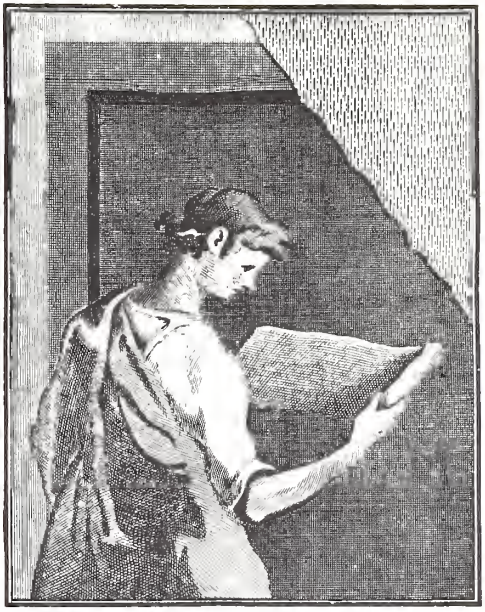

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EDITORIAL AND ON THE GROUND-GLASS

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To Contributors: Contributions relating to photography in any and all of its branches are solicited and will receive our most careful consideration. While not accepting responsibility for unrequested manuscripts, we will endeavor to return them, if not available, provided return-postage is enclosed. Authors are recommended to retain copies.

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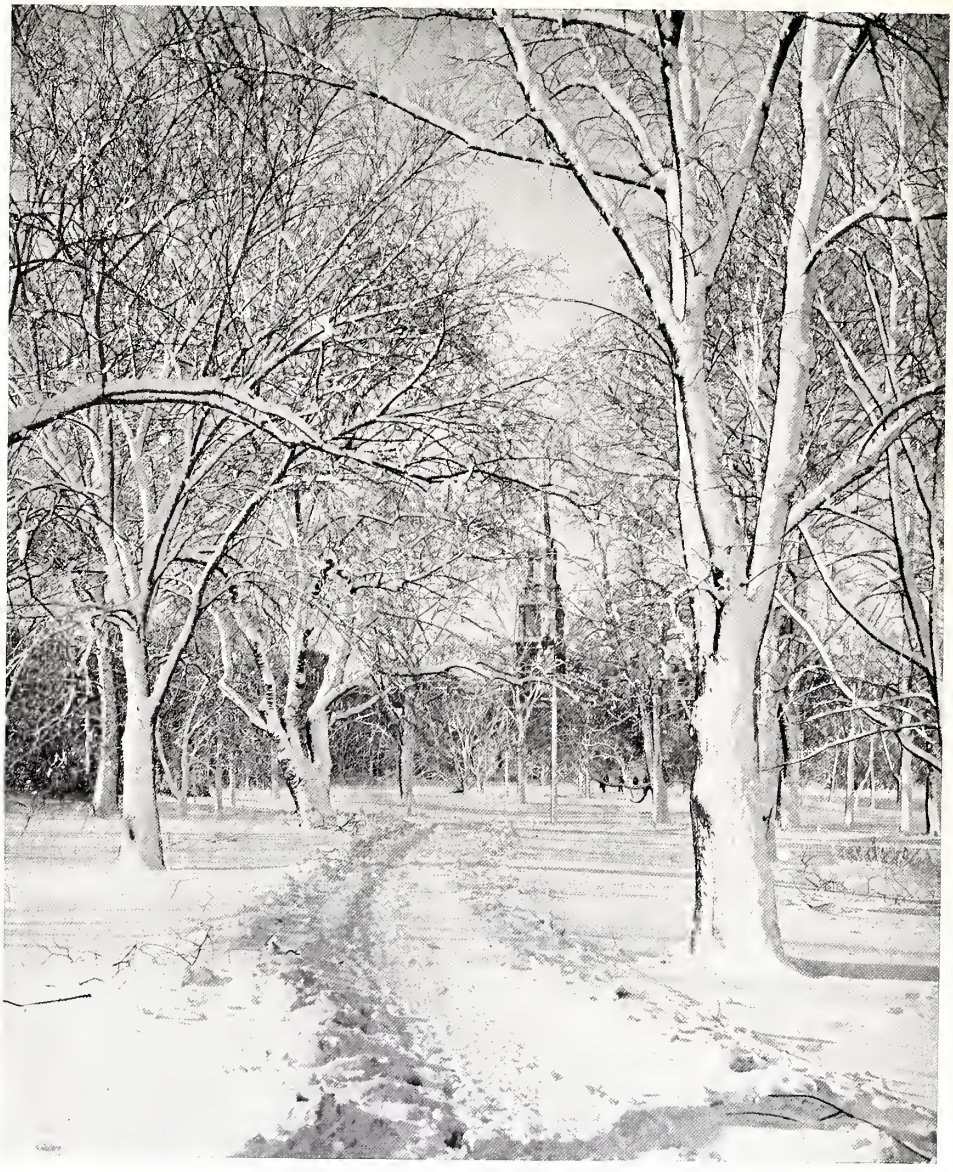


WINTER, BOSTON PUBLIC GARDEN

F. A. SAUNDERSON

PHOTO-ERA

The American Journal of Photography

Vol. XXXIV JANUARY, 1915 No. 1

Photography Without a Microscope

E. J. WALL, F.R.P.S.

PHOTOMICROGRAPHY is generally looked upon as a very difficult subject and beyond the means of the ordinary amateur because of the expense of a microscope. High-power work is certainly not easy, and the first outlay is decidedly heavy; but a great deal of work is well within the reach of the average worker, provided he is content with simple subjects.

Any one possessed of a 5-inch lens, or one of shorter focus, can turn out some really fascinating studies, which are a welcome change from the everlasting snapshot or fuzzygraph. All that is required is a long-extension camera, but even this need not affright one, for it is easy to make a bellows or tube of stout cardboard that will answer as well as the most expensive camera made. The illustrations sent herewith were made with a box of corrugated packing-board, nailed at the one end to a 3¼ x 4¼ printing-frame, to which was glued a piece of wood that carries the lens. The focusing-screen and the plateholder also slide into a printing-frame of the same size, the whole cost being less than a dollar. The extension of this home-made camera is only 24 inches, but 30 or 36 inches is better.

The beauty of work of this kind is that one is absolutely independent of daylight, and many a spare evening-hour can be filled up with it most profitably.

As a light-source the ordinary flat-flame oil-lamp may be used, but as the exposures are very long, it is far better to use an inverted incandescent gas-burner, or even one of the Mazda lamps, preferably a 60- or 100-watt. The camera should be placed on a flat bench or table, and the light-source put at the exact level of the lens. The best way to ensure this is to mark the center of the ground-glass with a cross in pencil, and shift the light or camera until an image of the light falls on the cross. It may be necessary to raise the camera, and if so it should be fastened firmly to a box or block of wood so that it cannot shift.

Some form of condensor should be used, but this may be an ordinary reading-glass or a landscape-lens, that should be unscrewed from the barrel, so that the full aperture can be used. The focus of this lens is quite immaterial, only, of course, the shorter it is, the less room it will take up. I always use an ordinary projection-lantern with an arc, but this is merely because it is always ready, and electricity is cheaper and more convenient for me in that form than in any other. I also use a supplementary condensing-system that enables me to parallelize the full beam from the projection-objective; but this is merely because I have to do high-power work also, when one wants all the light that one can get.

The first thing to do is to obtain a rough image of an object on the ground-glass, note the position of the camera-lens and mark this with pencil on the bench or other support. One need not be very accurate about focusing. Then push the camera out of the way and place the condensor about 3 inches from the object on the light side, then shift the light till an image of it is formed about 3 inches behind the position of the camera-lens. Now place the camera in position and center the condensor so that a perfectly even illumination is obtained on the ground-glass. This is not such an easy matter as one would think, and frequently when one imagines that even illumination is obtained, a negative will often show just the reverse.

If an oil-lamp is employed, the proper thing is to use the edge of the flame; but I am strongly opposed to this for beginners, as it is one of the most difficult of all light-sources with which to obtain even illumination; it is far better to give longer exposures and use the flat flame broadside-on. With the incandescent burner the image of the mantle may be troublesome by showing on the image. Occasionally this also

shows with a Mazda, when one filament happens to be at such a distance from one of the walls of the bulb that the latter acts as a mirror. The remedy for this is to insert a piece of ground-glass close to the light; this, then, becomes the actual light-source, and there is no difficulty then, as a rule, to obtain even illumination. Having obtained as even a circle of light as possible, place the object in front of the lens on the holder, which may be merely a piece of glass in a printing-frame, or, if the object is a regular micro-object, it may be held in a wooden clip or temporarily fastened to the glass of the frame by passe-partout paper. Focus the image as sharply as possible on the ground-glass, using for preference a focusing-eyepiece. As a matter of fact, it will be found better to discard the ordinary ground-glass and use a fine focusing-screen, made by developing an unexposed rapid plate with a normal developer, without bromide, for, say, three minutes, then fixing, washing and converting the fog into silver iodide by immersion in a solution of iodine in potassium iodide, then treating with weak ammonia solution so as to remove the color, and finally washing and drying. This makes an extremely fine-grained screen that cannot be used without an eyepiece.

The beginner will find it advantageous to start with 3¼ x 4¼ plates, particularly as the results can be used for lantern-slide making by contact. It is a still further advantage to place inside the camera a mask of stout cardboard, that side facing the lens being covered with black velvet; this absorbs a lot of light and makes for cleaner negatives. As regards the plates to be used, they should be preferably slow orthochromatic, as these considerably shorten the exposure. But personally I should never use anything else but the Wratten M Panchro plate, which is particularly made for this work, and this is sensitive to red also.

Although it may seem out of place, yet even for such low-power work, I strongly recommend the preparation of some color-filters. I have already described the preparation of these (PHOTO-ERA, December, 1913, page 287), but for photomicrography the filters practically form no part of the optical system, therefore one may make them by the method which I there deprecated, namely, by using fixed-out dry-plates and staining them in solutions of dyes. A full set of filters will comprise red, green, blue, orange, yellow and violet. The red, green, blue-violet and yellow filters may be made as described in the above-mentioned article; but in order to obtain them by merely staining up plates, the following method may be adopted: First fix your plates in acid-hypo, or if they have been exposed to light at all use a fairly strong solution of ferricyanide and hypo, thoroughly wash and dry.

The red filter can be made by staining with tartrazine or naphthol yellow, to which rose-bengal or erythrosine has been added to give a full red tint, about equal parts of a 1-percent solution of the dyes will be about right. For the green, a 2-percent solution of naphthol green, and for the blue a 2-percent solution of methylene blue or thionin blue. As a rule, if the dye-solutions are kept at 65 degrees F., fifteen minutes will be sufficient. For orange one has merely to reduce the quantity of the red dye in the red staining-mixture, or aurantia or auramin with a little rose-bengal will answer. Methyl violet in a 0.5-percent solution will make the violet screen. It is as well to stain up two or three glasses to different depths, as this considerably facilitates rapid work, though one can naturally get along with only one filter of each color.

The purpose of a filter may be to give either contrast or detail, and there are one or two very simple rules to remember. If an object is photographed through a filter of complementary color, great contrasts are obtained; whereas the use of a filter of the same color as the object will give detail. This is well shown by Figs. 1 and 2; the former was taken through a violet filter and the latter through a red filter; the object is the well-known proboscis of the blow-fly (a very poor specimen by the bye), which ranges in color from a bright yellow to a deep orange-brown.

It may be useful to give a table of the complementary colors:

If in doubt as to what filter to use, it is very easy to judge as to the correct one by placing them in turn between the light-source and the condensor and examining the image on the ground-glass of the camera; the complementary colors will at once make the image appear very dark or quite black. Occasionally it will be found better to combine two filters, such as yellow and green, or yellow and blue, this last giving a very deep green as a rule.

The question of exposure is always a difficult one, and very little assistance can be given without entering too deeply into the question. The duration of exposure is governed by the character of the object, the speed of the plate,

the light used, the aperture of the lens, the magnification and the filter-factor. Assuming that one always uses the same make of plate and light, these factors will remain constant. As regards the aperture of the lens, this must be calculated as the "numerical aperture," or N. A., and, whereas we always use the F/x, or ratio-aperture of photographic lenses, it is not difficult to convert the one into the other, the rule being to divide 1 by (F/x $\times$ 2). For instance, if we have a lens working at F/8, then 1 divided by 8 $\times$ 2 = .0625, which is the N. A., and the exposure is as 1 divided by N. A. squared. The following table gives the F-ratios, the N. A. and the relative exposures:

F/x Ratio	N. A.	Exposure
16	.0312	1024
11.3	.0442	512
8	.0625	256
6.5	.077	172
5.6	.088	129
4	.125	64

the operation with the longest extension that it is possible to obtain, when by a simple sum one can obtain at once the magnification for every inch of extension of the camera. For instance, suppose with a 2-inch lens and 10-inch camera-extension the magnification is found to be three times, and with an extension of 30 inches it is found to be nine times, then, obviously, for every inch of extension, the magnification is 6 divided by 20.

As regards the filter, but little help can be given, but considerable help will be obtained by photographing a scale of grays with and without the filters and estimating from the results. One or two actual trials will soon put one right.

The character of the object is all important; naturally a thick, opaque object requires more exposure than a thin, transparent one; but if one keeps a note-book in which is recorded every detail as to the above factors and a print from the negative, one soon learns a lot, and can judge from past experience as to the correct exposure for a new subject. The use of a few plates in practical trials is well worth the cost of the same, and the correct way to make these trials is to start with a given exposure and *double it each time*. One can easily make five test-exposures on one plate if the shutter of the plateholder is marked in pencil into five equal divisions. Suppose, for instance, we wish to test the exposure: the best way is to pull the shutter right out and give five seconds, then push it in and give five more, then push it in another notch and give ten seconds more, then push in and give twenty seconds, then push in and give forty seconds. You will then have a series of exposures of 5, 10, 20, 40 and 80 seconds, and one can easily judge from them as to the correct exposure. This simple rule of doubling the exposure each time should always be followed in all photographic work. It is im-

FIG. 1
Ordinary Plate, Violet Filter

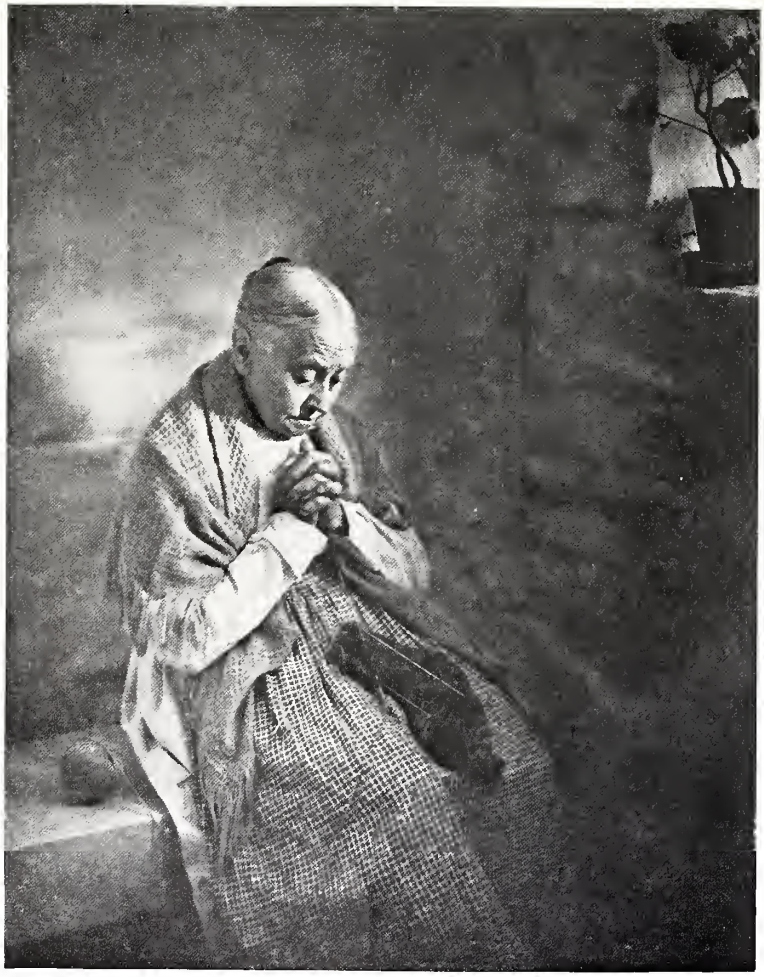
FIG. 2
Panchro Plate, Deep Red Filter

FIG. 3
Skin of Sole by Reflected Light

The rule for the magnification-factor is that the exposure varies as the square of the magnification, that for 100 being taken as unity, therefore we obtain the following table:

Magnification	Exposure
2.5	1/1000
5	1/400
10	1/100
25	1/16
50	1/4
100	1
250	6
500	25
1000	100

To determine the actual magnification, it is a good plan to photograph a finely-divided rule by reflected light, or, better, one on glass, if such is handy, by transmitted light, using the lens and a given short camera-extension, and then repeat



THE VESPER-BELL — RUDOLF EICKEMEYER, JR.

possible to judge from a series of exposures in arithmetical progression as 5, 10, 15, 20, 25.

