sundays ago and he took me over to inspect a certain room in a neighbor's house, a room that he thought would interest me. And it certainly did. This room was up on the top floor, one the oldest son of the family had used as his particular "study" while at home. The walls were finished in some sort of wall board laid off in panels with narrow wood strips. Some of these panels were of course partially hidden by the furniture and others were used as backgrounds for framed pictures, but not a few were decorated with photographs,

THE AMATEUR AND HIS TROUBLES

mostly small enlargements, pasted directly upon them; or rather, upon the small-figured brown paper with which they were covered. Each panel carried several photographs and the decorative effect was secured mainly by the shapes and sizes to which the photographs had been trimmed. For example, the upper part of one carried a dome topped photograph with three almost square smaller ones in a row below, the size of the latter and the spacing between being such as to make the length of the row the same as the width of the larger photograph above. Another combination was two upright panels above and a large, almost square print below, the outer edges again coming even. To tell the truth, I half suspect the gentleman really took up the idea in order to safely use such of his subjects as trimmed best to a square, a shape that hardly looks well in a frame or by itself. In any case, the effect was very pleasing and I could see how easy it would be to strip off his paper background, apply a new one and mount a new set of prints, any time he wanted a change. And the reader must not run away with the idea that making up a combination like this is merely a matter of trimming the right number of prints to the determined shapes and sizes. There must be a degree of harmony preserved, both as to subject matter and general weight. For example, if one square in a pair is an elephantine tabby cat with a dark foliage background and the other is a bird's eye view of all out doors, the effect is rather patchy, to say the least. In addition, it is not always easy to find prints that will trim to particular shapes. Some time when you have plenty of leisure, just try to find a print that will trim to a fan shape and yet look right, look as if the composition really fitted that shape and no other.

Using an Old Timer

Some years ago I salvaged a matched pair of old Waterbury single lenses that a dealer had in his junk barrel, with the intention of making some experiments along stereoscopic lines. The other day I ran across them and found one of them had gone bad, if not originally so when I got them, by the balsam letting go on one side a little. I did not want to go to the ex-

pense of having it re-cemented, and the stereoscopic experiment was a thing of the past, so I took the good one and had the lens fitter make a flange for it that would just screw into the flange that takes my $6\frac{1}{2} \times 8\frac{1}{2}$ anastigmat. With this lens I find I can shoot almost directly into the light without any danger of getting one of those smokey negatives we all know so well. There is not only a long hood in front of the lens, but a stop with a small opening. In addition, instead of the entire inside of the camera being bombarded with a flood of light, the cone of light that passes through the lens does not quite illuminate the plate, much less all the folds of the bellows. If I want to make a bunch of small tree trunks with the shadows coming towards me in fantastic designs across the road in the foreground, I can do so. If I want to get one of these halo hair effects in an outdoor portrait, and the subject is not in actual motion, I can do that also. Of course, the same thing can be done with one of these soft focus lenses if one has that particular type that is only one combination or if he has one that permits of the front combination being removed. In other words, I can have this fixed stop of my old single Waterbury bored out larger and have a soft focus lens, but I would have to have a supplementary stop of the size of the present one to put back in when I wanted normal sharpness, and I do not care for all that bother.

We Wonder Why It Is

If you want to take a picture of a Kodak Girl or even one of a child or adult using a kodak, always hunt up a subject that never took a kodak picture and put the camera in her hands. Just why it should be so is one of those things that are hard to explain, but it seems to be an acknowledged fact. I have tried it myself. The real camera user takes it entirely too seriously; she wants to look as if she was just about the acme of proficiency with a kodak. The other kind have no such ambition; they want to look, if they do give it a thought, as if making kodak pictures was all a good joke and really hardly worth bothering their heads about. And unfortunately, that is the sort of pose that turns out the most pleasing in the finished result.

OUR BOOK SHELVES

"Dictionary of Photography"

This standard reference book for amateur and professional photographers, by E. J. Wall, has, through the nine editions that have been published, become so well known that no introduction seems necessary. This new or tenth edition, edited and largely rewritten by F. J. Mortimer, comes to us with its almost seven hundred pages and its usual handsome cloth cover, with the assurance that the complete and comprehensive scope of the work has been maintained. The definitions given are of course fully explanatory; but in addition, all of those suggesting such treatment have been extended until they are in the nature of descriptive articles or condensed treatises. The book is one that should be a part of every photographic library, as it no doubt is, and with the new matter added since the publication of the last edition, this new volume should not be overlooked by the worker who desires to keep himself well informed on any subject that may claim his photographic interest. Published by Iliffe & Sons Limited, 20 Tudor Street, London E. C. 4, England. Price, thirteen shillings and three pence postpaid.

"Photography Made Easy"

R. Child Bayley, the editor of "The Amateur Photographer," London, has given us another book, a new book, a book for beginners, and like his other works and his articles in general, readable, informative, and comprehensive within the scope of his subject. It is really founded upon that excellent series of "Lessons for Beginners" that have been such a noteworthy feature in the pages of "The Amateur Photographer" for the past few years. There are some thirty-two chapters embracing, in addition to the usual subjects, such ones as: Home Portraiture, Printing Defective Negatives, Sulphide Toning, Arranging the Subject and the like. Over two hundred and sixty pages, paper covers. Published by Iliffe & Sons, Limited, 20 Tudor

Street, London, E. C. 4, England. Price three shillings and three pence, postpaid to this country.

Photo-Engraving Primer

This handsome little cloth-bound book, of some eighty pages, contains a wealth of practical instruction for the apprentice engraver or for those interested in the working practice involved in the making of line cuts and half-tone engravings. The author, Stephen H. Horgan, is well known as an authoritative writer on the subject through his other books and his editorial work in the "Process Engraving" department of *The Inland Printer*. The instructions given in this "Primer" are thorough and practical, while unusually full and comprehensive, making the volume one that is capable of filling a want that a more cumbersome and overloaded compendium on the subject would simply aggravate. The book is published by the American Photographic Publishing Company, 221 Columbus Avenue, Boston, Massachusetts. Price one dollar and fifty cents.

"Photo-Engravers' Hand-Book on Etching and Finishing"

This is a meaty little book, thorough and comprehensive in its style, well illustrated and well put together, the work of P. C. Rayme, one of the instructors in the Photo-Engraving department of the Bissell Colleges of Effingham, Illinois. The book is very popular with the students of the college and we are quite sure that it will prove of value and interest to any others interested in photo-engraving in any way. In addition to the illustrations in the text there is a series showing the evolution of a three-color print, a printers' color chart and an etchers' color chart, all of great value to the one desirous of applying color to illustrations through the medium of printers' ink. Copies can be secured by sending one dollar and fifty cents to The Bissell Colleges, Effingham, Illinois.

OUR BOOKS AND SHELVES

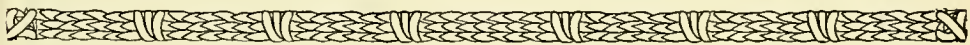
"Photographic Enlarging"

Rapidly running through two large editions, Mr. Bayley has revised this popular work, bringing it up to the moment in all that concerns his subject, and this standard handbook on enlarging is again obtainable. The subject is covered thoroughly in the nearly two hundred pages, even Bromoil and Ozobrome coming in for treatment, along with enlarged negatives and the usual bromide enlarging work from beginning to the final spotting and working up. Enlarging is becoming so popular, practically universal in connection with the small cameras, and this book should have a wide sale. Published by Iliffe & Sons, Limited, 20 Tudor Street, London,

E. C. 4, England. Price, three shillings, ten pence, postpaid to this country.

"American Annual of Photography, 1921"

The new edition comes to hand, as heretofore, full of good articles and reproductions of good pictures, with the usual amount of valuable tables and formulas in the hack. Its good quality is so well known that we need not do more than say that it is up to the usual standard and we are glad to find it coming out more nearly on time this year. George Murphy, Incorporated, 57 East Ninth Street, New York, are sole sales agents and practically all of the local dealers will carry a supply. The paper covered edition is two dollars, the cloth covered one fifty cents additional.



CLUB NEWS AND NOTES

Club Secretaries and others will oblige by sending us reports for this Department

Fifteenth Wanamaker Exhibition

The Fifteenth Annual Exhibition of Photographs at John Wanamakers, Philadelphia, will be held March seventh to twenty-sixth, entries closing February eleventh, 1921. There will be nineteen prizes, ranging from one hundred dollars downward, the judges will pass on the work as they would on an exhibition of paintings, and the prints submitted should be white to light brown cards, not smaller than 8x10, or larger than 18x22. Announcements and labels will be supplied upon request to the Photographic Exhibition Bureau, John Wanamaker, Philadelphia. These exhibitions have always ranked very high and the competition for the honors have drawn the work of a large number of good workers throughout the country. Such of our readers who have not as yet tried one of these Wanamaker exhibitions should do so with some examples of their pictorial work, if only for the satisfaction they will derive from measuring it beside the prize winning pictures that are generally reproduced in the catalogue sent to all of the exhibitors.

The Frederick & Nelson Exhibition

Particularly gratifying was the interest taken in this exhibition, held in Seattle, November first to thirteenth last. More than eleven hundred entries were submitted

and five hundred and twelve selected for exhibition. The judges, men well versed in art and pictorial matters, did their work most conscientiously, with the result that awards, announced with the opening of the show, met with the general approval of both the public and the exhibitors. The attendance was large, surprisingly so, and those who have seen nearly every Pacific Coast exhibition of the past few years voted it one of the best, if not the best, that they have seen. Besides a host of new names there were represented such well known workers as Laura Adams Armer, John Paul Edwards, Louis Fleckenstein, Louis A. Goetz, Margrethe Mather, L. A. Olson, Edward Weston, Myra Albert Wiggins and others. Those having the exhibition in charge are to be congratulated upon their success.

Count DeMiro's New Studio

The Count Estevan Gavroche de Miro has sent out announcements of the opening of his exclusive studio for the season at the Del Monte Hotel, Saint Louis, Missouri. He occupies Suite 211 and sittings are made strictly by appointment, his phone number being Cabany 6940. Residents of and visitors to Saint Louis should avail themselves of this opportunity to secure distinctive portraits by a master photographer.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

The Post Card Album

Despite its late start this album seems to be traveling nicely, Mr. Hans, the Kansas City representative on the route list reporting its arrival from the Tampico, Mexico, representative on the twenty-second of November. I. P. A. members interested in post card work should not neglect to send a few of their best cards to John Bieseman, Post Card Album Director, Hemlock, Ohio, in order that they may be represented in and have their name and address placed on the route list of the next outgoing album, which we understand will start as soon as a few more sets are received. Four or more of your best cards, sent at once, will be appreciated and will assure you a treat when the album gets around to you on its route.

NEW MEMBERS

- 4830—Alfred A. Mayer, 324 Palisade Ave., Garfield, N. J.
5x7 and smaller, on developing paper, of landscapes, buildings, portraits, or anything of interest; for same. Class 1.
- 4831—Lawrence A. Bowen, 1877 S. Acorna St., Denver, Colo.
 $2\frac{1}{4} \times 3\frac{1}{4}$ and $3\frac{1}{4} \times 5\frac{1}{2}$, on developing papers, of mountains, geological subjects, and others of general interest; for same. Class 2.
- 4832—Akio Saki, Handa-Machi, Aichi-Ken, Japan.
Class 2.
- 4833—Robert E. Williams, Jr., The Dalles, Ore.
 $3\frac{1}{4} \times 5\frac{1}{2}$ or 4x6, on developing paper, of Columbia Highway and Columbia River scenery; for mountain scenery and artistic landscapes. Class 1.
- 4834—Leo E. Fitzgerald, Charlton, Mass.
 $2\frac{1}{4} \times 3\frac{1}{4}$, on developing paper, of landscapes, buildings, and animals; for landscapes, mountain scenery, historical subjects and old ruins. Class 2.
- 4835—A. C. Duncan, Box 785, Jennings, La.
 $2\frac{1}{2} \times 3\frac{3}{4}$ to 5x7, on developing paper, of war scenes, German views, draped and undraped figure studies; for same. Class 1.
- 4836—W. H. Hawley, Vernon, Tex.
 $2\frac{1}{4} \times 3\frac{1}{4}$, $3\frac{1}{4} \times 4\frac{1}{4}$ and 5x7, on developing paper, of animals, views and general subjects of interest; for views, water scenes, bathing views and bathing girls. Class 1.
- 4837—Lora M. Jennings, 234 N. Eutaw St., Baltimore, Md.
 $2\frac{1}{4} \times 3\frac{1}{4}$, of views, children, scenery, etc.; for Western scenes, views, etc. Class 1.
- 4838—H. C. Wilson, 1252 Agnes Pl., Memphis, Tenn.
Stereoscopic prints of general subjects; for same. Good work only. Class 2.
- 4839—Melville M. Sobey, Oakdale Park, Hudson, N. Y.
4x5 and 5x7, on developing and printing-out paper, of landscapes and mixed subjects; for landscapes. Can exchange only when convenient. Class 2.
- 4840—Margaret Litheeler, 1120 Beacon St., Brookline 47, Mass.
Class 3.
- 4841—John Falencyk, 329 East 24th St., New York, N. Y.
9x12 cm., $3\frac{1}{4} \times 5\frac{1}{2}$ and 5x7, on developing paper, of marines, especially storm and high seas pictures, foreign and general views; for anything interesting, landscapes, portraits and figure studies.
Class 1.
- 4842—C. B. Clark, Beach Photo Studio, Pacific Grove, Calif.
Up to $6\frac{1}{2} \times 8\frac{1}{2}$, on developing paper, of general views and portraits; for same. Class 2.
- 4843—George W. Bergen, 1513 North 40th St., Omaha, Neb.
4x5, on developing paper, of park views, landscapes and city views; for similar, or anything interesting. I desire to exchange 4x5 prints only.
Class 1.
- 4844—Turner's Studio, 147 W. Main St., Crooksville, Ohio.
Post cards, on developing paper, of views, buildings, etc., for post card views, landscapes, buildings and anything of interest in foreign countries only. Class 1.
- 4845—David C. Goodyear, 222 West 72nd St., New York, N. Y.
 $3\frac{1}{2} \times 3\frac{1}{2}$, $3\frac{1}{4} \times 5\frac{1}{2}$, and up to 8x10, preferably post cards, on developing papers, of railroad subjects in general; for same. Privilege of return extended and demanded. Class 1.
- 4846—William A. L. Jaco, 1206 River St., Braddock, Pa.
Class 3.
- 4847—R. L. Rodman, 2117 Logan Ave., San Diego, Calif.
Class 2.
- 4848—Oscar Gustafson, Box 261, Iron Belt, Wis.
8x10 and smaller, for same. Class 3.
- 4849—J. P. Graham, 323 Nob Hill Ave., Seattle, Wash.
 $2\frac{1}{4} \times 3\frac{1}{4}$, on developing paper, of sailing vessels, steamships, battle ships and marine views; for same, but any good work accepted of any subjects, of any size. Class 1.
- 3345—Miss Kathryn DeLisle, 725 Tillman St., Detroit, Mich.
Class 1.
- 4472—Harry E. Carpenter, 359 Remington Ave., Bridgeport, Conn.
 $3\frac{1}{4} \times 5\frac{1}{2}$ and 5x7, on developing paper, of landscapes, bathing girls, current events, and miscellaneous; for same. Wish to hear from Hawaiian and Philippine members. Class 1.

RENEWALS

- 4484—N. Mc. D. Freeman, 7720 Emerald Ave., Chicago, Ill.
 $2\frac{1}{2} \times 2\frac{1}{2}$ and up to $6\frac{1}{2} \times 8\frac{1}{2}$, on developing papers, of city and country views; for same, especially of foreign countries. Class 1.
- 4503—C. W. Maddox, Box 64, Butler, Mo.
 $3\frac{1}{4} \times 5\frac{1}{2}$, $2\frac{1}{4} \times 7$ and smaller, on developing paper, of Southern California, Alaska, and general home views; for figure studies and anything of interest.
Class 1.
- 4654—A. H. Latta, Box 305, Hickory, N. C.
Class 2.

CHANGE OF ADDRESS

- 4622—A. G. Gronacher, 1115 Yale St., Sacramento, Calif.
(Was Kenosha, Wis.)
- 4790—G. E. Bowman, Fort Bragg, Calif.
(Was Tulare, Calif.)

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported By William Wolf

All of the San Francisco studios are running to full capacity, turning out holiday photographs.

The Anderson Photo Shop of Fresno is keeping up a good average in its photographic finishing.

E. O. Farnum has sold his store in Santa Barbara and is now devoting his time to selling real estate.

The Royal Studio, Fresno, is very busy with holiday work that is being turned out in excellent style.

Mrs. Burhans and daughter of San Jose were in San Francisco recently, doing Christmas shopping.

Mrs. C. C. King of Tulare is turning out some very fine colored work this season.

Mrs. A. Salb of Petaluma was in town recently buying in anticipation of a holiday rush that had started off well.

The writer contemplates a trip East to further the sales of Probus colors and Preservative paint.

Mrs. Emma B. Freeman, formerly of Eureka, has opened an attractive art shop at Sutter and Stockton streets, this city. All visiting photographers are extended a standing invitation to call and see this beautiful place, and make themselves known when doing so.

Woman's Auxiliary, P. A. of A.

The business meeting of the Auxiliary, held August twentieth last, resulted in the election of Clara Louise Hagan, Third vice-President of the P. A. of A., to fill the vacancy caused by the retirement of Miss Gerhard. The Secretary was instructed to present a resolution thanking the President and members of the Board of the P. A. of A. for their kindness and liberality to the Auxiliary. It was voted to retain the same chairman and secretary and Mrs. Howard D. Beach was selected as Hostess for the next National Convention. The Auxiliary did splendid work at

the last Convention; and, as the organization is perfected, expect to do even better at the next and following ones. All who are interested in the activities of this Auxiliary should get in touch with the Secretary, Mrs. Frank V. Chambers, 7321 Boyer Street, Mount Airy, Philadelphia, Pennsylvania.

Lothers & Young Studios

This new home of commercial photography was opened at 251 Post Street, this city, the middle of September, in order that the firm might better carry on the increased business with which it has been favored. The new quarters are well located, furnish ample room and have been well fitted up. We can only wish this enterprising firm the success that it merits and trust that they will not be long in requiring even more space than the new quarters provide.

A Simple Exposure Indicator

A recently patented device, the Milner Light Gauge, is being placed on the market with every indication of immediate and gratifying success, judging by the favor with which it is being received by both the users and dealers who have had an opportunity of trying it out. This device utilizes a very simple, but scientific principle, that heretofore has not been applied in this manner, resulting in an accurate measurement of the light in such a way that the correct exposure is instantly indicated for all stops without the use of tables, factors, or calculations. It is about the size of a silver dollar and consulting it is as simple a matter as looking at one's watch. It does not indicate exposures under artificial light conditions and it is not burdened with a lot of variants to be used for different subjects and with different plates. It does, however, cover thoroughly all the ordinary conditions and the usual rapid plates and film. Any user of ordinary intelligence can make his own variations to suit abnormal conditions just

CAMERA CRAFT

as he trebles his exposure for three-times color screen. The advertisement of the Light Gauge appears upon another page in the front section of this issue.

Yearly Entertainment and Dance

The get-together spirit which emphasized the true feeling of cooperation was again in evidence at the Annual Cabaret and Dance, presented by the Social and Welfare Club of the Willoughby Coworkers, held at the Waldorf Astoria, on the evening of December fifth. Some six hundred persons were present. The program consisted of a variety of entertaining specialties. Supplementing this program was a feast of dancing and good cheer, and it was fitting on this occasion for Mr. Willoughby himself to express his deep appreciation to those present for their splendid efforts.

The House of Charles G. Willoughby, Incorporated, New York's progressive photographic supply institution, boasts an organization of real honest to goodness members. Each considers himself and herself an actual partner in the business because under the Willoughby profit-sharing plan the entire organization has been welded together into a happy, satisfied and efficient organization.

Motion Picture Cameras

The Bass Camera Company, 109 North Dearborn Street, Chicago, advise us that they have purchased a large number of four-hundred-foot Universal cameras from the Government and are selling them at a saving of forty per cent. The firm maintains a service department for the benefit of anyone interested in any problems connected with the work and will gladly furnish complete lists covering their large stock of motion picture cameras, film and supplies, by mail gratis.

Jules Richard Transparencies

Our London friends, the City Sales & Exchange, advise, that in addition to their office as chief agents for the Jules Richard stereoscopic apparatus and specialties, they have installed a magnificent collection of the Richard transparencies, in sets, including a unique selection of war pictures taken in and on the various fronts, in connection with the signing of the peace treaty at Versailles and the celebration at Paris. As there are quite a few workers in this coun-

try who are using the 45x107m.m. size, they will no doubt be glad to learn of these being available. The list is an exhaustive one, including all foreign countries and art subjects in sets. While primarily intended for viewing in the stereoscope, they can be projected singly the same as ordinary lantern slides by a slight modification of the usual lantern slide carrier. The list is contained in a neat booklet that will gladly be forwarded upon request from interested parties, addressing: The City Sales & Exchange, 90-4 Fleet Street, London, E. C. 4, England.

\$50.00 Reward

A man, posing as Warren J. Armstrong, secured a two hundred foot Universal Camera, with Dissolve, from the New York branch of Burke & James, Incorporated, a short time ago, for which he gave a spurious draft. Burke & James report that he was registered at one of the principal hotels under the name of J. J. Kumler and that he left the hotel without paying his bill. He is a man about five feet eight inches high, slender build, thin features, black hair, parted in the center, of gentlemanly appearance and conversation, claiming to be connected with the Smithsonian Institution, Washington, D. C., engaged in volcanic research work.

The camera is No. 2604 and the lens is No. 3050268, and a reward of fifty dollars will be given by Burke & James, Incorporated for their return in good condition.

Rexo Dupli-Kit

The Rexo Dupli-Kit is a thin metal mask which fits in the back of the camera over the bellows frame and masks off the opening so that a picture one-half the regular size will be obtained when Rexo Speed film is used. With this mask twelve pictures half the regular size are made on a six-exposure roll, twenty on a ten-exposure roll, and twenty-four on a twelve-exposure roll. It is adapted for use in all makes of film cameras and no special attachment or extra ruby windows are required. The black paper used on the Rexo Speed film is printed with an "X" between each exposure. This shows where to stop to obtain a half-sized picture. Full instructions for use with each Mask. Ask your dealer to show you how simple and convenient it is.

NOTES AND COMMENTS

The New Bausch & Lomb Catalogue

The new Bausch & Lomb catalogue is a beauty, and it is as helpful and informative as it is pleasing to the eye. Sixty-four pages of the finest book paper, with a double cover and a wealth of most interesting and finely executed halftone reproductions, means that this book is one of the most expensive ones gotten out as a catalogue in a long time. In reality, excellent reproductions and informative text occupy so much of the space that it is hard to reconcile the book itself with the name catalogue. If every reader of our magazine could be made to realize the value of the book, the requests for copies would give the Bausch & Lomb people a complete roster of our subscribers. But of course only the wise ones will heed this notice or the invitation published in the firm's advertisement, particularly as we are not telling you about all the valuable features the book contains. If you want to find out this last, write for a copy and find out for yourself. You will thank us for advising you to do so.

Illinois College of Photography—August

All students photographically inclined, are looking forward with much anticipation to the National Photographic Convention which will be held in Milwaukee, from August twenty-third to twenty-seventh. This convention is always quite a meeting place for former students.

Effingham has recently added to its list of financial institutions, the State Bank of Commerce, of which President Bissell was elected first vice-president. Three other members of the College Faculty are also stockholders.

At the College Camera Club, the last collection of pictures shown made up the largest exhibit for some time. Even during the warm weather the club has flourished and we are expecting added interest to be taken in its enterprises with the advent of fall.

President and Mrs. L. H. Bissell a short time ago motored to Indianapolis and Martinsville, Indiana, spending several days at a resort in the latter place. They were caused to detour frequently, on account of the extensive road building program being carried forward in Illinois.

New Directory and Market Data Book

Crain's Market Data Book and Directory of Class, Trade and Technical Papers, now on the press, promises to be of unusual interest to advertisers generally and users of trade and technical papers in particular. It not only lists all of the business publications of the United States and Canada, giving circulations, rates, type page sizes, closing dates, etc., but supplies a market analysis of each trade, profession and industry. Thus the reader is given the basic facts of each line in which he may be interested, including its buying power, buying methods, character of requirements, etc. The volume, which is bound in cloth and contains nearly five hundred pages, is published by G. D. Crain, Jr., 417 South Dearborn Street, Chicago. The price is five dollars. Orders in advance of publication are being accepted at the rate of three dollars and seventy-five cents.

Sample Packages of Paper

One of our out-of-town subscribers, paying us a visit the other day, made a suggestion that we think would be well worth the attention of paper manufacturers. His idea is this: Let the maker of any brand of developing paper get out a sample package, say in the popular $3\frac{1}{4} \times 5\frac{1}{2}$ size, containing perhaps two sheets of each of the several surfaces put out and say four sheets of the most popular or most generally used of the assortment; these last being in excess for the purpose of determining the standard exposure for the negative to be used in the trial of the samples. Then, with proper directions furnished with the sample packet, the worker could easily select a fair negative, determine the exposure for the indicated sample by trial, and then make good prints from the other samples by following instructions as to giving one sample one-fourth more exposure, another one-half more exposure, and so on, these variations being indicated in the instructions. The manufacturer could, of course, include in the sample package, sheets of the varying emulsions as well as surfaces, and in the instructions suggest that the selected "fair" negative, while obviously not the one on which these special emulsions showed their good quality, would show the variation effected and suggest their advantage for too weak or

CAMERA CRAFT

too strong negatives as the case might be. The worker, by the simple process of finding the right exposure with his selected negative and his particular light for what we may term the standard emulsion, should have a good print on all of the surfaces and in addition to being able to compare the different surfaces should feel a confidence in his ability to give the right exposure for each of the different emulsions of that maker. And the value of this acquaintanceship and confidence as a forerunner of later sales can be understood. Such a sample package would necessitate a little trouble perhaps, and the printing of a special instruction sheet would be involved, but the plan looks like a good one to us.

Lens Cleaning Tissue

The proper cleaning of photograph lenses is a thing that sometimes puzzles even the best of photographers.

A very satisfactory method of cleaning lenses is through the use of Japanese tissue which is made from the bark of the Japanese Mitsumata. This tissue is free from any abrasive and so proves very satisfactory for cleaning purposes. The Wollensak Optical Company are putting this up in 4x5½ inch booklets of convenient form, sixteen pages of tissue to the book. They also include suggestions for the proper cleaning of lenses which will be found of definite assistance to the photographer. They can be obtained at all dealers in photographic supplies, or if your dealer does not have them in stock, the company is willing to furnish them direct, postpaid, for twelve cents each.

Roll-Film Development

The advantages of tank development of roll-films are too obvious to comment upon, and we will therefore confine our remarks to the chemical side of development.

We must confess to a wholesome respect for the pyro-soda developer. It gives that "bite" or resistance to the negatives, thus making it an easy matter to get good prints from them. By reducing or increasing the amount of sodium sulphite, the colour of the deposit can be altered, less sulphite giving the characteristic pyro deposit. For tank work it is not advisable

to considerably reduce the sulphite owing to the rapid oxidation of the pyro that takes place. There are several formulas to choose from, but we give below one that has proved satisfactory to us in our own work:

No. 1:

Pyrogallic acid	1 ounce
Sodium sulphite, crystals.....	2 ounces
Citric acid	40 grains
Water to.....	10 ounces

No. 2:

Sodium sulphite, crystals.....	8 ounces
Sodium carbonate, crystals....	8 ounces
Water to	80 ounces

To make a working developer that will fully develop a film in twenty-five minutes at sixty degrees Fahrenheit, take one-half ounce of No. 1 and four ounces of No. 2 and water to make forty ounces, adding twenty drops of a ten per cent solution of potassium bromide.

The temperature of the working developer must be correctly ascertained as it has an important bearing upon the time of development. For instance, if at sixty degrees Fahrenheit a film takes twenty-five minutes to develop, it would only take about sixteen minutes at seventy degrees Fahrenheit. The addition of metol is often recommended, but we do not find any increase in the shadow detail by its use.

An extremely useful developer for dish use, is Metol-Hydroquinone in which the alkali is caustic soda. This developer gives the greatest contrast and density it is possible to obtain. It is also very rapid and searching in action. An excellent M.-Q. developer for films is made up as follows:

No. 1:

Metol	90 grains
Sodium sulphite, crystals....	8 ounces
Hydroquinone	1 ounce
Potassium bromide	120 grains
Water to	80 ounces

No. 2:

Caustic soda sticks	2 ounces
Water	80 ounces

For use, take equal parts of Nos. 1. and 2, mix and add an equal bulk of water—Trade Notes.

SAN FRANCISCO
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CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA



ANSCO
5 x 7
PRINTING
MACHINE

Price: \$10

This Ansco Printer takes the bother out of printing. The amateur photographer who uses it gets more uniform results, more conveniently, and in shorter time. It makes printing sure and simple in any kind of room that has electric current. It is especially well adapted to the requirements of the commercial photo-finisher.

DETAILS: Takes negatives up to 5 x 7; has ruby glow and uses a standard 40-watt Mazda lamp as the printing light; lower window provides orange light for developing prints, and ruby safe light for developing plates and films.

Built with the same care for essential *rightness* that has made Ansco cameras famous.

Ansco Company

Binghamton, N. Y.

CAMERA CRAFT

A Photographic Monthly

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Wollensak World

PUBLISHED BY THE
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DEVOTED TO
LENS AND SHUTTER
INFORMATION

Vol. I

JANUARY, 1921

No. 1

SPECIALIZATION BRINGS QUALITY

Wollensak Optical Co. are
Specialists on Lenses
and Shutters

This is the age of the specialist. American industry has long since discovered that concentration of effort achieves the best results. Specialization brings success and fosters quality.

Specialization has helped the Wollensak Optical Company develop a line of photographic lenses and shutters of scientific and optical precision, a line that includes lenses for every purpose, a dozen types in focal lengths from 2" to 26".

It is well to insure satisfaction by having your lens and shutter needs supplied by a specialist.

COUNTERFEITERS EMPLOYED PHOTOGRAPHIC METHODS

Velostigmat Lens and Other Well Known
Photo Materials Used by Swindlers

WASHINGTON—Secret Service men recently rounded up a notorious gang of coiners, who had succeeded in flooding the East with spurious bank-notes. The counterfeit money was so cleverly made that it fooled even experienced bankers.

It is unfortunate that such a good lens as the Series I Velostigmat F:6.3 should have been used for such a corrupt purpose. It is, however, a striking testimonial to the sparkling definition of the Velostigmat, that the criminals succeeded in evading justice as long as they did.

VERITO SCORES AGAIN

In the December issue of *American Photography*, three out of four prize-winners used the Verito. This is not an unusual occurrence. It is typical. At a recent National Convention, the Verito captured seven out of fourteen Salon honors—as many as all other lenses combined. The Verito Soft-Focus Lens is consistently a "winner" where artistic quality is a consideration.

We don't recommend the Velostigmat for the uses mentioned above. But we do recommend it wherever sharp, crisp definition is desired.

Every Velostigmat is an anastigmat—*plus*. The Series I, F:6.3, is a triple-convertible for the commercial man; Series II, F:4.5, high-speed for Graflex or Studio; Series III, F:9.5, a fast wide-angle lens; Series IV, F:6.3, a popular-priced fast anastigmat for hand cameras.

Our catalog tells you more about them. Fill out the coupon at the bottom of the page and we will send a copy. No obligation, of course.