As regards the development, this is to a great extent a matter of personal opinion. Some prefer to obtain rather contrasty negatives; others, myself among them, prefer rather soft results, even although the background may not be absolutely white. I prefer all detail to black patches, and I never alter my standard method of development; that is, I employ a solution of constant composition, at a constant temperature, used for a given time.

Some may find a little difficulty in focusing, but if a lens of given focus always is used with a given camera-extension, then it is far easier to shift the object slightly than the lens or camera-extension. For opaque objects, as Fig. 3, the light must of course come from the side, and this is not difficult to arrange either with artificial or daylight, provided one has one or two pieces of mirror. The light-source should be so shifted with the condensor that the beam is thrown to one side of the object and thence reflected to the object itself. Frequently, however, it will be found advantageous to employ a second condensing-lens to concentrate the light still more and narrow it down to a circle just large enough to illuminate the object alone.

The actual outlay for such work as this is very little, and the vast field that it opens up will be found full of surprisingly happy results. One does not need to spend much money for objects, for they can be found on every hand; a small flower, the head of a dandelion-seed, a bit of fish-skin, etc., in fact, any simple object enlarged in this way will reveal a new world to many.

A WINTER RAIN J. H. FIELD

A Practical Flashlight-Apparatus

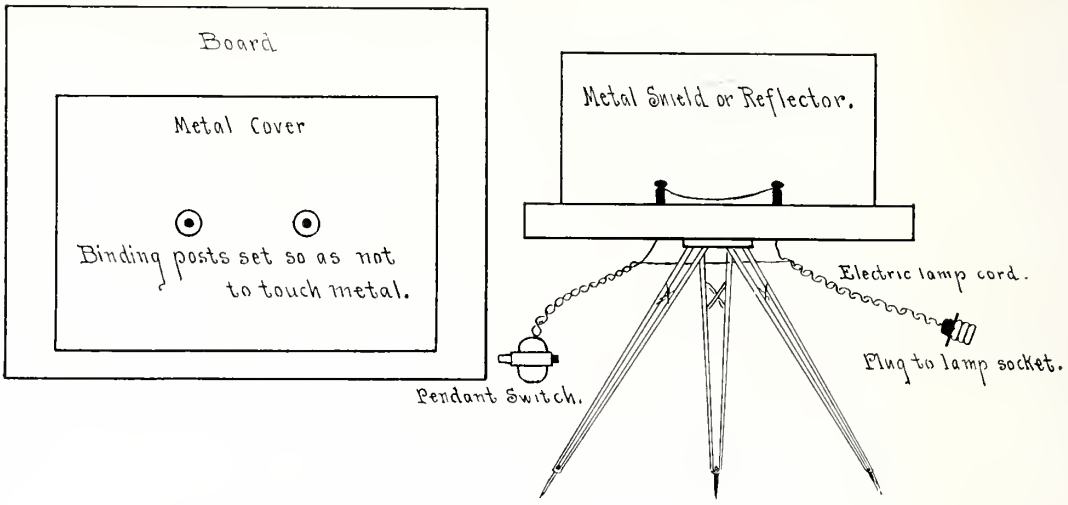
WALTER S. MEYERS

A GREAT many devices have been placed on the market within the past few years for exploding flash-powder, some of which are indifferently efficient. It happens frequently with the amateur as well as the professional that the psychological moment passes before the flash-powder ignites, and many a good negative is sacrificed to the irregularity of the ignition-apparatus.

I was confronted, a few months ago, with the necessity of making a number of negatives of a young child. I searched the market in vain for a noiseless, effective and instantaneous flash-lamp and, after spending a week in trying to buy what I needed, I was forced to fall back on my resources and make what I wanted.

It is needless to describe the steps that I went through in order to arrive at the perfection I desired; but the lamp I finally made for $2.00 and used was so effective and so simple that it is well worth the photographer's while to duplicate my device for his own use.

Take a small piece of ⅜-inch pine, say 4 x 5 inches in size. Then take two binding-posts such as are used on all dry-cells for attaching wire to carbon. Bore holes to the right and



SUCCESSIVE STEPS IN MAKING AND USING THE FLASHLIGHT-APPARATUS

left of the center of your board for setting these posts upright in the board so that they will be 1½ inches apart, and with the washers that come with the binding-posts secure them firmly. Then take a piece of copper or zinc, 4 x 7 inches in size, and bend it in the middle of the length so as to form a right angle. The base of this angle is now fastened to your board. Bore holes in the metal large enough so that it may surround the binding-posts without touching either of them. A tripod-socket is now set into the bottom of the board so that it may be secured firmly upon a tripod while in use.

Now take about 15 feet of electric lamp-cord and, selecting a place near the middle of this piece, cut one of the strands and peel back the insulation about half an inch. Then fasten each of these bared wires to one binding-post from the bottom so that the wire will pass under the board. At one end of the lamp-cord connect up a standard lamp-plug and at the other what is known as a pendant-switch, being sure to procure one which shows a red button when open and a black one when closed so that, by glancing at the switch, you may know whether or not the circuit is open. Now procure a spool of one-ampere fuse-wire and you are ready to begin.

Take a piece of the fuse-wire about 2 inches long and, loosening the binding-screw on each post of your board, connect them across, allowing the wire to sag almost to the board. Then pour your powder on the board, between the posts, and be sure that the wire is covered by some of the powder. Then, making sure that your pendant-switch is open (the red pole being the longer would show this), screw the plug into the electric light-socket most convenient to the place where the work is to be done. Turn on the key at the socket so that the current will flow into the wire when the pendant-switch is closed and you are ready to explode the charge.

Arranging the camera and subject to your satisfaction, you can place the light for the best effects, the length of cord, which is optional with you, allowing you sufficient leeway. When you are ready, close the pendant-switch which you carry in your hand. By so doing you will short-circuit the current which will break between the binding-posts, the fuse-wire being its weakest spot. The flash of the fuse will explode the powder and the exposure is made.

It is well to try the lamp before using powder, just using the fuse-wire to accustom yourself to the necessary operations. The lamp is simple and safe. If your current is connected, the fuse will blow as you are attaching it, giving you a slight shock or burn. If you are careful always to have the pendant-switch open before attacking the fuse, this cannot happen. I have taken about fifty flashlights with my device and I have yet to get a shock or burn. The explosion is instantaneous. You can use the bulb in one hand and the switch in the other, with absolute confidence in the result. At the moment of closing the switch produces the flash and it can be operated very successfully in connection with daylight without producing ghosts or showing movement in a moderately quiet object.

The Bromoil-Process for Portraiture

DR. EMIL MAYER

THE efforts of the artistically inclined photographer have long been directed towards the greatest possible freedom in the selection of a medium of expression. He has never had the good fortune to be as independent in his work as the sketcher or painter, and the artistic value of his results is strongly influenced by the difficulties of his material. Homely features in his model may often, to be sure, be softened by skilful lighting; but even with the most expert adjustment of the changeable conditions between posing and lighting, he cannot always bring his desires into harmony with the character of his subject. Other difficulties often present themselves in his negative-material. A negative with correct tones is, indeed, possible, but that demands the use of highly orthochromatized plates and a yellow filter; the lengthening of exposure required for this can only rarely be made, because, in long exposures, the expression of the sitter usually suffers, even if he can keep still for the necessary time. So it often happens that the tone-value of the negative obtained is not satisfactory, and that the line-directions do not correspond to one's ideals. If such a negative is to be printed by any of the ordinary processes, the defects must be eliminated by careful retouching. But even this does not always turn out satisfactorily, since the most expert retoucher cannot meet every requirement.

The ideal of the artistic photographer is the ability to produce on the positive an effect somewhat analogous to freehand drawing; but with the old methods this was not possible. A partial exception is the gum-process, which consists of several arbitrary printing-phases that permit a certain amount of freedom in the artistic result only by being combined. But the gum-process could not be used by the professional photographer, because it is too tedious, and the final result can never be depended upon.

Free action on the positive, at the same time obtaining really meritorious artistic results, has been made possible only by the oil- or bromoil-process. These two technical methods are often considered as different in nature; but that is an erroneous idea, for in both the same process is applied, which is based on the following principles:

While in other photographic methods of reproducing the image the chemical properties of certain chemicals in changing through the action of light are made use of as a chief medium, in the oil- and bromoil-processes these chemical changes play only a preparatory rôle. With them the production of the final picture depends upon a physical property of gelatine, viz., its capacity for becoming tanned or hardened. In the oil- and bromoil-processes, a photo-chemical image is first formed in the gelatine coating of the paper; this, however, is not final, its sole object being to produce a suitable *tanning* of the gelatine, and when this is done the photo-chemical image is removed in a specified way, leaving the image almost or entirely invisible. This tanned image has the property of swelling in water, more or less in proportion to the degree to which it has been affected by the light. When placed in water, the untanned portions, corresponding to the lighter parts of the original, absorb the moisture, while the tanned places, or shadows, do not. If an oily ink is now applied to the gelatine surface with a suitable brush, those parts of the sheet that have absorbed moisture will repel the ink, while the tanned portions readily take it, thus reproducing the original picture.

In the oil-process the image is produced by printing directly on paper coated with bichromated gelatine and washing out the chromate from the untanned portions. But it is not easy to determine the proper time of exposure; and, besides, the tone-scale is so limited that only very soft negatives are suitable, and in the selection of a support and the structure of the paper the choice is quite restricted. The bromoil, on the contrary, is a much more perfect method for developing the tanned picture, since in it all the difficulties encountered in the oil-process are eliminated.

The various operations in the bromoil-method are, in general terms, as follows: a bromide print or enlargement is first made; the visible image is then bleached out, leaving an invisible tanned image in the gelatine; then, when the proper degree of swelling is obtained, oily ink of any desired color is applied.

The first question that presents itself here is the suitability of the bromide paper for this process, since not every paper can be used successfully. It is very necessary that the coating should not have been too much tanned in manufacturing, as such paper has lost the capability of giving a usable print; it should be tested

beforehand and especial care taken with smooth, matt, heavy papers, such as are used for view-cards, etc.

In preparing the bromide print, whether by contact-printing or by enlarging, the following rules should be kept in mind: When removing the silver deposit in the bleaching-bath, there is always a certain amount of tanning wherever there is any precipitate of silver. If the print has fine, clear lights and well-filled shadows, in the former there will be no tanning, while in the latter it will be quite strong. The result will then be a well-modulated and easily workable tanned picture. But if the lights, either from overexposure or fogging, show a deposit of silver, this also brings with it a degree of tanning, and the resulting picture will be flat and hard to work. The first and most important requirement is, therefore, a well-modulated silver-print as clear as possible. Both in developing and in fixing the silver print everything must be avoided that will tend to tan the gelatine as a whole. It is, therefore, recommended that a non-tanning developer, such as amidol, be used, and that the fixing be done in a neutral hypo-bath. The development itself should not be carried to the complete filling of the shadows. It is enough if the deepest shadows show a dark gray color, as, if printed to the deepest black, it makes the bleaching more difficult. The print is then washed, dried if possible, and bleached in the following:

SOLUTION 1

Copper sulphate	20 grams	5 drams
Water	100 c.c.	3½ ounces

SOLUTION 2

Potassium bromide	20 grams	5 drams
Water	100 c.c.	3½ ounces

SOLUTION 3

Cold saturated solution of potassium bichromate

These are mixed in the following proportions: Sol. 1, 3 parts; Sol. 2, 3 parts; Sol. 3, 1 part, and for each 3½ ounces add 2 drops of concentrated hydrochloric acid. For use, this is to be diluted with three or four times its volume of water. In it the bromide print will bleach rapidly. It often happens that the picture does not disappear completely, but remains a brownish yellow color. In such cases the print is allowed to bleach till no trace of the original gray remains, then rinsed and placed in a one-percent bath of sulphuric acid, in which it quickly loses its brown color. After several rinsings, the print is placed in a ten-percent hypo-bath for ten minutes to remove any traces of the secondary silver picture. By this time the image should be entirely invisible, or at most show only faint traces, so that the coated side of the paper can hardly be distinguished from the back. The print is now washed and dried, which drying completes the preparatory work and is indispensable for the success of the bromoil copy.

The sheet is now placed in water to bring out the latent swelling-property of the gelatine. The cooler the water, the less marked will be the swelling, whereas by using warmer water it becomes more pronounced. It makes a great difference whether the negative is contrasty or not. If contrasty, the difference in the degree of tanning is naturally greater and therefore requires a lower temperature of the water than with a weak negative. The various makes of paper also act differently in swelling, according to the degree of hardening they have received in the factory. If the print is placed in cold water and then dried, the lights, when looked at diagonally, will show a slight gloss without being raised above the surface. If the sheet is blotted off and printing-ink dabbed on it, a copy will be obtained that lacks in gradation, its tone-values being usually inferior to those of the original print. If, however, it is placed in water at about 100 degrees F., the gelatine is affected strongly; the lights swell up and the middle-tones rise proportionally, only the shadows that have been completely tanned remain flat. In this case the image comes into visible relief, and when the ink is applied quite a contrasty copy is obtained, with gradation superior to that of the original. Between these two extremes is a whole series of intermediate gradations, the intelligent utilization of which renders possible the most varied effects. The best temperature for the water-bath can be determined only by experiment, but a few tests will quickly show what is right. The new beginner, therefore, had better start with cool water, trying first how the sheet takes the ink, and if not satisfactory the temperature is increased until the desired condition is obtained. A *visible* relief of the picture is not necessary, the proper degree of swelling being indicated by the prompt appearance of the image when the ink is applied.

For applying the ink, paint-brushes of the best quality, with elastic bristles and sloping end, should be selected. The size of the working-surface should be from one-quarter inch to one inch in diameter; they should always be cleaned in benzine after being used. Two grades of ink are to be provided: one rather

PORTRAIT
J. H. COATSWORTH

stiff, such as is used for fine book-printing; the other softer, like that employed by copper-plate printers. The object in having hard and soft ink is that the latter can be used where the degree of swelling is such as to repel the stiffer ink. Various makes of copper-plate, photogravure and lithographic inks can be used.

The prepared and moistened print is laid on a sloping drawing-board that has been smoothly covered with a piece of damp linen. A very small quantity of both grades of ink is put on two corners of a clean, glass plate, the brush is lightly touched in the stiff ink and dabbed over the clean portion of the glass so as to "distribute" it lightly and evenly; the brush is now dabbed gently on a well-defined portion of the print, taking care that no more than a mere breath of the ink goes on the paper at each dab of the brush. If the sheet has been correctly prepared, the picture will immediately appear in a wonderfully delicate manner. If this does not take place after a few strokes of the brush, the sheet must be replaced in water a few degrees warmer than before, and again blotted off. When the right degree of swelling has been obtained, the whole print is gone over as gently as possible, strengthening it gradually by taking fresh ink as required until it is completed. During the progress of inking, the gelatine coating gradually loses its moisture by evaporation, and consequently its swelling; but this can at once be restored by laying the sheet in cold water, and after again blotting off, the work can proceed as before. If at this stage it is desired to obtain stronger contrasts, have the water a little warmer. In working the shadows, great care should be used, as these parts take the ink greedily and are likely to be overdone, so the quantity taken on the brush must be as light as possible. The more finely and gently the brush is handled, the better it works. If it is noticed that the stiff ink does not take hold on the print, but sticks to the brush, the ink is too strong and must be softened by dabbing the brush lightly in the soft ink and distributing it over the hard ink, testing it on a light part of the print to see whether it takes properly; when this is the case, the work is continued with the softened ink. All details that are to remain in the picture must be brought out before applying the strengthening-touches. If some parts are strongly colored before the details are brought out, it will be difficult to bring them out later.

Practice teaches that a certain degree of swelling corresponds to a certain consistency of the ink, which can be learned after a little practice. When this relation is determined, the work can be done very rapidly. If for any reason the application of the ink is unsatisfactory, the whole picture can be removed with the greatest ease with a wad of cotton-wool dipped in benzine. For the purpose of practice, with a little care a sheet may be washed off several times and inked again.

Bristles often come out of the brush while working, particularly if it is new. They can be removed with a sharp-pointed piece of soft eraser, or later with the point of a penknife.

As has been stated already, the greatest advantage of the bromoil process is that one is not restricted to the tonal value of the negative, since this can be regulated as desired during the progress of the work. We are absolutely free to give any particular part of the picture more or less ink, or none at all. One part can be left quite light and misty, or it may conform to the tone of the negative, or by using softer ink the tone can be given extraordinary depth. Indeed, one's dependence upon the negative is limited to the outline only. In the treatment of tone-values the operator is, after a little practice, sovereign. It is possible, by taking very little ink at a time, and by very careful dabbing, to obtain from the same negative a picture as delicate as a breath, but at the same time perfect in all its details, or, by correspondingly strong swelling, one that is vigorous and full of contrast. Moreover, the operator has it in his power to change the structure of the inking by varying the method of handling the brushes. If the inked brush is applied squarely to the surface of the gelatine and then removed slowly, it leaves an impress of its surface on the print. If the brush is then dabbed with light strokes, the ink is spread out and the print shows a coarse grain without overmuch details. The longer the ink is dabbed, the finer its structure becomes. The bromoil worker has thus under his control the power to give the print any desired coarseness of grain. Naturally all the various ways of inking and handling the brush cannot be described in a magazine-article; but they can be quickly acquired by practice, and all these characteristic and unequaled advantages are obtainable by the simple use of the brush. If the ink is applied by other means, such as a roller, the work becomes mechanical and loses its artistic character.

In making the negative for a portrait, a neutral or a dark background is recommended. (An exception is made where the print is to be of a reddish color, when white is preferable.) Starting with such a negative, one can have either a light or a dark, or even a mixed background. One precaution, however, should always be observed: before finishing work on the

head the background should be filled in, starting from the outer edge and working towards the head, so that in the contours no dark line shall appear. If one does appear, it must be evened out into the background before it becomes too dark.

If it is desired to have parts of the picture look sketchy, while other parts are fully filled in, the sketchy portions should be left in coarse grain while the other parts are worked out slowly and finely; but they should not in any case show an absolutely smooth surface.

When the inking is completed, the print is tacked up with push-pins at the corners and allowed to dry. It is advisable not to allow it to hang loosely in drying, as the paper is apt to curl up and break in subsequent handling. At this stage the print will have a slight gloss, which in the deep shadows may be unpleasant. When fully dry the gloss may be removed by placing the print for a short time in a bath of benzine, which dissolves the fatty matter out of the ink and leaves a pleasant matt surface. This should be done soon after the ink is dry, otherwise it becomes too hard and the grease is no longer soluble. The benzine at the same time fixes the print and makes it more resistant, taking firm hold on the gelatine and becoming practically permanent.

This degreasing of the bromoil print permits an extraordinarily wide range of mechanical treatment later. Consisting of the finest coloring-powder, it sticks to the gelatine like a lead-pencil drawing, and can be worked on with an eraser in the same way, and can be removed from any part desired. If the shadows are too intense, we can remove some of the ink by the same means, giving them more transparency, or the coloring may be entirely removed, leaving only the white gelatine. For this purpose fine sandpaper or a sharp-pointed rubber eraser is used, and for delicate work a piece of soft-kneaded rubber shaped to a fine point. Those parts of the print that call for lightening should first be gone over with the pointed rubber in gentle, closely-made strokes, removing the ink-dust while proceeding, as otherwise it might form dark streaks and become again rubbed into the paper. If the first working-over has not produced the desired effect, repeat the operation, using more pressure. Sometimes the ink holds very firmly, requiring energetic rubbing to remove it. On the other hand, on light portions it is necessary to work very cautiously or more ink may be taken off than intended.

In conclusion, I will describe in a few lines a method of transferring bromoil prints to any kind of non-photographic paper. If the finished bromoil is passed through a roller-press in contact with a sheet on suitable uncoated paper, the ink is transferred to it, giving a picture that has the appearance of a fine graphic reproduction which possesses an artistic character heretofore difficult or impossible to obtain. If a roller-press is not obtainable, a calendering-press may be used, but one of the gears should be removed so that the rolls will work without friction or shock. The bromoil must be cleanly worked, as the slightest shade of color is transferred. The edges must be trimmed sharp. By using a large sheet for the transfer, a fine, artistic print with a wide margin can be obtained. The bromoil is laid on a sheet of stiff cardboard provided with register-marks, and the transfer-sheet is laid on it; a second piece of cardboard is placed over this and the whole passed slowly and evenly between the rolls. Care must be taken to get the proper amount of pressure, as if it is too weak the transfer will be imperfect; if too heavy the transfer-sheet is apt to be injured in separating it from the bromoil. When properly regulated, the transfer will have clear lights and intense shadows. The bromoil can then be inked again and another transfer made, and so on for as many copies as desired.

Abridged from "Atelier des Photographen."

NOONDAY-REST MARSHALL FOWLER

A DREAM OF SILENCE AND OF PEACE — H. C. MANN

Is There a Place Left for Straight Photography?

SIGISMUND BLUMANN

IT has been my misfortune to run counter to the most eminent pictorialists — to several of them — in insisting that the untouched negative and a contact print therefrom may produce a work of art — and in a small size at that. The friendly controversy was precipitated by the statement from the other side that Norrie's prints were good as far as they went, but that they needed enlarging. To this I replied that, being perfect in composition, atmosphere, planes and technique, any different treatment was not criticism's fulfilment, but rather a matter of individual taste.

My statement seemed to run so against the notions held in high places that I was relegated to the obsolete and accused of thinking that an enlarged print and a doctored negative condemned the maker to exclusion from photography. Now, as a matter of strict truth, that is exactly what I do feel but hardly dared to say until forced to confess it to myself by the pressure of the contention. Appreciation should be killed did I, or any one, decide to forego the pleasures of modern pictorial freedom with a prejudice against the modernists quite equal to their prejudice against everything conservative.

One eminent worker, to whom I would almost apologize for differing from him, since he makes wonderful pictures and I have never made one, advances this: "Any negative that cannot be improved by enlarging in the printing or by making an enlarged negative therefrom was not worth while in the first place." Now this is downright despotic. I suggested that it were permissible to say that any print that was not good enough from the original negative was sufficient to condemn that negative. But neither ruling is just. Many fine pictures require no treatment, and many fine negatives are improved by enlarging.

Authorities were hurled at me — names to close the argument. But Browning, without feeling of sacrilege, said to his Maker: "There are two of us." Kühn, Dührkoop, Perscheid, Mortimer, Anderson, Reid, Misonne, Demachy, Steichen, Käsebier, all the Photo-Fellows of Chicago and the Pictorialists of Buffalo! What is left for an answer? Why, a great deal. To give a preponderance of evidence means not always more evidence, but better. I produce just a single print of Mr. Norrie's, made from a small negative, so far as I know, untouched,

four inches by six in size, and on a matte, gold-toned paper (mark the horrible fact), and artists acknowledge the transcendent beauty and perfection of it. They claim to feel the color and atmosphere — the water is wet and flowing, yet the definition is clear.

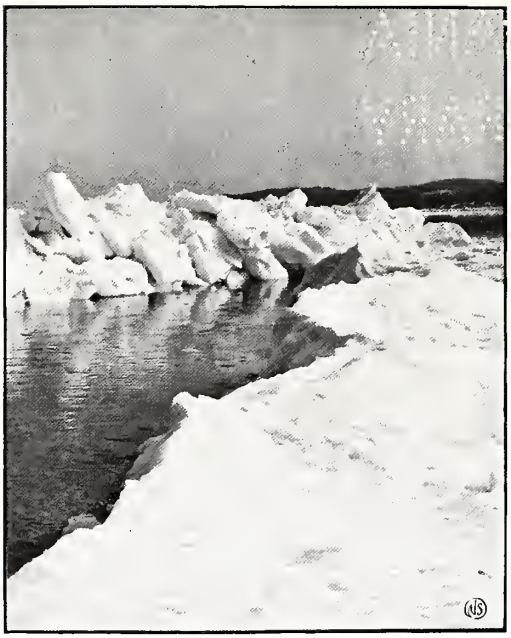
So far, none has fallen into my trap with the assertion that the greatest artists of the brush work most broadly. Let us anticipate them. That statement, if made, were only another arbitrary ruling. We may be permitted to say, in rebuttal, that however broadly a photographer works he must confine himself to the limits of his branch of art or confess that he is reaching *in extremis* for help elsewhere, anywhere. The painter works broadly, but with paints. He does not, for instance, put on plaster-moldings to get relief, or cut out holes in the canvas to give luminosities with lights from behind. When he does that, he resigns his ideals and the ethics of his profession.

When a photographer paints in, touches out, builds up with pencil or brush, or in any way manipulates otherwise than with the materials pertaining to photography, he must be willing to be judged by standards of the painter's art. The question, therefore, becomes not how much more artistic a photographic print Mr. Porterfield or Mr. Steichen has produced than Mr. Norrie, but how does the doctored photograph compare with a Corot, an Innes or a Moran?

Aspiring beyond the boundaries of their own domain, the Moderns may suffer a harder and nastier rebuff than their hyper-ambition deserves; for they should find that the great picture-makers who work altogether by hand hold in mere contempt those who must have a box and glass to start them — "A good photographer, you know, but just a photographer."

Now, I, for one, refuse to put photography at such a disadvantage. I am willing to crawl into any hole, if the hole be left me that I may crawl out again or, at least, peek through at the glimmer of day. Let me enjoy — let the enjoyment pass as good in taste and judgment — the conservative worker who can succeed in making a real picture with just a camera, lens, dryplate and the simple manipulations of the darkroom. Admit such workers into the Olympian preserves. Do not hedge in the Parnassian slopes. Confess that you have not a monopoly of all that makes for the best in photography, and I shall also make a confession — to wit: that it was the radical advance of the re-worker who resorted to any method to make his print great that has taken photography out of the class of the mechanical arts and however precariously, yet aggressively, maintained for it a place among the fine arts. But whether the modern contingent or I confesses, or does not confess, the facts are incontrovertible and Truth denied will still rise triumphant. We must all abide by that.

BATTLESHIPS H. C. MANN



IN WINTER'S GRASP — WILLIAM S. DAVIS

Foregrounds

WILLIAM S. DAVIS

DURING the early days of landscape-painting the most usual form of representation was in broad, far-reaching compositions, more or less panoramic in character, and this style continued to be the prevailing mode (speaking, of course, in a general way) up to about the middle of the nineteenth century. With the rise, however, of more modern schools of painting, composed of artists who sought their inspiration directly from nature, methods changed and forms of composition became more spontaneous and intimate in character, with the result that, of late years, many pictures are so composed that the foreground-material either furnishes the motif or at least plays a very important part in the composition. It is little to be wondered at that this should be the case, as such treatment is well adapted to subjects which call for a feeling of close personal contact — as the rendering of beautiful modulation of lights and shadows over a broken surface, such as rough snow or ice illuminated by the slanting rays of morning or afternoon sunshine.

Other similar subjects which may be mentioned are forest-scenes, where the spreading roots of some rugged monarch of the wood or the clustering wild plants offer splendid material; winding streams and the reedy banks of lakes or rivers; fields "in days when daisies deck the ground"; reflections in quiet water and studies alongshore. Such a list might be multiplied many fold, but would serve no useful purpose.

The arrangement of material in the immediate foreground is under greater control than open scenes, which, together with the fact that details are a prominent feature and must usually be shown with a certain amount of exactness, would seem to make these subjects well suited to the special capacity of the camera as a delineator of delicate detail. Owing, however, to this very profusion of detail, and the many forms in which it is met with, its successful disposition into harmonious patterns of line and tone is usually a test of the artist's skill in composition.

WHERE WOODS AND MEADOWS MEET — WILLIAM S. DAVIS

Their Importance
As Motifs or Subordinate Accessories
In Picture-Composition

In the first place, then, a distinction should be made between the use of nearby objects for complete pictures, and as a part only of more open scenes containing all the planes of both linear and aerial perspective. In the latter the center of interest usually lies beyond the immediate foreground, although this frequently plays a very important part, only it is rather a negative one — the effort being to keep the subject-matter unobtrusive, while using it as a foil to bring out more effectively the real focal point of the picture. This is accomplished either by making the lines of the foreground lead the eye up to the part desired, or by means of contrasting tones show more clearly the relative distances of objects where atmospheric effect is an important feature. When a foreground is used simply to increase the effectiveness of what lies beyond, it must be kept simple in character even to the extent, if need be, of using material that would not by itself prove particularly interesting, yet at the time is definite enough in character to preserve the feeling of reality essential to a foreground; then, by choosing such lighting as will give a broad rendering, the desired result should be obtained. An open road sometimes serves the purpose, or a curving shore-line; whereas in a marine-view the eye readily travels over the surface of the water to the vessel or other objective features of the composition. With subjects of the vista class a dark foreground, with overhanging foliage, serves merely as an effective setting intended to frame the middle-distance.

HIGH AND DRY — WILLIAM S. DAVIS

WILD FERNS — WILLIAM S. DAVIS

Returning now to the subjects first mentioned, wherein the foreground forms the objective feature, an endeavor should be made in these to produce both a pleasing line-pattern and well-balanced distribution of tones, in which details of minor interest are made to keep their place without total obliteration. In the strongest compositions the tonal spaces are produced by broad massing of light and dark controlled by a dominant line running through the picture. "In Winter's Grasp" illustrates this point. Advantage was taken of the contrast between the jagged edge of ice alongshore and the

THE CURVING SHORE WILLIAM S. DAVIS

dark blue water to make the line so formed the leading one. The space-divisions, it will be noticed, are few and simple in character as a whole, consisting of a large triangle of light tone filling the immediate foreground (interest in which was obtained by making the most of the delicate shadows caused by the broken nature of its surface), balanced by the smaller oblong mass of the ice-reef beyond, these, in turn, being balanced by the darker areas of sky and water. Aside from the small part taken by the distant point of land, this picture is composed of but four space-divisions. Monotony is avoided, for no two are just the same in size or shape.

"High and Dry" represents a somewhat different method of handling, for in this the elements of the scene resolved themselves into a series of separate tone-spots rather than a flowing-line effect; so the problem was to so distribute the darker spots — made up of the cast shadow on the beach nearest the eye, the hull of the sailboat with its shadow, and the long, horizontal line of the wharf over the nearly uniform light-expanse, composed of sky, water and a strip of sunlit beach — in such a manner that the total effect would be a somewhat decorative pattern of virtually flat spaces of light and dark tones within the boundaries of the picture. To obtain the required separation of planes in subjects of this character, careful differentiation of both tone and definition is necessary between near and distant parts. The darkest tones must be massed in the foreground, and the distance kept lighter and flatter. In this instance the exposure was made on a somewhat hazy morning, but I am inclined to think that the effect would have been improved had the wharf been softened still more, both in tone and detail, by a thicker atmosphere of mist or fog.

"Wild Ferns" is also something of a spot-composition, but composed of smaller masses less definite in character than the beach-view.