WOLLENSAK-ROCHESTER

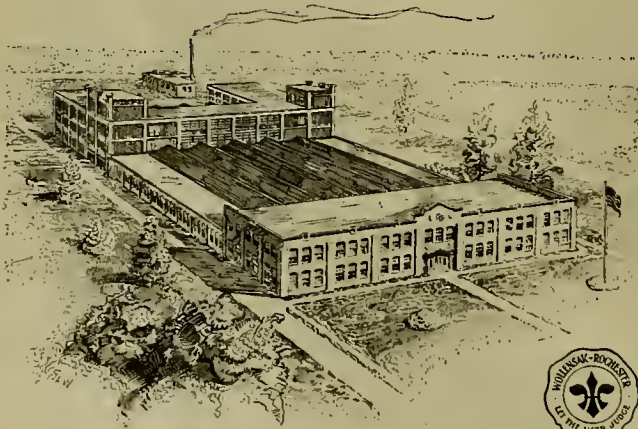
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- For Amateurs
 For Professionals

Name

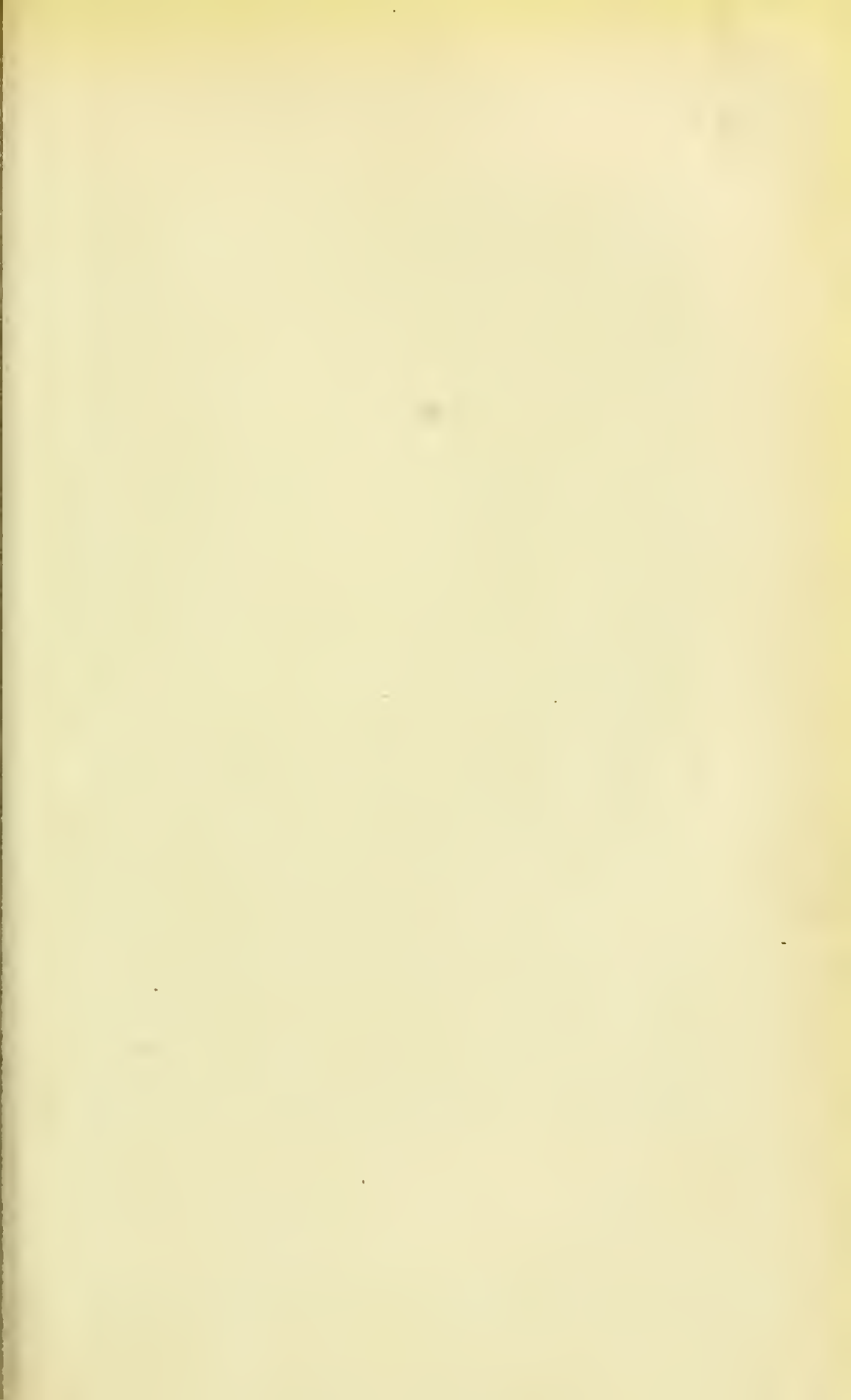
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This is the plant of the Wollensak Optical Company—the largest in the world devoted exclusively to the manufacture of photographic lenses and shutters. It has 80,000 sq. ft. floor space and ample accommodations for outdoor athletic activities of employees.

Please Mention Camera Craft when Corresponding with Advertisers.





"COOL, QUIET WATERS"
(Copyrighted)
By SAMUEL ADELSTEIN

Requiescat in Pace

Fayette J. Clute

Born September 15, 1865

Died January 28, 1921

TO one who knew him long and well is delegated the sad office of speaking those words of praise, those expressions of appreciation, which shall represent the thousands of friends—what they feel and would say for themselves—who learned to love the slow-spoken, approachable, and helpful man who can speak and write to them no more. It was through this magazine that he gained contact with the many who called him friend. CAMERA CRAFT was never a mere commercial proposition to Fayette J. Clute. Had it been so, it must have failed of its mission. It was, to the man who made it and upheld its place and standards, a matter of human interest, of love for his kind and those of kindred tastes. If, to some, Clute was only CAMERA CRAFT; to most, CAMERA CRAFT was only Clute.

So, he being gone away, CAMERA CRAFT remains as a monument himself erected. He builded well, and his work shall endure. We can but bring our occasional white roses to put upon the place that knew him, and then go on our way. But the magazine, in able hands, guided by sympathetic souls, shall continue as its erstwhile Editor meant it to go. Nothing shall be changed; every effort shall be made to cover the empty gap; and even the ownership continues, virtually the same. Two sons, for whom Friend Clute planned and worked, remain to keep the family name upon the door.

He has gone from us; and, in that he suffered greatly in the final incurable illness, it was better so. But he shall continue to live in many minds, in widely divergent places. What resting-place could man desire more noble than in the hearts of his fellowmen.

CAMERA

CRAFT



A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG.

SAN FRANCISCO

CALIFORNIA

VOL. XXVII

OCTOBER, 1920

No. 10

Commercial Slide Making

By David E. Ardley



It will probably interest the average lantern slide maker to have a peep behind the scenes of a commercial slide plant. Some readers may think this wholesale method of turning out the work would hardly produce good results, but the fact remains that the quality of the work is really excellent. Five hundred slides in a working day of eight hours, by one operator, will strike the novice as "going some." He may have visions of rush and hustle, but there certainly is no rush; it is all system.

The kind of slides in demand are used mostly for advertising purposes. They must be brilliant, that is, the blacks must be dense and the whites practically clear glass. These slides are invariably colored, and half-tones do not play so important a part in them, as that effect can be secured by color modification; enough modeling to give roundness seems to suffice. In many cases slides are made in outline only, and color is relied on wholly for the effect.

The first requisite is the drawing; this is made to scale and usually in water color, black and white. Some artists work in washes, but the majority mix white pigment with the black and secure their grays in that manner. When working with body color, it is an advantage to add a little light red to the black, so that the grey tones resulting from the mixture of white and black shall not have a bluish cast. The small quantity of red will produce a grey of a slightly warmer tone, and this will reproduce better.

Figures and other objects are invariably outlined boldly in the drawing; the reason for this is that it saves time in coloring, as hair lines are more difficult to color up to and the cost would be greater on account of lessened output on the painter's part. Drawings are made considerably

larger than the slide itself; this makes it easier for the artist and his work is considerably refined by the photographic reduction. Presuming the picture on the slide itself is to be two and a half inches square, the original design might be as large as sixteen inches square, but the artist bears this reduction in mind and draws for it.

In these advertising slides lettering plays an important part, and it is much to his advantage if the artist is a good letterer. Sometimes the entire design may consist of lettering and ornamental work surrounding a photographic or printed insert; and some designers also have recourse to relief work by modeling a part of the design in plasticine. Anything for variety, something to catch the eye, to arrest attention, appears to be the great idea.

The drawings, when completed, are turned over to the photographer; and, if they are not all of the same reduction, are bound to meet with some criticism, for it is a time-saver to make the one focusing answer for all copy; and this is done wherever possible.

The negatives now to be made are probably the most important part of actual slide making. They must be so good that they might be called perfect. As all the after work is purely mechanical, there can be no dodging in the printing. These negatives are uniform, or should be made so. It is time saved, which also means that it is cheaper to expose a second plate rather than to indulge in "doctoring" a faulty negative. But faulty negatives are rare, as the operator sees to it that his conditions are uniform; thus guess-work is eliminated.

The next in importance to the negative is the printing box. This consists of a simple home-made wooden box, oblong in shape, seven by nine inches end measurement, twenty-seven inches high, and supported on four short legs nine inches from the floor: The top of the box thus stands thirty-six inches high. The bottom of this box is closed light tight, and its upper end is made to take a piece of glass five by seven inches.

The box interior is provided with two electric lights. One, a white globe, fits into a socket in the center of the lower end; the other, a small ruby globe, is located to one side. The white light is operated by a treadle fixed under the printing box and on its left. This treadle actuates the switch which controls the light by making and breaking contact. The little ruby light burns continuously. Near the upper end, also on the inside of the box, cleats are fixed to support two plates of ground glass to diffuse the printing light; though, for average work—that is black and white slides—only one of them is used. The second ground glass is inserted when slides are printed from negatives possessing considerable half-tones, such as those reproducing photographs, especially portraits. The whole of the inside of the box is painted white.

A supporting or printing glass, five by seven inches, is provided for the top of the box; on this the negative is affixed in any convenient way. This may be accomplished with three small strips of lantern slide binding. On this supporting glass are permanently cemented two strips of wood three-quarters of an inch wide and a quarter of an inch thick, in the form of a

COMMERCIAL SLIDE MAKING

letter L; the length of these strips is to be the same as the two sides of a lantern plate, and they are intended as a guide to locate accurately and quickly the slide to be printed over the negative. This five by seven glass is dropped into its grooved position at the top of the box after it has had all its surface obscured with black paper excepting that portion occupied by the slide; this precaution prevents any white light escaping into the dark room.



GREEN BANKS AND WINDING WATER

By ALBERT E. DAVIES

The next necessary adjunct to the dark room besides its usual equipment is a plate box. This is an oblong box securely fixed to the wall and located close to the printing box. A convenient size for the plate box is thirty-six inches long by twelve inches deep front to back, and ten inches high. It should be provided with a light-tight lid hinged on the top edge with spring hinges; this lid closes over the front automatically.

We will now consider the making of the slides. The plates as received from the manufacturers come in lots of a hundred dozen to the case, which are packed in the usual cardboard boxes of two dozen plates to each box. The photographer will take twenty-one of these boxes to the dark room and with pocket knife cut the paper binding around each box, one after another. Then, taking the first box, he turns the whole two dozen plates into his left hand, and immediately rearranges the plates so that all the backs (the glass sides) are on top or uppermost. The plates are then shuffled, card fashion, to check up the pack, the ruby light being allowed to strike the

CAMERA CRAFT

plates at an angle so that the operator is sure that all plates face one way, that is, coated side downwards. This having been done, the plates are transferred to the wooden plate box on the wall, face inwards and to one end. This is repeated with the other twenty boxes. But, as each two dozen is added, a strip of paper or card separates it from its neighbor, to facilitate handling during the printing which now follows.

Printing is done in the following way. Two dozen plates are removed from the hinged box and are held in the left hand coated side to the palm; with the right hand the top plate is removed and placed over the negative, its exact position being assured by the two strips of wood cemented at right angles. There is no fiddling, no loss of time, the left foot presses the treadle, an exposure of three seconds is, or should be, ample. As a precaution a piece of black cardboard is placed on the back of the lantern plate and both are pressed down slightly upon the negative at the moment of printing. A small shelf close at hand holds the cardboard while changing plates.

The following is important: When the first plate is printed, it is placed at the bottom of the pack **face up**; all the rest of the plates after impression are put at the bottom **face down**, so that, on printing the twenty-third plate, we find the one face up on the top of the pack. This avoids the necessity of counting and is more accurate, as it sometimes happens—though not often—that a box of plates may be shy one, also occasionally there may be a plate too many. In either event, a plate would be lost by the counting method.

Five minutes will give ample time to print the two dozen plates. The reader will see that there is no hurry. These printed plates are returned to the box, but are stacked up at the opposite end. Were this method of printing pursued, the whole five hundred plates would be ready for development in one hour and three quarters. But the better way is to impress half the number of plates, and to continue printing the balance while the first lot is in the wash tank.

For developing, each two dozen plates is placed in a kit back to back, the kits being specially made to accommodate that number of plates. The developer is according to plate manufacturer's formula, though sometimes it is diluted for special reasons, such as slides with much half tone. There are two developing tanks each holding thirty-six ounces of developer. Into the first tank a kit of slides is lowered, and, two and a half minutes later, the second tank receives its slides. At the end of five minutes, plates in the first tank are ready, the kit is lifted out, rinsed in water, and the whole batch of slides, including kit, is transferred to the hypo. Another kit is put into the first tank of developer, and the kit of plates is removed from the second tank of developer, and so on, timing by the clock.

The plates are left in the acid hypo bath for fifteen minutes, again rinsed in clear water and each kit in turn is transferred to the washing box. This is nothing more than a wooden box with a false bottom raised about two inches, the kits standing on this false bottom with about an inch of water above the plates. The fresh water comes in at the top gently and

COMMERCIAL SLIDE MAKING

is drawn off at the bottom of the tank through a faucet. This faucet is regulated to empty the tank in ten minutes, and the washing time is twenty minutes. The washing may, of course, be extended if convenient, though it is not necessary. The reader's attention is drawn to the time given to thorough fixation. After the wash water, each plate is removed from its kit, rinsed, placed into a rack, and put before an electric fan to dry.


The operator is now free to finish the balance of his work, which is done in the same methodical way.



"WHAT DOES DADDY SEE IN HERE ANYWAY?"

By ALBERT E. DAVIES





Does Picture Making Pay?

By B. F. Loomis



An article in a recent number of *Camera Craft* suggests that some are giving up photography because they find it does not pay. Perhaps I can add a word on the subject, a few words describing my own position in the matter, perhaps present a point of view that these disgruntled ones have failed to find.

I have been making pictures for about twenty years. I started out with a 5x6 camera fitted with a single acromatic lens. This lens was shortly discarded for a rectilinear; and a year later this camera, lens and equipment went in exchange for a 6½x8½ camera with a D set of Bausch & Lomb Anastigmats, and then I felt that I was well equipped for all kinds of view work. All the money I have made in photography during these twenty years has been put back into photographic equipment, so that, looking at it from the financial point of view, I am not very much ahead as a result of my picture making.

But, my wife delights in oil paintings, my daughter enjoys tinting photographs, while I find pleasure in taking views and making enlargements. The greater part of our pleasure all these years has been with our pictures. One of my wife's paintings went to the World's Fair at San Francisco, my daughter's work has been highly complimented by worth while critics and my own views have at least enjoyed a good sale.

Living near the base of Mt. Lassen, when the volcano broke into eruption, quite naturally, I was "Johnny on the Spot" for some world pictures. Not because I knew any more about taking pictures than the next one, but Dame Fortune blew her smoke in my direction, and of course I could not help taking a whiff of it, and my volcano pictures circulated all over the world.

Later I erected a concrete block building in my home town and in it is located The Model Studio. Consequently all I have ever earned at making pictures has been put back into the business; and considered from the dollar standpoint only, I am nothing ahead. Of course I have never depended on only picture making for a living, that has always been indulged in simply as a side issue, just as is the case with those others who are dissatisfied because, as a hobby, it "does not pay."

'Does it pay to make pictures?'

Well, the question is incomplete without an understanding of what is meant by the word "pay." So I can only answer a fool according to his folly. I was once out selling photographs, or rather, trying to, and a lady explained as her reason for not buying, that "Pictures cost money, and you can't eat them."

DOES PICTURE MAKING PAY?

To this I replied: "Well, that's so; pictures are not worth a cent, except just to look at, and they cost money, too. But listen, if you will go about among your neighbors and divide them into people who have pictures on their walls, and those who have not, and then tell me which class is prosperous and happy and which class you would prefer as friends and acquaintances, I think you will see the matter in a different light.

The question needed no further argument, and in this instance my logic was accepted. This lady's family now have a beautiful home with pictures on the walls, and they also have plenty of money.

Right here allow me to give you an aphorism which would well be posted in flaming letters to take the place of some of these sign boards advertising the pesky cigarettes: "Environment Makes the Man, as Much as Man Makes the Environment." And I mean by this that, if you put a man in a beautiful and comfortable home and leave him there for ten years, he will be a very different man from what he would be were he put into a tumble down shanty and made to remain there for a like period. In the former case, he will grow to like nice surroundings, to looke nice himself; while in the tumble down shanty he will drift into a pair of overalls and an old pipe, just as easy as sliding down hill. And, what is the difference in the price? Simply our attitude toward life. No one works harder than the poor man, but his work does not always tend to make life enjoyable. As long as he is contented with a mere existence he will never have anything else. Continual striving upward and looking for better things, is the keynote of success.



THE MAGNIFYING GLASS

By F. K. CRUM

CAMERA CRAFT

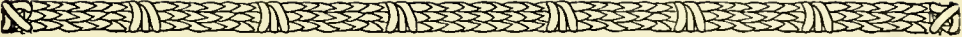
But does it pay to make pictures?

The cultivation of our artistic talents sharpens our wits, and increases our desires, and in that condition we are more sensitive to making possibilities than are our less alert fellows. Those who live in beautiful homes and have pictures on their walls, spend their evenings in reading good books, and in learning or planning how to make the most out of life; while those who live in tumble down shanties spend their evenings in smoking an old pipe, playing cards, or fumbling an old fiddle. In most cases, at least, these last are not looking beyond their present environment. Therefore, one important rule of success is to look upward and cultivate the best there is within yourself. Do this and success is bound to follow.

Yes, it pays to make pictures, and good pictures at that. One may not make anything out of his pictures, directly, but he is making something of himself. Cultivate the artistic talent; desire the best things of life. Look upward and far ahead. In this sense, if no other, it pays to make pictures.



HOLLYHOCK-SENTINEL OF THE GARDEN By ALBERT E. DAVIES



Advertising by Photographic Means

By Edgar Felloes



Here are possibilities of an advertising nature, by means of photography, which appear to have been overlooked. I refer to the show-card, to be met with in practically all our store windows. There is a well established trade in show-card writing; the large business houses have a department set apart for this purpose, proving the recognized importance of these cards as an aid to business.

Show-cards need not be large; they should be attractive; they must be clean. A card sign is easily soiled, soon loses its freshness, and the annual bill is a serious item to most stores. It is true that cards are often needed for the announcement of special sales; but it is also true that an enormous number of cards take a stock form. For instance: "Novelties for this Season," "Our Eastern Offerings," "Repairing Our Specialty," and many others. An interested reader has only to visit a library and look over books on the subject of Card and Sign Writing to glean many ideas that would be useful; and many of these works give title suggestions with hints on make-up. Besides this, the store windows will help, and one sometimes runs across some neat expression, some catchy phrase. I made a note of the following in a bank ad. recently: "We take more interest in you than from you."

Now the Photographer, on account of ease in reproduction, can make and offer something that will be acceptable novel, and at a reasonable price. Profit accrues to him in multiplication and in judicious distribution; and a simple change in "get up" will disarm criticism of repetition. His also is the advantage of easily incorporating decorative effect in his work, which would at once lift it into a class by itself; and his lettering, providing it was properly spaced and balanced, would, on reduction, have a finish not to be improved upon.

These cards **must** be attractive and clean. Perhaps glass is the easiest thing to keep really clean; so I propose to speak of "glass cards;" and, as to attractiveness, color will help much, and this will not be so formidable an undertaking as some might imagine. The size may be from 11x14 to 5x7, but some businesses can effectively use something as small as a lantern plate. Novelty and refinement will count more than size.

Lettering is naturally the most important part of these designs—we will consider that first. Though very desirable, an ability to letter well is not an absolute essential, but the appreciation of balance and spacing is. If, for instance, we letter for a reduction of six or eight times and copy, the negative will show a fine finished effect by reducing irregularities to a negligible degree, but no amount of reduction will correct faulty spacing.

Card writers invariably letter with a brush; it gives more freedom of

handling than anything else; but it requires considerable practice. Those who have had no experience would probably prefer something firmer, like crayon, finding it less difficult to manipulate; and, in the line of crayon, the soft lithographic kind would be found the most useful. For small letters, use a pen and drawing ink; but one should not forget the reduction for, with the diminished size of a letter, its thickness is also reduced.

Presuming that the worker has a sheet of paper or cardboard fastened to his drawing board, and with the aid of a T square has lined up the lettering space, he should lightly sketch in with pencil the wording of his advertisement, just as it is intended to appear. The T square should now be moved to the top edge of the board with its blade downwards. Then, working from right to left, with the crayon shaved to a flat surface at the point, he should draw in all the perpendicular lines in each letter. The natural width of the crayon will supply the full width of many of the letters, and they will not vary. Shave the crayon at the sides for narrow letters. The curves and loops should be made in freehand after the perpendicular lines are done.

For those who might find this difficult, there is the stencil. With an assortment of stencil plates, one can easily put in the lettering, and later, with a pen, fill up the white spaces left by the "ties." Furthermore, these letters could be improved by adding "spurs" to them. Naturally, these expedients are not equal to free lettering with a brush; but, if neatness is used, one can "put over" this class of work.

If decoration is to be a part of the work, this can generally be added in the form of photographs. An easy way of doing this is by means of a bromide enlargement touched up, and the lettering in the form of a panel is laid upon the photo and the whole copied.

I will now describe a modified method which may be used to great advantage at times. With it we get results not to be obtained by other means. Take a sheet of glass, lay it on top of our design, and do the lettering in white paint upon it. When dry, turn the glass over and lay it face down upon lace, plush, cretonne, or any figured material, and copy. The plate resulting therefrom is to be used direct; the method to be explained later.

Still another means is to coat the glass with pigment and to remove the pigment where necessary. This is done in the following way: Procure at a paint store a bottle of light red, and also ivory black ground in water. These pigments must be free from glue or other adhesive. With a palette knife, take of each pigment equal portions and thoroughly mix on a slab. Now add a drop or two of gum water and, with a wide soft brush, spread a little thinly on glass and let it dry. The mixture being dry, test it. What we need is a coating of pigment that may be easily scratched but not smeared. If the pigment adheres strongly to the glass, too much adhesive has been used. Remedy: add pigment and water only. If the paint is dislodged by the touch of a finger, add adhesive. If inclined to be brittle, thus giving rough edges to the lines, add a trace of glycerine or molasses.

ADVERTISING BY PHOTOGRAPHIC MEANS

Our pigment having been mixed satisfactorily, proceed, with the brush, to coat the sheet of glass as smoothly as possible. It is not necessary that the glass should have an absolutely opaque coating, but it should be fairly dense. Having prepared our rough sketch on paper, we proceed to transfer the design by means of blue manifold paper upon the painted ground. If we use stencil, select the suitable letters and, with a stiff nail brush, brush out the dry color exposed in each letter. Next, with a penknife or a hard stick



pointed, remove the ties and embellish the letters as before described. Borders and lines are easily added by using the stick cut sharp at one end and flattened at the other; either end is then available for use as requirements suggest.

I pointed out the availability of stock designs for this class of work, but the reader will realize that he can greatly increase his sales by incor-

porating something of a special nature to meet the requirements of certain customers. We can, if we wish, remove certain parts of our design, or words may be changed by simply scratching out or removing the pigment; then we paint over that particular portion and proceed as before with our addition. To avoid confusion we will call this our negative plate, and a copy of it in the camera will be our positive, which is on a reduced scale. Were we to select black cardboard and make our designs in white paint, we would have a similar result by providing ourselves with a negative drawing. Either of these ways is good, and by using them we save ourselves the cost of a plate. There are two methods of producing our positive plate. If we select the black cardboard method, we must reverse our glass plate in the holder, that is, we must have the glass side of our plate facing or turned to the lens. This, on development, will give us a reversed positive, which is what we need. If, on the other hand, we use the darkened glass plate, we reverse the glass itself and copy with the film side of our photographic plate to the lens.

In copying the drawing on glass, a good way to proceed is to hang a white sheet before a window and stand the glass plate between it and the camera. The exposure would naturally be shorter than copying from the black and white drawing; for in one we have letters of white paint, and in the other our design shows in white light. Careful and even illumination in all cases is essential.

I presume it is not necessary to speak of the actual photographic work, as the reader is supposed to be familiar with that part of the undertaking; but, in these days of ultra rapid plates and short exposures, a word of caution is not out of place. In making your exposures, give plenty of time. We need bright effects; your blacks must be honest blacks, never dark gray. We must have the exposure long enough to enable the light to act well down into the film. Do not try forcing with developer on an undertimed plate; we cannot possibly get good blacks that way, and our lights are dulled. Use slow landscape plates where halftones are included in the subject; by which I mean, where there are photographic inserts. For line work alone, select a process plate—it is easy to manipulate. Lastly, for this kind of work I prefer hydroquinone developer to any other; it gives beautiful blacks and is cheap.

Having made our positive plate, we should apply color to the film side, and this should be painted in body pigment. We do not use stain or dyes, as the plate is not to serve as a transparency, but has later to be backed with cardboard to which it is bound by applying gummed tape around the edges. Any of the oil colors are suitable and, if too stiff, may be thinned by adding a little turpentine and mastic varnish. When we wish a pale or light tint, add white to it; or we can, if we choose, paint the color very thinly and when it is quite dry apply a coat of white over that tint. This involves two processes and, as a general practice, should be avoided, as it increases labor and consequent cost. This coloring is very simple; just put the color where it is wanted, the photograph takes care of the drawing.

ADVERTISING BY PHOTOGRAPHIC MEANS

From time to time examine the glass side of your plate, where the picture should show brilliantly; while on the film side the design will be all but obliterated by our applied colors. The reader will now appreciate the reason for reversing the positive when making it, as we have to see the picture through the glass. Errors in painting are easily rectified while the pigment is wet: we need only apply a rag damp with turpentine. This solvent will not injure the gelatine film.

We must remember that color plays a very important part in these "glass show cards." Were one versed in the laws of color, little more need be said; but the general reader is not likely to be familiar with this study. What he needs is some knowledge that can be used at once. Color combinations lie around us everywhere, and the more we search the more we find. Whenever we recognize some combination as particularly attractive, we should make a note of it, or become possessed of the object showing it.

When I was a youngster, it was a joy to me to visit an artist friend's studio. One day, I noticed on his table a twig broken from a dead branch and clinging to it was a little tuft of dead lichen of a silvery blue color, and a little way from this was a very small patch of dried moss of an orange hue. The twig itself was brown, the bark had shrunk, it was just a dried stick. I admired it, the whole seemed so beautiful in its color combination. I asked my friend what he intended to do with this twig. He turned to a portfolio and, while unfastening the strings, his eyes rested on me and seemed to say, "You are going to have a little light let into your darkened soul." My friend brought out a design he had finished for wallpaper, it was an "all over" pattern of leaves, berries and branches. The leaves were silvery blue, the branches a shade of brown, and the berries carried flicks of orange; the background seemed to be a mixture of orange and brown, but quite pale. I have never forgotten that lesson, it was so practical.

The following is a good way of finding suggestions for a variety of color combinations. Look in the color prints that appear so frequently in our leading magazines. At times, some of these magazines, such as the Ladies' Home Journal, publish colored designs of book covers, lamp shades, and a host of little articles suitable for presents; the color combinations of some of these are beautiful and may easily be adapted to our purpose. In the pictures, hunt in the backgrounds and other portions for little bits of color combinations. Some of these are apparently quite accidental, but they may serve the purpose of our show cards admirably. Oriental rugs, birds' feathers, flowers and leaves—out of an endless variety let us choose the most striking.

Nor should we forget the use of bronze powders; these are particularly suitable in conjunction with colors in conventional designs, though we are all familiar with their use in Japanese lacquer work, where the decorative treatment closely follows Nature's lines. This will doubtless suggest the idea of designs in black, bright red, and gold bronze. The black is provided


by the photograph itself; we then apply the bronze powder, and lastly the color is selected.

The subject of "make up" will now need a little consideration, as it will explain the further handling of these plates. We contemplate, let us say, the making up of a stock design, and have decided on "Repairing Our Specialty," to be on an 8x10 plate. Further, we have decided to make it by what I will call the negative method on board. We would set about it in this way: Procure a sheet of black cardboard, not less than sixteen inches wide by twenty inches long. On this we put our title in white paint in a black panel bordered by white lines. Our panel will be, say, 10x14 inches, placed to the right side and nearer the top than the base of our board. We have decided to use this advertisement for watchmakers, furniture dealers, and shoemakers; in fact, we propose to try to place one of these glass cards in the window of every store where they do repairing. It is easy to photograph a watch or a clock or both, to introduce as decoration. This applies also to suitable decoration for the other lines of business; and such pictures are placed in the margin of our design in the following way: From the original negative we make a contact transparency; from this transparency we make—either by contact or enlargement—a negative print, and this negative print is placed in position in our negative drawing and copied in the camera down to 8x10. We now have a positive direct, and available for our purpose, if we did not overlook reversing it. It will be clear that the same drawing is suitable for various businesses by changing borders; and we should also change our color schemes on these same designs so as to introduce variety.

The very great advantage of these negative drawings is that we are enabled to make positives of various sizes from the same drawing, whereby we save in cost of labor and material.

All these glass advertisements should be bound in a stout cardboard backing, and the name, address and phone number of the maker should be placed on the back, with stamp or printed label.





Some Camera Comics

By Cobb X. Shinn



Illustrations by the Author

One of the most interesting and amusing things you can try with a camera is making insect comics. There is nothing mysterious or even hard about it; all you need is patience, and you can make them just as good as these.

First of all, get your actors, or models, to pose for you. Now, don't think there is some way to train grasshoppers, turtles and crawdads, because, if there was, some fellow would have a circus of them, traveling around the country, the same as a flea circus. You must give them a dose of chloroform: Just put a little on some cotton and hold it under your actor's nose and he will say, "Night tee night." You must have your stage all set, if you don't, Mr. Actor will soon come back to life with one big kick, and over goes your scenery.

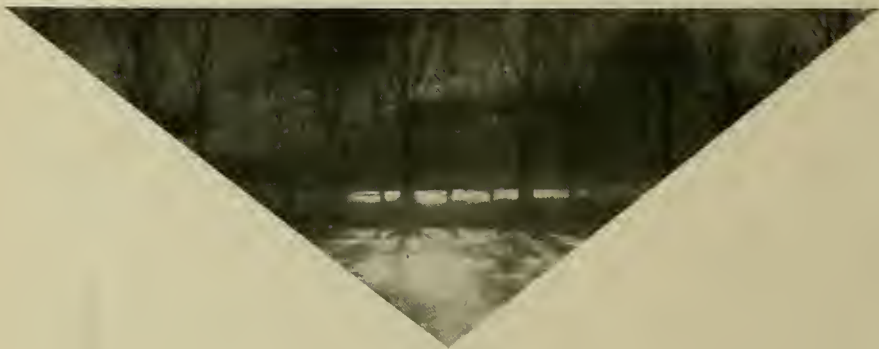
For scenery, make little drawings on card-board with pen and ink, and in the foreground use bits of moss and small sticks for logs, like the crawdad is sitting on. The main thing is to get all in proportion; the book the crawdad is reading is only one and a half-inches long. The turtle which the grasshopper is driving, is two inches long, while the grasshopper is just an ordinary grasshopper. You may have trouble in getting the grasshopper to sit up this way, but all you have to do is take a wire and bend it and put it along the off side of your model, so it does not show in the picture.

These pictures were made indoors by electric lights. It would be out of the question to photograph them outside, because, if a puff of wind should come along, over goes your whole show. I have also made them by a north window and find this light excellent, it is even, and no direct sunlight casts shadows on your background. When doing this close-up work, you will find on your ground glass that all the planes of your picture are not in focus and you cannot get them in focus. The reason for this is, that you are not making them in actual size, but you are enlarging them, so the best thing to do is to focus on something about the center of your composition and then stop down to the smallest stop on the diaphragm; this will make your picture sharp all over, but you will have to give it a longer exposure. By a good north light in August, I found that thirty seconds was the time on an ordinary film.

After making the prints, you may find that the background is not just as you want it, but it doesn't require much time or skill, with a little Chinese white and ivory black, to draw in a suitable background; but it requires the making of a new copy.



Somebody asked me one day why I made these things and to be honest I said, "I don't know." First of all I wanted to do something different, and I worked upon it as a hobby and not for commercial reasons, but I found out that it would pay me well from a commercial standpoint. The "Grasshopper and Tobacco Worm" won me \$10 in a camera contest in the Washington Post. The Red Cross used the "Turtle and the Grasshopper" as a cover design on a booklet which they put out for the amusement of the wounded soldiers in the hospitals. A farm paper used the whole four illustrating a humorous article. So, I have been well paid for my time and trouble, to say nothing of the fun I go out of it.



PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

AVOIDING RETOUCHING — Reading your excellent magazine regularly, I have observed that new methods and utilities pertaining to photography are always accorded space and attention. I am therefore taking the liberty of recommending something that has been of great benefit to me in my capacity as a professional photographer. For many years I have catered to the exclusive, and I may say all-too-exacting patrons of Fifth Avenue, New York. This class of work demands a constant search for new effects, even to the bizarre, in modeling, posing and the like, in order that the whims of my clientel be satisfied. Retouching, of late years, has been so overdone that many of the resultant prints look like portraits of wax figures; time, trouble and effort being expended in the production of inferior portraits. There is, however, a device on the market that puts a check on the over-zealous retoucher, namely, the Artograph Screen made by the Artograph Screen Company, 500 Fifth Avenue, New York City. It is a flexible process screen to be used in printing from the negative, a negative that has received only proof retouching, resulting in a soft, clean print without further trouble. I have been using one for some time and I think that upon examining the sample prints I am sending, you will concur in my opinion that the results are soft and pleasing. For amateurs who are desirous of making portraits, yet lack skill in retouching, one of these screens should be just the thing.—W. B. S., New York.

A VALUABLE CEMENT — A cement that will mend wood, stone, china, glass and the like, one that will harden under water and resist the action of salt water, is made as follows:

Litharge	4 ounces
Plaster of paris	4 ounces
White sand, very fine	4 ounces
Rosin, powdered fine	1/2 ounce

Less than twelve hours before use, these ingredients should be mixed together with enough boiled linseed oil to make at not too thick putty. Mix the ingredients by measure and if possible, delay subjecting the adhering surfaces to water for two or three days to enable the glue to set.—W. E. R., Ohio.

DRYING NEGATIVES WITH ALCOHOL — An immersion in alcohol after surface drying with a lintless blotter or cloth, makes the drying of a negative a matter of but a few minutes, the bath expelling the water and hardening the film. To remove the accumulated water from the alcohol and render it again suitable for use, dissolve about one hundred grams of dry

carbonate of potassium in every hundred cubic centimeters of the alcohol, the salt absorbing the water while being insoluble in the latter which will separate and remain on top where it can be poured off. The carbonate can be dried and used over and over; in fact, even fairly dry carbonate should be heated in a metal dish before use in order to drive off as much moisture as possible.—C. B., New York.

TO MEND CELLULOID — I have found a formula in an old issue of "Amateur Photography" of London that is excellent for this purpose. It is composed of two parts of shellac, three parts of spirits of camphor and four parts or more of strong alcohol. The shellac should be dissolved in a warm place and kept well corked. This glue is not only excellent for mending celluloid articles but for attaching wood, metal and the like to that substance.—A. S. D., Florida.

Art is not nature, nor can it equal nature. Fine Art, says Ruskin, is that in which the hand, the head, and the heart of man go together. Great Art is nothing else than the type of strong and noble life. All great art is delicate. Greatness in art is that which conveys to the mind of the spectator the greatest number of the greatest ideas. Power in art is the doing of much with restricted means.—Platt.

An abundance of one thing in one place, as of lights or darks or colors, and is always indicative of a master. When the lights are massed, the darks must be massed to support them. While there must be no emptiness, there must be no evident detail. There are details that are essential, and there are details that are not essential. The breadth of the forearm of Michael Angelo's Moses is destroyed by the anatomical details. Haydon says, "There is no doubt that breadth without detail proves more comprehensive than detail without breadth; but it is not a balance of evils we seek, but a principle of perfection." To secure breadth a principal part must be made predominant, and parts that are secondary must be kept in due subordination, and thus detail in its technical sense is opposed to breadth.—Platt.

All second-rate artists will tell you that the object of fine art is not resemblance, but some kind of abstraction more refined than reality. But the object of the great Resemblant Arts is, and always has been, to resemble as closely as possible. It is the function of a good portrait to set the man before you in habit as he lived. It is the function of good landscape to set the scene before you in its reality, to make you, if it may be, think the clouds are flying and the streams foaming. It is the function of the best sculptor—the true Daedalus—to make stillness look like breathing, and marble look like flesh.—Ruskin.

CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

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No. 10

On the Selling of Our Pictures

We are constantly receiving inquiries on the subject of our title; we quote from a recent letter:

"For some time I have been trying to sell some of my landscape pictures to publishers of magazines, but have never been able to get good prices for them. In every instance, however, they were small pictures; not larger than 4x5. Can you tell me what size pictures are most desirable and, whether or not, it is best to enlarge the pictures in case negatives are small, provided the negative is sharp enough to admit of it?"

Before we consider the get-up of our pictures, as to size, as to glossy or matt surface, or any point of a technical nature, let us ask ourselves "in cold blood" what merit our picture really has. If our best reply is—"It is pretty!"—let us pause and think a while before we spend another cent on it. Pictures that are pretty are not uncommon by any means. Our pictures must be more than pretty, they must be striking to get across, there is little or no money in them otherwise, the reason; there are so many of them. We are not now considering photographs of a scientific or technical nature which serve a special purpose, but simply pictures.

When an editor buys Mss. he desires a real good story or live news, in either case it is the story he is looking for. Many photographs, especially landscapes tell no story. If we wish to cater to the illustrated press with our pictures, they must have this story telling quality, if we hope for a high average of success. Elsewhere, in this magazine are two articles by different authors, they help make this point clear. Photographs to have a value do not necessarily have to be of any particular size, a fairly large size is desirable for convenience. If an engraving is to be made, by half-tone or any other photo process, the enlarged print can easily be reduced to whatever size is desirable for the printed page. A photo 4x5 inches is not too small for a magazine page, though for a newspaper an enlargement of that size is desirable, and if it should be a landscape, made prominent by a recent happening, its size may be profitably increased. Glossy paper prints are generally preferred because this surface makes the most of detail, but a first-class matt print with sufficient detail is equally satisfactory. It would be a good plan when submitting prints of 4x5, or similar size, to advise the editor you would supply enlargement of any print selected, if required. It would only increase our disappointment to have our work rejected after going to the extra expense of enlarging. If, on the other hand we were submitting a photograph destined for a particular space, a cover

design, for example, it would pay in that case to use an enlargement, as the editor could more easily determine the effectiveness of the subject.

There is undoubtedly a large and increasing demand for photographs of an illustrative nature and it will invariably be found that those who supply them, specialize, and within narrow limits at that. Animals are popular; no one could guess the number of cat pictures that find their way to the market. Any photographer having a good "story telling" cat negative has money within sight, but it takes time and patience and knack. Dogs do not appear to have been so successful, though doubtless some clever photographer and dog lover with imagination, will some day break in and make a "clean up." We are all familiar with the photographs of "the only dog," but that is in a class similar to "the only child;" it won't do, the picture must contain the story. Pictures of children also, are good for ever, if the pictures meet the same conditions. Any one can understand the exacting nature of this line of work, and it takes enthusiasm to get away with it.

Here are some stories: It was a professional photographer who started the run on cats; it was an accident. The portrait business was slow and the man noticing his neighbor's cat and kittens, exposed a plate on them; in due time, a print from this negative appeared in the show case, and nothing was expected of it beyond a hope that it would attract attention to the general exhibit. In a few days the fun (?) began. The neighborhood being an attractive holiday resort, was patronized by many visitors; the cat pictures sold like the proverbial hot cakes. This experience called for more cat pictures—the man bred cats, he stole cats, and was forever hunting cats with his camera. This man gave up his portrait business, cats paid better; he specialized, he could not help it, there were cats everywhere, in the developer, in the hypo and even swimming around in the wash water. Our hero dreamt cats and as he was too busy to shave his whiskers——! But enough, don't forget the story in your pictures!

Now the babies: Some years ago a friend made two cabinet pictures of Indian babies, they were wonderful sellers. These papooses first came on the market as platinum prints, the negatives were duplicated in the usual way and in a short while the dollars came, but platinum was too slow. Then the babies came by the Velose route, and the reader can imagine they were turned out pretty lively, but this is not all; some Easterner publisher later secured the rights and turned out these babies in halftone by the thousands. Our friend had had enough; we never learned just what those two original negatives brought him, but we believe they must have made a wonderful record.

Another friend, this time a lady, illustrated a book of verses for a well known publisher, her negatives were made on $6\frac{1}{2} \times 8\frac{1}{2}$ plates, there were ten of them, and she told this writer her remuneration was \$1,000 and, still better, the excellence of this work was the means of securing another commission. The pictures above referred to, were reproduced on a smaller scale. Does photography pay? This is a question as old as photography.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

The Application of the Watkins Factorial Principle to the Development of Photographic Plates and Papers.

The Watkins factorial method of development is so well known that it requires but a brief introduction. It is based upon the principle that the time of the first appearance of the image is a fixed proportion of the total time of development required for any given degree of contrast. Every developer possesses an appropriate range of multiplying factors. It is claimed that the factor remains constant over a considerable range of temperature and is unaltered by small variations in the usual developer constituents, and is, moreover, not different for different makes of plate. Experimental work by Mees and Wratten* confirmed these conclusions in general. There is no reason why the factorial method of development should not be applied to the production of a finished image on any photographic material in which a latent image is produced by exposure and the application of developer is required to render it visible. The paragraphs which follow will discuss the advantages and disadvantages of this method in reference to ordinary negative work, bromide prints, gaslight prints, lantern slides and the making of copy negatives and positives either by contact printing or enlargement.

Ordinary Negative Work

There have been two chief objections to the factorial method of development when applied to ordinary negative work:—

- (a) The danger of fog.
- (b) The variation in the time of first appearance of the image caused by variation in the exposure given to the plate.

The first objection is based upon the assumption that it is not possible to obtain a dark-room light sufficiently bright to

* "B. J.," July 26, 1907, Variations in the Watkins Factor.

time the image appearance accurately and yet so safe that the plate will not fog. This is undoubtedly true in the case of panchromatic plates, and a light which is safe for them is too feeble to enable the appearance of the image to be accurately timed.

It is not true, however, for orthochromatic plates and ordinary plates. Using a safelight made with rose bengal and naphthol yellow, illuminated indirectly by a twenty-watt 230-volt metallic filament lamp, giving sufficient light at a distance of two metres to render the plate plainly visible, the following degrees of safety were obtained upon three representative plates:

Plate	Rose Bengal Safelight at two metres distance from plate.	
	Exposure required to produce appreciable fog upon full development.	Exposure which avoided any appreciable fog upon full development.
Wratten Allochrome...	4 minutes	2 minutes
Wellington Anti-screen	8 minutes	4 minutes
Wellington Xtra Speedy	16 minutes	8 minutes

It is apparent that, provided that the preliminary inspection period of the plate does not exceed two minutes, and in practice it seldom exceeds half a minute, perfect freedom from fog is obtainable with this screen. Messrs. Kodak (Wratten Division) and other firms can supply safelights of brightness and safety equal to the one used in this experiment.

The second objection, namely, that the time of first appearance varies with the amount of exposure given, is much more serious. The following times of first appearance of the image were obtained upon a series of Wellington anti-screen plates, given different exposures. The exposure figures given are efficient exposures and are relatively, if not absolutely accurate:

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Wellington Anti-screen Plate	A	B	C	D
Exposure in fractions of a second.....	1/100	1/45	1/25	1/10
Time of first appearance of the image in seconds	25	22	20	18

The minimum correct exposure, calculated by meter, was one-forty-fifth second. The subject was a short-scale open landscape of range well within that of the plate. Plate A was under-exposed; plates B, C and D were all exposed within the range of correct exposure. Upon development for the same total time, plates B, C and D yielded identical prints so far as contrast is concerned. The total time of development required by any plate to reach a definite degree of contrast is independent of the exposure given within the range of correct exposure. If the same factor were employed for the development of plates B, C, D, plate B would have been developed for a longer time than plate D, and similar degrees of contrast would not have been attained. For the factorial method to yield a time of total development independent of the exposure given, a different factor would be required for each exposure according to whether the exposure were meagre or full. It is impossible either to guarantee equivalent exposures for every plate in ordinary work or to know by how much the exposures given vary from the minimum normal.

It would appear, therefore, to be a sound criticism of the factorial method applied to ordinary negative work that it does not enable the worker to calculate the total time of development with unflinching precision and that the cause of variation is chiefly the inability of the photographer to give equivalent exposures to successive plates from day to day, no matter how carefully the exposures are calculated. It is an unfortunate fact that the advocates of the factorial method of development have almost entirely confined their attention to its use in connection with the production of negatives exposed upon outdoor subjects or any subject illuminated by light of a fluctuating value. It is the type of work to which it is least suited.

There is another class of negative work, however, which does permit of exposure

without violent fluctuations, namely, negative making by artificial light. Portraiture and copying are two prominent examples. Provided that the photographer knows how to count real seconds, and provided that the lens aperture is not altered without making proper allowance, there remain only two variables which cause difficulty in exposure. One is the possibility of some variation in the strength of the artificial light, and the other is the probability that successive batches of the same make of plate turn out to be of different exposure speeds, in spite of the assurance on the box to the contrary. Whereas at first sight the possible difficulty introduced by these two variables may be insuperable, there is a test of the constancy or otherwise of exposure. Provided that successive plates are developed to the same degree, then their density is a measure of the exposure given. The greater the exposure, the greater the density; the less the exposure, the less the density. Density is not a criterion of exposure except in plates developed to the same degree. This statement, namely, that density is a measure of exposure upon two plates developed to the same degree, has often been made before, and has almost always been misinterpreted. Two plates out of the same batch are probably, but not necessarily, developed to the same degree when they are developed under the same conditions for the same time. Two plates of the same make, but of different batches, are practically never developed to the same degree when they are similarly developed for the same time. Two plates of different make or different names are also never (except by chance) developed to the same degree when developed for the same time. Every batch of every plate possesses its own rate of development, and densities only become a measure of exposure when these different rates of development are allowed for.

It is suggested that in this artificial light work there is a great opportunity for employing the Watkins factorial method of development in order to keep the degree of development constant. The time of first appearance of an image made by constant exposure expresses the rate at which development is proceeding. Working to the same Watkins factor, and attaining thereby

A PHOTOGRAPHIC DIGEST

a constant degree of development, then the densities of the finished negatives are an indication of the equality of the exposures. As soon as the photographer succeeds in turning out negatives by factorial development which are of equal density, he may be satisfied that his exposures are even and that he is making proper allowances for any variations in light and plate speed. And as soon as equal densities upon successive plates are attained—an indication of even exposures—then factorial development at once becomes accurate, and is no longer upset by variations in exposure so common in outdoor work. It is suggested that a useful factor for copying is three-fifths the factor given by Watkins for ordinary landscape work; and for portraiture, about half the ordinary landscape factor. But I must again definitely warn photographers that the statement that density is a measure of exposure is not true when development is conducted by inspection or any other method which does not ensure development of the successive plates to a fixed degree. It is possible to make an under-exposed plate extremely dense by prolonging development, and the same plate over-exposed will present a thin image if it is under-developed. But if these two plates are equally developed—and the factorial method is a means of obtaining equal development—then the under-exposed plate is thin and the over-exposed plate is dense, and the statement that density is a measure of exposure becomes true.

The application of these principles in the manner suggested enables artificial-light negatives to be developed with a degree of precision considerably greater than that of any method of inspection.

Bromide Paper Prints

Before discussing the desirability or necessity of applying a mechanical method of development to bromide paper, it is necessary to consider a few points. It is admitted that the time of development of photographic plates is important, because the contrast of the negative (the printing quality) is entirely dependent upon the degree of development. It is also admitted that there are numerous factors in the case of plates which alter the time of development necessary to attain a definite

degree of contrast. These factors are:

- (a) The temperature of the developer;
- (b) The nature of the developing agent;
- (c) The strength and composition of the developer;
- (d) The make of plate and the variety of each make;
- (e) The particular batch of each variety of plate.

A very large number of practical photographers and the majority of photographic experimenters (if not all) are of the opinion that in order to get the best possible print on bromide paper it should be developed to "finality." It would be more accurate to describe this degree of development as the one which attained the maximum contrast of the paper. For reasons already given in the "B. J."† the maximum contrast of the paper is attained after a certain length of time of development produces no increase in contrast but only increases in depth. Whereas in the case of plates we wish to stop development short of that which will give the maximum contrast of the plate, and we employ time as an aid to judgment as to when to stop, so, in the case of papers, do we require a guide of some description as to when the stage of maximum contrast has been attained if papers should prove to be as susceptible to variation and as variable amongst themselves as plates are known to be. I submit that papers do vary in their speed of development as much as do plates, and that the list of causes of variation in time of development from (a) to (e), given above in the case of plates, is equally applicable to papers. In the article in the "B. J.," already referred to, it was shown that bromide paper developed very slowly in cold developer and very quickly in hot. A piece of Kodak paper which required one and a fourth minutes' development at 80 deg. F. required eleven and a fourth minutes at 40 deg. F. to reach the same degree of development. An alteration in the amount of potassium bromide in the developer (either purposely added or created during development by passing prints successively through the same dish of developer) makes a great

† Experiments with Bromide and Gaslight Papers. "B. J.," March 5, 12 and 19, 1920.

difference in the time of development. Amidol developer containing .02 per cent potassium bromide is twice as fast a developer as amidol containing .2 per cent potassium bromide. The Kodak amidol formula is twice as quick as the Wellington amidol formula for the same reason. The strength of the developer alters the time of development of bromide paper to an extent within the experience of every practical photographer. The make and variety of bromide paper exercise just as marked an influence upon the time of development required as does the make and variety of plate. I have found a certain batch of Criterion extra hard bromide paper develop 2.7 times as quickly as a batch of Criterion ordinary bromide paper. With the former, a development time of one minute was exactly equivalent to two minutes forty-three seconds in the case of the latter, and the same multiples of these times with their respective papers just yielded the maximum contrast of the paper. I have found a batch of Kodak Permanent Bromide Paper develop at exactly twice the speed of a batch of Kodak Velvet Bromide Paper. It is abundantly evident that papers are as variable in their development speeds as are plates. It must be obvious therefore that whatever method of development of bromide paper be advocated it must be capable of indicating to the photographer at what rate the development process is taking place.

There are two methods available:—

- (a) Development by inspection;
- (b) Development for a calculated time.

Method (a) is time honored and is used by the vast majority of bromide workers. It has been considered an easy matter to judge when the development of a bromide print should be terminated, because the appearance of the print is a sufficient guide. Apart from the appearance of the finished print, the manner in which the image grows is considered to be a valuable guide to the correctness of exposure or otherwise, and finally, advice to develop to finality is deemed sufficient to safeguard the print from under-development. With this advice the majority of bromide workers fail lamentably to reach the standard of excellence exhibited by Messrs.

Kodak, Wellington, Illingworth, and others in their show productions. The vast majority of bromide prints are over-exposed and under-developed. It is not sufficient to say that the appearance of the print in the developer is sufficient guide, for the proper appearance may never become manifest owing to fault in exposure. It is not sufficient to note how the image grows, because that varies according to the make of paper, or the nature of the developer, or the temperature of development, and so on. It is not true to say that development stops when "finality" is reached; it does not. The course of development is a progressively slowing process like any other irreversible chemical reaction; but there is no abrupt stop. If a series of prints are made, each having the same exposure and each being developed for a longer time than the one before it, using fresh developer for each print, then there is seen to be a progressive darkening of the print the longer it is developed. It is impossible to tell by inspection whether a rapid growth of the image is due to over-exposure; or to a fast developing paper; or to a fast-developing developer; or whether two or more of these factors are operating together. It is impossible to tell by inspection whether a slow growth of the image is due to under-exposure; or to low temperature; or to exhausted developer; or too much bromide, or a combination of two or more of these factors. And there are thousands of photographers who have never yet succeeded in making decent bromide prints and never will, until they give up trying to exercise judgment and substitute rule instead. This same statement once held good for negatives until Hurter and Driffield did their work, Watkins wrote his book, and Messrs. Kodak introduced a tank—a series of events very closely related one to another. I would suggest that development by inspection and reliance upon judgment is the most unsatisfactory means conceivable to enable the photographer to answer the question that he must be able to answer, namely, at what rate is development taking place?

The second method is development by time. In the absence of time and temperature tables for all the makes and varieties of bromide papers, the factorial method of

A PHOTOGRAPHIC DIGEST

estimating the total time of development is worth consideration. As in the case of plates it makes allowance for temperature, variation in developer, variety of paper. The disabilities of the factorial method with plates were:—(a) The possibility of fog, and (b) the variation in the time of first appearance of the image occasioned by variations in exposure. A suitable dark-room light overcomes the first disability in both plates and papers, and the second disability entirely disappears in the case of papers by making an exposure trial slip and developing it factorially also. Those who, venturing greatly, determine to try this factorial method must be prepared for two surprises. They will find that many bromide papers require very brief exposure and amazingly long development. They can rest assured, however, that this brief exposure and prolonged development is the whole secret of quality in a bromide print, and the factorial method of development is designed to ensure it. And for the sake of those who wish to try it and have not access to the "B. J." of a previous issue in which working formulae and factors were suggested, the following notes will serve as a guide. A suitable developer is amidol of the Kodak formula. The Watkins factor is twelve. A trial exposure is made in strips in the ordinary way, each strip getting twice as much exposure as the one before it. This is developed for twelve times the first appearance of the image (any image). If the whole of the trial slip is too dark after development to a factor of twelve then all the exposures given have been too great and another trial must be made. Conversely, if all the trial slip images are too light upon development to a factor of twelve then more exposure is required. The right exposure is that given to the portion of the trial slip image which is the right degree of darkness or depth after having been developed for twelve times the appearance of the image. The final print is given this exposure and developed factorially to a factor of twelve, preferably in a fresh portion of developer. If the time of appearance of the image is twenty seconds, then development must be continued for 20×12 seconds = 4 minutes. If, with another brand of paper or under different temperature conditions,

the image appears in ten seconds then development to the same factor, namely, 10×12 seconds = 2 minutes, gives exactly the same degree of development. Under no circumstances must the factor be altered. A factor of twelve with amidol is required to make the paper develop to its maximum degree of contrast, the "finality" of text-books. That degree of development must remain fixed. All the alteration that it is necessary to make can be made in the exposure.

The following table will enable the photographer to diagnose the cause of any technical dissatisfaction with the finished print:—

Complaint	Cause	Remedy
The finished print is too dark	Over exposure	
The finished print is too light	Under-exposure	Give more exposure
The finished print is too contrasty (soot and white-wash)	The paper is unsuitable for the negative	Use a bromide paper giving softer contrasts or reduce the negative
The finished print is too flat (lacking in contrast)	The paper is unsuitable for the negative	Use a bromide paper giving more contrast, or a gaslight paper or intensify the negative

This table is useless as an aid to the diagnosis of faults unless development is a fixed process. This fixity is ensured by utilizing a factor. Any departure from it entirely spoils the accuracy with which defects in the final print are attributable to their proper cause.

The above is a portion of a valuable article from "The British Journal of Photography" and will be continued in our next issue.—H. D'Arcy Power.

Formula for Strong Intensification

The following, from "Il Progresso Fotografica," should prove excellent for black and white or line subjects where the maximum contrast is desired.

Potassium ferrieyanide, 5 per cent solution, 50 parts; lead acetate, 5 per cent solution, 50 parts; acetic acid, 1 part.

Bleach in above; wash until free from yellow stain, and redevelop in full daylight. For still greater density, treat with ammonium sulphide, about two per cent in water.

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Firelight Effects

It is a mistake to think because these pictures are often very attractive, that they must necessarily be difficult to make. In the first place these pictures by firelight are of the same class as the so-called moonlight pictures, neither of them are really what they seem to be; furthermore if well done, they, in both cases, will be more pleasing than the real thing. Excellent effects of firelight may be secured by the aid of a window and fairly good sized mirror, but it is necessary that the window comes down to near the floor. The writer once decided to make a picture of Cinderella and chose the mirror dodge, but found on experiment that the window was somewhat high. Securing a stool the mirror was placed on that, then to our chagrin Cinderella was too low; you see she had to sit at a fireplace, was all alone in this world, with only a pumpkin for companion.

The next step was to move a table near the window and the model posed on that; the mirror was tilted, the shade drawn part way down and a most beautiful effect of firelight fell upon Cin. It began at her shoes, which were overdue at the garbage can a long time, and the rays followed the body to her beautiful face. Then the bottle of smelling salts: yes, we had to have tears in those dark, weary eyes. Cin. snuffed, Cin. coughed and the tears came, really, it was beautiful!

It took but a moment to hurry to the camera, another moment to look on the ground glass, and less than a moment to discover the camera was too low, and it took all of ten minutes to secure another table from an adjoining room. Everything was now ready; more salts, more tears and two negatives were made. On development one of them showed up fine, the firelight was real.

It was hard to work at the office next day, for were we not going to develop prints that night? We will never forget that night; everybody was there for a photographic demonstration, including Cin's relatives; for the report of that wonderful negative had gone forth, like the news of a victory, and a thrill of pride was ours.

The lights were dimmed, the trial strips made, the watch gave the time, and the crowd pressed close; you could hear its breathing. Six prints were made, developed and fixed, they were rinsed and we couldn't wait any longer. At the prearranged signal all the lights flashed up, and the place was a fairyland of happy expectant faces. The pictures were passed around and received unstinted praise; there was the pumpkin, and there was little Cin. seated on a little box, with a tear in her eye; and the firelight was the realest, real thing you ever saw. What is this? said one. Why the box, replied another. No, but this; can't you see it? Yes, we saw it, it was the box, we all saw it, and it said:

"U-NEED-A-BISCUIT!"

If you are an amateur with troubles, cheer up! we will try and help you.

Flowers

Why do some photographers, when making a negative of a small object, place their camera right "on top" of it? Of course, these workers would answer the above question by saying, to get a larger picture. Not long ago the writer was obliged to do a lot of work touching up a photograph of some flowers; the picture was an enlargement, to bring the flowers to their natural size.

Now that part of it was well and good, but the lens was abused in making the original negative. This fault was very

THE AMATEUR AND HIS TROUBLES

apparent through the photograph showing the lack of depth of field. It is not necessary, in fact pictorially, it is inartistic, to place the lens at such a distance from the object, to get everything in sharp focus. We know, if we use the lens at its equivalent focus we shall have a wonderful depth of field, but the object we are trying to depict will be, in the case under consideration, exceedingly small, therefore we come closer to the object, and the image on our screen will show on a larger scale, after we have racked out the lens to meet with the new conditions. The question now arises, how near shall we come? And it will probably be a surprise to some of our readers to learn, it will be the lens, and not the operator, that will decide the question, no matter what length of focus that lens may have.

Probably few who practice photography are unaware of the fact that the depth of field, is increased by using a small stop; but does that advantage make up for a certain inherent disadvantage? No! and why? Because a small stop unduly increases our contrasts, we give a prolonged exposure on account of it, and the petals of our flowers are apt to appear hard, even petrescent. The small stop tends to under-exposure; this does not mean that the whole plate is under-exposed, but the shadows among the petals print over dark, which destroy in great measure, and some times entirely obliterates, the reflected lights which are in them; or, these reflected lights are so thinly depicted on our negative, that they wholly fail to register in our final print. In the ideal flower print, we must see away down and in; just as far as a bee may reach; for our flower will lose its charm, when its throat is filled with blackness.

In focusing flowers select the ones on the stalk nearest, and with a large stop get them sharp, if the blossoms on the far side of that stem are also sharp we may approach nearer, but we must not come so close, that these more distant buds and blooms become patches of dark and light, having lost all their "drawing." It is desirable that these more distant flowers should be out of focus, to give relief to the primary ones, but not so lacking in defini-

tion as alluded to: All of this the lens will determine; then the operator will select a suitable stop and this should be done with care, avoid a small aperture for the reasons just given. Having the negative, which presumably is a good one, make an enlargement; four diameters is a big enlargement and will in most cases meet requirements, but it all depends on the negative if we are to indulge in greater amplification.

Uniformity With a Vengeance

I have often mentioned the advisability of confining one's work to a certain class of subjects, or at least, having enough pictures of one or two classes of subjects to constitute a collection. So it was not without quite a little pride that a recent visitor brought in an album showing his work along the line of dog portraiture. They were fine prints from fine negatives, all of them 5x7 and they showed more kinds of dogs than I ever dreamed there were; that is, if each was a different breed. But as the pictorial representation of each dog was almost exactly the same size, a stranger to dog varieties would not know whether a certain specie, strange to him, was the size of a Yorkshire spaniel or a Newfoundland. And all this could so easily have been avoided by the simple expedient of introducing a chair into one picture, a bit of porch steps into another, a sofa pillow into a third, a hunting or driving glove into the fourth, and so on, at least with the less familiar breeds. Of course we all know how large a mastif or a Newfoundland is, but some of the others are not so well known; and even when we do know a certain dog belongs to a small type, it somewhat offends our sense of the fitness of things to have his image flashed before our eyes in the same size as that of the huge mastif we have just been examining. The image of the small dog, in such a collection, should at least be a little less space crowding that that of the larger one, just as a slight concession to truthfulness, even if at the expense of uniformity.

OUR BOOK SHELVES

Book Review

"Pictorial Photography in America, 1920," Tennant and Ward, New York.

This is the first published review of American Photography by the Pictorial Photographers of America. Seemingly it will occupy the same place in American photographic press that the well-known Photographs, published in London, do to that of Great Britain. So far as this issue is concerned, the pictures are all from American workers, but a wider selection is promised in future issues. The foreword is written by Clarence H. White and short chapters follow by Edward R. Dickson, Lewis F. Boucher, Francis O. Libby, Dwight A. Davis, H. R. Neeson, W. H. Porterfield and John Paul Edwards; these writers treat of sectional progress. The mass of the book is made up of nearly one hundred reproductions, showing a great variety of pictorial work, and a great diversity of schools. Taken as a whole, they may be commended for a general high average of technique and artistic feeling in the choice of subjects. It would be hard to say that there are many which will live in our memory, or that mark any surpassing excellence. Like in all such collections, there are a few for which it is difficult to understand the reason for reproduction. The modern movement in art shows its effect in many, but taken all in all, the work is a gratifying evidence of progress and a credit to the pictorial photographers of America.

American Annual of Photography, 1921
Geo. Murphy, Inc., New York.

Our old friend is once more to hand, with what I am inclined to think is one of the best series of articles that has appeared in any single year of its existence. It is not the purpose of this notice to refer to all of the writers, but one cannot overlook the value of such articles as that on "Photographic Lenses," by Carl W. Atkinson, "Orthochromatic Plates and Filters," by

Arthur C. Eldridge, and "Stains on Negatives and Prints," by J. I. Crabtree. These are of the type of article where thoroughness does not run into technical pedantry, and where the average man, including often the advanced worker, may get real help. The illustrations are on the whole very well selected and interesting. The influence of the soft focus lens and an increasing appreciation of tonality is generally manifest. Certainly no one will begrudge the slight increase in price which modern conditions have brought about.

Wellington Photographic Handbook

This well known manual has recently come out handsomely bound in boards, but in a limited edition. No photographer should fail to add this book to his collection, it is good; it will be useful; and the price is astonishingly low. The work is gotten up to push the Wellington products, but the contents will prove valuable to all photographic workers.

The directions for enlarging by daylight and determining the correct exposure are alone worth the price of the book. Also, there is included a valuable article on the fascinating bromoil process. There are a dozen page illustrations of varied subjects and we notice all the negatives for these, with the exception of two, were made on the Wellington 'Xtra Speedy Plate, the two exceptions, which are flower studies, were done on their Anti-Screen Plate. These flower studies are particularly beautiful and will serve as an object lesson to those amateurs who follow this branch of photographic work.

Any of our readers who may have use for a book of this class, (and who has not), had better send thirty-five cents, the price postpaid, to Ralph-Harris & Co., Boston, Mass., who are sole United States agents for the Wellington products. This firm's advertisement will be found on another page.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

Exhibition of Pictorial Photographs

You are invited to send your pictures to the First Annual Prize Exhibition of Photographs, February 26 to March 12, 1921, Kansas City Mo.

Entries close February 15, 1921, and the following prizes are offered:

First prize	\$100.00
Second prize	50.00
Third prize	25.00
Ten prizes, \$5.00 each.....	50.00

To win a prize, a picture must be the original camera work of the exhibitor—not copied. The developing, printing or enlarging may be done by others.

Previous showing of pictures in other exhibitions will not exclude their entry.

We wish to draw attention to the fact that the developing and other manipulations may be executed by others; it is only necessary for the exhibitor then, to select his subject and expose his plate, and "George" does the rest. All this is most inviting and should meet with a hearty response from prospective exhibitors who may wish to take a chance. The real amateur, however, will be willing to do more than that, and we believe that in this exhibition, as in probably all others, the ones who works, who does most, if not all of the work himself, will be the person who wins distinction.

We have entry blanks and rules at our office which we will be pleased to distribute to any who apply for them. The remaining time is short, get busy!

Address all communications to Exhibition Bureau, Kansas City Photo Supply Co., 1010 Grand Ave., Kansas City, Mo.

California Camera Club

From "The View Finder," a little publication put forward by the above club, in the interests of its members, we glean much information of the doing of a very live organization. Here for instance, will

be found the following:

Monday, January 3rd to 10th, exhibitions of prints from the Oregon Camera Club of Portland.