The difficulty in woodland subjects is to strike a happy medium between uniform flatness of tone over all and the other extreme of spottiness, caused by reflected sunlight from

WHEN THE SNOW LIES DEEP — WILLIAM S. DAVIS

projecting parts of plants and foliage — most strongly in evidence when one is near enough for such details to appear as separate spots.

The best that can be done is to keep the background as simple as possible, then watch the different effects produced by changing shadows. If the exposure can be made when the background is in shadow, and nearby plants, or tree-trunks are touched with soft sunshine the result will usually be good, as the foreground is then brought out with sufficient brilliancy, while the necessary repose and breadth is obtained in the rest of the composition. Of course, in cases where the local tone of the foreground affords sufficient contrast without special help from the lighting, advantage may be taken of the fact to work on a gray day, or when the sunshine is diffused by passing clouds, and thus obtain a softer effect.

The foregoing also applies to plant-studies with an open background of field or sky, in the matter of controlling the lighting of the foreground; but many say that with studies of this class the best time for work, particularly in summer, is during the early morning or late afternoon hours, when the light falls more from one side. I suppose it is almost needless to add that a quiet day is most favorable to success.

As it is sometimes essential to place the camera quite near the ground to obtain the desired viewpoint, focusing may be made much easier by holding a small mirror at an angle back of the ground-glass, so that one may see the image from above.

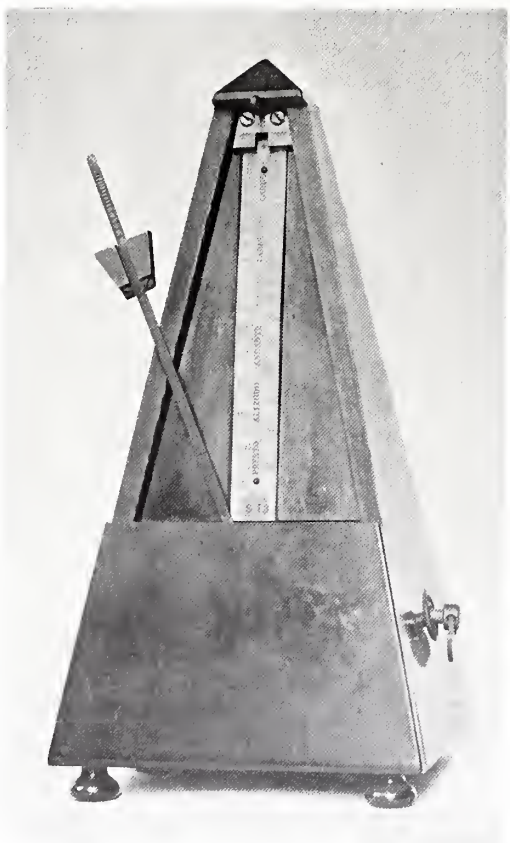
While all near objects need more exposure than others, a very liberal allowance should be made when the contrasts of light and shade are at all strong. Local color likewise plays an important part, and while an exposure-meter can be used advantageously to test the relative strength of the light as a basis to start from, some experience is also necessary to enable one to estimate the increase called for by the two varying factors mentioned.

The Metronome as a Darkroom-Clock

CHARLES TRAVIS

MOST persons have made the acquaintance of the metronome; those who have studied music have spent hours practising scales to its inflexible rhythm, whereas the unmusical know it as a neat mahogany pyramid that stands upon the piano wherever a piano is to be found. It is the musician's clock, intended for the single purpose of beating time.

The metronome differs from the usual timepiece in an important particular — it has no dial. It tells time not for the eye, but for the ear. Otherwise it is made much like any other clock with pendulum, escapement and mainspring. Its rate can be varied by means of a sliding counter-weight on the pendulum-rod, a scale upon the front of the case telling us the number of beats which will be given per minute for each adjustment of the counter-weight. When the counter-weight is set at 60, the metronome beats seconds, at 120, half-seconds, and so on. This, by the way, suggests one of the least important uses of the instrument — as an aid in counting seconds.



The method by which the metronome is used as a clock for the darkroom is very simple indeed — we wind it up a definite amount and then wait until it runs down. The amount of winding is measured by counting the number of clicks of the ratchet on the winding-key, in the same way that the speed of some focal-plane shutters is regulated. The length of time the clockwork will run for a given number of clicks depends upon the position of the counter-weight; by setting the latter at various scale-numbers we may make one click of the ratchet equivalent to 10, 15, 20, 30 or more seconds. These settings are given in the table on page 21. It may be objected that the stopping of the metronome when time is up may easily escape notice. As a matter of experience, the reverse is true. It is a psychological fact that when the ear has accustomed itself to a monotonous rhythmical sound, the stopping of that sound is a definite call to the attention. Thus we may sleep through the ringing of an alarm-clock, only to wake with a start when the alarm runs down, and it is this principle which makes the intermittent alarm more efficient than the continuous kind. Or we may be absorbed in an interesting book, yet look up suddenly when a clock in the same room happens to stop. As the metronome ticks louder than the clock, the effect is correspondingly more marked.

This method of measuring time is remarkably accurate. For some unknown but, doubtless, wise reason, the works of the metronome contain a little device which stops the instrument at a definite point. The mainspring is never allowed to unwind completely; its driving-power is suddenly checked at the proper time, and the pendulum gives one or, at most, two expiring swings and comes to rest. The only source of error lies in the possibility that the rate may not be quite what the scale indicates; but this is not likely to amount to more than one second in each minute. For all photographic purposes the difference is quite negligible.

To use the metronome in this way, it is necessary first to know how many swings of the pendulum are equivalent to one click of the

winding-ratchet. This is easily found by winding for ten clicks, setting the counterweight at 60 and then timing with a watch until the instrument runs down. Under the conditions mentioned, the author's metronome runs for just 5 minutes 20 seconds (or 320 beats), so that each click is found to be equivalent to 32 beats. The following table has been figured on this basis. If another metronome, when tested as described, runs for some different time, the numbers in the first column are to be changed proportionately. Thus, if it runs for 6 minutes, each number in that column is to be multiplied by 360/320. It is believed, however, that the table can be used as it stands in the greater number of cases, for the author's instrument is of very common type.

Scale-number	Time-equivalent of One Click (Seconds)	Longest Time that can be measured at this Setting (Minutes)
192	10	17
126*	15	25
96	20	34
63*	30	51
48	40	68

* These numbers are closely approximate; more accurately, they are 124 and 62, which do not appear on the scale.

Which of the numbers in the first column is to be used for setting the counterweight depends largely upon the length of the interval to be timed; 126 is, perhaps, most useful for periods up to, say, 10 minutes, and 63 for longer periods. These numbers permit us to work to the nearest quarter and half minute, respectively. Somewhat greater accuracy may be had by using 192, with which we can work to the nearest 10 seconds. In counting clicks when winding, it is better to count by minutes and fractions, not by single clicks. Thus if we wish the metronome to run for 2¾ minutes with the counterweight at 126, we count: "(click-click, click-click) *one*, (click-click, click-click) *two* (click-click, click) and *three-quarters*."

All sorts of operations may be timed in this way, including exposure, development and the various after-treatments of plates and papers, and it will be found that the method is easier than to use a watch. If the counterweight is kept always at some standard position (126), the metronome may be set in the dark, so that it has all the advantages possessed by any of the clocks invented particularly for the darkroom.

It has just been said that the metronome may be used in developing. With the time and temperature system, however, we would not use it in the way described, for there is a much neater and more satisfactory way. We can make the instrument itself compute the proper time of development corresponding to the measured temperature, which is something, perhaps, that no other clock can do. The principle is this: moving the counterweight one notch up or down changes the rate just enough to compensate for a difference of one degree in the temperature of the developer. The numbers on the scale run approximately in a geometrical series, and are doubled for every 16 divisions. Now 16° F. about doubles or halves the development-time; the number varies with different developers, running from 14° to 20°, but the figure given is a fair average. Within the range of temperature ordinarily used, say from 60° to 70°, the accuracy of the method is more than adequate for photographic purposes, whereas even at 55° or 75° it is quite closely approximate and gives very good results.

This is the way the scheme works: the notches on the pendulum-rod are regarded as a scale of temperatures, 126 (or 63 for tank-work) representing the normal. We know the time required at normal temperature to get the proper degree of contrast; the metronome is wound to run for this time. We then take the temperature of the developer, and for each degree above normal we slide the counterweight down one notch, or up if below normal. In other words, we control contrast by the winding-key, and compensate for temperature by the counterweight.

As an example, suppose that 4 minutes is right at 65°, and that the temperature of the developer is actually 69°. We take 126 on the scale as equivalent to 65°, and wind for 16 clicks, for at 126 each click runs the metronome for a quarter of a minute. Because the temperature is 4° above normal, we set the counterweight at 4 divisions below 126, *i.e.*, at 152. Then pour the developer on the plate, starting the metronome at the same time; when the instrument runs down, development is completed.

This way of developing by time and temperature is so convenient that it is recommended to the exclusion of all others; but if desired, the metronome may also be used as an aid in factorial development. Here we time the appearance of the image by counting beats, and then figure the number of clicks necessary to run the metronome for the required total time. A few clicks, say 10, must be given to carry the instrument past the time of appearance of the image, and this number is to be deducted from the calculated total.

An example will make this clear and will show how simple the method is in practice. Suppose the factor is 12, and the image appears

WINTER NEAR ST. MORITZ-DORF G. R. BALLANCE

when we have counted 70 beats. The total time is then 70 x 12, if measured in beats, and 1/32 of this if measured in the usual way by clicks of the winding-key. We, therefore, divide 12 by 32 once for all, and use the quotient, 3/8, as a new factor. Reckoning to the nearest whole number, 70 x 3/8 equals 26. We have already given the key 10 preliminary clicks, so we wind for 16 more, and stop development as before when the metronome runs down. It is to be noted that it is immaterial where the counterweight is placed, because the method is wholly relative. For uniformity, it is well to keep the setting 126, which also gives a comfortable rate to be followed in counting.

If the original factor have no divisor in common with 32, we may save mental arithmetic by expressing the new factor approximately. Thus if the old factor were 11, we would use 1/3 instead of 11/32, and no material error would be introduced.

Another way in which the metronome can relieve the photographer from attention to small details is in timing such operations as fixing and washing. It would seem the easiest thing imaginable to notice the time when plates are put into the washing-tank, and to allow them to remain there for at least an hour. As a matter of fact, the one thing easier is to forget when they were put in, so that if the negatives are wanted in a hurry, we are likely to cut the time of washing below the safe limit, or else waste half an hour or so to make sure that washing is complete. The author's practice is to set the metronome at 54 and wind as far as possible (which in his instrument is 103 clicks), when it will run for just one hour. Thorough washing is then assured if the negatives are not removed while the metronome is still running.

These are some of the ways in which the metronome is useful in photography. Try them out, if you are fortunate enough to own a metronome (or can borrow one); you will agree that "useful" hardly describes the instrument — "indispensable" is more appropriate.

STRIVE for an honored name by giving good and honest work. — *S. L. Stein.*

SNOW

PAUL LEWIS ANDERSON

Pictorial Landscape-Photography

Part III — Technical Methods

PAUL LEWIS ANDERSON

NO elaborate discussion of technique will be given, for many articles, in the photographic magazines, as well as several text-books on the subject, have given fuller information than could possibly be included in the space of such a series as the present. Any good magazine is a mine of information, and valuable formulæ are to be found in the photographic annuals, particularly those published in England and Germany. A few remarks may be given, however, and will perhaps prove of value.

In the first place, there are two distinct ways to approach the photography of landscape — the direct and by enlargement. In the first case the camera requires a plate practically the same size as that of the finished print, and the print is made directly from the original negative. In the second method, a small camera is employed and the final print is made either by enlarging on bromide paper or by printing in some other medium from an enlarged negative. The former plan has the great advantage that it necessitates fewer operations and makes it easier for the worker to attain the desired quality in his print, which is often lost in the additional processes of making a transparency and an enlarged negative. It has, however, the disadvantages of limiting the size of the result and of being less flexible, the former resulting from the fact that a camera larger than 8 x 10 is too heavy for the average person to carry, the latter because the intermediate operations mentioned above permit the modification of results when the worker has become skilful enough to control his medium. It is, therefore, necessary for the worker to decide which of these methods he will follow, and it may be said that the writer prefers the former when the result is not to be larger than 8 x 10, whereas if prints 11 x 14 or larger are desired, the second is adopted. In choosing a small camera for the second method, as large a one as can be carried should be selected, because it is easier to compose the picture on the ground-glass if the latter be of a fair size, and with too small a one faults of composition may pass unnoticed which will, on enlargement, be very conspicuous. As to ratio of enlargement, this has no effect, provided the arrangement of line and tone be good, so it is not necessary to take it into account. When making pictures for subsequent enlargement, the writer almost always uses a 6½ x 8½ folding plate-camera, though sometimes a 4¼ x 6½ kodak to which a focusing-back has been fitted, the latter because the use of the ground-glass is strongly to be recommended, and because plates are for many reasons preferable to films. The latter have, to be sure, the advantage of portability, but there their superiority ends, for in every other respect plates are better. The camera chosen should have a long bellows, horizontal and vertical swing-back — or front, which amounts to the same thing — rising and falling front, and a large front-board, together with a focusing-screw, though it is possible to use the clamp, which is the only means of focal adjustment on the folding film-instruments. The view-type of camera combines these adjustments with a low price, though if greater compactness is desired, and cost is not an important item, the folding plate-cameras are better. The horizontal swing-back will seldom be used in landscape-work and may be dispensed with, though it is useful in portraiture and architectural photography.

If subjects which contain much red or orange are to be photographed, a panchromatic plate is necessary; but this is seldom the case in landscape-work, and for all practical purposes an ordinary orthochromatic plate will be found perfectly satisfactory, provided it be used with a ray-filter, as should ordinarily be done, and provided some means be employed to render it non-halation, as otherwise it will be difficult to include clouds with the landscape on the original negative, and branches of trees, where outlined against the sky, will be too vague or may even disappear altogether. The American manufacturers furnish many good orthochromatic plates in double-coated form, the additional coating rendering them non-halation; whereas the English makers rely more on backing, which is equally good so far as preventing halation is concerned, but does not provide the extra length of scale and consequent latitude of exposure which inheres in the double-coated plate. However, a single-coated plate, if properly backed, will have latitude enough for any work that a landscape-worker is likely to want to do. It cannot be denied that a panchromatic plate will do all that any other will do, and a little — or rather a great deal — more, so it is ad-

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vised that such be employed, though those workers who wish to examine their plates during development — a proceeding which is unnecessary and is likely to result in fog — will probably prefer to use the orthochromatic variety, as this will stand much more light than the others. The writer uses panchromatic plates entirely, developing by time and modifying results by varying the length of development, a formula for developer, together with the time of development at various temperatures for a definite degree of contrast, being given with each box of plates, as this factor varies with the different emulsions. It will be observed that, although the writer has said that he uses panchromatic plates entirely, no such statement appears in the data given with the illustrations, where the plates named are all of the orthochromatic, non-halation type. The explanation is simply that it is only within the past year that he has used panchromatic plates, and all the negatives from which these illustrations are taken were made before that time. This will also serve as an indication that, although the panchromatic type is valuable above all others for portraiture, such is not the case with landscape-work. At present, the writer, whose work is largely professional portraiture, uses panchromatic plates for that purpose, and also for what little landscape-work he does, finding them better for the latter than any other, though not a great deal more valuable.

The writer's preference is for one of the soft-focus lenses, several good makes of which are on the market, although a single achromatic, known as a "single landscape" lens, will give excellent drawing if opened to F/8 instead of F/16, as it is usually furnished. For the worker who desires slightly finer definition, a rapid rectilinear is recommended, and if a small camera is to be employed, an anastigmat may be a good investment, for these possess, as noted above, the advantages of speed and flatness of field, though the definition may be softened to any desired degree in enlarging. The use of a soft-focus lens on the enlarging-camera will result in a quality of definition very like that given by such an objective in making the original negative, the only difference being that in the former case the diffusion will be uniform throughout all the planes, instead of being least in the plane which was focused on, and increasing progressively in the distance.