Tuesday, January 11th, 8:00 p. m., Club business meeting.

Thursday, January 13th, 8:00 p. m., Miss Katherine Ball, supervisor of Art in the Public Schools, will lecture on Pictorial Composition, illustrated by slides and pictures.

Saturday, January 15th to Feb. 15th, exhibition of prints by Mrs. Laura Adams Armer of Berkeley.

The club is to be congratulated in securing pictures; the work of this photographic artist.

The subject for the February Print Competition will be the San Francisco City Hall. This covers both interior and exterior views of the building. We think this a splendid idea; apart from the advantages gained by this form of photographic training, the pictures secured have another value, they encourage the growth of Civic pride by bringing forcefully before a large audience, an intimate knowledge of the beauties of our public buildings, hidden from the eyes of a casual observer.

There are other cities and other clubs that should follow this excellent example.

Photo-Era

We have received a card from our esteemed contemporary notifying us of change of address. It reads as follows:

IMPORTANT NOTICE

On and after February 1, 1921, the publication office of "Photo-Era Magazine" will be situated in Wolfeboro, New Hampshire. Please address all communications to Photo-Era Magazine, Wolfeboro, New Hampshire, U. S. A.

We are pleased to publish this announcement for our friends and with it we send our best wishes for 1921.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, Evergreen, Jefferson County, Colo.

J. H. Winchell, Chief Album Director, R. F. D., No. 2 Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Claus Spreckels Building, San Francisco.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

John Bieseman, Director Post Card Division, Hemlock, Ohio.

James B. Warner, Director Stereoscopic Division, 413-415 Claus Spreckels Building, San Francisco.

A. E. Davies, Director Western Lantern Slide Division, 1327 Grove St., Berkeley, Cal.

Arthur H. Farrow, Director Eastern Lantern Slide Division, 51 Richelieu Terrace, Newark, N. J.

STATE SECRETARIES

California—A. E. Davis, 1327 Grove St., Berkeley.

Colorado—H. E. High, 527 12th St., Denver.

Idaho—Eugene Clifford, 902 9th Ave., Lewiston.

Iowa—Harry B. Nolte, Algona.

Kansas—H. H. Gill, Hays City.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

Missouri—J. F. Peters, Room 210 Union Station, St. Louis.

New York—Louis R. Murray, 21 Clark St., Ogdensburg.

Oregon—F. L. Derby, La Fayette.

Texas—Emmett L. Lovett, care Southern Electric Company of Texas, Wichita Falls.

ALBUM DIRECTORS

Alabama—Richard Hines, Jr., Barton Academy Bldg., Mobile.

California—W. E. Thomson, 3211 School Street, Fruitvale.

Colorado—O. E. Aultman, Pleased Bldg., Trinidad.

Florida—Capt. E. S. Coutant, Lock Box 73, Stuart.

Georgia—L. O. Surlis, P. O. Box 434, Cuthbert.

Idaho—Eugene Clifford, 902 9th Ave., Lewiston.

Illinois—George A. Price, Box 286, Champaign.

Indiana—H. E. Bishop, 551 E. 40th St., Indianapolis.

Iowa—C. W. Parker, Mapleton.

Maryland—E. G. Hooper, 218 East 20 Street, Baltimore.

Massachusetts—John Mardon, 10 High St., Boston.

Michigan—W. E. Ziegenfuss, M. D., 171 Richten St., Detroit.

Minnesota—Leonard A. Williams, 622 2nd Avenue South, St. Cloud.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

Missouri—Wharton Schooler, R. F. D. No. 2, Eolia.

New Hampshire—Mrs. A. Leonora Kellogg, Box 224, Londonderry.

New Jersey—Arthur H. Farrow, 51 Richelieu Terrace, Newark.

New York—Charles F. Rice, P. O. Box 517, Mamaroneck.

North Dakota—Jas. A. Van Kleeck, 619 Second Ave., North Fargo.

Ohio—J. H. Winchell, R. F. D. No. 2 Painesville.

Pennsylvania—L. A. Sneary, 2822 Espy Ave., Pittsburg.

South Dakota—C. B. Bolles, L. B. 351, Aberdeen.

Texas—J. B. Ohelm, P. O. Drawer M, Henrietta.

Utah—John C. Swenson, A. B., Provo.

West Virginia—William E. Monroe, Box 298, Point Pleasant.

NEW MEMBERS

4864—Walter H. Wilson, Sunman, Indiana.

$3\frac{1}{4} \times 5\frac{1}{2}$, on developing papers, of views, buildings and miscellaneous subjects; for same. Class 2.

4865—H. Cleve Burr, Rawiri St., Gisborne, New Zealand.

$3\frac{1}{4} \times 4\frac{1}{4}$ and $1\frac{5}{8} \times 2\frac{1}{2}$ V. P. K., on all makes of papers, of scenery and general views of New Zealand; for old ruins, animals, birds, mountain scenery and general views. I desire to exchange lantern slides also. Class 1.

4866—P. Kalathi Chetty, 22 Subbn Chetty St., Park Town Post, Madras, India.

One-half plate, on any papers, of all kinds of subjects; for same. Class 2.

4867—Max Olbrich, 114 McNaughton St., Rochester, N. Y., Class 2.

4868—H. Carl Marmon, Box 61, Wartrace, Tenn.

$1\frac{5}{8} \times 2\frac{1}{2}$ and $3\frac{1}{4} \times 5\frac{1}{2}$, on developing paper and post cards, none at present; will have animals, nature, battlefields and buildings; for mountain and animal pictures in preference. Class 2.

4869—Douglas McCall, corner 10th and 5th Ave., Opelika, Ala.

$6\frac{1}{2} \times 8\frac{1}{2}$, $3\frac{1}{4} \times 5\frac{1}{2}$, on developing papers, of interiors, buildings, still life, nature studies, etc.; for any subjects. Class 2.

4870—Peter E. Faber, 3331 Benton St., Box 54, Wheat Ridge, Colo.

Post cards, on developing papers, of outdoor views, snow scenes, mountains, etc., for views of different sections of the country. Class 1.

4871—Ev. Tejada, P. O. Box 15, Dona, Cecilia, Jampas, Mexico.

$3\frac{1}{4} \times 5\frac{1}{2}$ and 5x7, on developing papers, of general scenery and marine views. Class 2.

4872—Max F. Borcharding, Hall Hotel, Denver, Colorado.

Class 3.

4874—Miss E. M. Booton, Waverly, Mo. Class 2.

RENEWALS

2215—S. S. Webb, 16 Dickey Ave., New York, N. Y. Postcards only. Class 2.

2447—Oscar Ulstad, R. F. D. 2, Madison, Minn.

$3\frac{1}{4} \times 5\frac{1}{2}$, on developing paper, of local views, landscapes, etc., for views of army camps, transports and battleships, also A. E. F. views and foreign exchanges. Class 2.

3255—Dr. A. M. Sutton, 175 So. First St., San Jose, Calif.

$3\frac{1}{4} \times 4\frac{1}{4}$ and 4x5, on developing out papers, no glossy or post cards, of woods, streams, seashore, dunes. Try to make pictorial prints interpreting something. Only good work sent and expected for anything corresponding in intention and execution with the above. Can exchange about twice a month, possibly monthly at times. Class 1.

4291—John R. Palmer, Franklin, N. Y.

4x5, 5x7 and 8x10, on developing papers, of natural scenery, views in Adirondacks and various places, for anything of photographic interest. Class 2.

4692—B. Beauchamp, Castleblayney, County Monaghan, Ireland.

Class 2.

4845—David C. Goodyear, 222 West 72nd St., New York, N. Y.

3A to 8x10, do not do my own printing, of, exclusively N. Y. Central and Hudson River locomotive photos, preferably taken about or prior to year 1890, for same. Class 1.

CHANGE OF ADDRESS

4632—J. H. Hans, 12 East 35th St., Kansas City, Mo. (Was 3829 Main St.)

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported By William Wolff

Mr. and Mrs. M. Green of the Riverside Studio, Reno, were recent visitors to San Francisco. Just taking a little pleasure trip after a busy season. They reported an exceedingly good holiday business.

Mr. L. I. Jones, until recently with Morton & Co., photographers of this city, is now with Hirsch & Kaye as salesman in the San Francisco district. Mr. Jones, who is an experienced photographer, has many friends among the local trade. He succeeds Mr. Fred Sass, who will continue with Hirsch & Kaye in their order department.

Geo. W. Reynolds of the Camera Shope, Fresno, has disposed of his holdings in that city and is succeeded by Parsons & Heilbron. They continue this popular finishing establishment under its old name. Mr. Reynolds has taken over the Photo Craft Shop, Santa Cruz, which he has modernized—Pake equipment and everything. Incidentally he will do a little farming near the seaside city.

C. M. Miller, whose pictures are an interesting part of the daily Automobile News, has been a busy person for the past few weeks. His manager, Mr. C. A. Gwynn, had a long term of jury duty.

F. E. Bellus, Santa Cruz, is installing elaborate flash light equipment. It is expected that he will specialize in this branch of photography.

The new Parchment Antique paper has made a decided hit with the better class of photographers. Prompt deliveries and the fact that the paper may now be had from San Francisco stock, has added to the popularity of this new product. Samples are available for those who are interested.

W. W. Morrison, a prominent Eastern photographer, has located in Visalia.

Fred Soyler, representing Taprell, Loomis & Co., is now in this territory showing a complete line of spring styles in photographic mountings.

The writer has just returned from a trip to the Southland. Photographers report business good. Many have welcomed an opportunity to fix up their work room utensils after the holiday rush. Result—exceptional demand for Probus.

A Beautiful Calendar

We wish to thank the Haloid Company, makers of photographic printing papers, for their most attractive calendar which now decorates a wall in our office. The subject, a landscape enlargement, very airily treated and delicately hand-tinted, presents a poetic rendering of a country road with a distant village church. A cottage in the middle distance on the right, and in the foreground on the left, a leaning tree—by the way, it leans just right for most effective composition, and looks fine in the oval shape of the picture.

Visitors to our office are attracted by this work, and never fail to learn this good thing is also a Haloid product.

A Victor Product

We have been notified by J. H. Smith & Sons Co., of Chicago, of their three big improvements in The Normal Grade Victor Flash Powder. It makes decidedly less report, ignites more easily and burns more rapidly, and with all, its high illuminating quality has been fully maintained.

The Victor Studio Flash Cabinet is still meeting with a steady demand, and each new year finds an increasing number of studios operating the highly efficient apparatus.

The S. P. L.

Readers will notice the new advertisement of Struss Pictorial Lens on another page of our magazine. Those who would wish to familiarize themselves with a lens that has helped many a photographer to achieve distinction in our Photographic Salons, would do wisely to send to Fred W. Keasbey, Box 303, Morristown, N. J., for his explanatory booklet concerning a

lens with an artistic definition. Knowledge takes no room, says an old proverb, and we would say, get familiar with this lens.

A School of Photography

We have just received a well gotten up catalogue from the Southern School of Photography, located at McMinnville, Tenn. The president of this popular institution is W. S. Lively, ex-President Kentucky and Tennessee Photographers' Association, instructor in Lighting, Posing, Electric and Flashlight.

On the front cover of this catalogue we are presented with a view of the school building, done in Artura Iris paper, which shows strikingly on the brown ground; on the back another attractive picture, a landscape in Artura Carbon Green. The whole book is liberally illustrated with views and portraits.

The institution owns the imposing school building which stands surrounded by a beautiful campus of four acres.

We glean from the introductory notice the following, which we quote in part: "After an actual experience covering a period of sixteen years in the conduct of the Southern School of Photography, we feel that the future of this school is assured, and that it is bound to be a great benefit, not only to those who take up the practice of photography as a profession, but also to the entire fraternity."

The school is particularly proud of its operating room, which is 30x50 feet, and has one of the latest Inglis single slant north lights, 16x18 feet. It is equipped with the latest improved cameras and lenses, from cabinet size to 20x24 inches."

Glancing at the last pages of this booklet we find a number of letters from former students, letters of appreciation and good feeling, and it is significant to note they all begin, Dear Dad, or Dear Daddy. Does this not strike us that these students must feel like a pare of one big family?

Time to enter: Any day, week or month during school term, beginning first Monday in April.

Smuggled Exposure Meters

Herbert & Huesgen Co., general distributors of Photographic and Optical Goods, 18 East Forty-second Street, New York, advises us as follows:

"It has come to our notice, and is alleged that irresponsible individuals have smuggled out of Germany, without the authorization of the manufacturers or by the customary licenses of the German Government, a number of Heyde Exposure Meters, that are made especially for the German market, and are not suitable to work with cameras manufactured in this country. The Exposure Meters that are made especially by the manufacturers for distribution in the United States, are calibrated on the dial, to work according to the diaphragm values that are commonly engraved on lenses and shutters sold in this country."

It is needless we presume to draw the attention of our readers to the fact that smuggled meters can be offered for sale at a lower price, and purchasers of such meters are liable to experience disappointment when they find readings don't tally with our stops.

A Lower Priced Clip

The film clip is now looked upon by the busy photographer as an absolute necessity, and manufacturers appear to have done their best to meet requirements. Here is another clip, an excellent little article: "How about the price?" That's just it. The Rao Manufacturing Co. of Minneapolis have placed upon the market what they claim, "A better film clip at a lower price." A descriptive circular is yours upon request. Look up their ad. in this issue.

The Howell Photo Paper Corporation

The above named firm has recently completed a new factory in this city; it is the only one west of Chicago.

This firm aims to supply a line of proofing papers which are dependable in every way, being made from a standard formula, and they guarantee every sheet that leaves the factory.

The Zellerbach Paper Company has been selected as exclusive Pacific Coast distributors and their representatives are now visiting the various studios for the purpose of introducing this line of papers.

They will send free samples to photographers making application for them.

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CAMERA CRAFT



SAN FRANCISCO
CALIFORNIA

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A Photographic Monthly

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MARCH BARGAINS IN CAMERAS

1½x2½ Ica Atom Camera, fitted with Hekla lens in Compound Shutter, including Adapter.....	Now	\$42.50
1½x8½ O Graphic Camera, fitted with Zeiss Kodak f-6.3 lens. List price, \$64.00.....	Now	47.50
1½x2½ V. P. Duchess Camera, fitted with Carl Zeiss f-4.5 lens, Focal Plane Shutter, Carrying Case, 6 Plate Holders and one Filmpack Adapter. Almost new. List price, \$160.00.....	Now	105.00
2¼x2¼ Carbine Camera, fitted with Carl Zeiss Triotor Lens, f-6.3, in Compound Shutter.....	Now	55.00
2¼x3¼ Ica Camera, fitted with Hekla Lens and Compound Shutters (like new). List price, \$55.00	Now	45.00
2¼x3¼ Auto Graflex Jr. Camera, fitted with Ic Tessar f-4.5 Lens, including carrying case and Filmpack Adapter, complete, \$124.00.....	Now	85.00
2¼x3¼ No. 1 Premoette Jr., Special Zeiss Kodak Lens, f-6.3, in Compound Shutter, like new.....	Now	52.50
2¼x3¼ No. 1 Special Kodak, fitted with B. & L. Tessar Ic Lens, f-4.5, in Optimo Shutter. Like new. List price, \$80.00	Now	65.00
2½x4¼ 1A Premoette Special Camera, fitted with Cooke f-6.3 Lens in Compound Shutter.....	Now	42.50
2½x4¼ 1A Graflex Camera, fitted with Zeiss Kodak f-6.3 Lens, (not Autographic). List price, \$132.00	Now	105.00
3¼x4¼ Auto Graflex Camera (old Model), fitted with Velostigmat Series II, f-4.5 Lens (guaranteed perfect)	Now	85.00
3¼x5½ Sanderson Camera Tropical Model, with extra 4x5 Plate Back, including 1 Adapter and 3 Plate Holders of each size (no lens)	Now	95.00
3A Special Kodak, fitted with Zeiss Anastigmat Lens, in Compound Shutter (without range finder)	Now	72.50
3¼x5½ 3A Folding Pocket Kodak, fitted with Dynar Lens, f-6-inch in Volute Shutter. Perfect condition	Now	67.50
4x5 Reflex Camera, (no lens).....	Now	35.00
4x5 R. B. Cycle Graphic Camera, fitted with Zeiss Kodak Lens in Compound Shutter, including case and 3 plate holders (like new).....	Now	125.00
4¼x6¼ 4A Special Kodak, fitted with No. 5 Zeiss Kodak Lens, f-6.3—like new—List price \$122.50	Now	67.50
4¼x6½ 4A Folding Pocket Kodak R. R., with Lens and Automatic Shutter, List Price \$35.00.....	Now	22.50
5x7 Auto Graflex Camera (old model), no lens, with Magazine Plate Holder	Now	65.00
5x7 Premo Filmplate Camera, fitted with R. R. Lens. List price \$35.00.....	Now	22.50
5x7 Reflex Camera (no lens)	Now	45.00
5x7 Press Graflex Camera, fitted with 5x8 Ic Tessar Lens, including Carrying Case, 2 Plate Holders, Filmpack Adapter and No. 2 Crown Tripod. Complete \$330.00.....	Now	245.00
5x7 Premo 9 Camera, with R. R. Lens, including Carrying Case and one Holder. List price \$59.00	Now	42.00
3½x12 No. 4 Panoram Kodak, like new. List price \$30.00.....	Now	18.75

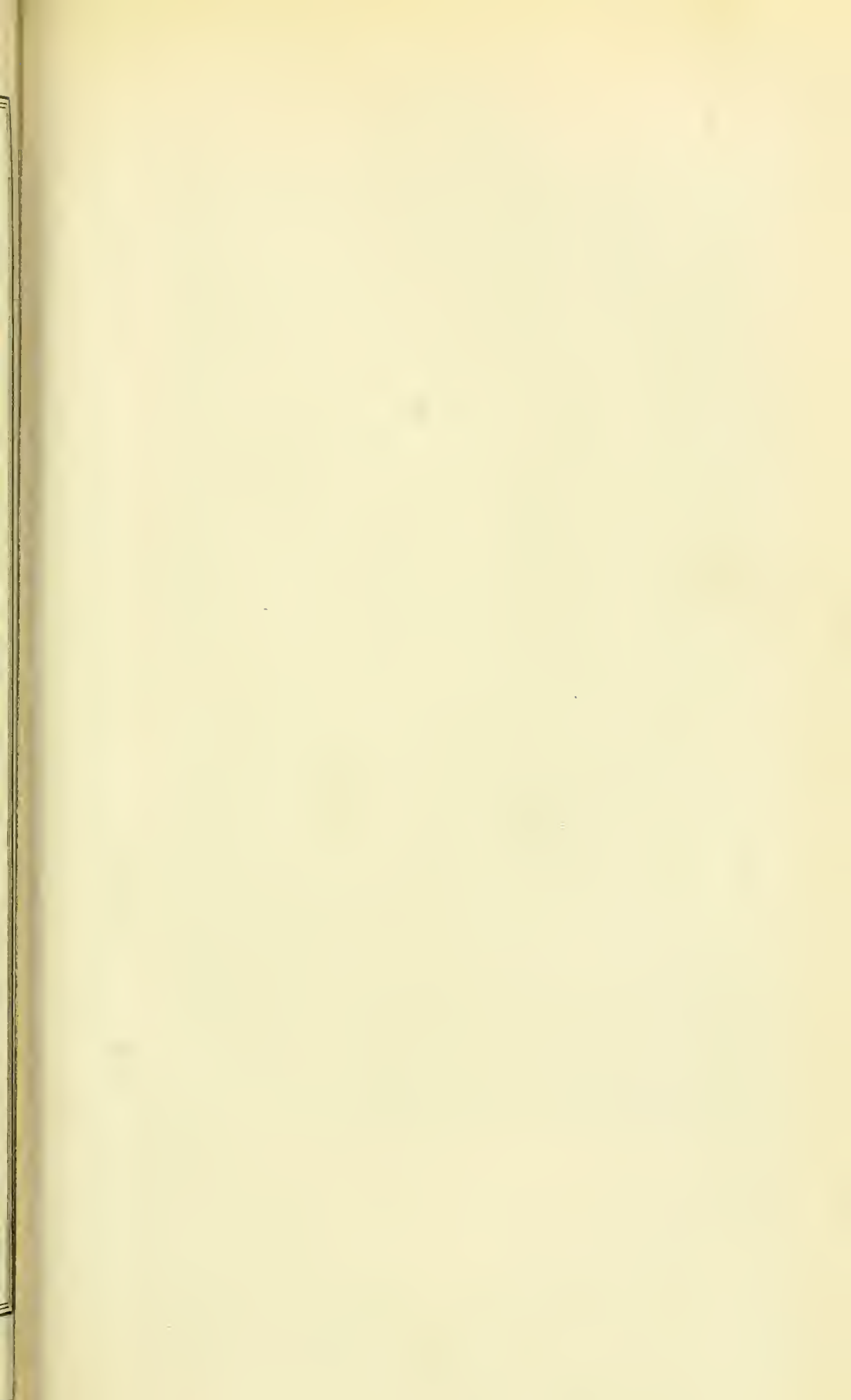
Four Extra Special Bargains This Month

2¼x7 No. 1 Panoram Kodak, slightly used. Price \$20.00.....	Now	10.25
2¼x3¼ Autofix Focus Camera, fitted with Velostigmat Lens, f-6.3, in Ilex Universal Shutter. Brand new. List Price \$50.00	Now	33.75
2¼x3¼ Autofix Focus Camera, fitted with Velostigmat Lens, f-6.3, Ilex Universal Shutter, Brand new. List Price \$75.00.....	Now	52.50
3¼x5½ 3A Graflex Camera, fitted with Ic Tessar Lens, f-4.5 (not Autographic). Slightly used. List price \$200.00	Now	125.00

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"Tongues in trees, sermons in stones, books in
running brooks, and good in everthing"
By ALBERT E. DAVIES

CAMERA



CRAFT

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The Story of Trees with a Camera

Albert E. Davies



Illustrations by the Author

Spring is a time when nature attracts attention to herself by putting on a new dress. Nearly everyone notices the first signs of Spring, and those of us who enjoy the use of the Camera are especially receptive; and we owe to our Camera thanks for this receptiveness, for it is by its use, that we have had a little extra training in observation.

Trees being in the majority are among the first to give evidence of a new summer cloak, and as the first signs of the budding leaves appear is an excellent time to start an album of tree studies. In a collection of such pictures one has, not a usual hit or miss bunch of miscellaneous subjects, that can be interesting but a short time, but a systematic study that has been a pleasure and a benefit to make, and is always a book of unending interest: A story written with pictures.

Trees are the oldest living beings. They beautify the landscape. They purify the air. They regulate drainage. They break the force of the winds. Their protection keeps the earth soft and fresh and capable of growing things. They shelter innumerable plants and animals, even man, which without them would become extinct. What subject could have greater interest, for themselves and for their bearing upon our lives? Where could be material for illustration of greater variety?

Studies of trees are not hard to get, and one subject affords many opportunities. For instance, one tree will afford material for eight or ten

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exposures if not more, and forms a reason for several trips afield to the same tree. In different weather and at various seasons, and at each visit as you become better acquainted with your friend, you find new opportunities and thoughts.

Let us turn the pages of our book and see what we can make from a single tree. Starting in the spring a view showing the whole tree and parts of its natural surroundings. We first want to know its name and what birthyear it is starting to celebrate. A few inquiries among those to whom the tree is an old friend, if such are obtainable, together with measurements and a consultation of those books you can find on the subject, will net you at least an approximate date, and what is still greater if you have not thought of it before an introduction to the study of the tree's own story from itself.

For the second page of our book let us have a close up of a single sprig, showing probably both the closed bud and some others, already with a bit of green in sight. We may make this on the tree or perhaps better take a small spray to where it is possible to arrange a soft even light and a background.

For this work, the portrait attachment for the Kodak, or better still a long bellows camera is necessary. Arrange the branch to fill the greater part of the picture space, and while this arrangement is a matter of choice and according to the material you are working with, I would suggest that the subject itself only be allowed to show and not any arrangement of holding. For close up studies of this kind where detail is desirable, and where also such an amount of detail is in the subject, in order not to distract, a plain background is best. Some of the most pleasing work, I have ever seen, of this kind was made against a plain white ground and in this connection it is necessary not to get any shadow on this background. With light delicate subjects it is next to impossible to work out of doors, unless the air is exceptionally still, as in order to gain depth, that is bring several planes to a sharp focus on your plate, it is necessary to stop down the lens to quite a small opening. The closer you are to the subject the smaller the stop you will have to use, to bring all of the subject you want to a sharp focus. Doing this will necessitate increasing the time of exposure, so it will be best where possible, to work indoors, bearing in mind, of course, that where there are only one or two planes represented close together, so small a stop is not needed to bring them sharp, and consequently no movement of the subject is liable during the shorter exposure.

When working indoors if your light is from windows, diffuse with, either tissue, thin white cloth, or by some other method, and make it as full as possible in order to avoid anything like a deep shadow. Place the background a little ways back of your subject, experiment will best tell the distance, far enough back to be out of focus but not so far as to necessitate an extra large one. If using white it may be necessary to illuminate

THE STORY OF TREES WITH A CAMERA



THE BARK OF SOME TREES OFFERS MORE CHANCES FOR PICTURES THAN OTHERS.

this background enough to destroy any harsh shadow, but be careful not to light enough to cause a strong reflection that might give halation.

Use Orthochromatic plates, and where you have much variety of color, also a ray filter. Always give good full exposure, so that no detail is lost in shadow and don't try to include too much in your picture.

As the months advance the tree gathers its full shape a little awkward at first but finally the roundness of full summer foliage. In making studies of your subject at different times of the year, you will find a vastly changed appearance from various sides. As you walk around the tree, from one side the shape will show the direction of the prevailing winds. The changing light and background has another bearing and so on. As you study it a valuable lesson is learned in composition, and another, in how to make your picture tell the story.

Intercepting these pages we have studies of the blossom and detail studies of the foliage, the number and extent of these is up to your own inclinations, and the possibilities of your subject. In making studies of the bloom and leaves, consider their respective functions, as understanding them is knowledge gained, and helps to portray successfully. The leaves are the breathing organs of the trees. No two leaves are exactly alike, nor are any two trees exactly alike. One may lead a rugged, wild and

struggling life, while another an easy luxurious existance in a fertile valley. Detail studies of the leaves from different sides of the same tree, and at different seasons, offer material for several pages, according to how elaborate the leaf may be of the particular kind of tree one may be working on. Different trees of course have different methods of reproducing, but most all have some sort of a blossom. Showing how these are fertilized may be given some thought. I have had quite a little success in photographing bees in various blossoms, but have not done much other work along this line. The fruit or seed carrier may be shown, and possibly the methods of distribution.

As we turn the pages of our book don't let us give the impression that every day is bright and sunshiny. If you have not yet tried making pictures in the rain or a high wind you still have an experience ahead of you, and to show how the various elements are necessary to the good health of our trees, is photographically quite an accomplishment.

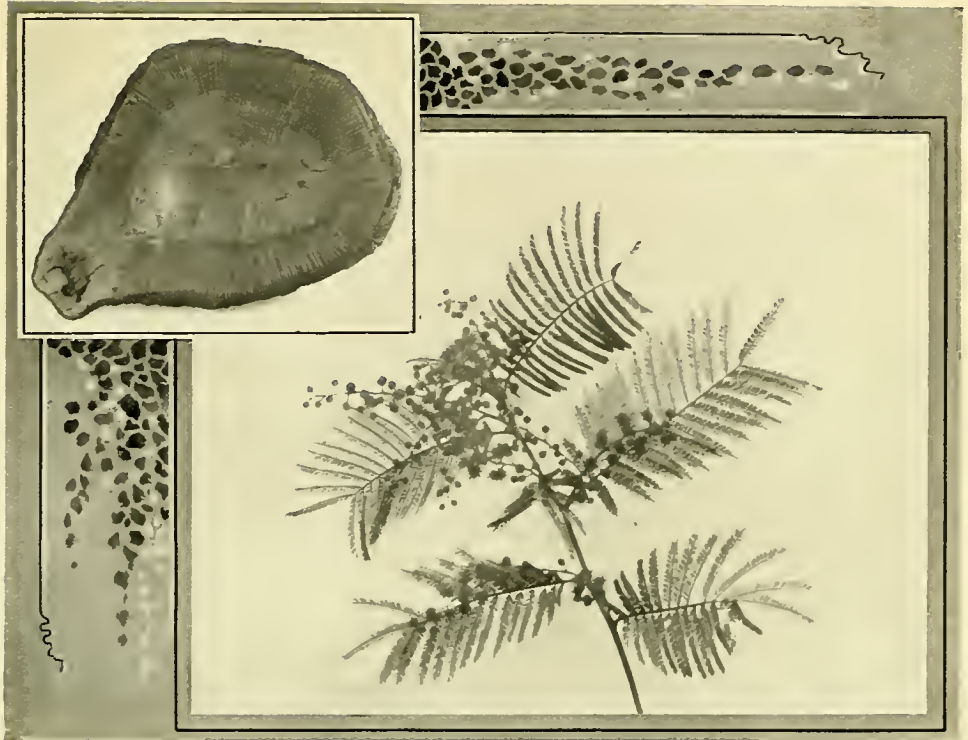
The bark of some trees offers more chances for pictures than others, at least one should have a prominent place, as in the case of such trees of the Eucaliptus, which sheds its bark as well as the leaves; more than one study may be made of this interesting feature. By working close up under the tree, and stopping the lens down to gain depth, a view may be made showing the trunk which will give a practical close up of the bark, and at the same time a pleasant vista of the surrounding landscape. For such work a dull day and a deep filter over the lens, to more nearly equalize the extreme difference in light, will help.

Finally with winter, the barren branches of our, by now good friend, against a cloudy sky, and later, if you are located in such a climate, with a downy mantle of snow, we have our tree at leisure and the cycle complete. We do not have to stop now, however, as the photography of trees offers winter as well as summer work; and to photograph the wood of different trees is almost a complete study in itself.

Many of the woods of trees that we may photograph are in commercial use, and studies may be made of articles manufactured of wood, showing various uses of different kinds. Also where wood is used for interior finish; a part of a room showing decorative effect, and greater possibilities are in panels, the grain as shown will stand careful reading, and a part of the life history be fathomed.

If you wish and have the opportunity, one may show the transition from the growing tree to boards, and one or two prints of lumbering and sawmill operations will not be amiss. However the best possibilities for photography and study are in cross sections. The annual rings of growth, the heart and start of branches. The wounds, their effect, when and how they were healed, are all shown. In fact the trees method of recording, and it's life history, are laid bare.

THE STORY OF TREES WITH A CAMERA



A CROSS-SECTION OF CALIFORNIA OAK.
THE DELICATE LEAVES AND FRAGRANT BLOOM OF THE ACACIA.

Different woods will require various treatment, but in the majority, carefully smooth the surface by scraping with sandpaper, and then apply a coat or two of linseed or other clear oil. This method of preparation will preserve and show all markings to the best advantage.

The flat surface is not so hard to illuminate, nor does the lens have to be stopped down far, to gain complete detail. Full exposure is always necessary, and careful rendering of color values in monochrome, will give the best result. Get the camera close enough to your subject to fill the picture space, and there is no limit to the number of exposures that may be made, as you will find that every cut you make on your wood, will tell another story.

A few words as to prints, whatever the size of your negative, the ideal method will be to have but one print on each page of your book, and this to be between the sizes of 5x7 and 8x10. These may be varied of course by an occasional group of smaller prints. At the present day with the popularity of the small camera, most every thoughtful camera enthusiast has, or can easily obtain or arrange some sort of enlarging apparatus, so that the making of prints of the above mentioned sizes is not a difficult matter, the results are well worth the extra trouble and time expended. The surface, grade and kind of paper used is a matter for your own consideration.

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there is an excellent variety on the market at the present time, and careful consideration of the various surfaces offered, will net one, that will show each study to the best advantage.

The number of subjects available is unending, and it will not be difficult to confine your studies to your own locality. When a complete set has been made of one tree, you will have not only a connected story of that tree, but you will find that by working forward with a definite aim, you have made several pictures that are complete in themselves.

There are many popular tree books on the market, and perusal of some of these will help to identify and aid in reading the life history of many of our trees. In short they give in words what we are showing by a method that all may read, pictures.

For yourself, each tree that you work on you will learn, and there can be no greater satisfaction and benefit than knowledge gained of your natural surroundings.

DRAPERY—The folds must conform with the movement of the figure. In historical painting the folds should be large and few, because the grandeur of the forms produces broad and simple masses of light and shadow,—drapery being meant to cover, not to hide the figure. Drapery should be suited to the age, character, and rank of the figure.—Platt.

Foreshortening is one of the most difficult studies in the art of design, and constitutes the excellence of the master. Any object is foreshortened when its ends are presented to the eye instead of the side or full length.—Platt.

GENRE PAINTING—Pictures of domestic life and manners — small pictures of character dramatically represented, as Hogarth's, which, for want of a definite character, are classed together as of a certain kind or genre (pronounced jar).—Platt.





The First Theatre in California

By M. Tanron



Illustrations by the Author

I was enjoying a visit in Monterey hunting the highways and byways for subjects photographic, to add to my collection of pictorial souvenirs. My pet camera, a Goerz Stereo Binocular was with me; as the name implies it is a binocular and a stereoscopic camera combined. There is nothing remarkable in a tourist looking at distant objects or views in a strange town with a binocular, it attracts little attention, and the casual observer would hardly think, when I was looking through the binocular even wrong end to, that I was using the instrument as a camera.

Perhaps we get attached to our cameras through long usage, and that attachment borders on affection, when we remember the pictorial mementos in our collections; souvenirs of places we may not see again.

My particular hobby is the photographing of landmarks, and I have hopes of some day possessing many such pictures. Also, I try to get a record at the time, if possible, of interesting particulars of the scene or objects photographed. These notes add greatly to the enjoyment of friends viewing my collection; it is so much better than passing around a snap shot and telling them "this is an old street in Monterey and this is an old house, etc. etc." A listener is likely next to expect "this is the house that Jack built."

Among my shots in that old and delightful city, I came across this one, and I thought of Camera Craft; perhaps the picture might be of sufficient interest to its readers to merit reproduction.

In my note book I find the following technical data: Lenses used, Goerz double anastigmat; exposure, month of June, 11 a. m., sunny; stop used, full opening; plate, Cramers Iso; developer, Lumier's dianol. The size of the single negative is $1\frac{1}{4} \times 1\frac{3}{4}$ inches, and from this little plate, the 8x10 bromide enlargement was made; I might add, persons who have seen this bromide were surprised, such an excellent enlargement of the size mentioned could be made from such a small negative. I have pasted the contact print on this bromide so that the reader may judge by the cut, their respective proportions.

From the historical memoranda I glean the following: The first theatre in California. It was originally constructed for a sailors boarding house by John A. Swan, who came to Monterey, California, on the ship



THE FIRST THEATRE BUILDING

By M. TANRON

Soledad, sailing from Mexico about the spring of 1843; shortly after Swan's arrival he erected this adobe, to which he later added two wings, one for a dwelling, the other an addition to the boarding house.

It seems that about 1849, when the discovery of gold was made, a theatrical company was organized from a troupe that was disbanded or stranded (my notes appear smeared here.) These thespians gave a number of plays; one of the first attractions was, "Putnam" or "The Lion Son of 1776," and tickets were sold at \$5.00 each. It is also reported, Jenny Lind's famous voice has been heard within these walls.

I like, in imagination to look back to those stirring days, and I strive to picture the audience in that adobe play house, listening to Putnam the Lion Son; how Old Put—or was it Young Put? would roll his Rs. from the stage, and how he just hissed and then bellowed his tragic lines at the audience, in quite the accepted fashion. And think of that crowd; what men they were; and what rough-necks were some of them; with bulging hip, and weighty belt full of bullets, an 'everything. Those were the days of gold, when the blood was red and "the licker" was strong. "Them was great days." What a time!



The Distant View

By Edgar Felloes



Illustrations by the Author

Who is not familiar with the distant view which at times has won our admiring attention? And who has not experienced disappointment at that view on the photographic plate? How small it looked, how insignificant; and yet—at the time of taking, the object absorbed our whole attention, it filled our whole vision; we were barely conscious of surrounding things; the picture was ours; we were satisfied.

Let us now examine a print of that beautiful scene, what have we? Everything is apparently reversed; that thing of beauty which tempted a plate, where is it? Tucked away, somewhere on the horizon. The print is rather a source of disappointment than a pleasure, objects we never noticed before are now most conspicuous, and we are apt to wonder why we made the view.

Now, why did we fail? Simply because our lens “saw,” more than our eyes were conscious of. The picture is there, however, it is hidden away; let us find it!

Take two pieces of black or white card and cut them in the shape of a letter L by inverting one of these letters we find we can enclose a space either oblong or square; let this space then, include only that part of the picture the eye was conscious of when admiring that particular scene; it is that, and only that—we need in our photography; we have commenced to appeal to the imagination. Did not that distant view appeal to our imagination; we were so wrapped in it, we actually saw little else. Let us work along these lines. The new recruit may feel a pang of regret at scissoring away so much of a print. The little that is left would hardly appeal to anyone, it is such a sad fragment; but the germ is there, never forget it, and if our negative is good, we can enlarge that little bit to a moderate degree, and have the real picture and our pleasure again.

The writer is a great believer in enlarging, but not in the method of enlarging usually practiced; there, we enlarge it all, the good and the bad, the interesting and the commonplace. We should select that part we think good and then enlarge it. Do not adopt a set size for our enlargements for the sake of uniformity; the results will look mechanical and tiresome. There is no objection, however, to a uniform size of paper, this makes for neatness, but let the pictures themselves vary in size according to their fitness.

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There are ways in which these distant views should be made; details are here given and reasons, that The New Comer to our ranks may be interested and encouraged to try. In my strolls I make it a practice to take my ray filter with me for, "you never can tell!" and frequently a tripod also, though the outfit is a hand camera. Filters and tripods are so handily made now-a-days that it seems a pity, the latter especially, is not more often used. The tripod opens a wider field for us; we do not have to practice photography long before we learn there is much that can not possibly be secured by a snap shot, now, a tripod might have saved many an undertimed film or plate.

Walking through Golden Gate Park one sunny afternoon, I was attracted by the view of the two towers of St. Ignatius' Church topping the trees. I was carrying Orthanon double coated plates and a ray filter K3, made by Eastman, and this happened to be the first time I had used that filter on that make of plate, I was more familiar with the filter in conjunction with Panchromatic plates. The question arose, "how much time?" and I remembered this old saying, and I hope some reader will also remember it, "when in doubt—give plenty of time." Then another difficulty presented itself; automobiles were skimming along, following each other in rapid succession; I could have had a second, perhaps two seconds of time for the exposure between the passing of cars, but what about the ray filter? which is of a pretty strong yellow, and that rate of speed risked under exposure—but, persisted the echo, "give plenty of time." Perhaps, some of you will think, by giving a time exposure, the cars will surely be blurred! Not a bit of it! Here is a trick known even in the old wet plate days, and will be new to some workers today: If we give a long exposure, and the object is moving, the negative shows no impression of it; this also is worth remembering.

The camera, a Premo, was placed on the tripod; this camera was used on account of it being supplied with a ground glass, a great convenience at times. Over the lens I placed the yellow screen or filter and then focussed; in general practice it is safer to focus with the screen in place, than to place it there after focussing; because, the addition of the screen is likely to change the focus, though probably in working short focus hand camera lenses at their equivalent focus this might not be the case; so that any one using a camera with roll film would be safe without the ground glass, as his lens for a view of this kind, would be drawn forward to 100 feet mark on the focusing scale. I worked as I did simply through a habit acquired in copying; I wished a sharp picture; for I knew it would be necessary to enlarge a portion of the negative, later.

The novice probably knows that the impression of the light from the sky, on the sensitive film, is far more rapid than from any other part of the landscape; hence we have what is termed a "bald-headed" sky in our print; that means a print showing the sky portion a blank of white paper.

THE DISTANT VIEW



THE TOWERS OF ST. IGNATIUS

The View as the Lens "saw" it

The Scene as it Appealed to the Eye

On the other hand, the greens of foliage and grass, show excessively dark, from the opposite cause; for there is infinitely less light reflected from these greens than from a blue sky; not only that, but the sky itself contains light and in consequence its actinic effect is greatest. To overcome this difficulty or at least to mitigate it, we have recourse to color sensitive films, and to still further accomplish the end in view, we employ these ray filters. It stands to reason then, if we can change our blue sky to a green sky, our trees and our grass in the picture will stand a far better chance of adequate representation, and this is just what is done by placing a yellow ray filter, between the sky and the sensitive plate, and a convenient way to do so, is by fitting our filter over the lens. If we look at a blue sky, or anything blue through the filter we will see at once the blue color is changed to a greener shade, and it is much easier now to make a photograph, in color value, more as the eye sees the scene. Another aid rendered by the color screen is, we are able to pierce the mists that frequently exist in the atmosphere, hence its use is important in these distant views. There are works published on the above subject, giving what I have written in a



A WIND WARPED TREE

By W. FLETCHER

scientific way, and to these writings the students attention is directed, the study will be found both helpful and interesting.

Having explained the use of the filter, I now return to the making of that negative, illustrative of this article. Everything being ready a small stop was inserted F 32, and an exposure of 15 seconds was given. Please remember such a small stop would not have been used had it not been for those automobiles; I dislike the use of small stops for landscape work, they tend to destroy atmosphere; yellow screens have that tendency also, and we should not use them stronger in tint than necessary to accomplish the desired end. During the exposure 8 to 10 cars passed by and the sun showed in bright streaks on their polished sides. If the reader will examine the center tree in the enlargement, these streaks of light will be found in the deep shadow, they suggest steps; of course they might have been removed from the negative, or touched out on the print, but it would not serve my purpose to remove them, there is no trace of the passing cars, however, because as explained there was not sufficient time, with that small stop, to register. The solitary car on the left of the contact print was stationary, it therefore appears in the print.

In conclusion I would like to say to those photographers to whom landscapes appeal; don't neglect a distant view if attractive, even if it shows small on the negative; try enlarging it.

Snow Scenes

By Ed. Walters



Few photographers would guess how I made some of my best snow pictures; some would call it a fake, well, so it is, but any one buying photographs would be almost sure to select the "fake" in preference to the real view; and after all, why brand the effort with such an ugly name, when results are so pleasing?


It is necessary in making these kind of pictures to have recourse to double printing, but if the reader will follow my suggestions he will have no serious trouble. First we need some stock negatives; these I always make on films for the reason they can be printed from either side, and are then suitable for views with the light falling from either right or left and somewhat towards you. What we need are some effective foreground studies suitable for the subjects to be treated. For rural scenery we have an endless variety of fences, stone walls, a pump, a wagon and other objects too numerous to mention. In making the views of walls or fences, be sure not to run them parallel with the bottom edge of the film, make your exposure from a position showing the object at an angle and include a gate or other opening, so as not to shut out the view into the picture, as our object should be to connect the foreground with the more distant view and not to cut our picture in two parts, which would be likely to happen if our wall or fence ran right across the picture in an unbroken line. If snow has settled on top of the object very beautiful results may be secured especially if this snow has the light falling upon it, the other parts are in half tones and shadow. The snow itself in the foreground is generally improved so far as the picture is concerned by showing foot-prints; if there is a gate make the tracks in that direction, and through the gate also if possible. Undesired objects showing in the negative should be opaqued out, but choose your foregrounds with care, and a view to reduce



painting-out to a minimum. Probably the best time of day for snow pictures is morning or evening.

I will describe the actual making of one of these photographs, as all are handled in much the same way. Among my stock negatives happened to be an old wagon covered with snow, it stood alone in a whitened field, the light fell upon it from the right and front; the exposure was made when the sun was low, but the light effect on the snow on top of the wagon, the seat, footboard and other prominent parts, were very effective, the rest of the wagon showed gray and dark. The picture looked good to me, but probably to some it would be nothing but an old wagon. I had a clear idea of what was wanted; a view rather flat, some distant houses or trees, a gray light. I found a suitable view with some farmhouses in the distance and a winding road to them, the road was rutted through the passage of vehicles, and the sky had some dark clouds promising more snow. Here was my picture. I made two plates not being sure of my exposure, as the light was feeble, and the result after developing was one negative, harsh from undertiming and the other much better. There were two things done in the developing which should be mentioned. When the plates—a non-halation—was about half ready I took a plug of cotton and dipped it in stronger developer and applied that to the sky on the right hand towards the edge, likewise, the foreground on the left, by the roadside, was so treated, not forgetting to drop the plate in the tray of developer once in a while to wet the whole of it and avoid harsh edges; the idea in mind was to suggest light crossing the picture diagonally. On another evening I made a print, no that's not so! I made about seven prints, before I got what I wanted. I found the sky on the right side needed a little shading during exposure, and I was giving either too much or too little, the wagon was printed in, after the exposure of the landscape, it stood by the roadside, and was printed on top of the snow, not nicely fitted in, but with a hole in a piece of cardboard it was vignettted in, and the print was complete but for one thing; the touches of light showing on the snow in the wagon negative, were sullied in the print and something had to be done. The print was taken out of the wash water, placed on a sheet of glass and the surplus water blotted off; with a small sable brush dipped in the red prussiate reducer. I carefully traced over the light parts on the damp print and with another blotter removed the reducer, in a few minutes the thing was done, the print was again washed, dried and mounted. The title chosen was "Abandoned," and an artist friend of mine, a picture painter came and looked at it; he cocked his head on one side, pursed his lips and after a long silence said, "It wasn't at all bad!" He is a fat man.

It is true there is more trouble in this kind of work, but if photography is really one's hobby, what of it. The work means more to us, and if well done, gives added pleasure to others. It often happens in snow scenes, through the density of the negative the snow itself prints only light gray. Instead of reducing the negative, try printing in from another plate as suggested, the result will often prove very pleasing.



Tropical Troubles of the Photographer

By Van Allen Lyman.



"I had those Indian negatives laid face to face, very carefully packed in old plate boxes and stored away in a closet. When I looked at them a year later I found that some breed of tropical parasite in the shape of miniature ants had been there before me and, finding the emulsion to their taste had actually eaten labyrinths of grooves in it. They were tiny enough to get in between the plates. Most of those negatives, which were irreplaceable and worth a few thousand dollars to me were utterly ruined, of course." This was the tale of woe that the writer heard from a photographer friend a year ago and, while an extreme case is merely typical of the abnormal conditions that make things interesting for the photographer when he reaches the vicinity of the equator.

Photography in the tropics is apt to be performed under difficulties at best. Chemicals and sensitized materials deteriorate much more rapidly than in the States, and films especially so. The Eastman people formerly furnished films for tropical use packed in tin boxes and sealed with a piece of adhesive tape. Now, they pack their tropical films in thin lead cases. When a film is to be used in the humid tropical lowlands the best procedure is to have the inside of the camera as free from dampness as possible, drying it out by artificial heat if necessary, put in the film which to that time has not been taken out of its air tight case, expose the entire roll as quickly as circumstances will permit and develop immediately. In the highlands of the tropics conditions are not so severe, but in humid lowlands, and especially in the rainy season one does well to consider films perishable, and to handle them accordingly. "Treat your films as you would fresh milk in the matter of spoiling and you won't be far wrong, and you'll get better pictures," said an old timer to me. While this might be considered a slight exaggeration it hits rather nearer the truth than might be expected. Glass plates will stand tropical humidity better than films, but who has the fortitude to lug around pounds of glass plates under an equatorial sun.

The development process in the tropics presents peculiar difficulties of its own. When "cold" water from the tap may register around the century mark one may have the unpleasant experience of seeing a film behave just as it might be expected to in a hot bath. In the larger cities, where ice is available one uses it, either putting ice directly in the developer or putting the tray of developer in a dish of cracked ice. A thermometer laid in the developer gives a guide to temperature and one regulates the cold accordingly. We do real nice work in the tropics, Oh yes indeed, but sometimes do it under difficulties.

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When one is called on to make an extended trip in the jungles development is still another story. Here, one has no ice available and for cool water must turn to the water cooling bag and the small hours of the morning. Air temperatures are lowest generally from two to four A. M. and water from an evaporating water bag will have a temperature a little below the atmosphere in addition, so one does his work then. If a lake or deep river is at hand one can sometimes get coolish water from its bottom. The procedure for getting bottom water is to take an ordinary bottle, weight it with stones so that it will sink, tie a long cord about its neck, leave a little slack in the cord and then make a hitch around the cork which is put in place but not too tightly. The empty bottle is then lowered to near the bottom, a slight yank on the string extracts the cork and the cooler water runs in.

To those going to equatorial regions as tourists a suggestion may be of value. If you carry any films with you get the "tropical" ones packed in lead cases, or better, buy films when you arrive at your destination. Have your films developed by a local photographer on the spot, possibly you can arrange with him to do your own developing. At least do not figure on sending films back to the States for development, they are too apt to be spoiled by the time they get there.

Tropical conditions have their effect on other parts of photographic equipment as well as the negative end. In time lenses will often go bad. In some cases a bacteria will develop which will affect the balsam of compound lenses. Certain qualities of glass will sometimes develop beautiful iridescent coloring in spots, against which ordinary cleaning is apparently ineffectual. The man on special work with lenses valued at perhaps several hundred dollars may keep his lenses submerged in oil, except when in actual use, as a preventative.

Set a camera away for a time and when you again open it there may be a beautiful green mould starting to grow on the bellows. Open it out and set it in the sunlight to air and on again sighting it a cockroach the size of a mouse may be found cheerfully making his dinner off the leather.

Reference to lenses naturally leads to shutters. The writer once had in Mexico a nice little camera with one of those shutters with a name like a Pullman car and working at any speed from one second up—at least it worked in the States. But tropical climate did not agree with it. I do not recall exactly how we got it open the last time, but I think we used a pen-knife, a toothpick and a hatpin. After that we fitted that camera with a shutter that worked infallibly, a pill box lined with black cloth, and the diaphragm was stopped way down. In contrast to this, however, the writer has at present a 3A Kodak which he has used steadily for seven years almost on the equator and the shutter, one of the sort which gives 1/15, 1/50, 1/100, T and B, has never given any trouble whatever and incidentally has never been given any attention.

PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

TO OUR FRIENDS—Tell us what you know! Perhaps you have had some photographic difficulty and overcame it—how did you do it? Tell us!

Perhaps you know some photographic "kink" that others would like to know—be generous, help others; tell us what you know!

These paragraphs are yours; to be used for mutual help: let us hear from you—

White Wooden Trays and Sinks



For the past several years I have used homemade wooden sinks and tanks for hypo and other solutions where the bulk was fairly large. These I have always made out of $\frac{3}{4}$ inch material, taped the seams and given two or three good coats of black waterproof paint. After a few months of use, they generally needed a going over, some corner would develop a small leak, or if the tray was allowed to dry out one board might check, making quite a crack to close. Not only was this stopping for repairs a nuisance right when I wanted to do some work, but when another coat of paint could not cure the trouble, I was up against it until I hit upon the plan of patching up the worst spots with a coat of hot paraffin. I tried several methods of applying it, and found a most satisfactory one, and have coated my old tanks with very good results.

A few days ago a hypo tank required replacing to avoid the risk of hypo dust in the dark room. It had become so saturated with the salt that, when left to dry, was found covered with a mass of white crystals. Having used paraffin successfully in stopping leaks in my old tanks, I decided I would coat the new one with paraffin also and in planning this I saw no reason for using the old method of coating with the black paint first. In fact, it had everything against it.

I don't know how black became the popular color for dark rooms, and dark room utensils, but it is losing place in favor of finishing in a light color. Cleanliness is essential for good pictures and a black dark room is not conducive to cleanliness. As far as light goes, the walls can only reflect it and the dark room illumination should be the first thing tested for "safety."

I cut my pieces of good clear redwood and thoroughly dried each one by heat, as I assembled the tank. When it was together, I gave it a good heating by setting in front of my electric heater for some time. Any

source of heat will serve of course, the main object being to get the wood dry and warmed through.

While the box was warming I melted up my paraffin, and in doing this was careful not to have the flame too high as hot paraffin ignites very easily. I melted enough so as not to run short in the middle of the coating. Having previously made a small paddle, whittled out of light wood to the shape of a 2 or 3 inch paint brush, and over the end of this was bound a few layers of soft cloth to form a pad, I was ready to proceed.

When the box and paraffin are both hot, pour a small amount of the paraffin in the tray or tank and flow it to all the corners, then using the cloth pad as a brush spread the paraffin over the whole tray both inside and out, the thicker the better, as long as air pockets do not form between layers. Keep the box and paraffin hot all the time you are working, this allows the paraffin to penetrate into the wood and prevents air pockets from forming between coats. As a finishing touch I use a gasoline torch to smooth any rough or uneven places and although I have not tried it a hot flat iron would probably serve very well for this purpose.

A tray made this way preserves the light color of the wood, is proof against most chemicals in photographic use, and with ordinary care in handling I have found to be very durable.

A. E. D. California.

BLISTERS—It's a fine thing to have only successes to report, but perhaps The Editor can find room for an account of failure. A while ago I needed several prints to illustrate a card index, they were to be made on development paper on account of convenience, it was not necessary that these prints should be class A, but serviceable, fairly good stuff would do, the blacks for instance, might be of a greenish or brownish shade. This leeway made me careless. I had some developer mixed that had been used for lantern plates the day previous, a good formula too, and as it did not matter what particular shade of picture I got, I decided to use it and save myself the trouble of mixing fresh, and then I should also save that cost. I printed a trial print, found the exposure was correct, though the developer was rather slow. Being satisfied I went right ahead and finished the job; the prints looked good too, they were clean and snappy, and they went into the wash water that way. In half an hour's time I examined the prints and found them covered with blisters and useless. This experience led me to start right, and the results were satisfactory. I attributed the cause of failure to the excess of alkali. My developer was mixed for what is known in the trade as black and white slides, and contains a larger amount of alkali than would otherwise be used, this has a softening effect on the gelatine and I attribute my crop of blisters to that cause, the developer also being old, the time of developing was slow, this aggravated things. I am inclined to believe in some cases, failures may be traced to this cause—excess of alkali.—G. W. W., Washington.

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Our Little Cameras

Why is it so many amateurs appologize for the size of their cameras, and excuse the quality of work because of the size of picture? The more advanced workers must be familiar with this mental attitude, and no doubt can remember the remark—when showing a larger picture, say 5x7, which at that, may be an enlargement, “You work with a large camera; mine is onyl a vest pocket, a little Brownie, just a cheap thing.”

These self excusing workers should change their mental attitude toward their little instruments; they should have more affection for these little souvenir getters, should in fact cultivate a reasonable amount of respect for their outfit; sufficiently so, to induce them to take a proper amount of care, so that their little cameras will be in perfect working order, at any time. Doing these things will at once make our work better, it can not help but make it better, because we have commenced to think; we want better pictures and we are going to have better pictures, just because we want them.

We have before us the January number of Kodakery, a magazine for Amateur Photographers, published by the Eastman Kodak Company; the reader may secure a copy for five cents, and the amateur will find it worth while. This little booklet is full of illustrations; they consist of various subjects from the 1920 competitions, the product of careful amateurs. There, that is just it! These amateurs were careful in everything they did, or there work would not have graced the pages of Kodakery. There was care exercised in the selection of subject, the lighting of the subject received thought, and the whole after operations were brought to a successful issue—by care. Did any of these amateurs feel when making their pictures: “Oh, this is just a little camera, let her go Galligar?” No one would for a moment think so, on looking at the illustrations.

Large pictures from small negatives, is the subject of an article on page 12; on this page is printed a little roadside scene secured with a Vest Pocket Kodak, and on the page following we have an enlargement of about 4 diameters from that little negative, compare them. The enlargement is very good, most people would prefer it to the little picture, but we should remember everything had to be in the small negative before it could appear in the enlargement. Now, if we were working with a half-plate camera, 4¼x6½ inches, we should find a decided increase in the cost of same and also the working cost, be it plates or films would be appreciably greater:

The Photographic Salon

What's in a name? A whole lot, sometimes. Were we to call an exhibition of lens pictures simply a photographic exhibition, our show would probably fall flat, but let us dub it by the above title; there are hopes; and if we can secure the co-operation of such workers who are "nifty" with brush or pencil, these hopes loom big. For to such shows the limousene goeth, and where the limousene goeth the crowd cometh, and we all feel better, even happier; perhaps our collars are whiter and our shoes shine more. Indeed, there is something in a name.

There is also something very interesting in these exhibitions, for here we encounter the craftsman who is impatient of photographic limitations, and who has the courage to take all kinds of liberties with a picture having a photographic base. The dominant idea seems to be to make a photograph look unphotographic. Some workers attempt this and secure striking results, others succeed, but lamely; and why? Probably they are lacking in art instinct or art training. On the other hand, the "straight" photograph must show something quite striking, to pass the critics, or, if the work is not remarkable, it really must show something startling or even eccentric; we hunger for the bizarre, we thirst for the different, we may be anything, but we must not be ordinary.

A wise man has told us to assume a virtue if we have it not; and that is just what we will try to do with regard to our pictures; for it is not given to us all to create, but we may borrow from others if we wish, and their example will give us the power, to put our own little work through.

In these days of cheap reproductions we have for our guidance, the labors of the worlds greatest artists, they are our not for dollars, but for cents. It is within the means of any of us to purchase a few catalogues of their works even down to our day; these catalogues have small pictures to help our selection, and from them we secure larger reproductions in half-tone, about 4x6 inches which is quite large enough for our requirements, and not too large for our purse. Also, if we are really in earnest we can augment our collection by clippings from the illustrated magazines of the works of modern painters. The value of these prints as reference, is great to any Pictorial Photographer; just how these artists did it, we shall learn, and just how we should do it, we shall know, and our work won't be timid.

It is not our intention to copy these pictures, not by any means, but we can, with profit to ourselves, use their lighting effects and their massing of shadows. We can not of course do these things while making our negative, but we certainly can do wonders while making our print. This brings us then to the subject of "dodging," it is perfectly legitimate, for we are after the pictorial, and we take our print and do with it what we best can, to strengthen our story or to tell a new one. Our negative then becomes our servant; it is a means to an end, and not as is too often the case, the end of a means. We hope, later, to discuss this subject technically, for some of our readers may want to be shown.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

The Application of the Watkins Factorial Principle to the Development of Photographic Plates and Papers.

(Continued from October Number)

It may encourage those who doubt the ability of rule to displace guesswork with success to add that amidol and a factor of twelve produces perfect technical prints upon every bromide paper made by Messrs. Kodak, Illingsworth, Wellington, Kosmos, Barnet, and Criterion, and I can see no reason why the same factor should not apply equally well to all other makes. And it may give further encouragement to state that a few experienced bromide workers in the Liverpool Amateur Photographic Association have adopted factorial development in spite of their acquired skill, because of the paper saved through the avoidance of mistakes when untoward circumstances combine to deceive.

The factorial system of Watkins is the most perfect system we have as yet for the production of bromide prints of quality.

Gaslight Paper Prints

The one difference in the developing properties of gaslight paper and bromide paper is that the former develops very much more quickly. The rapidity of development is so great that judgment by inspection is impossible. This rapidity of development also implies a very rapid appearance of the image extremely difficult to time. There is no advantage whatever to be gained in abandoning the usual time method of development of gaslight paper and substituting the more difficult factorial method of timing. In spite of variations in temperature, etc., which do cause differences in the total time of development of gaslight paper, it has been shown in the "B. J." that these can be adequately compensated for by variations in exposure. The simple rule for gaslight paper is to then the slide possesses great contrast. If

develop the vigorous varieties for thirty seconds at any temperature with developer which is double the usual bromide paper strength, and develop the soft (normal) varieties for sixty seconds, with the usual bromide paper developer at normal strength. Precisely the same principles apply in diagnosing faults as in the case of factorially developed bromide paper, namely, prints which are too dark are over-exposed and prints which are too light are under-exposed. With gaslight paper, it is convenient to utilize a fixed time of development and never depart from it. The same end is reached in bromide paper by using a fixed factor and never departing from it. It is a curious reflection upon photographers that for years they have been content to produce gaslight prints by purely mechanical development for a fixed time without utilising "inspection," "judgment," "control," and so on, but only with difficulty can they be persuaded to suspend their judgment, scrap their control, and work by rule when developing bromide paper.

Factorial methods of development are not readily applicable to gaslight paper, because of the difficulty in timing the first appearance of the image with accuracy.

Lantern Slides

The finished lantern slide possesses two characteristics which are absolutely distinct serve completely different purposes and which are or should be controlled or varied in a different manner. One characteristic is density and the other is contrast. The term "density" is used in the popular sense (synonymous with the scientific equivalent, opacity), and describes the stopping power to the transmission of light. The term "contrast" describes the relationship between the various densities in the same slide. If there is a considerable difference between the highest density and the lowest,

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there is little difference between the extreme densities, then the slide possesses little contrast and is flat. These two characteristics, density and contrast, serve different purposes. The density required is determined by the strength of the light in the projecting lantern, and the degree of enlargement. If, at a certain degree of enlargement, the image on the screen is too dark, then the light is too weak for the density of the slide; or, conversely, the slide is too dense for the strength of the light. The density of a slide is the characteristic which requires to be adjusted to the lantern light in order to give an image upon the screen of the required luminosity. The other characteristic, namely, the contrast, is purely a matter of taste in precisely the same manner as is the contrast of a print. A slide of a contrast suitable to the subject is very little affected by the light of the lantern,‡ and only a little affected by the degree of enlargement. For practical purposes, the density of a slide is adjusted to the lantern; and the contrast is adjusted to pictorial requirements.

It is being recognized as a photographic axiom that density is a characteristic dependent upon exposure and that contrast is a characteristic dependent upon the length of time of development. This is true of all photographic materials requiring development to render visible a latent image. It would appear to be desirable then for the maker of lantern slides to expose them to suit the lantern for which they are to be exhibited, and to develop them according to his pictorial ideas of the contrast the subject demands. Not only must the exposure be measured, but the degree of development must be measured too. As in negative work, the degree of development varies with the time of development, and the latter is influenced by temperature, developer changes, make of lantern plate, batch of lantern plate, and so on. In the absence of time and temperature tables for every lantern plate upon the market, we are driven to factorial development to determine the degree of development under variable conditions. The inaccuracy of the factorial method due to

gross errors in exposure is eliminated by a lantern plate exposed in strips like a piece of bromide paper. By exposing to a reasonably constant light at a known distance, exposures can be repeated or modified with exactitude; and by developing factorially, the degree of development can be repeated or modified with equal accuracy. The degree of development cannot be estimated by inspection in an unfixing lantern plate. The eye may be a fair judge of density as a whole after long practice, but it can never judge accurately the density differences which are the measure of the contrast. And it is entirely for the sake of getting these density differences right that development must be carried out with the aid of calculations. These difficulties disappear if development is carried out factorially. There is only one textbook known to me in which precise advice is given as to the means of repeating or modifying with accuracy these two characteristics of lantern slides and that is the publication of Messrs. Kodak (Wratten Division) entitled "Lantern Slides." I would refer the reader to that booklet for further information concerning the difficulties in judging warm-toned slides during their development and the ease with which these difficulties can be overcome by adopting a factorial method of development. For those who would care to try the factorial method I suggest that the factor employed for ordinary black and white work be three-fifths of the ordinary negative factor given by Watkins for the developer chosen. The following table of faults and their remedy may be helpful:—

Fault	Cause	Remedy
The slide is too dense for the projection light	Over exposure of the slide	Give less exposure and develop to the same factor
The slide is too thin for the projection light	Under exposure of the slide	Give more exposure and develop to the same factor
The picture on the screen possesses too much contrast	Over development of the slide	Give the same exposure and develop to a lower factor
The picture on the screen possesses too little contrast (flat)	Under development of the slide	Give the same exposure and develop to a higher factor

The whole gamut of failure is covered in that table.

‡ Slides which are not neutral in color are affected by the spectral composition of the projection light.

A PHOTOGRAPHIC DIGEST

I cannot refrain from quoting a sentence from the Kodak booklet referred to, which is to my mind one of the finest bits of advice ever given to the lantern slide maker: "The best method of dealing with wrongly exposed slides is to put them for a few minutes in early boiling water, to which has been added a little washing soda. When carefully cleaned, they make excellent cover glasses."

The factorial method of development is eminently suitable for the production of lantern slides with ease and precision.