A ray-filter should be part of the equipment, and it should preferably be procured from the maker of the plate, as in this case it is more likely to give satisfactory results, the manufacturers of the plate employed by the writer giving the exposure-factors for their various filters in conjunction with each batch of emulsion, as the relation varies. In any case, a filter giving full correction will be all that is necessary, and such a filter should not increase the exposure more than five times. A set of selective filters, that is, filters which will emphasize any desired color, may perhaps be useful, though the writer cannot recommend the use of such a set to the landscape-worker. The occasions when they would be employed will be rare, and the desired effect can usually be obtained with a little hand-work on the negative, whereas the inclusion of such a set would mean adding to an equipment that is likely to be sufficiently complicated without it.

Some means should be used to determine the correct exposure, there being two types of instrument for the purpose: the first depending on the darkening of a piece of sensitive paper, the time required for it to match a standard tint being observed; the second being based on the fact that the correct exposure for different conditions of subject and light has been determined by experiment, the results being given in the form of a table. Either of these methods may be employed with satisfaction, though both possess the defect of failing in a weak light, such as that of evening. Of the former type, the best are the actinometers of Wynne and Watkins, and of the second, the most convenient is the Wellcome Exposure-Calculator. This does not mean, however, that there are not others equally good, the tables given every month in PHOTO-ERA being quite accurate. In weak lights the only thing to do is to determine as nearly as possible the exposure by reference to a table, then increase it in accordance with the dictates of previous experience. Some workers depend entirely on experience, but this ability comes only after years of practice, and even then is apt to lead to error when the conditions are unusual.

It is absolutely immaterial what developer is employed, so far as results are concerned, the only choice being in the matter of convenience; for any agent will give exactly the same results as any other, provided it be used correctly. There is, however, a great choice in the matter of ease of use, for the less work that is involved in making up solutions, the easier the work will be, and it is difficult enough at best. The developer should preferably be one of the type that tends to give soft results more readily than hard, and should keep well before using. These qualifications are possessed in high degree by rodinal (or citol, which is the same product under another trade-name), this being a con-

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centrated solution, to be diluted with water for use; also by almost any of the long-factor developers, several of which are obtainable in the form of compressed tablets, requiring only solution in water to be ready for use. In developing, either the tray or the tank may be used, the former being preferable if it is desired to develop several plates to different degrees of contrast, whereas if the same quality is wanted in all the negatives, the latter should be employed. If developing by time, the duration of development must be varied according to the contrast wanted in the result, the contrast existing in the subject, the temperature and concentration of the solution, and the printing-medium to be employed. It will be apparent that if a certain degree of contrast is desired in the print, development must be longer if the subject was lacking in contrast, and shorter if the original was strong. Different printing-processes give different contrasts, and this must also be taken into account; but all these variations may be allowed for in determining beforehand the time of development, and, this having been decided on, the result can be attained with much more certainty and much less risk of damage to the negative than by the method of inspecting the plate at intervals during the progress of development. It may be objected that the timing-method offers less opportunity for the exercise of judgment than does the method of inspecting the plate, and at the same time renders the process more mechanical, thus detracting from the freedom and spontaneity of the result. Consideration will show, though, that this is not the case, the only effect of using the timing-method being to transfer the employment of judgment to a sphere where it may act with more certainty than is possible in the dim light of the darkroom, whereas freedom and spontaneity are out of place in the mechanical side of photography. They are, to be sure, of immense value — are, in fact, imperative — in selection of subject, in focusing, and in the choice of a printing-medium, their presence in these parts of the work being what saves it from becoming a purely mechanical process; but they have no place in those details of the technique which can be determined scientifically. To develop by judgment — or, to put it accurately, by guess — is to place oneself on a par with a painter who, instead of learning that blue and yellow when mixed give green, should prefer to try the effect of mixing various pigments until he found the right ones.

(To be continued)

THE ROCKS — CHARLES H. FLOOD

EDITORIAL

America's Opportunity

THE saying, that what is one man's loss is another man's gain, may be applied to the present disturbance in the world's commerce. What is Germany's misfortune must redound to the advantage of some other country, and that country seems to be America. Already the subject is being strongly agitated, and in several quarters it is felt that the great opportunity to give an impetus to American export-business has arrived and is knocking at our door. It is well not to be too sanguine, however, lest too hasty efforts to profit by Europe's sad plight prove a disappointment. It must not be imagined that because South America cannot now obtain goods of German or Austrian manufacture, she will accept complacently those of another country even if they should be inferior. In any event, the difficulties to reach South American markets, which American manufacturers have experienced in the past, still exist. It will still be necessary to study carefully the needs and the peculiarities of the South American merchants, to manufacture just what goods they order, deliver them safely and promptly, and to emulate the exemplary business-methods of European purveyors, which, of course, include a fluent knowledge of the language of the country, be it Spanish or Portuguese. It is obvious that no greater compliment can be paid the native of a foreign country than to converse with him in his own tongue. To force him to speak English, or to conduct business through an interpreter, is not likely to propitiate him.

Therefore, the first step in the preparation for a visit to Argentine, for instance, is to learn Spanish. A practical knowledge of this language, specimens of goods to demonstrate the quality and workmanship of which American manufacturers are capable, a gentlemanly conduct and a desire to conform to the customs of the country constitute the sum and substance of a traveling salesman's equipment. It may be that a serious application of these suggestions will create a feeling of confidence and respect for American manufactured products in these distant lands and stimulate closer commercial relations between them and the United States, which is a condition earnestly to be desired by every American producer.

The Eastman Two-Color Process

THAT indefatigable captain of industry, George Eastman, is credited with another photographic achievement, in importance rivaling his initial invention — the Kodak. It belongs in the realm of chemistry, a product of the Eastman Park Research Laboratory, and is known as the Eastman Two-Color Process.

In yielding a glass transparency, as the ultimate result, the new method of color-photography resembles the Autochrome, but differs from it in production and appearance. The complete color-picture, a combination of two superimposed glass positives, is viewed by transmitted light — direct or mirrored daylight, or colorless electric light — and presents the colors of nature, including the most delicate nuances, with remarkable fidelity and clearness. The colors are extremely transparent and there is no grainy structure, as in the case of the Autochrome, and wholly satisfactory results are assured by straightforward observance of the working-instructions. However, an eminent advantage of the Eastman process is the extent to which the colors can be modified, according to the degree of intensification or reduction which is accomplished by local manipulation. In the hands of an artist-photographer with a true feeling for color, this process is capable of yielding results of wonderful beauty and distinctive individuality. The process of modifying the colors is done with the brush; hence, besides a capable photographer, the worker should be a good chemist and a skilled technician.

To attain successful results with the Eastman process, a special system of artificial lighting is necessary; an electric light that has any trace of color is useless. The subject, be it a portrait or still-life, is arranged as if for an Autochrome, though, of course, all the rest is absolutely different. Two color-sensitive plates are exposed in the camera — one through a red and the other through a green color-screen — and then developed, the former being transformed by a reversing- and a dyeing-process into a green positive and the latter into a red one. The two transparencies are then registered, bound together, and at once yield a picture in true natural colors. This combination of the red and the green suggests, somewhat, the principle involved in Kinemacolor, where a revolving screen of alternating

red and green, figures prominently in the taking- as well as in the projecting-apparatus. The working-out of the Eastman color-process is based upon a new and important step — the direct transformation of a negative image in black silver into a positive in which the silver of the negative is represented by clear gelatine, and the places that were lightest in the negative by the full strength of a color-dye. It was the development of this specific process of changing a silver negative into a dye-positive which has made the Eastman two-color process possible.

When available for the photographer, materials for the Eastman process, including special plates, color-screens and chemicals, will be accompanied by full working-directions, a meter to determine the exact exposure and advice with regard to lighting and arranging the subject. We understand that a special camera is being perfected for exposing the two plates simultaneously and yielding one reversed image, so that the resultant positives may be combined face to face in optical contact. When the color-sensitive plates are exposed successively in an ordinary camera, according to present practice, the final transparencies, when superimposed, may be brought into register. Being face to back, the complete picture must be viewed at right angles to the glass surface; if viewed obliquely, the effect of registration will disappear. Moreover, a cover-glass is required for the unprotected film-surface.

A Well-Earned Distinction

AS an artist is an adept in any of the fine arts, and with photography now recognized as a fine art, John H. Garo, of Boston, has for many years enjoyed the distinction of being an artist, and in the fullest sense of that broadly used term. However, when this accomplished photographer applied for membership in the Boston Art Club, several years ago, he hoped that his reputation as an interpreter by means of the camera would enable him to be classed as an artist, the same as the painters, sculptors, architects and etchers who constitute the artist-membership of this club, as contrasted with the lay-members; however, he was disappointed. The committee on admissions recognized his distinguished ability; but as the club did not regard photography as one of the fine arts, although it had frequently opened its art-gallery to photographic exhibitions of a high artistic standard, it could admit Mr. Garo only as a lay-member. His friends then urged the fact that he was as skilful a painter as he was a photographer. Even this argument proved unavailing, for the committee declared that Mr. Garo made his living primarily by photography — in fact, was known and classed as a photographer, however well he might paint. Accepting the verdict of the committee, and applying for admission as a layman, Mr. Garo was promptly elected to membership.

Last spring Mr. Garo was granted the use of the art-gallery to exhibit specimens of his photographic work. He selected for this purpose about fifty 11 x 14 gum and oil prints representing portraiture, still-life and landscape. The individuality and beauty of these pictures created a genuine sensation among the artists and cognoscenti of Greater Boston and enhanced his reputation as a creative artist of originality and power. Last November Mr. Garo, encouraged by the success of his spring-exhibition, applied for membership as an artist, tendering as proof of his ability two oil-paintings. This time he succeeded and, after two years a lay-member, Mr. Garo is now a regular, full-fledged artist-member of the Boston Art Club — an honor not likely soon to be attained by another photographer in New England.

Photographic Testimonials

AS one of our English cotemporaries remarks quite pertinently, few men keep their recreations in separate watertight compartments, and the choice of a hobby is often governed by considerations of a practical nature. When a young business-man is urged to take up photography as a new diversion, he may assent readily, but is apt to question its value as an aid to his advancement. In this respect there should be no doubt in his mind, for sooner or later an occasion will arise when his photographic knowledge will stand him in good stead. In any event, practising photography as a serious pastime, and to be familiar with its latest developments, will enable the young business-man to derive the utmost enjoyment from the art and to be ready, at a moment's notice, to render a service to his chief or his firm. Let us consider, for an example, that of a landscape-gardener or of a window-dresser. Provided with photographs of work that he has accomplished with his own hands, such an applicant for a position would be able to offer proofs of his ability and skill more convincing than written testimonials, at least more likely to engage the interest of his prospective employer. Indeed, a serviceable knowledge of the use of the camera should be regarded as important to a person's education nowadays as the ability to operate a typewriter.

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.

4. Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter, SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15 unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value. Persons interested to have one of these PHOTO-ERA prize-collections shown in their home-city will please communicate with the Editor of PHOTO-ERA.

Awards — Indoor-Portraits

Closed Oct. 31, 1914

First Prize: C. E. Kelsey.
Second Prize: Belle M. Whitson.
Third Prize: L. L. Higgason.
Honorable Mention: Jack Butler, W. G. Cartlich, E. G. Dunning, J. H. Field, Mrs. C. B. Fletcher, M. Frey, Will G. Helwig, William H. Spiller, E. R. Trabold, Alice Willis.

Special commendation is due the following workers for meritorious prints: N. L. Avery, Edna Blackwood, Henry H. Blank, T. H. Brennen, F. E. Bronson, R. A. Buchanan, S. A. Chapman, F. S. Dellenbaugh, Jr., S. De Mott, S. O. Dunbar, Mrs. Wm. Durrant, Paul M. Elder, John Howard Ellis, Karl Fichtner, Alice F. Foster, Harriet J. Goodnow, Cecelia May Green, Fred E. Gustafson, A. B. Hargett, Mrs. Charles S. Hayden, Wesley Heebner, Louis M. Herbicek, George S. Hoell, Dr. Morris Houston, R. D. Hubbell, Franklin I. Jordan, Emil G. Joseph, S. R. Kitchin, Rexford Krueger, Warren R. Laity, R. J. Latshaw, Richard D. McCue, Mrs. Wilma B. McDevitt, Clara J. Monroe, Louis R. Murray, Nick W. Parsons, Chas. H. Partington, W. B. Post, Gladys L. Prime, John E. Prior, Jay Satterlee, John Schork, W. D. Sell, U. Shindo, Elliott Hughes Wendell, Mildred and Kenneth Wilson, L. A. Van Zandt.

Subjects for Competition

"My Home." Closes December 31.
"Winter-Scenes." Closes January 31.
"General." Closes February 28.
"Flashlights." Closes March 31.
"Interiors with Figures." Closes April 30.

Photo-Era Prize-Cup

In deference to the wishes of prize-winners, the publisher will give them the choice of photographic supplies to the full amount of the prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

SECOND PRIZE
INDOOR-PORTRAITS

SISTERS — BELLE M. WHITSON

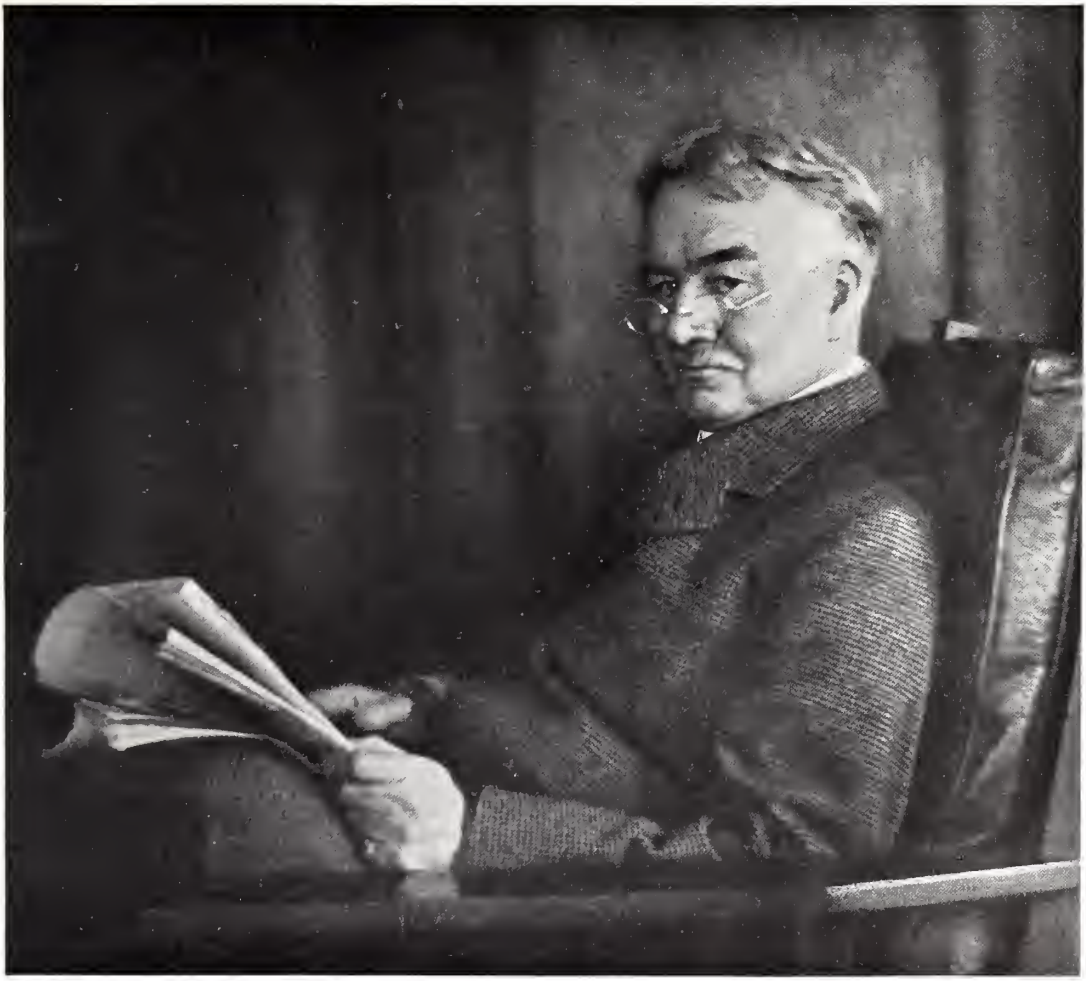
General — Photo-Era Competition

Closes Feb. 28, 1915

Again we come to one of the competitions in which every one has the opportunity to submit his favorite print, with no "class distinctions" to trouble him. Here is the chance for the print that has seemed to come under none of the specified heads, but looks to its maker like a prize-winner. Perhaps it is just a plain landscape that has failed to come under the special divisions of that subject recently considered, or possibly it is a figure-study that tells too much of a story to be classed as portraiture, but comes more nearly under the head of genre.

Whatever the subject of your choice, in order to give its best representation the most careful consideration should be given to a proper printing-medium, and all the little "particularities" that go toward the making of the perfect print. Sometimes it is necessary to go back to the negative itself and make some improvements there before printing. It may be that an otherwise pleasing landscape prints with a "baldheaded" sky, although clouds show in the negative. The old standby, "Farmer's Reducer," is the best remedy here. To a little fresh plain (hypo) fixing-bath add enough of a 10-percent solution of potassium ferricyanide to make it a light straw color. Soak the negative for a time in clear water to soften the film and prevent streaking; then lift it from the water, let it drain from one corner for a moment, then hold with the sky down. Dip a camel-hair brush in the reducer and, beginning near the horizon, let it flow over the sky, passing the brush constantly back and forth for a minute or so, then immerse the plate again and repeat until the required density is secured, then wash thoroughly and dry. It is better not to go quite to the horizon, as then you run no risk of overlapping, and the sky is always lighter there.

This same treatment may be applied in all sorts of cases where some part prints too light. The windows in an interior, white dress or hair-ribbon in a portrait, or numberless similar distractions may be lessened in intensity.



DAD C. E. KELSEY

FIRST PRIZE — INDOOR-PORTRAITS

For smaller areas, however, with more definite outline, it will be necessary to have a pad of soft muslin to blot the standing water from the film, then with a small brush and weak solution go over the spot, immersing the plate frequently to avoid uneven reduction or spreading over the outline.

If, however, the sky in your negative is without clouds, it will be necessary to procure them from some other source. If the sky is thin, printing out gray and dingy, the easiest method is to work in clouds on the back of the plate, either by coating the back of the plate with ground-glass varnish and working it up with graphite, or by putting in the clouds with oil-paint on the glass side. A good mixture has flake-white as a base with enough ivory-black to make a light gray, and a little yellow ocher. This may be laid on with a brush and then "patted" into evenness and desired texture with a finger-tip, a pad of fine texture such as silk, or for some effects a piece of velvet. One should study cloud-forms and be sure to have the sky lighter toward the horizon. Do not attempt any strong contrasts of color, but keep the sky simple and subordinate to the landscape. A trial print should be made while the medium is still wet, and if too much pigment has been used, press a clean blotter firmly over the plate and it will remove some of the surplus. One advantage in this method is that you can make the sky support and repeat the lines of the composition. A little experimenting will give you control, and you will find the method useful in working in backgrounds for portraits or modifying undesirable details in any sort of subject.

When the sky in the negative is thick, however, and prints white, no work on the plate will show in the print, and one must resort to "printing-in" methods. With a sky of this character no mask is needed in printing. For this purpose one should have some suitable cloud-negatives. In making them, do not point the camera towards the zenith, as the clouds there are of a different character from those near the horizon; and do not select a spectacular sky, but one with simple lines that will not attract the eye. Plates should be made at different times of day and in differing conditions of light, and great care taken to make the negatives thin and crisp.

VIRTUOSO L. L. HIGGASON

In selecting the sky to use for your print, watch carefully that the clouds are lighted from the same side and with the same degree of light as the landscape they supplement. It gives you greater variety and chance for selection if your cloud-negatives are larger than the prints with which they are to be used, then the print can be moved about until the best composition is obtained.

Have ready a piece of cardboard larger than your frame and cut roughly to the outline of the horizon. Hold your frame to the light and with this card protect the landscape-portion of the print, keeping it moving slightly over the joining. Print lightly, remembering that the sky is only to supplement the landscape, not to subordinate it.

If the negative chosen is of the portrait- or genre-class, the methods of reduction or working on the back of the plate may be applied here also. It may be that a too white dress or hair-ribbon reduced to its correct value will transform an unsatisfactory subject into one of great possibilities. Or, possibly a figure against a dead-black ground lacking atmosphere may be greatly improved by introducing some little variation and movement in the background by the use of the paint suggested. A little judicious retouching also may be needed on the portrait-negative; but always better too little than too much for artistic work. For large work it is sometimes better to put the varnish on the back of the plate and work from that side.

Having removed all blemishes from your plate and put it in the best possible condition, the next question is what printing-medium will bring out the best of which that particular negative is capable, and give the truest idea of the scene represented. If the negative is a good one and the scene capable of reproduction in either gray or brown, there is nothing much better than platinum in some one of its shades and surfaces. It may be, however, that the plate is too thin or too contrasty to make a first-class platinum print. In either case, the use of some grade of developing-paper is indicated. But this may not satisfy the ambition of the maker of a " prize-print " to be.

One easy and interesting solution is Ozobrome. This is a carbon print with a developing-paper base. The

MEDITATION — E. R. TRABOLD

first step is the D. O. P. print. This may be on any surface and of any grade, and the multitude of papers on the market makes the choice almost unlimited. Some of the rougher-surfaced papers are good for broad effects or large work and hold the pigment well. When coated on buff stock and used with a brown or red pigment, they give a very beautiful result.

One great advantage of all carbon-work is the variety of colors available. Having obtained the best possible print, the next step is to select the color. For snow-scenes and some sea-views, select blue; for other sea-scenes and some landscapes, green; for sunsets, firelight-effects and some portraits, red or red-brown.

Powders for sensitizing the Ozobrome come with the paper, as also do directions for using. The method is very simple. A piece of the pigment-tissue is taken from the sensitizing-solntion and squeegeed into contact with the wet print (previously fixed in a plain hypo-bath, hardened with formalin and thoroughly washed). They are allowed to remain in contact for twenty minutes, then immersed in water at 105 degrees. When the color begins to ooze, the paper backing is stripped off, the print turned face down and allowed to remain until the pigment, unacted upon, has dissolved away. A second bath of the same temperature and a rinse in cold water completes development. If it is desired to remove the underlying image, place the print in a tray of "Farmer's Reducer" and leave for about ten minutes, or until all black patchiness is removed, then wash for fifteen minutes and suspend to dry. This method is useful in many cases when the negative would not give good results with the regular carbon process.

Study your negative, then decide what impression you wish to give, choose the printing-medium that will best represent that particular scene and give the desired impression, make the best print possible, and let us see your results.

KATHERINE BINGHAM.

GERMANY expresses reverie with lines, England with perspective.— *Charles Baudelaire.*

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

With Reviews of Foreign Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston

Glazing Gaslight Prints

INSUFFICIENT hardening of the gelatine, particularly in summer, causes most of the troubles encountered in this work. The use of an acid-alum fixing-bath will usually avoid difficulty, but in very warm weather a simple way of effectually hardening prints is to allow them to dry completely after washing, and again soak in water for a few minutes before placing upon the glazing-sheet.

A glazed surface may be had by the use of plate glass, ferrotype-sheets or celluloid, the first being best, although breakable and heavy. Absolute cleanliness is essential. Soak new glasses in one part strong hydrochloric acid to three parts water for twenty-four hours, then wash well with water and finally scrub with soap-powder and then rinse thoroughly. The glasses thus made chemically clean may be polished with a little French chalk sprinkled on and rubbed over the surface and polished with a clean duster.

Lay the glasses on a table and apply the wet prints, face down, expelling all air-bells with a wide, pliable rubber squeegee. Then cover the entire glass with a large sheet of blotting-paper and apply the squeegee to roll the prints into firm contact and absorb all superfluous moisture.

Quick drying ensures easy stripping. In a well-ventilated room the average time is three hours; in a drying-cabinet at a temperature of 90 degrees, half an hour. When bone dry, prints may be detached from the glass at the merest touch. The curling of single-weight paper may be overcome by dampening the backs with 50-percent wood alcohol and water and placing the prints face down between blotting-papers until dry. Avoid alcohol-solution reaching the face of the print, as it will destroy the gloss.

Removing Spilled Ink

SOMETIMES, in filling an ink-stand, one accidentally pours out too much of the fluid. The question arises how to remove the little pool of ink in the quickest and safest manner. To do this with a blotter is a tedious process, if there is a considerable quantity of ink to be absorbed. By using a medicine-dropper or fountain-pen filler, the ink can be taken up in a second or two, quickly clearing the way for removing the stain.

CYKORO EXPOSURE– AND DEVELOPMENT–TABLE

Giving relative exposure and strength of developer for various tones, assuming that an average negative requires *20 seconds'* exposure for deep green.

COLOR	EXPOSURE	DEVELOPER (STOCK-SOLUTION)	TIME OF DEVELOPMENT	COLOR OF FIXED PRINT BEFORE TONING
Delft Blue	20 sec.	Full Strength	¾ to 1 min.	Light Green (See footnote *a*)
Deep Green	20 sec.	Full Strength (See footnote *a*)	1½ to 2 min.	Fix only — requires no toning
Olive-Green	20 sec.	Full Strength	1½ to 2 min.	Warm Green
Warm Olive	25 sec.	Stock-solution 3 parts, water 1 part	1½ to 2 min.	Yellow-Green
Cool Sepia	30 sec.	Stock-solution 2 parts, water 1 part	1½ to 2 min.	Greenish Yellow
Warm Sepia	40 sec.	Stock-solution 1 part, water 1 part (See footnote *b*)	1½ to 2 min.	Reddish Yellow
Red Chalk	80 sec.	Stock-solution 1 part, water 4 parts (See footnote *c*)	2½ to 3 min.	Bright Yellow (Tone very little)

Intermediate tones are obtained by varying exposure and strength of developer in proportion.

Important. Full exposure gives soft effects. Less exposure gives contrast.

(*a*) For colder green add ½ oz. sodium sulphite, dry, to each 16 oz. stock developing-solution.

(*b*) For warm sepia add to each 16 oz. stock developing-solution ¼ to ½ dram nitric acid.

(*c*) For red chalk add to each 16 oz. stock developing-solution ½ to 1 dram nitric acid.

For increased warmth in any other tone add a few drops of nitric acid as required.

Only slight toning is necessary, removing only part of the yellow tinge and clearing the high-lights.

Leave quite warm for drying down.

(*a*) For delft blue make a delicate print rather weak in the shadows — toning intensifies.

Use bath double strength at 115 degrees F. Tone until desired color is reached.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and all regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston.

Faking

To the average novice in camera-work the "straight print from a straight negative" is the extent of his exploration. In many quarters, indeed, this is looked upon as the *sine qua non*, and all faking or dodging is considered illegitimate. It all depends on the point of view regarding straight photography; but this seems to me a case when the end justifies the means.

There are many simple ways to improve a print, aside from the purely photographic means, such as reduction or intensification of the plate or print. The simplest of all "fakes" is the shading of a part of the print during exposure. It may be that a foreground or nearby hill prints too deeply before the distance is properly timed. If one is printing by artificial light, this can sometimes be remedied by holding the frame so that the distance and sky are nearer the light than the thin foreground. If this does not equalize them sufficiently, take a piece of cardboard and, during part of the exposure, cover the foreground with this, keeping it in motion so that no abrupt line will be formed. A little experience will show you how long to shade for best results, remembering that the foreground should be somewhat darker than the distance.

If the opposite difficulty presents itself and some small area prints too light — such as a white waist or hair-ribbon — take a piece of black paper, such as is used to wrap sensitive paper, and tear a hole in it a little smaller than the space to be darkened. Keep this in motion over the desired spot for part of the exposure.

If many prints are to be made from the faulty plate, this method may prove too tedious and it will be better to "doctor" the negative. If plates are used, a good method is to flow the glass side with a matt-varnish, or "ground-glass substitute." A good formula for this is:

Sandarac	90 grains
Ether	2 ounces
Mastic	20 grains

Dissolve the resins in the ether and add 1 to 1½ ounces of benzole. Pour on the center of the plate, tilt quickly until covered, and drain the surplus from one corner.

This gives a surface with a good "tooth" to work on. Graphite — the sharpenings of lead-pencils — is a good medium to work with and may be applied with a crayon-worker's stump, a tuft of cotton, or even the finger-tip. Work this smoothly into the varnish where it is desired to hold back the printing, and where it is to be accelerated scrape away the varnish with a knife.

Any amount of work may be done on a flat negative in strengthening the lights and darkening the shadows by working on the matt-varnish at the back. A ray of sunlight that picks out and emphasizes certain parts of a scene may be so strengthened as to add interest and make the picture. Edges may be shaded off by cross-hatching; but when much is done in this way, one or two thicknesses of tissue-paper should be placed over the front of the frame to diffuse the light and prevent any sharp edges showing in the print.

If film-negatives are used, it is rather difficult to coat them evenly with the varnish, and the same results may be obtained by binding firmly against the back of the film a piece of fine-grain matt-surface celluloid. This takes graphite well and when transparency is desired, paint the spot with a brush dipped in any thin varnish.

Sometimes it is desirable to soften and somewhat define a too sharp and literal image. A good way to accomplish this is to interpose between negative and print one or two sheets of colorless transparent celluloid. This, by separating the print from the negative, allows the light to spread a trifle over the outlines, softening and blending them. The same thing can be effected with a glass plate by printing from the back of the plate. This, of course, reverses the image, but with pictorial subjects this seldom matters.

Another way to obtain softening of detail and artistic results is to develop the print by the brush- or glycerin-method. For this process immerse the print in water until limp, then place it on a piece of glass inclined at an angle with its lower edge resting in a tray. Have ready a rubber-set camel-hair brush and a graduate with glycerin slightly diluted with water. Brush the print over with the glycerin, then with developer containing a small amount of glycerin. Begin at the center and watch development; if it comes up too rapidly at any point, paint that over again with the clear glycerin, and, if any part holds back, use undiluted developer there.

One has great control by this method and can alter many details more or less. The edges can be softened and shaded off, or they may be darkened, and if the print is a little overtimed, may be made to lose all detail and give a dark setting to the image.

If one has artistic ability, one may carry "dodging" to almost any extreme, introducing things that are not in the plate at all or removing entirely things that are there. Such extremes, perhaps, are hardly legitimate, but by judicious strengthening of the points of interest, and the subordination of distracting portions, a work of art may be produced where a "straight print" might be a mere record.

Groups

THE arrangement of groups of two or more people is the *bête noire* of many a photographer of more than amateur rank. The trouble is not a new one, but the same that caused anxiety to even so great a portrait-painter as Rembrandt himself; for in his attempt to make a "picture" of the "group-portrait" of the city guard, he so slighted the likenesses that it was many a

FIRST PRIZE
BEGINNERS' CONTEST

ON THE TRAIL JOHN W. OSTRANDER

long year before he had another commission, though the "picture" known as "The Night Watch" ranks among the world's greatest twelve masterpieces.

What the sitters want is a satisfactory likeness of each member of the group, and the poor photographer has to do his best to obtain this desideratum, while for his own satisfaction, at least, he seeks to make the results conform to the laws of good composition.

The chief law is that of principality. There should be one figure or group of figures on which the interest centers. This may be brought about either by making the other members of the group give attention to some action on the part of the central figure (central in interest, not in position), or by a difference in the value of the dress, or by making one figure the focus of the lines of composition.

An excellent example of concentrated interest is Rembrandt's "Anatomy-Lesson," in which the attention of all is so intently fixed on the demonstrating-surgeon. A clever ruse to obtain unity is seen in the same artist's "Syndics of the Cloth Guild" where the beholder quite feels *himself* the center of interest, as all eyes are centered upon him, and some of the worthy burghers half rise from their seats at the table to inquire the meaning of his intrusion.