Enlarged Negatives

The making of enlarged negatives is not so commonly indulged in today as was the case some years ago, partly on account of the cost of plates and partly because the carbon and platinum printing processes are not very commonly used except in contact printing from the original negative. There are occasions, however, when an enlarged negative is required, and there is a remarkable absence of precise instruction in the text-books. An enlarged negative can be made from the original negative through the intermediary of an enlarged or same size positive. We are not concerned at the moment with the use of a carbon transparency as a positive. Two operations have to be successfully carried out, the production of a satisfactory positive and from it the production of a satisfactory negative. If the enlarged negative is required to be of the same contrast as the original, then the contrast of the positive and enlarged negatives must be reciprocals of one another. If, for example, the positive is developed to a contrast of one ($\gamma=1$), then the enlarged negative must also be developed to a contrast of one. If the positive is developed to a gamma of .8, then the enlarged negative must be developed to a gamma of $\frac{1}{.8}$ ($=1.25$), in order to reproduce the contrasts of the original negative. It may be desirable, on the other hand, to increase or decrease the contrasts in the final negative as compared with the original in order to fit it for the printing process contemplated. The densities of the positive and final negative do not matter in the slightest degree; density merely affects the time taken to

print. The density relationships, however, that is the contrast (γ), matter very much, because they determine the printing quality. It has been considered by some workers that factorial methods of development would be a great help in calculating the degree of development given. Personally, I doubt it, because of the difficulties in standardizing the exposures, particularly in the enlarging process. Without standardized exposures for both positive and negative the time of appearance of the image varies with the exposure and leads, as it did in the case of open air negative work, to erroneous total times of development. Inspection is hopeless as a method of precisions. Development by time alone appears to be the way out of the difficulty. Unfortunately, this method leaves the photographer with but little choice of plate. The only plates made concerning which there is with every batch information concerning the speed of development and the time taken to reach various degrees of contrast are the panchromatic plates of various makers and the Wratten Alchrome. A process panchromatic would be perfectly suitable for the work, and accompanied by all the information required. They cost more than ordinary plates, but the precision with which they can be used more than compensates for the additional cost. Assuming that the photographer is equipped with a process panchromatic plate accompanied by information as to the precise time taken to develop to a gamma of .8, 1.0, and 1.2, he should be able to imitate, exaggerate, or diminish the contrasts of original negative with a precision greater than any factorial method of development, because this method is independent of the time of exposure, provided that the later is within the latitude of the plate. If the contrasts of the original are to be imitated, then both the positive and the new negative should be developed to a contrast of one. If the contrasts of the original negative are to be reduced in the final negative, both the positive and final negative require development to a contrast (γ) of eight tenths or some figure below one. Exaggeration of contrasts is arrived at by the development of both the positive and negative

CAMERA CRAFT

to a contrast of one and two tenths or some figure above one. If positives and negatives are so produced by time development, then their densities are an indication of the exposure given. If medium densities are obtained in both the positive and the negative, then the photographer may be sure that his exposures are within the period of correct exposure—a piece of information of the greatest value, which cannot be arrived at in any other way in practical work.

It might be thought that if the timing of development with process panchromatic plates can lead to precise results, then, in the case of other plates, advantage could be taken of the time and temperature tables published by several agencies. It is an unfortunate fact that these time and temperature tables are only true for the particular batch of plate that their publisher tested. Every other batch of the same plate differs except by pure chance. I have had two successive batches of Wratten panchromatic plates, one of which attained in four minutes the exact degree of development attained by the other in eight minutes. This is a moderately extreme example, but a variation of fifty per cent in the time of development from batch to batch of the same make and variety of plate is quite common. Time and temperature tables, as published for plates in general, give average times only. The information they contain is not sufficiently precise to be of value in work requiring accuracy.

The factorial method of Watkins is unsuitable for use in the development of positives and subsequent enlarged negatives owing to the difficulty in standardizing exposures. Accurate development by time is a better plan, and that can be accomplished by using process panchromatic plates accompanied by information as to their rate of development.

Summary and Conclusion

The process of development is purely a question of time in every photographic process in which a latent image is made manifest by development. The factorial method of Watkins is a method of ascertaining what that time should be and automatically makes allowance for the many

variations in the conditions of development and nature of the materials which cause alterations in the time of development. The method is upset when exposures cannot be standardized. It is therefore suitable for the following classes of work:

(1) The development of studio negatives and copy negatives exposed with the aid of a constant artificial light.

(2) The development of bromide paper.

(3) The development of lantern plates. It is not suitable for:

(4) The development of panchromatic plates.

(5) The development of any plates exposed on outdoor subjects.

(6) The development of enlarged negatives and positives.

(7) The development of gaslight paper.

It has long been recognized, but the recognition is only slowly becoming general, that the one important thing for the practical photographer to know is the rate at which any operation that he is conducting is taking place under the conditions which obtain at the time. It does not matter two pins to the practical man to know that there is silver bromide in the film of the plate; or to know that after exposure and upon development it is decomposed into metallic silver and bromine. But it does very much matter to him to be able to tell at what rate that change is taking place, so that he can stop it at the precise moment that he wishes. And upon analysis it is apparent that, on the vast majority of occasions in photography, it is not of the slightest importance to the practical worker to know either what change is taking place or how it is taking place, but only important to know how quickly it is taking place. And since Hurter and Driffield published their work in 1880 a great deal of work has been done on the time that certain photographic operations take, the conditions which alter that time, and the amount by which it is altered.

The science and art of photography! The finished picture may be a work of art, but the means of attainment is most certainly a science.

B. T. J. GLOVER. in *British Journal of Photography*.

THE AMATEUR AND HIS TROUBLES

Conducted by Edgar Felloes

The Shadow-Plate

We are told there is nothing new under the sun, and I have often thought this statement applied more forcibly to photography than to anything else. I will not say that what I have to tell you is a new idea; you see, I am afraid of the other fellow; he might jump in and send me a night letter declaring—"that bright idea of yours was known in the year one, and you will find it on page 13 of—" Perhaps this is all true, but it is the usefulness of this little "kink" that tempts me to brave that wide-awake friend; and owing to my success in working the plate, and believing the idea original, I was bold enough to coin a name for it—The Shadow-plate. Having duly introduced my subject, and at the same time attempted to cautiously entrench myself, I feel I may go on.

A few months ago, in overhauling my junk, preparatory to moving to another happy home, I chanced upon one of my Shadow-plates and I thought, some day, I must tell the Boys and the Girls, too, about this thing. In my ardent days, when I slept with photographic thoughts, and was generally broke on account of photography, I was always experimenting; my experiments sometimes ran in the quest of a short cut, a time saver. In those days the printing out paper was supreme, and many amateurs, if they were ambitious, soon "got wise" to the advantages of local "sunning" of their prints. The sunning was done in the following way; we first made the print and toned down certain portions of it with light, sometimes the negative was in place, and sometimes the negative was removed, and the print itself was carefully exposed to light, and on occasions both these expedients were resorted to; we tried everything we could think of, for the sake of art and our love for the stock-house. We made a few fail-

ures, yes, just a few, and then some; but we had a good time, and got sunburnt; but what of that!

It was an accident! One day I wanted a proof from a negative, I used a piece of printing paper which had one corner, and about one-third of the way across a graded brownish color, owing to accidental exposure, I placed this in the printing frame and exposed to the light, on examining my proof, I noticed that the part that was printed on the pre-exposed portion looked very good, of course the shape was wrong, of that colored patch, but the print looked brighter there, than had the print been first made, and later sunned down. It was natural to reach the conclusion, that all I need do was to make my colored patches of the correct shapes, and of the proper tones, and having reasoned that far, it was an easy step to the shadow-plate.

A shadow-plate then, is a plate that might be called an artificial negative, that is, it is a negative but not made by photographic means. Its object in use, is to tone down certain portions of the print, before that print was placed behind the negative, and when the shadow-plate was made right, the printing of it and the photographic negative was simply a mechanical process. There appears to me to be no reason why this method of treatment would not yield equally good results with our developing papers; with platinum I was quite successful. It is, however, an advantage to use proof paper for the preparatory work.

I will now speak on the technical part of our subject. First we need a print for our experiment, this may be on a matt surface developing paper. Take this print in hand and with a little powdered black chalk and a paper stump spread the black lightly over those portions of your print which need shading down, working for the effect

desired. To some amateurs this may seem like working in the dark, but as a help, I would suggest reference to the work of the painters. Perhaps we have a print or reproduction of a painting that appeals to us, and its composition may be somewhat like our print, with such copy in our possession we should not experience any difficulty in massing our shadows and reducing "spottiness" so frequently met in photographs. Naturally this building up of a picture upon the skeleton photograph takes taste and feeling, it is putting in our individuality, and at the same time it places our work on a higher plane, because we are thinking, building. It is not to be expected that all photographers would be sufficiently interested or even able to do these things, but there is a steadily growing number of workers who take the liveliest interest on the art side of their hobby, our exhibitions prove this.

Having manipulated our print and realized our ideas with regard to it we next proceed to making our plate. We may employ either of two ways, the first is to employ matt surfaced celluloid, the second glass; this may be clear or ground glass, and I prefer glass to celluloid. If we use clear glass we must cover one side with a close grained thin sheet of paper; the ground glass needs no preparation. Presuming the paper method is adopted we should work as follows. Take the sheet of paper and damp it evenly over the back this causes it to expand, blot off surplus moisture and apply some paste around its edge to the width of one-quarter inch, lay the paper on the sheet of glass, pasted side down and secure perfect adhesion. The glass plate should be placed horizontally

to dry evenly, which it does in less than an hour. When dry the paper should be perfectly taut and beautifully smooth. With blue transfer paper trace down a rough outline of our photograph, or it may be placed in a retouching frame and copied in that manner. With the outline guide upon our stretched paper, proceed to black in with stump and chalk our shadow-plate, applying the chalk on those portions which are to protect the lights in our final print, this should be done smoothly, and of the proper densities, use soft rubber or bread for corrections, and when this is done make a proof, paper side up, in the printing frame. On examining our proof, we should find a broad treatment of the picture to be, in masses of light and shade. The next stage of our work is the final print from the photographic negative, this must be registered with a little care, though it is not at all a difficult undertaking. On the completion of this print we shall know exactly what changes or modifications our plate may need.

In conclusion I would say when printing through the thickness of glass plates lay the printing frame at the bottom of a box not much larger than the frame itself and about a foot deep for small work, point the box to the sky and print in the shade, the object of this is, that the light should strike our plate at right angles and reduce the blurs which would likely become unmanageable, on the other hand, we don't require anything approaching harshness, for the object of our work is to tone down in masses, the negative supplies the drawing. When printing on developing paper we do not require the box, as our light comes from one source, the electric bulb.





OUR BOOK SHELVES

"The Commercial Photographer"

A thoroughly practical book on the above subject has long been due; and has now been undertaken by L. G. Rose, former photographer for The National Geological Survey; former photographer in The U. S. Naval Gun Factory; and commercial photographer to some of the largest concerns in America; a man of such varied photographic experience should have, and does have, valuable information for his readers.

The book contains 148 pages of firsthand information and it is profusely illustrated. The reader is taken step by step through twenty-nine chapters, each one dealing with a distinct phase of the subject, accompanied with suitable illustrations. Chapter twenty-eight and twenty-nine are reserved for business, and very important business at that; twenty-eight deals on prices; twenty-nine on business building.

Commercial photography has suffered greatly from low prices and the author thinks the probable cause was the portrait studio man; he was in the earlier days at least, the recipient of the orders, they naturally came to him; but things are steadily improving, specialists are meeting the demand and experience is dictating the prices. That important question of cost is fully discussed, it should be of help to a newcomer or to others who need to revise their prices. The chapter on business building is largely on the matter of salesmanship and service, and would apply more or less to other lines of endeavor.

Among the technical chapters, the subjects of cut glass and silverware will be enlightening. There is a chapter on copying which should prove valuable to most photographers; certain it is that the average photographic copy falls far short of the original, and this falling off in quality is so general, that it has been regarded to

expect otherwise is absurd. The Commercial Photographer is serviceably bound in cloth, price, \$4.00 per copy, postage 15 cents extra. Published by Frank V. Chambers, 636 Franklin Square, Philadelphia.

Applied Art

By Pedro J. Lemos

Director of Museum of Fine Arts of Leland Stanford University—Pacific Press Publishing Association, Mountain View, California.

This contains nearly four hundred pages on applied art, upon a basis which, so far as I know, is almost unique. Most works dealing with art questions teach, for the most part, on the basis of the written word; here, the text is reduced to the minimum, but there are the largest number of illustrations that the writer has ever seen in a single book. While the subject-matter of the treatise carries us through all the fields of art as taught in schools and colleges, with the exception of life study, so much of it has a direct bearing upon photographic presentation, that reference to it is more than justified. More and more, photographers are realizing that serious pictorial work can never be accomplished without a thorough understanding of the underlying principles common to all forms of pictorial art. We have here given, directly through the eye, an understanding of nearly every problem, whether in line, mass, color or composition, that can arise in the application of all the means of pictorial presentation, including that of the camera. It is the method of the author most frequently to present his subjects in photographic detail, and then by associated pictures, show the various modes of treatment by other media. Special attention is drawn to the illustrations in landscape work, as exemplifying this. It is a book that every advanced worker should obtain and every camera club have on its shelf.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by
sending us reports for this Department

Amateur Photographic Competition

The attention of our readers is called to the Wollensak Amateur Photographic Competition which closes April 1st. Amateurs who have cameras fitted with this company's lenses should send in at least two pictures, their best work, of course. There is a pleasure in measuring our skill with others; this healthy rivalry is productive of good, irrespective of the cash prizes offered.

When we undertake to enter a photographic competition we naturally do our best, and that effort alone advances us a notch in our manipulative skill.

"Every contestant, whether a winner or not, submitting two or more prints, will receive a handsome souvenir watch-fob of dignified and artistic design."

We quote this from the printed conditions, for some, let us hope only among the very young, take defeat rather hardly, even fancying it almost a disgrace, this is a pity, for all can't win prizes. To others, a failure is a positive incentive, this is as it should be, and such workers are bound to get on; but we would say to the unsuccessful contributor don't for a moment allow yourself to think there was any favoritism either in this or like competitions, for there is absolutely none. The pictures stand on their own merits, and those who win, will have the satisfaction of knowing, that their work alone did it.

Before sending up your photographs read the conditions carefully, and conform to them, these conditions will be found in the Wollensak advertisement appearing on another page. Many of our readers may have a desirable negative to print from, but others may need to hustle a little, but there is time to turn out and get delivered something good before the closing day, which please remember, is April 1st.

A New Society and a Coming Salon

In the first rush of enthusiasm many years ago, the pictorial photographers held numerous exhibitions. Philadelphia, Chicago and San Francisco followed one another in rapid succession in showing the public that the work of the camera could take its place among the fine arts. Three times San Francisco made that demonstration, and those who remember the Second San Francisco Salon, with its rigid selection (if we remember rightly, about 120 pictures were hung out of 1400 submitted), will recollect what an inspiration it was to every serious worker. But that is long ago, and while Californians have been to the fore in securing honors in the East and Europe, our own city, with the exception of the 1916 exhibition, has known them not. This is to cease—the workers who have done these things abroad have come together to prepare for a salon at home in San Francisco; not only one, but to make such an institution a yearly affair.

The Pictorial Photographic Society of San Francisco

has been established to this end, and also to advance the position of photography among the fine arts. It will hold monthly meetings devoted to discussion, exhibition of work and criticism. The membership is limited, and the following list is a guarantee that work will be accomplished:

Director, Anson Herrick; Vice Director, W. B. Dyer; Secretary, Warren Z. Newton.

Members: H. D'Arcy, M. D., E. O. Jellinek, M. D., Percy Neyman, M. D., P. Douglass Anderson, John Paul Edwards, C. A. Love, Louis A. Getz, A. B. Stephens, W. H. Stephens, Otto C. Schulte, H. A. Hussey, W. W. Barker, F. C. Monel, G. H. S. Harding, E. Martin Webb, Ida Krajewski, Dorothea Lange, Mrs. C. Davidson, E. R. Shirley, Frank Flannery, J. E. Green, H. D.

CLUB NEWS AND NOTES

Cassey, Horace Hirschler, V. W. Binkley, M. J. Mortiga, C. R. Mandiville, J. A. Hickey, L. J. Tyler.

University of California Extension Division Publicity

The commonsense rules that lie behind the appeal of advertising are to be shown in a course of lectures to be given in San Francisco by Prof. Warner Brown of the Department of Psychology, University of California. The class will meet on Friday evening, February 4, at 7:30 o'clock in Room 237, Merchants Exchange Building. The title of the lecture course is "Psychology of Advertising," but it really covers the common sense reasons for success in advertising, discussing the principles of psychology as applied to advertising, appeal and response, memory and attention, the association of ideas, the psychology of color and form; the experimental method of testing the value of advertisements.

Other interesting business courses soon to be started in San Francisco under the direction of the University Extension Division are "English for Stenographers" and "Essentials of Business for Women," according to the announcement from the San Francisco office of University Extension, 140 Kearny Street.

The class in "English for Stenographers" will meet at 7:30 Monday, February 7, at Room 237 Merchants Exchange Building. It will consist of 15 lectures and discussions on the use of correct business English, with special training in business and trade vocabularies. Stenographers are invited to bring their office problems to the attention of the instructor, Charles A. Glover.

The class in "Essentials of Business for Women" meets on Wednesday, February 16, at 7:30, at 1337 Sutter Street, Emanu-El School Building.

For Advanced Photographers

The ninth annual exhibition of photography by the Bangor Society of Art will be held in the Fine Arts Gallery of the Public Library, Bangor, Maine, from May 2 to May 14, inclusive, 1921.

The aim of the exhibition is to show only that class of work in which there is dis-

tingent evidence of artistic feeling and execution.

All work will be submitted to the committee of selection, and will be carefully and impartially considered.

Intending exhibitors should communicate with Orman B. Humphrey, Chairman Bangor Society of Art, Bangor, Maine.

First Photographic Exhibition

From Victoria, B. C., we learn The Provincial Arts and Industrial Institute of British Columbia has given a helping hand to photography by adding a photographic section.

The First Photographic Exhibition was held in the exhibition room of the Parliament Buildings from January 17th till February 5th of this year. The Hon. Dr. Maclean, Minister of Education, performed the opening ceremony. Over 200 entries were received, 189 of which were hung. The first prize was awarded to No. 38, entitled "The Messenger." It was taken by Mr. C. H. Fletcher, of Vancouver, and depicts an aeroplane in the sky, a subject which ordinarily one would conceive as unfitted for pictorial effect. In this instance the plane machine is an infinitesimal part of the composition, but so cleverly is it suspended in the luminous opening in the clouds, the one light spot in the picture, that immediately the eye is riveted on the speck of soaring matter. Clouds and aeroplane alike give a sense of motion, the one of tremendous and diffused dignity, the other of concentrated haste. The second award, No. 37, is an entirely different theme. It shows the statue of Raphael, Liverpool, the photograph having been taken by Mrs. R. M. Weller, Victoria. The readers of *Camera Craft* will probably remember this as it was hung at the International Salon. Los Angeles, California.

The Lantern Slide Section was not very large, but some very good work was shown including some on Lumiere Colour Plates.

A very fine specimen of Telephotography was shown by Mr. F. Dundas Todd. A view of Mount Baker from Douglas Hill, ninety-five miles away. This photograph is the result of twelve years and eight months work during which time Mr. Todd has exposed over four hundred plates on this subject.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, Evergreen, Jefferson County, Colo.

J. H. Winchell, Chief Album Director, R. F. D., No. 2 Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Claus Spreckels Building, San Francisco.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

John Bieseman, Director Post Card Division, Hemlock, Ohio.

James B. Warner, Director Stereoscopic Division, 413-415 Claus Spreckels Building, San Francisco.

A. E. Davies, Director Western Lantern Slide Division, 1327 Grove St., Berkeley, Cal.

Arthur H. Farrow, Director Eastern Lantern Slide Division, 51 Richelieu Terrace, Newark, N. J.

STATE SECRETARIES

California—A. E. Davis, 1327 Grove St., Berkeley.

Colorado—H. E. High, 527 12th St., Denver.

Idaho—Eugene Clifford, 902 9th Ave., Lewiston.

Iowa—Harry B. Nolte, Algona.

Kansas—H. H. Gill, Hays City.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

Missouri—J. F. Peters, Room 210 Union Station, St. Louis.

New York—Louis R. Murray, 21 Clark St., Ogdensburg.

Oregon—F. L. Derby, La Fayette.

Texas—Emmett L. Lovett, care Southern Electric Company of Texas, Wichita Falls.

ALBUM DIRECTORS

Alabama—Richard Hines, Jr., Barton Academy Bldg., Mobile.

California—W. E. Thomson, 3211 School Street, Fruitvale.

Colorado—O. E. Aultman, Plested Bldg., Trinidad.

Florida—Capt. E. S. Coutant, Lock Box 73, Stuart.

Georgia—L. O. Surlis, P. O. Box 434, Cuthbert.

Idaho—Eugene Clifford, 902 9th Ave., Lewiston.

Illinois—George A. Price, Box 286, Champaign.

Indiana—H. E. Bishop, 551 E. 40th St., Indianapolis.

Iowa—C. W. Parker, Mapleton.

Maryland—E. G. Hooper, 218 East 20 Street, Baltimore.

Massachusetts—John Mardon, 10 High St., Boston.

Michigan—W. E. Ziegenfuss, M. D., 171 Richton St., Detroit.

Minnesota—Leonard A. Williams, 622 2nd Avenue South, St. Cloud.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

Missouri—Wharton Schooler, R. F. D. No. 2, Eolia.

New Hampshire—Mrs. A. Leonora Kellogg, Box 274, Londonderry.

New Jersey—Arthur H. Farrow, 51 Richelieu Terrace, Newark.

New York—Charles F. Rice, P. O. Box 517, Mamaroneck.

North Dakota—Jas. A. Van Kleek, 619 Second Ave., North Fargo.

Ohio—J. H. Winchell, R. F. D. No. 2 Painesville.

Pennsylvania—L. A. Sneary, 2822 Espy Ave., Pitsburg.

South Dakota—C. B. Bolles, L. B. 351, Aberdeen.

Texas—J. B. Oheim, P. O. Drawer M, Henrietta.

Utah—John C. Swenson, A. B., Provo.

West Virginia—William E. Monroe, Box 298, Point Pleasant.

NEW MEMBERS

4877—N. F. Tonkin, 75 Louisa St., Oshawa, Ont., Canada.

Class 3.

4878—John Knerr, R. 5, Box 47, Danville, Pa.

Class 2.

4879—Miss Kathryn DeLisle, 725 Tillman St., Detroit, Mich.

Class 2.

(Appeared in September issue as No. 3345 renewal.)

4880—Y. Takase, P. O. Box 37, Petersburg, Alaska. Postcard size, developing papers, of landscapes; for the same. Class 1.

4881—Norman M. Kastler, 1446 College Ave., Racine, Wis.

3¼x5½, 4x5 and smaller, semi-matte developing papers of landscapes and miscellaneous views; for historical and miscellaneous views. Class 1.

4882—Chas. H. Kragh, P. O. Box 1302, Tucson, Ariz. 3¼x4¼ and 5x7, developing papers, of landscapes and genre of China and Japan; for figure studies and lantern slides of the country. Class 1.

4883—Mrs. S. V. Norris, Rock Mart, Ga.

Class 2.

4884—Dan H. Reese, Paradise, Cal. 3¼x5½, developing papers, of landscapes, clouds and scenic; for scenic, clouds and historical scenes. Postcards only. Class 1.

4885—John F. Bickley, 172 Glen St., Glenn Falls, N. Y.

Postcards of landscapes only; for the same. Class 1.

RENEWALS

777—Herbert R. Gregg, Oroville, Wash.

Class 2.

3227—V. Rose Huff, Chagrin Falls, Ohio.

Prints, postcards and enlargements, developing papers, of interesting subjects in good work and prompt exchange; for the same. Class 1.

3345—Rowe D. Murray, 1728 West Grand Blvd., Detroit, Mich.

When out on camera jaunts I am always trying for negatives that will produce real art prints for studio studies to be used for copies in oil paintings such as pretty landscapes, classy marine, little nooks along the seashore, sand dunes along the beach, rustic river scenes, docks, wharves, views, boating, sailing, etc. Prints of picturesque quality. No fuzziness considered, size immaterial. Please confine exchanges to the above subjects and do not send more than two prints with the initial exchange. I send out only high grade prints and desire such in return. Class 1.

3675—Otis T. Bartels, R. F. D. No. 1, Marshfield, Ore.

2¼x3¼ up to 5x7 on various papers, of coast scenes, landscapes, trees and portraits; for anything of interest. Class 1.

3829—Archie Gilfillan, 1441 Page St., San Francisco, Cal.

3¼x5½, postcards and prints of locomotives, steam ships, sailing ships, horse cars, cable cars, electric cars; for the same. Would like to hear from employees of the Southern Pacific Co. I will buy good clear 3¼x5½ film negatives of any of the above subjects, also photos of horse cars and cable cars. Class 1.

4189—J. S. Ross, Box 307, Moncton, N. B., Canada.

Class 3.

4712—John W. Winkler, Lock Box 392, George, Iowa.

Class 2.

CHANGES OF ADDRESS

4790—G. E. Bowman, Box 807, Fort Bragg, Cal. (Was Fort Bragg.)

NOTES AND COMMENT

**A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest**

Reported By William Wolff

Mr. Warren Z. Newton has been made manager of the Market Street store of Geo. H. and Henry Kahn & Co. and divide his time between the photographic and optical business.

Mr. Milner of the Milner Light Guage Co. reports big business in his little invention. Ask your dealer to show you one. It tells you instantly what stop and time of exposure to give, no guessing.

William Burhans of San Jose paid San Francisco a visit the first week of February.

H. Hoefle of the Century Eastman branch spent two days in San Francisco recently. He was making his semi-annual trip.

Fred Seyler of Taprell, Loomis Mount Co., arrived in San Francisco on February 18th and reports business good.

The Davies Studio has just opened at 376 Sutter Street, San Francisco, Room 20. Their work will be the coloring of portraits and landscapes for the professional and Kodak finishers and the trade in general. They are prepared to handle all kinds of oil coloring and will make prompt deliveries.

Sepia Prints

Have you tried the print out self-toning papers? These papers are steadily growing in popularity and deservedly so. Their manipulation is simplicity itself, scarcely more trouble than the making of blue-prints. We print by daylight, then fix in hypo, then wash, there is no developing.

There are two brands of the above named papers carried by advertisers in this magazine. J. L. Lewis is the importer of Seltonia, a favorite with some workers, also, there is the Paget Self-toning Papers, handled by the well known Willis & Clements people, who for years have provided the platinotype papers. Give this product a trial with a packet of post cards.

Pinatype Colors

We have received an advertisement, too late for issue, from H. A. Metz & Co., Inc., 122 Hudson Street, New York City. This firm handles the above colors, and it will interest experimenters in photo color processes to know where the dyes may be procured.

The war, which upset many things, made it difficult for those of an experimental turn of mind to carry on their researches; these troubles should end as we can now be supplied by the above named firm.

A New Home

It must be most gratifying for men to see, after many years of persistent effort, the realization of a desire; it must be particularly appealing to them, if their wishes crystalize into the form of a building; be it modern office or simply home; for theirs is the pleasure of watching it grow—day by day; and their neighbor is glad, for that effort has added to the wealth of a community.

The architect's plans for the new building to be occupied by Hirsch and Kaye at 239 Grant Avenue are now completed, and contracts have been let.

The actual work will begin shortly. The specifications call for a six story and basement building, equipped with every modern business appliance. A feature will be a spacious lunch and rest room for employees.

Jules Richard Products

In our September issue, under the heading, Notes and Comments, we drew attention to the Jules Richards Transparencies and referred the reader to The City Sales & Exchange, London, England, who are agents. Our readers will be pleased to learn that R. J. Fitzsimmons, 75 Fifth Avenue, New York, is the sole agent for the Jules Richard Products in this country.

CAMERA CRAFT

"Cash From Your Camera"

We are in receipt of a useful little book, which supplies the information that many of our readers are interested in. In this book we are told how, and where, to sell pictures; it is edited by Frank R. Fraprie, S. M., F. R. P. S., also editor of *American Photography*.

The publication opens with an illuminating introductory of thirty-seven pages, and this is worth any one's while to read who is interested in the subject. The average photographer's ideas on the disposing of his work, will be considerably broadened after the perusal of these pages. We are safe in saying, from our knowledge of amateurs' queries, that a large number of them have not the remotest idea as to what is required of them, and also what they must conform to, to earn money by the sale of their photographs.

There is a comprehensive list of people and publications, with their requirements, and the prices they are willing to pay for photographs. Some readers will think the prices paid are small, but the remuneration is largely dependent on one's knowledge of the marketing.

For example, let us say a photographer by the aid of this book, has familiarized himself with the requirements of half a dozen concerns in somewhat different lines, it is easy to conceive such a photographer will, during his spare time, have his eyes open to an opportunity to secure a negative that he would know what to do with.

The information to be gathered from this book is worth the price asked for it; it is in paper covers instead of cloth, partly in response to a claim that the public desires books in a cheaper form. This permits of a saving of at least twenty-five cents in the retail cost of the book. Published by American Photographic Publishing Co., Boston 17, Mass. Price, \$1.00.

Pictorial Photography

An exhibition of pictures by Louis Fleckenstein of Los Angeles, is now being held at the Chicago Camera Club's studio, 31 West Lake St. The list of his works comprise thirty examples, and shows this artist-photographer to be quite catholic in his tastes; as we have in this collection specimens of portraiture, genre subjects,

figure studies, landscapes, architecture and animal life. Truly, this might be called broad-gauge, and Louis Fleckenstein has the ability to make "all fish that comes to his net," which further goes to show, it is the man behind the camera and subject.

Louis Fleckenstein's work is quite familiar to our readers both in this and other lands, as reproductions of his pictures have appeared in *Camera Craft*. We think him great in child life, for his kidlets are doing something, or are about to do something. They have a story to tell. Is there anything more pleasantly appealing than a story telling child picture?

These one man exhibitions have much to recommend them, they instruct the student and interest the visitor, and last but by no means least, they extend the reputation of a conscientious worker.

35 Years of Photography

The Anderson Galleries, 489 Park Avenue, New York, recently opened to the public an exhibition of the photographic work of Alfred Stieglitz. The collection consists of 145 prints, over 128 of which had never been publically shown, dating from 1886-1921.

There we have the results of 35 years of persistent photographic effort. To the student of photography this exhibition should prove a veritable treat; for does not that space of time embrace all the real progress made in what we now understand as modern photography? In matters photographic Mr. Stieglitz was always to the fore, and his work is highly instructive in both a technical and in an artistic way.

In photographic processes there have been many changes in these 35 years, and be it remembered that each process as it appeared and made bid for public favor, was heralded as the best ever, and among the printing papers it is astonishing how many so called best, have gone their way leaving scarce a memory.

The Stieglitz exhibition would naturally excite great interest on account of the ability of this artist photographer, but if besides this ability, we have examples of past processes, there is added historical worth and interest.

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Claus Spreckels Building, San Francisco

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WE are entirely out of the January, 1920, issue. An unusually heavy subscription season exhausted the supply. We can use several hundred copies, so send along any of that date you can spare and we will gladly extend your subscription six months for each one. Perhaps your local dealer may have a few. A two-cent stamp is all that is required in this country.

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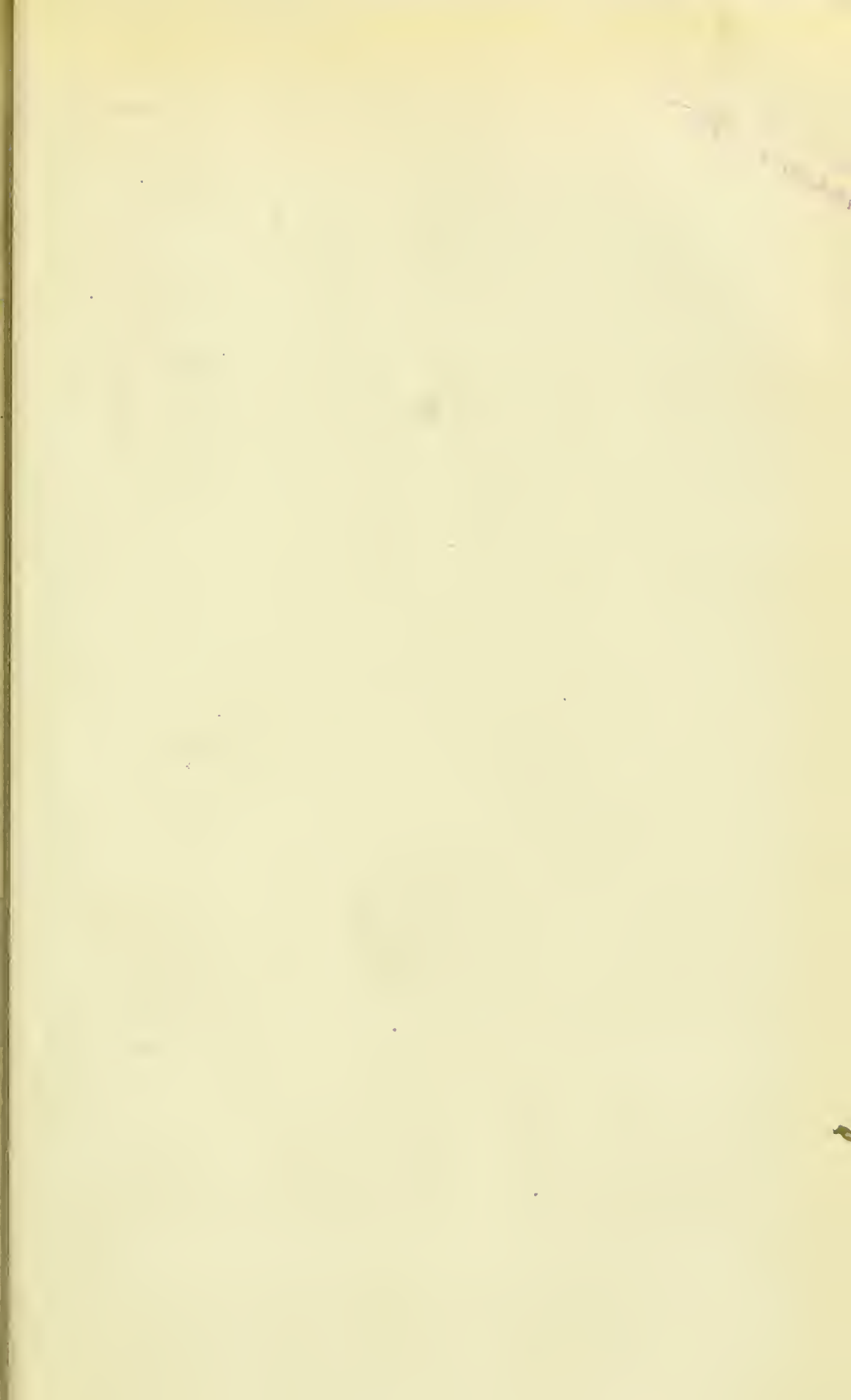
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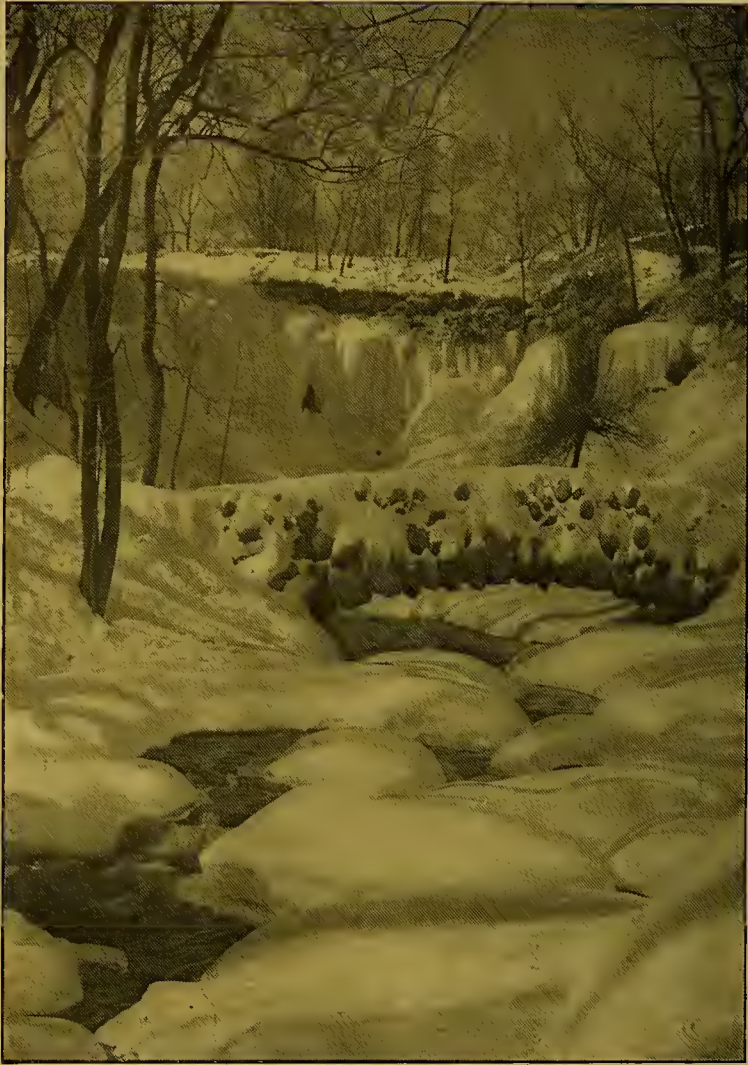
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By GEORGE WOOD

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CRAFT

A PHOTOGRAPHIC MONTHLY

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No. 12

Snow Photography

By George Wood



Illustrations by the Author

A few years ago it was my privilege to spend the winter months in the city of Minneapolis, and, as there is no "closed" season for the camera enthusiast, I found myself, long before my arrival there, looking forward to the time when I could be photographing my first snow scenes. The many parks, lakes and streams in the vicinity of Minneapolis, have long been well



BELOW THE FALLS, MINNEAPOLIS

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and favorably known to the pictorialists of the Twin Cities, but probably more pictures have been taken along Minnehaha Creek, both above and below the falls (made famous by our American poet, Longfellow) than any other section, and the pictures offered herewith were all made along this creek, and are a part of a number of snow and ice scenes that have proven not the least interesting among my collection of pictures taken in practically every state in the Union during my nine years on the road.

A very essential part of the equipment for snow pictures is proper clothing, and in my case consisted of a warm cap that could be pulled well down over the ears, a short heavy mackinaw coat, chamois skin vest, heavy trousers, three pairs woolen socks, Indian moccasins, and, for traveling in light snow, a pair of snow shoes. The hands should be covered first with a pair of silk gloves and then a pair of heavy mittens. In this way you can secure your negatives without danger of frozen fingers, for often the thermometer registers 10 to 30 degrees below zero, but the day being bright and the atmosphere dry it seems much warmer until you attempt to focus on some good looking bit after first removing your gloves. My outfit was a 5x7 R. B. Cycle Graphic, Goerz Dazor lens $8\frac{1}{4}$ inch focus, Cramer Medium Iso plates, and a Cremer Iso 2 color screen. The best time of the day proved between 8 and 10 and 3 to 5 when the shadows were long and the blue haze in the distance more pronounced, all lending to give to the picture a charm that no one can appreciate unless they have "viewed" those scenes on the ground glass.



THE FIRST SNOW OF THE SEASON

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SNOW PHOTOGRAPHY



ABOVE THE FALLS

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My "Red Letter Day" came in late February. The day before a soft heavy snow had fallen, and during the night a sudden drop in temperature froze the snow into almost solid ice. I was up long before the sun and made my way to the glen below the falls, and as the sun peeped over the hill I made my first picture. The long shadows of the early morning, the snow covered rocks and the rush of the waters as they followed down the glen to



EIGHTEEN INCHES OF SNOW AND MORE TO COME

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the mighty Mississippi, a mile below, formed a picture well worth the effort. Turning the camera directly around I secured another picture of the falls, but today they do not "laugh and leap into the valley," but what water the frost king allows to come over the brink drops behind a huge curtain of ice, and although the sun does not "flash and gleam among the oak trees" it does sparkle and scintillate on the icicles and snow that seem to attract as many visitors as during the summer months.

My best success in developing plates was with Glycin. For contact prints I use Portrait Velox and Azo B soft. For enlarging P.M.C. numbers 3, 6 and 7 give splendid results.

Shadows, as they approach the light, appear darker. Cast shadows are darkest at their edges—which is equal to saying, the center of a cast shadow is its lightest part. These statements are absolute facts, and may be verified by anyone whose eyes are trained, or whose eyes are sufficiently sensitive by nature.

Turn to page 391 and study "Asphalt Workers;" notice where the light is brightest, there, the strongest darks prevail. Now look at the cast shadow from the roller, where the asphalt is lightest, the cast shadow is clean cut and well defined; there is no suspicion of its blending into the light.

If we wish to have our work look brilliant, we must show which is light and which is shadow, nature does it, and she has always been our great teacher, our inspiration. If our story demands treatment in a minor key, we can do it without violating her laws.

There has been no retouching on either negative or print of the Asphalt Workers.—E. F.



Accentuation

By Edgar Felloes



With Illustrations

After all, there is not such a real difference between the language of pictures and the language of words; it is true the one is universal, not so the other, but they can both carry thought well. Now, this thought, which

becomes a message, can be just as monotonously delivered by a picture as by word of mouth. We all like "life" in conversation and what is that but saying we like accentuation; it makes the message clearer and more interesting. The same with pictures; we must accentuate certain portions to make the whole more interesting; it is done by light or shadow in contrast; we use either one or the other to focus attention; it is our climax, what the whole picture was made for. Some pictures, and many photographs, have no accentuation, and in consequence seldom receive more than a passing glance, and never a lasting thought. Our subject is not of so much consequence as the way we handle it. We can be in a wood with many trees, all looking more or less alike, and because of that monotony we would not be attracted, but let the sun break through some branches, and its rays fall upon one tree, the whole scene is changed, it has come to life, and if we have our camera



THE RESULT OF LOCAL INTENSIFICATION

with us we hasten to obtain a record while there is time, we were indifferent to the scene before, but now we hurry, and why? Because of accentuation.

On the road side lies a limbless tree and on it sits a man, behind, grows brush and other trees, making a background, to a possible picture. We

CAMERA CRAFT

might snap it at the noon-time and secure a first-rate photograph. If we happened on this subject later in the day when the light is lowering and coming from one direction, we may make a time exposure, and secure an infinitely better photograph. And from this negative we make a print, using all the arts we know; what is this art? It is merely accentuation. There is dim space around that man and accentuated light upon him. One who uses this method of composition may be accused of stage effect and spot lighting, but his work will have an undeniable punch to it, and it will be remembered for a time, for the story is not worse for being driven home.

Accentuating certain parts of our photograph or suppressing others, if properly done, will always add interest to our work, and the novice should not think these efforts are only to be used when we attempt something fine. We need to become familiar with methods, try it on work, even trivial work, provided it is suggestive of possibilities; this practice will make us more sensitive to pictorial effect, and if we attempt a salon picture, we are more likely to succeed with cheerful confidence, than if bothered by timid self-questionings.

From what I have written about the accommodating light that focused itself on that tree in the wood and made a picture, it stands to reason that we can not wait for such things to happen; all we know is, that it does happen, and it would be a pity to lose a picture when it's so near our grasp. Here we have recourse to artifice; it is but a stepping stone to art. In our printing of that negative we must hold back the light, or increase the density of our negative on a part of that tree. It does not matter in the least what methods we adopt to secure our end.

In matters photographic some are supersensitive, I do not know why it is, but some are ever declaring this or that method is not legitimate, but I believe our photographic exhibitions have somewhat broadened this view, certain it is, we do not meet with so many objections as formerly. If a painter wishes to put the paint on certain parts of his picture with his



ACCENTUATION



ASPHALT WORKERS

By R. B. Marsh

brush, his thumb or his palette-knife, he is at liberty to do so, and should not a photographer be allowed all the liberty necessary to improve his picture, if he can?

Among my negatives I found a poor one, and I hasten to add, there are several others; but this poor one had a use, and I selected it for this article. This negative was made on a gray day and is flat, and to make matters worse, it had longer exposure than necessary, therefore it was suitable, as I wished to show how to accentuate certain portions of a photograph to avoid monotony. The subject itself as you will see is trivial, but I have tried to add interest by variety. We have here a flight of stone steps and through the causes mentioned a picture lacking in "life." All I had to do then was, by some means or other to secure contrast, this I decided to accomplish by local intensification; it is exactly the same proposition as that tree in the wood.

There are many kinds of intensifiers, some we can buy, and some we can make for ourselves. I like to save time if I can, and therefore selected a ready-made preparation. I took a tube of Victor intensifier and added it to eight ounces of water just as the directions called for. I placed the negative in a tray of water, having previously cleaned it with a little alcohol on a tuft of cotton, to remove any finger marks that might be upon it as a little grease is apt to cause serious trouble. The plate was soaked for fifteen minutes, removed from the tray to drain and while draining I made a dilute solution of the intensifier, which consisted of one-fourth ounce of the intensifier to one ounce of water, to be applied with a small camel hair brush. Taking the negative from the rack I blotted off the surface

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with a soft handkerchief and proceeded to pick out my lights with the brush dipped in the intensifier, some portions I would paint over and others would have the brush held upon a spot to get extra density; a convenient place to work, is at the kitchen sink, as it will be necessary to let the water run over part of the plate treated, from time to time to avoid harsh edges. Snappy touches may be done with stronger solution. The Victor intensifier is a very powerful density-giving preparation and for our purpose it is best to work with diluted solution, which gives us more time for decision; repeated applications of the dilute solution will build up wonderfully, it is easy to overdo it.

I am indebted to R. B. Marsh for his picture of Asphalt Workers. The effectiveness of this work is entirely owing to accentuation. If those workmen had been so lighted that the photograph showed a lot of unnecessary detail, and if we could see the background behind them, there would have been introduced a lot of useless nothings, which would have ruined the picture and beclouded the impression. The photographer was fortunate, for the morning sun lit the smoky background, and that blocked out the unessentials; the toilers shown in silhouette tell the story most forcibly.

I only saw this picture once and that, several months ago, I had not forgotten it, and the reason was,—the story was told with a punch.

WINTER

CUTTING ICE IN NORTHERN N. Y.



MOTHER LOVE

PLAYMATES

EILENE

By Belmont Odell

What Photography Did to Me

By Belmont Odell



Illustrations by the Author

When I hurdled into the photographic game George Eastman had just weaned his pocket Kodak. It sold for a dollar and equipped with one of these swadling infants I started out St. Paul Street in the city of Rochester, N. Y., one cloudless morning to lay my tribute on the shrine of art. A few blocks out I bagged a bevy of newsboys, a street car and a horse. I then opened fire on the Soldier's and Sailor's monument in the park. I remember that I had to back down Clinton street nearly a block to include the screaming eagle on top of the pedestal. At the end of that perfect day as the twilight shadows gathered I had seven rolls of original photographic conceptions carefully etched in basic silver. Seven times twelve are eighty-four—nearly a hundred pictures to lay on the altar of art. Surely this from an absolute novice would create some little ripple in the world of Kodakdom.

But it didn't work out just as I had planned, for that night the alchemy of king pyro and the ruby gleam revealed strange sights. In fact the net results were not precisely up to expectations. When at two o'clock the next morning I emerged from the close closet darkroom I had seven wriggling, writhing, slimy strips of pictorial art. They seemed alive. They actually crawled; for that was before the days of N-C film, but I finally got them marooned in the bath tub, where they obligingly curled up and quit. Slowly and tenderly I unfurled and held them to the light. Two of the taller news-



SOBER REFLECTION

SELF PORTRAIT

BETTY

CAMERA CRAFT

boys were headless. They appeared all right when I herded them for the exposure and I did not notice any with missing heads. The Soldier's and Sailor's monument sagged pathetically toward Lockport. It did more. It actually staggered across the adjacent lawn.

That day's experience taught me some of the limitations of photography as a medium of soulful expression. I had translated advertising copy too literally. I had taken the thing too darned seriously. Thus was my introduction into the wierd world of photographic mania.

Then there arose in my pathway five or six magazines devoted to the fine art of cameradom and I eagerly annexed them to my incoming mail. I read avidly month after month in a vain endeavor to absorb the intoxicating atmosphere, which I always felt, but could never quite define. I tried consistently and honestly to cultivate my truant sense of aesthetics and the more I read the more keenly did I sense disappointment in the prints I was turning out; so far did they fall below the average of others of my kind. I was educating myself "out of" instead of "into" photographic, and speedily came a day when I solemnly sent my faithless camera to the discard. We were not congenial pals—my camera and I—so I filed it away in the crypt of unrealized dreams. During the nonphotographic years that followed I was keenly conscious that something had gone out of my life—something tangible, wholesome and uplifting—and finally the time came when I must have a definite understanding with that gnawing crave for the energizing sport of taking and making pictures. Then my camera triumphantly came loose from its moorings and again started down the lane of life as my companion, and with the passing of time it has grown more and more vital as a dependable shock absorber, softening the jolts over the little detours in the pathway of life.

That I have failed utterly to score in the game of art does not matter since the absorbing recreation found in photography has multiplied my success in other directions. I have no craving for artistic perfection; for the technique of the craft is too sublimely intricate for my crude temperament. I am content with these mediocre prints and the fragrant memories associated with their histories. They bring up thoughts which are good to live with when the setting sun is just looming in the horizon. Nothing in my material life would I exchange for the memories of countless hours in the long-ago-days of young manhood when Mollie and I first joined hands. Those delightful excursions to the open country, the leafy dells and laughing brooks, the sunsets we have seen together and those exhilarating climbs up the mighty mountains of the east. These are the mental pictures that come trooping in. I could have lived without the healthful hobby of photography, but perhaps not so long nor well.



The Fourth Los Angeles Salon

By Arthur F. Kales



With Illustrations

For the past four years the Camera Pictorialists of Los Angeles have regularly put on what has come to be recognized as one of the leading Photographic Salons of the world. These exhibitions of Pictorial photography have attracted the interest and co-operation of photographers the world over, and, more gratifying still, they have met with a response from the public at large that has made them an assured annual event.



PORTRAIT OF A CHINAMAN

By James N. Doolittle

CAMERA CRAFT

To those who have yet to view their first Photographic Salon, there is something in store that cannot be described. It would be folly to predict the other fellow's reaction, and, besides, there are too many preconceived ideas of what an exhibition of Pictorial Photography is, or should be. There is a point of view for every spectator, from the successful pictorialist who has had all six prints hung, down to the individual who has had his very best work turned down by the jury. But the truth lies, as it generally does, in the middle, and the consensus of opinion, among those who had the pleasure of viewing the Fourth International Salon recently held in Los Angeles, was that it was a very fine and representative collection of what is best in Pictorial Photography.

As is usually the case in any show, there are prints shown that are lacking in personal appeal. We might not care to add them to our own portfolio, but, on closer analysis, we are pretty sure to find that they possess certain characteristics that warrant the jury in passing favorably upon them. There is always the individual point of view, and, unfortunately, this will continue to prevail until that time when there is some definite standard by which the so-called artistic worth of a pictorial photograph can be weighed. Until then, the best we can do is to fight it out among ourselves.

In former years the preponderance of Bromide prints was quite noticeable. Perhaps this was due to the shortage of certain photographic materials occasioned by the war, or it might have been that the stress of the times put a premium on the quick and easy way of arriving at a result. Be that as it may, it is quite evident that pictorialists throughout the country are turning toward the more difficult processes. There is no escaping this thought, for at every hand and on every wall we find examples of it. Gum, gum platinum, platinum of the commercial and the hand coated variety, gum bromide, fretone, carbon, bromoil and bromoil transfer are all represented, some of them well done technically and many of them not so well done. Individually, the gums of Francis O. Libby and Dr. Lovejoy, the carbons of W. H. Porterfield, the bromoils of Dr. Chaffee and the bromoil transfers of Hamilton Revelle are eloquent arguments for these respective processes, but the majority would have been better if rendered in bromide or some simpler process that was thoroughly under the workers control.

Many exhibitors, especially the newcomers, seem to have the idea that, in order to successfully get a print past the jury, it must be done in some fancy medium. California pictorialists have, time after time, proved the fallacy of this notion. California bromide and chloride prints have been shown, and have excited favorable comment, at all of the leading exhibitions both in this country and abroad, and their work shown in Los Angeles is no exception in this regard. Any budding pictorialist, who is planning to knock 'em dead, should study the beautifully clean prints of John Paul Edwards or J. N. Doolittle, or the rich, low toned portraits of Louis Fleckenstein before running up a big account at his photo supply dealers.

THE FOURTH LOS ANGELES SALON



TUREGANO

By Jose Ortiz Echague

This statement is made with a deal of calculation, and is not an attempt to belittle any other process. The control processes, in capable hands, yield the most beautiful results, and really furnish the ultimate in photography. grata at photographic salons, is sheer nonsense, and should be discouraged but the notion, current in some quarters, that the bromide is persona non as such.

Ever since it's inception, the Los Angeles Salon has met with strong support from foreign workers. It has developed into the one real international exhibit of this country, partly because every inducement was made to attract foreign work, and partly because of the enthusiastic reception accorded it. This year the strongest foreign exhibit comes from Jose Ortiz Echague of Madrid, Spain. His prints, done in Fretone, range in size from $6\frac{1}{2} \times 8\frac{1}{2}$ to 11×14 , and are evidently the result of combination printing. Mr. Echague has not, to my knowledge, exhibited elsewhere in this country than

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in Los Angeles, which is a great pity, as his prints are distinctly worth while in every respect.

Age Remfelt of Sweden has sent some charming unconventional portraits. The portrait of Elsa Alm is refreshing and is one of the best things of it's kind in the show.

It is difficult to place Hamilton Revelle. One wants to claim his work for America, but the fact is that he is an Englishman, though his professional career is largely identified with the American Stage. How an actor can find the time for the beautiful bromoil transfers that he turns out, is a never ending source of wonder. His six prints were at all times the center of an admiring group whose interest seemed equally divided between the beauty of his process and the pictorial quality of his prints.

Strange to say, there was another exhibitor of similar name, Mr. H. Ravell. He, also, is master of his own medium. His Mexican Village Place is an 11x14 gum kallitype in duotone, and one has rarely seen such rendering of sunlight. Mr. Ravell hails from Mexico, and I am told that rarely a day goes by that he does not make from six to ten gum prints. If this is so, what a boost for the old saying that "Practice makes perfect!"

Among our own workers, Rabinavitch of New York showed the strongest collection of portraits, the "Girl in Black" being without doubt one of the strongest things in the show. The portrait of Sara Holm by Louis Fleckenstein and portrait of a Young Girl by Frederick Frittita were equally good, and these three were in a class by themselves.

John Paul Edwards and Dr. Ruzicka each showed a view of the Brooklyn Bridge made from approximately the same spot. There was considerable argument as to which was the better of the two, but the discussion invariably met the same fate as the old question: "How old is Ann?" or "What happened to Jones?"

Joseph Petrocelli of Brooklyn is a new name in the Los Angeles catalog, but his three prints gave him a place among the regulars and left a decided hankering to see more of his work. Mr. J. W. Pondelicek is another newcomer, and he made his initial bow with the three really good nudes of the show. His Bather is one of the best things of it's kind shown in this or any of the preceeding salons.

If one were to hold the usual post-mortem, there would be many names that could not conscientiously be omitted. The hand coated platinum of Wm. E. McNaughton are well known to many and need no comment. Dr. Jaeger's miniature prints are a constant reminder that mere size has nothing to do with it, and pictorial value is not measured in square inches. Fred Archer shows us a scene from an old village in France, and in an adjoining print shows a French village from a Hollywood movie set, or it might be vice versa, for both are equally convincing.

Space permitting, we could wade through the catalog and find material for favorable comment on every page, but in a review of this kind one can only hit the high spots, as it were, and, after all, the more constructive

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article is the one which does not exploit individual reputations, but, rather, aims at pointing out the way in which reputations can be acquired.

If the intending contributor to this, or any other salon, would conscientiously appoint himself his own jury and submit only such prints as his better judgment told him were worthy, there would be fewer disappointments when the catalogs arrive, or when the reviews are written. It is a lamentable and all too common occurrence for a contributor to pack up his entire portfolio and send it on, hoping that something or other might please the majority of the committee of selection. This is about as sporting as dynamiting a trout stream, and not nearly as prolific in results.

The Los Angeles Salon has, for some time, felt the advisability of announcing a definite standard to it's pictorial supporters, and when the invitations for the Fifth Salon go forth, they will in all probability carry a statement, not only of the aims of the salon, but also of the standards by which the prints will be judged. It will probably be no news to the old timer to find that the Salon desires good technical work, whatever the medium, coupled with a sound pictorial idea. The novelty, if any, will likely lie in the fact that the jury will be instructed to see that only such work is admitted. To the newcomer, such an outline should prove not only welcome, but highly instructive, for, as a rule, the average salon prospectus deals in hazy generalities and takes everything for granted.





PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

TO OUR FRIENDS—Tell us what you know! Perhaps you have had some photographic difficulty and overcame it—how did you do it? Tell us!

Perhaps you know some photographic "kink" that others would like to know—be generous, help others; tell us what you know!

These paragraphs are yours; to be used for mutual help: let us hear from you—

DRY MOUNTING—In the days before the advent of dry mounting tissue as a commercial article, I used to dry mount my prints in the following way; the results were perfectly satisfactory: Procure some denatured alcohol and place it in bleached shellac broken into small pieces; lay the bottle on its side, behind the kitchen stove, where it will be slightly warm, and occasionally give the bottle and contents a good shaking; the shellac will dissolve and it should make a solution about as thick as syrup, add more shellac if necessary to secure this consistency. In using this mountant pour a little of it on the back of the dry print in two or three patches and spread the solution evenly all over the print with a bristle brush. Allow the varnish to dry on the print, and when dry trim to size. With a lead pencil, mark the location for print on mount, apply the dry print to mount and secure adhesion with a warm flat-iron passed over the face of the print.

If at any future time we should wish to remove the print from its mount, all we need do is, to warm the print with the iron and immediately remove it.—W. A. D., Illinois.

GOOD TRAYS—Capital trays of light weight may be made of dry thin boards; for signs up to 11x14 I use picture backing boards with stouter material for the sides and ends, it is not necessary for these boards to fit tightly together, just touching each other will do. Now take a sheet of strong muslin sufficiently large and without cutting it, press it down into the tray turning over the corner neatly; next pour some melted paraffin or beeswax into the tray and allow it to saturate the cloth and impregnate the wood, then pour out the surplus wax, and proceed to smooth out interior of tray with a warm flat-iron. With a sharp knife, trim off the surplus cotton showing above the sides of the tray, and with the iron, finish the work neatly. To complete the work, apply two coats of asphalt varnish liberally to the outside of tray, see that the first coat is dry before painting the second and you will have a very durable and inexpensive appliance.—A. D. F., Utah.

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A PHOTOGRAPHIC MONTHLY

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No.12

A Photographic Library

It was the ambition of our late Editor, Mr. Clute, to possess a library of photographic works which would be a credit to any private collection; this he did for his own requirements, and he also, generously extended the use of it to others.

As might be expected, after eighteen years of persistent effort, this library became a problem. The magazines alone, from various corners of the earth crowded two offices and steadily encroached on a third one. In consequence of this, it had become physically impossible to increase our collection without a revision of plans; it was decided to turn the magazines over to the Sutro Branch of the California State Library, Sacramento and Webster streets, S. F. City, where they will be properly filed and be available for public use.

These magazines are in varied languages, English, French, German, Italian, Spanish, Scandinavian and Japanese, and in this cosmopolitan city will be of interest to its many peoples. Had Mr. Clute lived, we believe this disposition of part of his collection would have won his approval, for now these publications can be of the greatest use, to the greatest number.

It now devolves upon us to continue this work as originally outlined, and we intend to add all important works on photography as they appear; for we aim to have the most comprehensive collection on the Pacific Coast. All the current photographic magazines will be on our files also.

This notice to our readers would mean very little if we stopped right here, but that is not the policy. As Mr. Clute was glad to know his library was appreciated by others; CAMERA CRAFT also, invites photographers to make use of these books for reference. This invitation is not merely extended to the dwellers in Our Own City, but to those also who live elsewhere when visiting us.—E. F.

Why Kill a Hobby?

Probably the professional ranks in every line of photographic work is largely recruited from the amateur class; enthusiasm paves the way. Some amateurs of marked talent combined with business ability have forged ahead in photography for a profession, but the amateur we have in mind is the enthusiastic worker who decides that because of his great liking for the hobby he would be only too glad to follow some photographic line for a living.

We are not offering advice here, we merely wish to show some workings of this idea.

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An amateur acquaintance with a hobby for slides and home entertainments, met his opportunity through an advertisement—a slide maker wanted—here was a chance for the man who liked slides.

Our friend secured the position on account of the excellence of his samples; he commented later, however, that he did not really learn to make slides until he started at the factory. This was true in a way, that he really meant he was learning to manufacture, but the joy of his former experience was slipping away. There were a certain number of slides estimated for so many hours of work, this was necessary, of course, and most of the slides were required by the hundred. The work grew monotonous as one might expect; the man made good, but one thing he did not do was to continue to make slides for himself, his own, or his friends to enjoy. But here is the business end to think over. This man was making no more at his new work than as an office man, which he formerly was, and probably he stood less chance of advancement did he w—in or did he lose?

Another case was a lady; she just loved to paint flowers and such things, and possessed real talent for decorating nick-nacks whereby she made "pin money"; this was her hobby; then she drifted into the commercial, painted lantern slides and colored photographs for a living. We were not surprised when we heard this worker was credited with the remark, on the finish of her one hundred and sixtieth slide by actual count, every one of the same design and coloring, "Oh, this is rotten!" It depends on one's make up as to how much monotony can gall. As to her remuneration for working, she received no more pay than the average stenographer and certainly nothing like as much as an expert one, but on slides she was expert and fast.

So far we have only given the case of workers; here is something different. We have heard, and perhaps you have also heard, of some who wished they had the means to devote their whole time to their hobby, what have they not promised themselves if only possessed of the means.

Our friend who is no longer with us, but whose name was well known in the different photographic salons, could devote unlimited time to photography; he was really artistic and his work was of a high average. On one occasion we watched this man preparing two exhibits and he remarked: "I find no pleasure in this, but I am asked to contribute and what can I do?" If he could only have given Saturday and Sunday, like so many thousands of people, his pleasure might have lasted and the story would have been different. The point we cannot quite reconcile is, why a man with this talent, did not have talent enough to go on. There is color photography for instance; what beauties are available in that line, even with known processes. There is also natural history photography and the study that goes with it.

All this seems to point, that we need obstacles just as much as opportunity; and furthermore, a hobby has to be treated like a friend, with due consideration, or something will happen.—E. F.

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D.

The Toning of Bromide Prints

"The Toning of Bromide Prints" furnished Mr. Bennett's theme on this occasion, and capitably he dealt with an ever-interesting subject. A large number of very excellent prints, toned various shades, from an "engraving" black to a warm sepia, illustrated the lecture. Emphatically he denounced the doctrine of fitting the printing process to the negative, which was on a par with the dictum of "Smith (Minor)" that "the horse is a noble animal, but if unkindly treated he ceases to do so."

The so-called "platino-matt" bromide papers were regarded by him as a very poor imitation of platinotype, and he invariably employed an "ordinary" (semi-matt) brand Wellington's "cream crayon," in fact. Since the war he had found it gave warmer sepias, and this had necessitated a slight variation in his formula for securing varied tones. To obtain the finest quality it was essential that the prints be dried first.

Personally, he was a keen opponent of mechanical procedures in photography, the development of bromide prints excepted. Here correct exposure and full development for a fixed time was compulsory for best results. Also, fresh developer for each print should be employed. This might sound expensive, but was not so, as with a little practice 2 oz. of developer was sufficient for a 12x10 print, and $\frac{1}{4}$ oz. for a quarter plate. Most of his prints had been developed with Johnson's amidol (equal to the German product in every respect), and he invariably used an acid fixing bath--one ounce of potass metabisulphite to the pound of hypo.

His bleaching bath is composed of the two following stock solutions:

A	
Potass ferricyanide	1 oz.
Potass bromide	1½ oz.
Water to make	9 ozs.

B	
Mercuric chloride	60 grs.
Potass bromide	60 grs.
Water to make	5 ozs.

Sulphiding Solution

Pure sodium sulphide	1 oz.
Boiling water to make	9 ozs.

To prepare the sulphiding solution: Take a mineral-water bottle with rubber-sealed stopper; mark to indicate 9-oz. level; warm bottle gradually; insert sulphide and pour on boiling water. Insert stopper and shake till sulphide dissolved, removing stopper now and then to allow steam to escape. When solution has cooled, filter and restore to bottle.

For a warm sepia or brown tone, take 40 to 60 minims of A to every ounce of water. Colder tones are given by varying the proportions of B to A, as follows:

A.	B.	Tone.
40 Minims.	20 Minims.	Cool sepia.
30 "	30 "	Colder sepia.
30 "	50 "	Brown-black.
30 "	90 "	Engraving black

As the tone gets colder less exposure is required. Assuming 10 seconds to be right, employing A solution only, then exposures in the above table will be 9, 8, 7, and 6 seconds respectively.

As pointed out by the late Mr. Haddon, he said, whenever a mercuric salt is brought into contact with gelatine, a weak mineral acid bath should follow. Therefore, rinse the prints and pass them through three one per cent. baths of hydrochloric acid (1 dram to 12 ozs. approx.) and wash for ten minutes before sulphiding.

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The lecture was followed by a lively discussion, mainly on Mr. Bennett's apparent belief in the almost absolute permanency of properly treated bromide prints, especially sulphided ones. Short of destroying the support, he doubted if the latter could be reduced. Obviously, he has never tried acid-permanganate, to mention one reducer, which will clean up the image to the vanishing point. This, by the way, has no direct bearing on permanency, acid-permanganate not being a constituent of the air in terrestrial climes. A most hearty vote of thanks was accorded for a really first-class technical evening of the "blooming practical" order, and many expressed a wish to see the lecturer again in the near future. He certainly can make an evening go with a swing.—British Journal of Photography.