The group of two is one of the hardest to manage. When one has three units, two can be balanced by one who is predominant and the favorite pyramidal lines worked out. In larger groups a circular arrangement can often be effected and so lighted as to give emphasis to some one or two figures. The Holy Families of Murillo are good examples of both triangular and circular arrangements.

If by good fortune some one or two of one's sitters are willing to be subordinated, one can do far better work in posing, and often a back- or side-view is most characteristic and interesting.

The background is of great importance in the making of a successful picture. Some simple setting that carries out the idea of the arrangement, or repeats the lines of the grouping, is good; but a plain ground, such as a heavy clump of foliage, if out of doors, or a plain wall, if indoors, is preferable to anything that distracts the eye from what should be the chief interest.

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00; *Second Prize:* Value $2.50; *Third Prize:* Value $1.50; *Honorable Mention:* Those whose work is worthy will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is **"General"**; but only original prints are desired.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era; or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data. ***Criticism on request.***

4. Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15 unless they are packed with *double thicknesses of* **stiff** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express, very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed Oct. 31, 1914

First Prize: John W. Ostrander.
Second Prize: Ford E. Samuel.
Third Prize: J. W. Hungate.

Honorable Mention: James Allan, Allen P. Child, Lewis O. Curry, F. S. Dellenbaugh, Jr., Alfred S. Harkness, F. A. Hasse, Emil G. Joseph, E. C. Knight, Charles D. Meservey, Louis R. Murray, Elliott Hughes Wendell.

Special commendation is due the following workers for meritorious prints: George S. Akasu, Beatrice Booth, Percy D. Booth, Allen P. Child, J. D. Ficklen, Paul H. Hartford, J. P. Jones, Taizo Kato, Warren R. Laity, Gladys L. Prime, William A. Ray, A. M. Ryan, Harry Sloan, Kenneth D. Smith, William A. Stark, W. Stelcik, Charles Stotz, Oscar Wagner, Joseph N. White, Calvin Yost.

In art, as in all else, great truths based upon nature and expressed simply will always prevail, despite passing aberrations and infatuations and running after false gods.— *Arthur de Guichard.*

A SUMMER SUNSET ELLIOTT HUGHES WENDELL
HONORABLE MENTION — BEGINNERS' CONTEST

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

E. J. F. — **The ferrous sulphate crystals** that you require for making a ferrous oxalate developer are green in color, known as green vitriol or protosulphate of iron. This developer gives a pure black negative much like edinol or glycin, and for that reason development should be carried rather farther than with pyro, because there will be no yellow stain to give additional printing-density, but care must be taken not to block up the highlights.

O. C. R. — If you are a professional or a semi-professional photographer, **the law allows you to photograph from the nude,** provided you use proper judgment and care in the distribution and sale of prints.

You can copyright every picture for 50 cents. The local postmaster will provide you with the necessary blanks for this purpose.

Be sure to obtain the consent in writing of the model (stated in clear terms) in order to prevent any possibility of a legal tangle which might prove expensive.

If you are ambitious to excel in this branch of photography, you doubtless will obtain much valuable assistance from the Life-Studies sold by PHOTO-ERA, as regards posing, lighting and technical excellence.

A. J. W. — **The large number of formulae for fixing-baths** is the result of several causes. First, the nature of the bath may well vary for the class of work when severe conditions are imposed. For some work, during cool months of the year, no hardening is necessary, and the expense of certain chemicals may be saved. Again, during hot months and for certain classes of work, hardening is necessary and in different degrees. Thus, chrome alum hardens to a greater degree than ordinary alum, but stains papers slightly green, and so is used for negatives only. For the average amateur the simplest and best course is to use an acid-alum gaslight paper fixing-bath for plates and films also.

The relative preservative-action of acetic or citric acid is about the same, the former being economical and convenient when the bath is made up from a supply of chemicals in bulk; the latter being used in package fixing-baths, because it is a powder requiring no glass container and presenting no danger of breakage.

The various terms applied to acetic acid refer to its strength and purity. Glacial acetic acid is of 96 to 99½ per cent strength and of the highest purity. Acetic acid, 28-percent solution, is a diluted acid, as its name implies, and the commercial acetic acid is of about this strength, but often not of great purity. Acetic acid No. 8 is a 30-percent redistilled acid and the best for photographic purposes.

H. W. — If, as you state, you have a strong liking for camera-work and the determination to succeed, **the photographic profession has much to offer.** It is by no means an easy road to quick success, but will pay any skilled and conscientious man a living, and often much more. In New York, particularly, where there is such a field for specialization, success awaits the man who can find the right opportunity and meet it properly. There is always room for one more at the top of the ladder. The trouble is that there are too many of ordinary ability, but too few who excel. For instance, a young commercial photographer here in Boston, who began this work in spare time while occupying a salaried position, has now given up the latter, fitted up the third story of his home as a photographic workshop and is taking some excellent accounts away from photographers of long standing because every piece of work is his own personal effort, conscientiously performed, whereas the older men have become careless and are doing business largely on reputation.

It will probably be best for you first to take a school-course and then apply for work in a studio at a moderate salary where you can complete your photographic education. Three good schools are available, as follows: Illinois College of Photography, Effingham, Ill.; Southern School of Photography, McMinnville, Tenn.; New York Institute of Photography, 1269 Broadway, N. Y.

C. A. — **Remove permanganate stains** with oxalic acid, 10 grains to an ounce of water; then wash negative.

THE LITTLE AND THE BIG — J. W. HUNGATE

THIRD PRIZE — BEGINNERS' CONTEST

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

B. M. W. — Your sketchy vignette is technically very pleasing and you have a charming little model, but we cannot help but feel that the general tone of the picture is too serious, and that the position of the hands does not seem spontaneous. In any event, we like to see more apparent joyousness in portraits of children.

L. R. M. — White skies and halation mar all of your prints. If you do not care to go to the trouble of printing-in skies, several of your subjects, such as the boy on horseback, the sunflowers and the branches would be improved by printing in sepia on a buff paper, as this would give a decided tone to the sky. Halation, of course, may be avoided by the use of double-coated plates or films. Their use in a subject like your "Mother and Child" would give detail to the window and greatly enhance the realism of the print. On the whole, we like your harvest-scene of corn-stacks and pumpkins the best of the lot.

E. E. K. — Your portraits are too contrasty, showing the effects of underexposure and forced development, the result being solid black shadows and highlights in which there is neither texture nor detail.

"A Study in Lavender" is the most pleasing of the three, and it would have been more so had there been light coming through the window-curtains. This you can have without halation, as in "Back in the Days of Chivalry," by the use of double-coated plates or films.

H. S. — Your photograph is spontaneous and no doubt of great interest to the parents. As a piece of photographic work it is also good for the most part, but there is, however, decided foreshortening of the right leg, making the child appear to be crippled. This matter of foreshortening is a thing to be watched and avoided when working near the subject.

A. M. R. — "Field Museum, Chicago, Ill.," needs clouds in the sky to lend interest; also a print with a trifle more depth would be an improvement. The picture is well spaced, but the small tree at the extreme left is unfortunate. Were this trimmed from the picture and the remaining limbs obliterated by retouching, considerable improvement would result.

W. A. R. — "Entrance to the Court-House" is an interesting example of Romanesque architecture, well spaced and lighted. Much sharper definition, however, is desirable in a picture of this sort and it is particularly noticeable that the more distant details are more sharply defined than the nearer, which is directly the opposite of what it should be. The entire print is in too high a key, the highlights virtually having no detail.

"A Mountain Mill-Stream" contains excellent pictorial material, but the mill might well be subdued somewhat, as in its present high key there is a marked division of interest.

J. D. F. — "The Pond of Tears" seems to lack a center of interest. There has apparently been great underexposure and if it is your intention to keep this subject in a low key, the sky and its reflections in the water are much too light. A gray sky or a pronounced cloud-effect would be still more appropriate.

W. B. McD. — All your portraits are rather too contrasty and the highlights considerably scattered, in this way detracting attention from the face. So far as possible these scattered highlights should be avoided in lighting the subject and if necessary they may be still further modified in printing. Perhaps soft-working papers would yield more pleasing results from these negatives.

C. J. M. — We believe that longer exposure would have improved your portrait of Miss A. The figure seems to merge into the background, particularly the head, and there is no suggestion of anything to sit upon. The position of the arms suggests self-consciousness and does not show the hands to advantage. To do the latter well is difficult, it is true, but character is shown quite as much by the hands as by the face.

J. S. — Your portrait is decidedly underexposed. Solid blacks are objectionable in portraiture and the shirtwaist in this portrait is so exceptionally white that development was apparently forced.

MICHELANGELO'S "MOSES" — FORD E. SAMUEL

SECOND PRIZE — BEGINNERS' CONTEST

Exposure-Guide for January

Calculated to give Full Shadow-detail, at Sea-level, 42° N. Lat.

For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of time in table. From 8000 to 12000 feet use ½ of exposure in table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8 or U. S. 4. For other plates, or stops, see tables.

Hour	Bright Sun	Sun Shining Through Light Clouds	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2
10-11 A.M. and 1-2 P.M.	1/25	1/12	1/5	1/3	2/3
9-10 A.M. and 2-3 P.M.	1/12*	1/6*	1/3*	2/3*	1*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions under which one works. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop.

* These figures must be increased up to five times if light is inclined to be yellow or red. Latitude 60° N. × 3; 55° × 2; 52° × 2; 30° × ¾.

For other stops multiply by the number in third column

F/4	U. S. 1	× 1/4
F/5.6	U. S. 2	× 1/2
F/6.3	U. S. 2.4	× 5/8
F/7	U. S. 3	× 3/4
F/11	U. S. 8	× 2
F/16	U. S. 16	× 4
F/22	U. S. 32	× 8
F/32	U. S. 64	× 16

SUBJECTS. For other subjects, multiply the exposure for average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to sky. **Average indoor-portraits** in well-lighted room, light surroundings.

Example:

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an *open landscape, without figures,* in Jan., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U.S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/12 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of "Table for Other Stops," opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply $1/12 \times 4 = 1/3$. Hence, exposure will be 1/4 second approximately.

For other plates consult Table of Plate-Speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. $1/12 \times 1/2 = 1/25$. Hence, exposure will be 1/25 second.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

When Kitchener Took Pictures

PEOPLE with hand-cameras are very properly regarded with some suspicion in England these days, and Lord Kitchener himself might suffer arrest were he found practising incognito in the wrong place the art which forty years ago gave him his first appointment. Mr. F. E. Kitchener, of Stone, Staffordshire, once told a gathering of evening-school students that his cousin, the present secretary for war, did not figure very brilliantly at Woolwich, and, except for his height of six-feet-one, he was not much noticed. Even when he got his commission in the engineers, and for some time afterwards, he failed to distinguish himself, until one day the authorities wanted some one who could take photographs to accompany the Palestine Survey Expedition. Kitchener, it was then found, had been quietly perfecting himself as an expert photographer — by no means a popular pursuit in 1874 — and in virtue of his hobby he received the appointment. — *Manchester Guardian.*

True Appreciation

Photographic Publisher: (to detective). — "Some fellow has been representing himself as a collector for my magazine. He's been taking in more money than any two of the men I have, and I want you to collar him as quickly as possible."

Detective. — "All right. I'll have him in jail in less than a week."

P. P. — "Great Scott, man! I don't want to put him in jail; I want to engage him." — *Adapted.*

Printing Thin Negatives

A FAIR print may be had from a negative too thin to print by any ordinary method by placing it in an enlarging-lantern and using a slow gaslight paper. Of course, if desired, the lantern may be so adjusted as not to enlarge the subject. The exposure will be much longer than for bromide paper; but if the print is much desired, this will not seem a serious consideration.

The Motion-Picture Age

AN amateur photographer stopped one morning at a Kansas farmhouse and inquired for the farmer.

"I want to trespass on your premises," he said, "long enough to take a picture of that cornfield. It's the most magnificent one I ever saw."

"That's all right," responded the farmer. "But you'll have to take it instantaneous — it's growing so fast."

Oldport Herald.

Plate-Speeds for Exposure-Guide

Class-numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Barnet Super-Speed Ortho
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Ansco Film, N. C. and Vidil
Atlas Roll-Film
Barnet Red Seal
Central Special
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho Extra Special Rapid
Seed Color-Value

Class 1, P. E. 111, Wy. 180, Wa.
American
Barnet Extra Rapid
Barnet Ortho Extra Rapid
Cramer Crown
Cramer Instantaneous Iso
Imperial Non-Filter
Imperial Orthochrome Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Central Comet
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho
Defender Ortho, N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho
Hammer Non-Halation
Hammer Non-Halation Ortho
Seed 26x
Seed C. Ortho
Seed L. Ortho
Seed Non-Halation
Seed Non-Halation Ortho
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho A
Lumière Ortho B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho Medium
Hammer Fast
Seed 23
Wellington Landscape
Stanley Commercial
Ilford Chromatic
Ilford Empress
Cramer Trichromatic

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho
Wellington Ortho Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Slow Iso
Cramer Slow Iso Non-Halation
Ilford Ordinary
Cramer Contrast
Ilford Halftone
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

Though not without a slight technical fault — the arrangement of the left shoulder — the face of the little girl which serves as the pictorial greeting of this issue will gain many friends. The purity and sweetness of expression are natural concomitants of adolescence; but the high degree of intelligence, as expressed by those wondrous eyes, would seem to fit an older sister rather than a child of her own tender age. The depth of significance in the rarely beautiful eyes could not well be expressed more fittingly than by the title, "Windows of the Soul" — "these lovely lamps, these windows of the soul." Data: August, forenoon; south light; professional studio.

Never did winter appear in lovelier raiment than in the year 1912 when, during a quiet night, the barren trees and branches were covered with snow in preparation for a spectacle that greeted the people of Boston the following morning, and in exquisite beauty rivaled any fairyland that the imagination had ever pictured. The parks in the city proper, more particularly the Common and the Public Garden, were more sheltered than those in the suburbs, and consequently presented to the astonished gaze of the inhabitants the nocturnal creation in all its splendor and perfection. The full rays of the sun produced effects almost magical in the myriads of plays of light and shadow, and everything sparkled and scintillated as if all the stars of heaven had dropped to earth and frolicked on the snowy surface and among the trees and branches. Every camera large and small, was soon on the spot, and the photographic supply-stores were never known to do so lively a business in plates and films.

Among those who succeeded in obtaining negatives of exceptional beauty was F. A. Saunderson, whose picture, page 2, conveys a capital idea of the vision which our pen has attempted to describe. In the distance partly hidden by the delicate tracery of branches and twigs, may be seen Boston's most beautiful church-spire — that of the Arlington Street Church, itself glorified to the very tip by the hand of the divine architect. Data: January, 11.30; bright light; 8 x 10 Universal camera; Zeiss lens; 16½-inch focus; stop, F/32; 1 second; Orthonon; pyro-soda; 8 x 10 Glossy Velox.

Of the many artistic creations that have proceeded from the camera of Rudolf Eickemeyer, Jr., none makes a greater sympathetic appeal than that of the old woman at prayer, presented on page 6. Although produced a number of years ago, at a time when the sword of Mars was resting in its scabbard, the picture has a peculiar significance at the present time. We all sympathize with this silently suffering mother, regardless of her nationality, praying for one who is risking his life, if he have not already yielded it, for his own beloved country. With this impersonal thought, free of prejudice and ill-will, we leave the gentle beholder to his own course of contemplation. As to the artistic merits of Mr. Eickemeyer's composition, there is little to say, but that little in terms of eulogy. Sincerity and simplicity are what give this picture distinction. Data: August, 11 A.M.; bright light out of doors; 8 x 10 Gundlach Rectigraphic, 13-inch focus; 20 seconds; Seed 26 X; pyro; photogravure; only light from little window, with a sheet used as a reflector.