Notes on Factorial Development

The valuable articles by Dr. B. T. J. Glover in the "British Journal of Photography" of December 17 and 24 last explore in detail and with accuracy the strong points and the weak points of factorial development, although, as I shall explain, I strongly disagree with one or more of his final deductions.

There is much need for careful work like Dr. Glover's, especially if it would take the form of information as to the factors to use for different developers, a point on which there is a great paucity of recent information. When I first devised and published the method (as an adjunct to systematic exposure by aid of actinometer) about 1894, I devoted two or three years of experimental work to giving all the information I could as to factors. But after a year or two I found that users began to regard me as one whose business it was to mix up and test their pet developers for them and to give them the result in reply to a post-card inquiry "thanking you in anticipation." And as I had no pecuniary interest in their use of the method, and had to devote the experimental energy which I and a trained assistant possessed to work on the speed of plates (which was and is a necessary adjunct to my business as a maker of exposure meters) I had to cease making any new trials for factors. It is a matter

which really concerns the makers of developers or sellers of plates and papers. Messrs. Wratten (now of Messrs. Kodak) realised this as regards giving a factorial method for the development of lantern plates, but little else has been done. Dr. Glover's articles, unfortunately, only give one factor, that of 11 for bromide paper with the Eastman amidol formula. I do wish that makers would systematically, from their own trials, give factors for their own developer formula.

I thoroughly agree with Dr. Glover that factorial development has great advantages for development of bromide papers. I have before me a frame of six bromide prints from the same negative which I exhibited at the Royal Photographic Exhibition a few years after I discovered factorial development. It was, I know, well before 1904 when the first edition of my Manual was published, for I have always had in that book a page on factorial development for bromide papers. In this trial I took six different makers' papers, widely varying both in exposure speed and rate of development. I first ascertained the H. and D. speed of each paper (a troublesome matter), and having found by trial and error the right printing exposure for one paper behind the negative, I gave all the others exposures varying inversely with their relative speed. Then each was developed in a metol-quinol developer for four times the appearance of the image. The result was six prints practically identical. Other trials confirmed this.

Now for the point on which I disagree with Dr. Glover, both on theoretical grounds and on the results of long practical experience (my own and hundreds of others) in the method.

I think that he is fundamentally wrong in his final classification of classes of work for which factorial development is unsuitable.

In particular, I know that he is wrong in saying that it is unsuitable for development of plates exposed on outdoor subjects.

Let me first take the theoretical objection. It is also necessary to clear the way by pointing out that no available

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method of development is free from certain serious defects or contingencies which have to be guarded against in practice, and that to point out such defects is not sufficient to condemn the method. Otherwise, all methods have to be condemned. For example, if a plate maker makes an actual test of each batch, and gives accurate time and temperature development information for the emulsion as he sends it out, the user has still several very probable chances of going wrong which he must keep in mind. First, some emulsions alter in development speed within a month or two; secondly, all emulsions "go off" in development speed if kept long enough; thirdly, developers of the same formula vary in speed with different makes or purities of chemicals; fourthly, developers "go off" in energy if kept. Strangely enough, the factorial method overcomes in practice these peculiar weak points, although it has some of its own.

Factorial Weakness

The weak points of factorial development are, firstly, that it gives a slightly varying time for two plates, one slightly over, the other slightly under exposed, whereas theoretically both should have the same time for development; secondly, that the observed time selected for the "time of appearance" varies a little in different subjects. Now these two objections have to be kept in mind and guarded against. But they are objections which come just as much into practice in the classes of work which Dr. Glover pronounces to be suitable (bromide printing, lantern plates, studio work, and copying by artificial light) for the factorial method as they do in those classes (outdoor subjects, enlarged negatives and positives) which he pronounces unsuitable.

I think that Dr. Glover has made a serious mistake in assuming that those classes of work done with artificial light tend to greater accuracy of exposure than those by fluctuating daylight. I know I can take any box of plates (when the speed has been tested) and with the aid of an exposure meter (an actual actinometer test) secure at first trial an exposure within 50 per cent. of an ideal exposure, and this limit, provided there is a bit of sky or

white object in the subject, does not lead to appreciable error in factorial development. On the other hand, if I am given a packet of bromide paper and an unknown negative to print from, my gaslight and distance may be "standardised" to my heart's content, but I know of no way of getting a correctly exposed bromide print except by "trial and error," that is, by exposing some trial slips. And if a negative of a different type is substituted, another trial must be made. In other words, a standard light does not ensure a standard exposure, and in practice the use of an actinometer exposure meter standardises outdoor exposures (together with indoor ones) more accurately than "trial and error" does for studio and artificial light work.

Dr. Glover (page 763) gives an example in which the "minimum correct exposure, calculated by meter of an open landscape" was 1-45th second, the time of appearance being 22 seconds. He exposed other plates for 1-22nd and 1-10th seconds, and got lessened times of appearance of 20 and 18 seconds. He appears (although he does not mention it) to assume that the man exposing the plate would deliberately give the wrong exposure of, say, 1-10 instead of the shorter one, and on that assumption states it is "a type of work to which factorial development is least suited."

Let me point out that if he gave a similar test with bromide printing in which one minute was known to be the correct exposure and a time of appearance quoted for this, and two other exposures of two and four minutes also given with their times of appearance, and followed the same reasoning (that the user would give the wrong exposure), he must also inevitably arrive at the same conclusion, that factorial development is quite unsuited for bromide printing.

To come down to real use of the factorial method for daylight (outdoor and indoor, developed together if need be). It is a big success used on these practical lines. All exposures calculated by meter. The sky or a bit of white in subject taken for the observation. Abnormal high-lights, as the sun in the evening sky, or over-exposed window in an interior, are passed over, and a lower high-light observed. Or in an

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abnormal subject with no high light, like a carved panel in dark wood, it is developed in the same dish for the same time as a subject with a normal high-light. In fact, the way to avoid the weak point in factorial development is to develop in batches, not less than four plates in one dish, to pass over any exceptional high-light, and to take the normal (or average) high-light for the time of appearance from which to calculate, and to give the same total time of development to all subjects in the dish.

Transferred Bromides

When it is desired to make copies in the Photostat style—that is to say, as negatives, directly upon bromide paper—it has hitherto been necessary to fit a reversing prism or mirror to the lens so that the lateral inversion of the image is corrected. As a rule, however, the majority of photographers do not possess these accessories and consequently cannot utilise this very cheap and simple method of reproduction. Fortunately there is an easy way out of the difficulty, which is to use one of the transfer papers, such as Transferotype or Kerotype, by means of which the gelatine film may be transferred to another paper, the lettering and other details being then presented the right way round. Plans, manuscripts, drawings and printed matter of any kind can by this method be copied either upon an enlarged or reduced scale, the image being in white lines upon a black ground, without the expense of making an enlarged negative. Those photographers who have the opportunity of doing any considerable quantity of this work would do well to procure the special cameras made for the purpose, but for an occasional job the transfer process will be found quite satisfactory.—B. J. of Photography.

Four-inch Condensers

It is not generally realized that the ordinary magic lantern, with its four-inch condenser, can be utilised as an enlarger for any subject which can be included in a circle of that diameter. All the vest pocket sizes are within its scope, while $3\frac{1}{2} \times 2\frac{1}{2}$ negatives may just be covered. Lantern-objectives are usually of the Petzval form, and will answer for photographic work, but as they are unprovided with central

diaphragms, must be stopped down by placing a card with the necessary opening almost in contact with the front lens. If preferred, the condenser may be fitted to a box containing an incandescent electric lamp, and the arrangement completed by fitting an ordinary camera and lens in front. Many years ago Mr. Hume, the inventor of the Cantilever, issued a four-inch enlarger, which enabled bits to be selected from large negatives up to 12×10 . It is interesting to place a four-inch circular mask over a number of photographs and note how many good pictures are shown. Most of the "cabinet circles," so popular a little while back, come within this limit.—B. J. of Photography.

Submarine Photography from Aeroplanes
Writing in the "Geographical Review" on the subject of aerial photography as an aid to geography, Mr. Willis T. Lee, of the U. S. Geological Survey, deals at length with the application of this process to photographing and mapping submarine features. The visibility of objects at great depths in clear water from a point far above the surface has been a well-known phenomenon since the wartime period of "sub" chasing by aeroplane. It is said that objects 45 feet under water have been successfully photographed, and that with the proper plates and light-filters the presence of submerged objects invisible to the eye is revealed by the camera. It has been found possible to use this method of observation to some extent in detecting and mapping sand bars, shoals, drowned terraces and channels. Mr. Lee presents several photographs illustrating the results of the method. Not all photographs of coast lines reveal these subaqueous features. Certain conditions of the atmosphere and the water seem to be necessary for photographing them. "In studying the underwater features as shown in photographs," says the writer, "caution and careful checking in every possible way are necessary. Changes in hue in the photograph might be due to sediment in suspension rather than to differences in depth of water."—B. J. of Photography.

THE AMATEUR AND HIS TROUBLES

Conducted by Edgar Felloes

Values

In the representation of every view we have two kinds of perspective, aerial and linear perspective. If we disregard these fundamentals our picture will appear flat, like the picture writings of the Indians, or the quaintly carved and drawn records of the ancient Egyptians; but pictorial art as we understand it, has to be more realistic, to find general favor.

Let us here consider the question of values, which has a direct bearing on aerial perspective; in this, more than in anything else, our photographs fail.

You know—we all know, that as objects recede from the eye they appear grayer or more neutral in color, this is caused by the volume of atmosphere between us and that distant object. As we all know this much, is it not odd that we should be satisfied with those photographs that utterly fail to register these differences? Let us be fair to the lens and the plate, and find out the real causes of this failure. First then, it is the undertiming of our exposures and secondly, our own thoughtlessness, for don't we agree that as things grow distant they appear grayer?

Suppose we now look over some of our prints and instead of admiring, we will for the novelty of it criticise them as we should. Here is a street scene, notice the man in the foreground wearing a black coat, and further in the picture we discover another man, also wearing a black coat, man number two let us say is one hundred feet away from man number one; how do we know that any distance intervenes between the two men?—Simply by linear perspective, which shows man two is smaller than man one, altho they may be the same height and weight as each other in life. Now, we will take a piece of white paper and make two holes in it, as far from each other as the two men are, and

these holes just large enough to show an equal portion of each man's coat when the paper is placed upon the photograph, could we now form the remotest idea of the distance these men were separated? In a great many photographs we could not, and these photographs would show the total failure to register aerial perspective well into the picture; sometimes that fault extends to the middle distance and those pictures, in which the errors occur, are out of harmony.

Who has not seen in photographs, blacks in the foreground and blacks in the middle distance; there is no question that this is not according to nature; what has become of the atmosphere? When we have negatives of this class to deal with, we should modify these negatives, that our prints should be more realistic. It was said of Turner, the painter, he could show miles where other men showed only inches; this was his genius; but not even Turner could show distance, if his darks, or his colors in the foreground, matched those effects in the middle distance; it was his extraordinary appreciation of values under different atmospheric conditions, that placed this painter where he stands, even to our day.

It is not to be expected, that all photographers would care to go into the subject so deeply, many get all the enjoyment they expect, by a pictorial record to serve as a souvenir. On the other hand, there are workers, who find their pleasure by the progress made, and perhaps what is written may be acceptable, to the extent it induces a thought.

Another Reducer

W. J. Wilkinson an authority on photo process recommends the following reducer as being in every way superior to the old iodine-cyanide preparation, giving cleaner

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results and being more controllable. This reducer can be made up in bulk, and always ready for use.

The formula is in two solutions:

A—Copper sulphate 1 oz.
Common salt 1 oz.
Water 25 ozs.

When dissolved add sufficient liquor ammonia to re-dissolve the whitish precipitate first formed. The result will be a clear solution of ultramarine color.

B—Hypo 5 oz.
Water 25 ozs.

For use mix in equal parts, and dilute as may be found desirable.

(The above bleacher may prove equally servicable for bromide prints which have served as base for pen drawings.—Editor.)

Pictures of Horses Working

We all like to take pictures of farm scenes involving hauling wood, feeding from a wagon, plowing, and the like, about this season of the year. And yet the light is hardly good enough to permit of short exposures to stop the continuous motion of the teams. The right way to get this picture of motion, even were the light strong enough to allow of the horses being caught with their feet and legs in the wrong position, as they generally are, is as follows: Pose the team where it is wanted, get the focus, get everything ready, then ask the driver to start up, and, just as the horses put their feet forward and bend to the load, make a slow snap. You get more action because more strain is shown in the starting of the load, and better still, the position of the feet and legs is always just right. All this in addition to the longer exposure made possible. Try this the next time you have a subject of that kind and you will be pleased with the results.

The Borax-M. Q. Developer

A developer likely to prove popular with amateurs for their hand camera negatives is the following metol-hydrokinone, in which borax replaces the usual alkali. The following formula is recommended by Wellington and published in the photographic hand book, from which I quote. Probably no developer is capable of giving negatives of such fine grain or more completely free from fog or stain. Its advantages are most marked in the development of very

small negatives, positives from which are generally produced by enlargement. In such cases the almost grainless quality of the original image is of the highest value. Borax-M. Q. gives negatives of delicate rather than strong gradation, and of beautiful photographic quality. It works best with plates which have been fully exposed.

Borax-M. Q.

Metol 20 grains
Hydrokinone 50 "
Sodium Sulphite (cryst) 200 "
Borax (powdered) 20 "
Water (hot) 200 grains

Dissolve in the order given, allowing each chemical to be in complete solution before adding the next. This developer keeps almost indefinitely in well-stoppered bottles.

N. B.—All metol-hydrokinone developers should be used at a temperature of from 60° to 65° Fahr. Below 60° Fahr. hydrokinone rapidly loses its developing power and at very low temperatures becomes paretically inert.

When to Stop Development

Now that tank development is so generally practiced, some reader might think a word about tray development is a sort of return to old methods.

The tray method of developing is still preferred by some, and it certainly has economy to recommend it when a single plate or film needs developing. Under these altered conditions a novice may find it difficult to judge the proper time to remove the plate from the developer; in such a case the Watkins' system will prove most helpful, and when the exposure is anywhere near correct can be relied upon for good results. The system is simplicity itself, and consists in multiplying (the time the image takes to appear after pouring on the developer) by the "factor" 10.

For example: If it takes thirty seconds, from the time the developer is poured upon the plate, till a trace of the image first appears, we multiply that 30 seconds by 10 and the development should be complete in 300 seconds or five minutes.

This "factor" 10 is not to be taken as arbitrary; if we prefer a less dense negative we may make 8 our factor, or vice

THE AMATEUR AND HIS TROUBLES

versa, we may multiply by 12 to suit our individual requirements.

The idea is, to adopt a factor suitable to our normal developer and stay with it; this will give us a good average of successful negatives and eliminate guessing. It is best then for our initial attempt to develop with 10 as our factor, fix our negatives and judge the results, and if one is not quite sure then, carry on the plate to the finish and make a print. We should not forget that the developer used is always the same; naturally an old developer will work differently; use fresh developer and gently rock the tray during development and keep the tray covered after first examination.

Hypersensitizing of Autochromes

In the Bulletin of the French Photographic Society of September last, M. Jobe, points out the value of hypersensitizing in cases where the scale of values is low, and particularly in landscapes dealing with the tints of autumn. He states that the sensitizers on the market do not correspond with the plates at present issued, and that he has found it necessary to produce his own solutions by experiment, using for this purpose, pinachrome for yellow, pinaverdol for the green, and pinacyanol for the red.

Enthusiasm

Is there not something sublime in enthusiasm? Sometimes we are amused by it in others, for ourselves, we are in real earnest, always.

It is a long while since I trotted out with my first camera, I remember it well, and let me add, it was fortunate that my means were limited, or I might have been crippled for life. But the memory of my first camera comes back to me now, the memory of that exquisite thing made in mahogany and brass, and real Russia-leather. It was beautiful to look at, it was sweet to smell: That was enthusiasm.

I entered a supply house; the place seemed alive with cameras, and they all smiled on me, and one of them actually beckoned; I went and stood near it, and I looked and looked. Later I learned, that this particular camera was a 20x24 and used for enlarging and copying. Let me say right here in self excuse, all this was before the Kodak or other hand cameras were heard of.

One of the salesmen approached, doubtless he noticed my fixed gaze, and he feared I might hypnotize that camera and it would follow me out into the street, and he inquired if I liked that camera, and I replied in the affirmative, but continued I did not think I needed one quite so big, and believe me that man looked surprised; then I wondered how many cameras like this, that man could sell before breakfast. I purchased my camera, it was an Eastman 6½x8½ and I thought it was pretty small, at the time. Now came the lens, I saw lots of them, they were all beauties—they shone so. It was then I received my first lesson in lenses, and I decided on one—can you guess it?—Why a wide angle of course, and that's the truth; I wanted lots of view for my money.

The country fair was on, and I decided to break into commercial work, on the side, right away, for I wanted to get some of my money back.

A certain well-to-do banker who owned some fine horses, took a blue ribbon on one of his percherons, and I hurried to his stables and met one of his men polishing up the huge animal's hide and its neck, which was just as broad as a street. I soon had the horse focused on my ground glass, and was careful to see it just fitted as it faced me, and the horse looked grand, positively grand, on the plate. I made two exposures, and promised the groom one of each; and I thought of the owner, this Croesus, and I booked a nice order—in my mind—at \$20.00 a dozen. Then, not to jeopardize my fortunes, I hurried to my friend's studio, to have the plates developed.

I cannot properly describe my sensations in that dark room; the developing tray was rocked and the horse began to appear, and it grew, the whole thing looked so like a miracle, I nearly suffocated with emotion; then, I had an impulse to throw my arms around my friend's neck and hug him—a man, mind you—so I clung hard to the sink instead.

The painful part I skip. I went back to the dealer next day and changed that wide angle lens for a rectilinear, and for days after I feared I might meet that groom.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, Evergreen, Jefferson County, Colo.

Louis R. Murray, Chief Album Director, 927 Ford St., Ogdensburg, N. Y.

A. E. Davies, General Secretary, 1827 Grove St., Berkeley, Calif.

Answers to inquiries concerning membership and membership blanks will be supplied by the State secretaries. Album directors are at present acting as State secretaries in such of their respective States as have as yet no secretaries.

John Bieseman, Director Post Card Division, Hemlock, Ohio.

James B. Warner, Director Stereoscopic Division, 413-415 Claus Spreckels Building, San Francisco.

A. E. Davies, Director Lantern Slide Division, 1827 Grove St., Berkeley, Calif.

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Kansas—H. H. Gill, Hays City.

Mississippi—George W. Askew, Jr., 211 34th Ave., Meridian.

Missouri—J. F. Peters, Room 210 Union Station, St. Louis.

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West Virginia—William E. Monroe, Box 298, Point Pleasant.

To Our Members

I have often wondered if all members of our International Photographic Association derive the benefit possible from being affiliated with this organization. I believe a great deal may be pleasantly learned from an historical or geographical standpoint, and I put this forward as a suggestion for the consideration of others. Would it not be a good thing to include in our pictorial requirements pictures of an historical interest, in our Home Land and also other countries. We could ask our contributors to add to the pictures just a few notes, even a dozen words with regard to the history connected with the picture; we could then look the matter up and by that means increase our knowledge. If the exchange is from a foreign country we could in a little while learn a great deal of geography, and so forth. For a man with a family I know no better way of helping the youngsters ahead than by encouraging them to dig up information.

A. E. DAVIES,
General Secretary.

NEW MEMBERS

4886—C. A. West, No. 181 Fourth Ave., Salt Lake City, Utah.

Portrait Bromide (Buff E Rough M), portraits and subjects in the nude. Class 1.

4887—S. Putman Daggett, Hotchkiss School, Lakeville, Conn.

Athletic pictures, portraits, views and speed pictures; for portraits, interiors, speed pictures and views. Class 1.

4888—W. H. Fowler, Box 23, Rogers, Ark. Landscapes-rivers scenes, also large collection of various subjects; animal studies, birds and nests. Class 1.

RENEWALS.

4233—Harold Sherer, East Canton, Ohio. Class 3.

654—H. E. High, 1023 Champa St., Denver, Colo. Postcard, 4x5 and 4x6 on developing paper only. Views, mountain scenery, farm views, locomotives, etc. Want anything that is interesting; good work sent out and received. Class 1.

2215—S. S. Webb, 16 Dicky Ave., Warren, Ohio. Class 1.

Erroneously printed in the October issue as New York.

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of Interest

Reported By William Wolff

Kimball & Upson Co. of Sacramento have a very able manager in H. B. Meyer, who has full charge of the Photo and Auto Goods Departments. He is now working on a very fine catalog, the firm expects to issue shortly.

Mr. Chubb is still holding fort at Logan Studio, in Stockton.

Miss Owens of Ing & Allee, came out with her new spring outfit while the writer was in Sacramento recently.

Nathan Reimen and wife are running a very pretty little Kodak Shop on Main street, Stockton, Cal.

Saw Frank H. Hanson in Stockton the other day. Frank is doing a nice business and he sure looks as young as ever.

Dave Rosoff is running the finishing plant of H. E. Diggles Music Co., Sacramento. They have a full Pa-Ko equipment.

H. Sackrider and wife of Marysville contemplate a motor trip to San Francisco soon.

The Ashland and Oregon photographers are both very busy; school work and otherwise.

Swem Studio, Medford, Oregon, have made some changes in the front room of the ground floor Studio & Kodak Shop. It certainly looks fine.

Our Snow Pictures

We felt, we had "forgotten something," if we allowed winter to pass without some record in pictures of snow scenes.

We asked George Wood to stand and deliver; we felt sure of this man; for he has photographed just about everywhere in the U. S. and a few other places besides, his work is good—yes, very good.

It was a pleasure to look over such a varied collection as George Wood's, he is a painter as well as photographer and

some of his photographs are elaborately colored, not tinted, but painted solidly in body-color oils. This kind of work takes more skill on the artist's part than tinting or staining, for it is very easy to lose photographic detail. Among the pictures we looked at, was one of a man driving sheep along a country road, it was a great shot; but we did not see how we could run a July picture as a snow scene; that closed it out for the present, at any rate.

There were some pictures also colored, of our Old Missions; we understand the painting of these subjects alone, keeps this artist busy, there is quite a demand for these landmarks, and this kind of subject lends itself beautifully to artistic treatment, in competent hands. Those who like photographs, and tourists visiting us, should see this collection; refer to this artists address on another page.

Expensive Daylight

This is just about what some go-ahead professionals have thought, especially during the different holiday seasons. Most photographers remember the days of print out paper, the results were beautiful, no doubt about it, but where is the print out paper today? Would we go back to it? It was not the cost of that paper that made all quit it, then it must have been the cost of the daylight, we simply could not get enough of it, enough of the right quality.

Some of us are slow to change, that is a good trait too, not to jump at a thing; but if we wish to keep up with the progressive ones, we simply must take notice of what they do.

In most of the studios today, those that pride themselves on being up to the minute, will be found contrivances for artificial lighting to overcome those days of expensive daylight. All professionals real-

CAMERA CRAFT

ize the advantage of these aids, some no doubt have made up their minds to invest "shortly," but shortly is brother to "pretty soon," and we are trying to find the relationship of all procrastinating expressions with failure to do a thing.

No photographer probably would adopt an outfit without impartially investigating the claims of the different manufacturers, and it does not matter much in what order that list of is made, whether The Victor Studio Flash Cabinet comes first or last on that list; ask Jas. H. Smith & Sons Co. "Has Every Cloud a Silver Lining for You?" address your letter to 3541 Cottage Grove Ave., Chicago, Ill.

American Photography

We have just received the list of prize-winning prints in the first annual competition organized by American Photography.

The entries numbered 446, including more than 1600 prints, from almost every state in the United States and about a dozen foreign countries. The fourteen prize prints will be reproduced in American Photography for April, 1921, and many of the prints receiving honorable mention will appear in later issues.

The judges were, William H. Downes, Art Editor, Boston Transcript; Frank R. Fraprie, Editor, American Photography; John H. Garo, Painter and Photographer; Arthur Hammond, Associate Editor, American Photography; Herbert B. Turner, President, Boston Y. M. C. U. Camera Club.

The prizes are as follows: First prize, \$100.00; second, \$50.00; third, \$25.00; fourth, \$25.00; fifth to fourteenth prizes, each \$10.00; 108 honorable mentions, books or subscriptions to the value \$2.50 each. The winners of prizes are: First prize, John Paul Edwards, Sacramento, Cal., Sicialian Fisher Boats; second prize, H. Ravell, Laguna Beach, Cal., Old House, Tasco, Mexico; third prize, Bertha S. Austin, Catonsville, Md., Mary Louise; fourth prize, Dr. D. J. Ruzicka, New York City, Pennsylvania Station. We feel pleased that the first and second prizes came to California.

J. Will Palmer

The passing of good old Bill Palmer as his friends affectionately knew him will be

sad news to a large number of amateur photographers.

J. Will Palmer, we are informed in a clipping from the Nashua (N. H.) Telegraph, died at his home, 52 Abbott St., at an early hour Tuesday morning, Feb. 22, of anemia. Mr. Palmer was a native of Lisbon, this state, born Sept. 22, 1863; a son of the late William T. and Betsey J. (Streeter) Palmer. He came to this city 35 years ago from Sugar Hill, this state. He entered the employ of Arthur E. Gay, where he was for 33 years. For the past two years he had been employed by the Nashua Gummed Paper Co. as a draughtsman. Mr. Palmer was a quiet unassuming man, devoted to his home. In his line of work he was unexcelled. He is survived by his widow, a brother Samuel F. Palmer, and a sister, Mrs. Mary L. Bowles of Sugar Hill.

We Talked Shop

A friend, the representative of a large photo manufacturing firm of New York looked in for a chat on photographic topics generally. We drifted on to the subject of photo-meters and how popular they had become. At this our friend remarked he always carried a meter whether he had his camera along or not, and he added he had a meter that just suited his purpose, it was small in size, small in price, and it did all that was claimed, perfectly. We were naturally interested, scenting something new, something to write about. The meter was produced, we recognised it at once as Milner's; this was most gratifying to us to hear praise for a meter advertised in our pages, and by a wholly disinterested party, and at the same time an expert photographer.

The Milner Light Guage is the size and thickness of a dollar, it does not furnish calculations for all conditions, which would greatly complicate it; everything not necessary has been eliminated. We don't start calculations with a guess for a foundation; we are supplied in this little instrument with everything we need to know in everyday photography.

The inventor when asked how he hit on the idea told us the following: "I was going down the street one evening and I noticed in a drug store a large bottle of

NOTES AND COMMENT

green liquid, there was a light behind it, and just where the light was I noticed the green color was very bright and quite pale, but where the influence of the light was weaker the green appeared perceptibly darker, running off into black. That gave me the idea, but let me tell you, you could not guess the distance between that idea and that gauge you now hold in your hand. I had much work to make it simple, and I honestly believe I have succeeded in everything but one"—what is that we queried, prepared to be sympathetic; Milner became serious, "Well Sir, the darned thing won't talk!" "Oh, get out of here, we're busy!" and as the inventor departed, he shot back, "tell the boys it will do everything else, though."

Metal Specialties

The Rao Manufacturing Co. is once more to the fore with a real, practical, time saving film hanger, plus an order holder that holds and covers the order slips. By this method we eliminate the numbering operation and thereby reduce possible mistakes.

The busy professional will be glad to know all about handling roll films in plural sets thru the developing, fixing, washing and drying room.

Send for a descriptive folder and learn of modern ways. The advertisement will be found on another page.

It's Good

The February number of Kodakery has reached our desk; have you seen it? If you are an amateur, one that does not know it all, go to your stock house and have a look at it, and we might add the price of a copy will surprise you.

Of course you are interested in home portraiture, well, there is an illustrated article entitled Portraits by Flashlight, it is valuable and interesting.

Daylight effects by moonlight, sounds funny! but we are shown a photograph taken by the light of the full moon, one hour exposure; stop f-4.5. Also notes on coloring lantern slides, focusing in enlarging, pictures in green and other things. On page 25 will be found a winter snapshot, made with a 2-c Kodak Jr.—Some painters might say of it: "This is not at all bad, you know!"

Change of Address

We have received notice of the change of address of The Photographic Journal of America, from 122 E. 15th Street, New York or 701 Arch Street, Philadelphia, to their new offices. Please direct all communications, The Photographic Journal of America, 635 South Franklin Square, Philadelphia, Pa.

Grippit

It would be difficult to find a better name for an adhesive than this one; it certainly does grip, at the same time it is not a mucilage, neither is it a paste. Mucilage has been and is, most useful; but we all know how unsightly it looks when by chance it is smeared where not wanted. A paste, requires care in handling if we would be neat in our work; but this new product has decidedly good qualities of its own.

There is no water in Grippit, therefore we can mount a print on the thinnest support; there is no cockling of the picture, absolutely none; we need not comment further on this point, as every photographer knows all about cockling.

Grippit itself, is a thin, colorless, jelly-like substance, clean to handle; it does not stain; and if some of it should smear on the mount, let it dry; then remove it by rubbing with finger or soft rubber, and there will be no sign of it left. Grippit is also useful for mending camera bellows, for it sticks leather, as well as a host of other things.

There are two ways of using this sticker, spread Grippit over one surface and immediately while still wet, press against the other surface. The second method is: coat both surfaces with Grippit and after drying for three to five minutes press the surfaces firmly together. Dry-mounting has been successfully accomplished by this method. Dewy and Almy Chemical Company, 70 Harvey St., North Cambridge, Mass., are the manufacturers of Grippit. They advertise elsewhere in these pages, but inquire of your stock house if in need of this article, it will save time.

CAMERA CRAFT

The View Finder

If we look carefully into our diminutive view finder, we are surprised at the wonderful amount of subject it contains. The pictures revealed are colorful and varied, but we always wish they were larger. To follow the example of the cautious spokesman we begin safe, by saying, "there are view finders and view finders"—and that reminds us of The View Finder belonging to the California Camera Club.

This little folder is always interesting, gives lots of information and is the mouth-piece of a very live organization. You can't possibly tire of perusing its pages, there are just four of them, and you note, the editors number just three, healthy and strong; and these men give us the choicest from the center of each brain. Brothers of the pen, we envy you; own up to it; you have a snap!

On March the 1st to 15th continuation of Ernest William's exhibition of enlargements. Visitors to our city should not neglect a peep into the California Club's rooms; the California spirit is there—it means welcome.

March 15th at the club rooms hard times dance, old clothes in order on this occasion. Here's the very essence of bohemian philosophy; no matter the times—have a good time.

March 15th to April 15th exhibition of bromide enlargements by Dr. Chas. H. Jaeger of New York City, one of the foremost pictorialists in the United States.

March 18th Lt. Colonel Charles Wellington Furlong, F. R. G. S. will deliver the monthly lecture at Native Son's hall, on "Chile and the Fuegian Archipelago."

March 20th, 8:40 a. m., outing to Leona Heights.

March 22nd., whist party.

In order to stimulate interest in the making of lantern slides a monthly competition, similar to the one held by the Print Committee, will be inaugurated. The Lantern Slide Committee will set aside Thursday evening of each week for the purpose of assisting the members to make their own slides. The slides will be shown at business meetings. Those selected as winners will become part of the next set of slides for the Interchange Set of the Associated Camera Clubs of America.

The Colored Photograph

One of the essentials in the colors used for this purpose is absolute transparency, were it otherwise, the delicate tones in the photograph would be obscured and even lost. The Japanese Water Color Co., whose product is known as the Peerless Japanese Transparent Water Colors, claim just this quality of transparency for their colors, and added to that, brilliancy and permanence.

It will interest those readers who may intend to take up the coloring of photographs as a business, or as a side line for profit, to know that this above company have organized a "Department of Instruction" open to as many as they can care for properly. The instruction offered consists of three months' criticism of the pupil's work, with needed suggestions and explanations. A very practical feature is, the student may forward an uncolored print along with the colored one, and this extra print will be colored wholly or in part as occasion demands, and returned to the pupil. On another page will be found an advertisement of this company. Japanese Water Color Co., Rochester, N. Y., U. S. A.

Illinois College of Photography

This very popular institution is enrolling students from all points of the country and some from foreign lands as well. The Federal government, mindful of the fact, that photographic art is destined to play an important part in the future destinies of Nations, has several of her soldiers enrolled as students, paying all expenses.

With the beautiful park adjacent, and other surroundings, the College of Photography is an ideal place for developing photography under the present faculty.

An important branch of instruction is the Photo Engraving and Three-color work taught at the above college. This has proved a gratifying success, and there are about thirty students taking the course who are receiving a thoroughly practical training in all modern methods of photo-mechanical process. This will prove a very practical way for the young man or woman to plan for the future. There is, and always will be a demand for competent photo-engravers as the field of illustrated publications is constantly enlarging.