We have seen and liked the conventional rainy-day picture — street and person carrying umbrella. The scene depicted by J. H. Field, page 7, may suggest such a hackneyed subject at first glance, but in character and in treatment is wholly different. A naturally notorious and commonplace scene has been described with interest by one who always sees things with the eye of an artist. Mr. Field's picture has the impress of his refined personality and spontaneity of design. In the disposition of the pictorial elements the experienced eye appreciates in "A Winter-Rain" the judiciously managed entrance, foreground and center of interest. No data.

Through the courtesy of Mr. Leo J. Pally, a Brookline amateur, we are enabled to favor our friends with a fair example of the work of J. H. Coatsworth, an English expert in the oil-transfer process described by Dr. Emil Mayer, of Vienna, page 11. Those who are not familiar with this method will learn from a perusal of Dr. Mayer's paper how a skilled manipulator can individualize his work, owing to the great latitude which the process presents. It is gratifying to note that the number of bromoil practitioners is on the increase; but among the requirements are an ability to draw quickly and well and a sense of chromatic harmony and proportion. No data.

The interesting "tail-piece," page 13, is by a young camerist who entered the lists only a short while ago. He has shown in his photography a marked predilection for domestic animals, and, like many other workers, has found it extremely difficult to coax the phlegmatic kine into an artistic arrangement. In this instance, Mr. Fowler has been tolerably successful. In this connection the Editor recalls an untrimmed print of a similar character in which, at the extreme left, was the forepart of a cow — entering the picture-area — and at the opposite end the hindpart of another — leaving the same. Data: noon; cloudy; 1A Kodak; stop, U. S. 32; Eastman film; ¼ second; print, 5 x 8 Velvet Bromide.

The example of the work of H. C. Mann, published in October Photo-Era, 1914, was so well received that the shore-views, pages 14 and 15, will undoubtedly create a similarly favorable impression. Mr. Mann delights to depict the realistic side of nature. This is but natural, as he is a professional practitioner. His clear-cut results are marked by judicious selection of subject and excellent rendering of color-values. In titling the two present pictures, Mr. Mann appears to have had in mind the spirit of the hour; and, while contemplating the serene view with the five-master, the reader should tolerate no thought of an inquisitive German cruiser, nor should he permit the suggestion of a submarine-raid while musing over the line of battleships in their setting of ruffled waters and clouded sky. Data: "A Dream of Silence and of Peace"; 8 x 10 Century camera; 12-inch No. 6 Dagor; B. & J. 3-times color-screen; Hammer N. H. Ortho; pyro; "Battleships," same data.

Though, perhaps, a degree less satisfying than his wont — from a technical viewpoint — the six illustrations by W. S. Davis, pages 16–19, are convincing in the pictorial lesson that they teach. In designing his picture — a process of selection, in the main — the average camerist is very apt to slight his foreground. A consideration of this important pictorial feature is generally associated with a feeling of intimacy between the artist and the main subject, and is worthy to be cultivated. Furthermore, the student will derive valuable

practical help from Mr. Davis' illuminating and sympathetic paper, which is penned by an able critic and successful pictorialist. Data: "In Winter's Grasp"; February morning; very clear light; 1/8 second; stop, F/22; Cramer Inst. Iso., backed; "The Curving Shore," about 4 P.M.; hazy November day; stop, F/22; 2 seconds; Inst. Iso; "When the Snow Lies Deep"; December morning; clear light; F/32; 1/3 second; Standard Plate.

The seeming preponderance of winter-pictures in this issue surely no one will criticize. They are not only seasonable, but are by master-pictorialists. One, examples of whose artistry are always welcome, is the well-known Alpine photographer, G. R. Ballance, of San Mamette, Lake Lugano, whose former home, for many years, was St. Moritz-Dorf, in the Engadine, Switzerland. He, too, appreciates the value of a pleasing foreground, and in his very attractive winter-vista, page 22, illustrates the intimate relationship and harmonious unity between the foreground and the rest of the picture. Data: December, 12 noon; Thorton-Pickard 1/2-plate camera; 8 1/4-inch Goerz Double Anastigmat; F/32; 6-times color-screen; strong sunlight; 2 seconds; Ilford Slow Iso; pyro-soda; 5 x 7 C. C. Platinotype.

In contrast with Ballance's realistic manner is Anderson's imaginative style, on the opposite page. Each has a strongly expressed individuality: one appeals directly to the eye, the other to the imagination, and each has its friends and adherents. It is an interesting and profitable subject for comparison, and there is no doubt that Mr. Anderson, in his instructive serial essay, will gain many sympathizers and followers. His "Snow," page 23, may appear somewhat top-heavy to the uninitiated; but a careful perusal of the artistic principles, as elucidated by him in "Pictorial Landscape-Photography," will enable the student to understand the seemingly mysterious phase of pictorial interpretation. He will then also comprehend the true significance of pictures of a somber vein, of which Mr. Anderson's "The Path," page 25, is an excellent example. Data: "Snow"; January, 3.30 P.M.; light intense; R. R. lens; stop, F/8; 1 second; Standard-Orthonon; Cramer Isos III, 5-times ray-filter; Edinol; Artura print.

Of unusual interest and value to the student in pictorial interpretation are Mr. Anderson's two distinct versions of the same subject — one in autumn (page 25) and the other in midwinter (page 27). A comparison of these beautiful landscapes will prove entertaining as well as instructive. If you were to choose between these two masterpieces, which would you take? Data: "The Path"; October 31; 5 P.M.; light intense; Wollensak Single Achromatic; stop, F/6.8; 1 second; Seed's L. Ortho Non-Hal.; Rytol; Artura print for reproduction. "The Path, Snow"; February 10; 9.15 A.M.; slightly clondy; P. & S. Semi-Achromatic; stop, F/8; Cramer Portrait Isonon; Edinol; Cramer Isos III, ray-filter, 5-times; 1/4 second; Artura print.

Although an avowed exponent of "straight" photography of long standing, Charles H. Flood has begun to impart to his views a degree of breadth that is very pleasing, page 28. This is a step in the right direction. A judicious measure of interest marks the foreground, showing that he takes advantage of opportunities tending to enhance the setting of the main theme. Data: Angust, noon; 5 x 7 plate-camera; 7-inch Goerz Dagor; stop, F/8; dull light; Cramer Isonon; pyro; 5 x 7 Cyko print.

The Photo-Era Monthly Competition

NEVER before has a portrait-competition conducted by PHOTO-ERA yielded so large a number of gratifying results as the present one. The contestants were largely regular subscribers, which is proof that the Editor's constant efforts to maintain a high, artistic standard have not been in vain. The duty of the jury was not an easy one, particularly when it is realized that the term *portrait* was interpreted very broadly by many contestants. In many cases a certain picture proved to be more of a genre than a portrait, the worker probably thinking that the sitter could yield a better likeness if the mind or the hands were occupied. In any event, in numerous instances, the line was not drawn distinctly between a portrait and a genre. The dictionary meaning of a portrait is a likeness. A genre is "a style of painting or other art illustrative of common life" — in short, a picture that tells a story or expresses an emotion, and naturally includes the portrayal of a person engaged in any mental or manual diversion. A picture which represents a person reading a book or a newspaper, in the opinion of high art-authorities, is not strictly a portrait, however it may please the model's friends as a likeness. As the eyes dominate the human countenance — "the windows of the soul," to quote a famous poet — the gaze should not be averted, but directed towards the beholder — in photography, into the camera-objective. But on this subject, more anon.

Among the amusing entries in this portrait-contest were pictures representing the model actually asleep in bed; or gazing intently at a picture on the wall, only the ear and cheek being visible. There were not a few admirable near-portraits, to which titles expressive of some emotion, such as grief, contentment, reminiscence, had been applied. Of course, this procedure converted them at once into genres. Of merry, laughing babies there were many; but these, of course, could not be classed as portraits, despite the pleasure they gave the parents — as "likenesses." In an obviously loud laugh, the features are momentarily distorted — although "it is better to laugh than be crying" — and in a true portrait the face should assume a normal aspect. The inability of the artist to obtain a representative likeness of his sitter should not be offered as an excuse to encourage a laughing expression. A smile is admissible, though the portrait-painter generally prefers a serious cast of countenance — the features in repose.

In expression and attitude, the first-prize picture preserves the integrity of the portrait, page 33. Here the sitter evidently had been reading; but the artist saw his opportunity and, monopolizing the sitter's attention, obtained what must be considered a successful portrait. The original entry was lower in tone than the print used for reproduction, and the tone-values were admirable in their fidelity. The chief artistic value in "Dad," as a pictorial composition, lies in the pose, which yields a superb curving line and a well-balanced chiaroscuro. Data: 5 x 7 Century View; Verito lens; F/5.6; 1 second; Standard Orthonon; tank-development; 7 1/4 x 8 enlargement, Eastman Platinum Etching-Black.

Miss Belle M. Whitson makes her PHOTO-ERA *début* with a very pleasing portrait-group, page 32. Of course, she works among favoring conditions, which largely make for her success, namely, a camera-club's studio arranged and equipped like a first-class professional one. See data. These advantages, however, do not detract from her ability to understand her sitters and to do them justice. We suspect that she possesses that invaluable gift — a winning personality, which in managing the subjects before the camera is so essential to gain their confidence and sympathy. This surmise seems well founded when one beholds her charming group. The sisterly intimacy and affection, singleness of thought and unity of expression have been portrayed with complete success — so much so, that the artist may

(*Continued on page 49*)

ON THE GROUND-GLASS

WILFRED A. FRENCH

Photographer Pays $50 for the Negative

AMERICAN humor often seems to fail of appreciation on the part of our English cousins. In the October issue of PHOTO-ERA we observed that "in the opinion of impartial critics the Roxbury photographer who tried to snatch a kiss from an unwilling sitter was fittingly punished when, placed before the judge, he was ordered to pay $50 for the negative." Seeing this, an English cotemporary printed the following as an item of news:

"A photographer in Roxbury, U. S. A., who attempted to snatch a kiss from an unwilling sitter, was ordered in the subsequent proceedings to pay $50 for the negative."

Should there be any further question in this matter, let it be understood that no photographic negative was made on which to set a price. In trying to snatch a kiss from his sitter the photographer undoubtedly hoped for an affirmative, but instead received a negative (answer). The $50 was a fine imposed for his presumption.

A Ruse That Failed

AMONG the prints submitted in the PHOTO-ERA "Telephoto" competition last summer was one which on account of unusual technical merit attracted my attention. The 3 x 4 direct print pictured, at close range, a plain brick tower, front and back pierced by three long, narrow windows, and topped by a pyramidal roof similar to the Campanile (bell-tower) of St. Mark's, Venice. I recognized it at once as the tower of the High School of Brookline, Mass., although the building proper, including the roof, was not comprehended in the picture-area. According to the accompanying data, a doublet of six-inch focus had been used to produce this telephoto picture, but without any lens-attachment. Of course, it was to be assumed that the contestant had employed one of the combinations of his regular lens in lieu of a telephoto equipment.

Being familiar with the locality, I knew that the view could have been made only from an elevation of not less than seventy-five feet; but as the spacious Cypress Street Playground stretches directly in front of the High School for a distance of about nine hundred feet, there is no elevated point from which the front view of the upper part of the tower could have been photographed, and it was improbable that the camerist had risen to the necessary height in a balloon. The distance from the tower to the nearest convenient viewpoint — the roof of a dwelling on Cypress Street — is about nine hundred and fifty feet, from which, even with a twelve inch lens, the image of the High School tower would be less than one inch, whereas in the print in question it measured nearly three inches! I was mystified, to say the least.

Several days after examining this picture, I chanced to drive along Cypress Street. Stopping at the southern end of the Playground, opposite the High School, I estimated the distance from this point to the tower and corroborated my mental calculations of several days ago. Continuing to study the situation, I discovered an elevated road immediately behind the High School. In a few minutes I was there, finding myself standing on a high bank on the estate of a resident on Gardner Road, directly on a level with the upper part of the tower of the High School, from which point one could throw a stone and hit the roof of the building. This, then, was the spot whence our enterprising camerist had made his "telephoto" view! He had used, evidently, one of the combinations of his anastigmat, producing a lens of twelve-inch focus, which, at so short a distance, had yielded an enlarged image of his subject.

A Serious Faux Pas

HENRY RANKIN POORE, A.N.A., author of "Pictorial Composition and the Critical Judgment of Pictures," who lectures as successfully as he writes, tells the following amusing story: Engaged to deliver a lecture of timely interest before the Boston Art Club last spring, he chose for his subject, "Art and the Layman." Shortly before the lecture a number of club-members were introduced to Mr. Poore, and among them was the eminent French art-expert, Monsieur G——, whose knowledge of the English language is extremely meagre. "How call you the name of your lecture?" he asked Mr. Poore. "'Art and the Layman,' monsieur." Not appearing quite to understand, Monsieur G—— regarded the artist-lecturer thoughtfully and replied, quite wonderingly, "Layman, layman; you spell zee word l-e-m-o-n?"

C.C.S.

THE average reader will probably speculate as to the meaning of these apparently mysterious letters, but it is not so serious. These abbreviations not only belong in the category of such significant terms as C.Q.D. (S.O.S.), P.D.Q. and C.O.D., but stand simply for cubic centimeters, *i.e.*, as our English cousins are accustomed to express the plural of the French measure of capacity. I have been unable to determine the origin or propriety of this odd designation, although Prof. E. J. Wall, the eminent English physicist of Syracuse University, emphatically rejects the English method and subscribes to the plain C.C., the equivalent of either singular or plural, according to the practice of the American Chemical Society, the highest authority in the United States. And it is also what PHOTO-ERA will adopt from now on.

Photography to the Rescue

THE story is told of a romantic marriage which was brought about through an old photographic ruse. A certain accomplished amateur photographer once asked a lady of his acquaintance — a recent convert to color-photography — to marry him. He received an answer in the negative. Wishing to secure her favor, he proposed that she sit to him for an Autochrome portrait, to which she assented. The photograph in natural colors turned out to be a brilliant success, and the fair sitter accepted the gift with undisguised delight. Following up this advantage, the camerist proposed a second time. Again he received a negative answer. Then, glancing from the Autochrome portrait into the beautiful face of the original, he argued: "You cannot refuse me now. You have accepted the Autochrome and must accept me, too!" "I don't see why," replied the maiden with a puzzled expression. "Because," responded the ardent suitor, triumphantly, "two negatives make a positive!" A fond, mutual embrace, and he had won.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Gustav Cramer Memorial Fund

To honor and perpetuate the memory of a man who stood out before all others during his life as the friend of all men, whose charities were manifold and whose influence in our profession of photography was a big factor in its wonderful progress, it was suggested at the Ohio-Michigan Convention of 1914 that a committee be appointed to establish a memorial fund to be used in some manner that would seem peculiarly appropriate to the character of this man, Gustav Cramer.

Pirie MacDonald, being interested in the matter, called a meeting of the gentlemen mentioned for the committee for November 1, at the Phillips Studio, in Philadelphia. Present at this meeting were Messrs. MacDonald, Ryland Phillips, W. H. Towles, G. W. Harris, Dudley Hoyt, Frank Noble, Frank Scott Clark, L. B. Jones and J. C. Abel.

It was decided then to establish this memorial and to proceed to collect funds, the purpose of the funds to be: The endowment of a room in a hospital, preferably in St. Louis, which would be called the Gustav Cramer Memorial. Various plans for the collection of moneys were discussed and adopted by the committee, which will be made known very shortly through the medium of the photographic press.

Ryland Phillips, of Philadelphia, was made the permanent chairman, with E. B. Core, of New York, permanent treasurer-secretary. Mr. MacDonald was appointed chairman of the press or publicity committee.

The following-named gentlemen were appointed to the executive committee: Messrs. Ryland Phillips, E. B. Core, Pirie MacDonald, G. W. Harris, F. S. Noble, Frank Scott Clark, J. C. Strauss, S. L. Stein, Gustav Steckel, Walinger, Joseph Knafil, F. A. Rinehart, L. F. Hammer and G. W. Topliff. The chairman will appoint a larger general committee, whose members will cover the entire country. The affairs of the Memorial will be handled for the present by the executive committee. The full plans will be made public shortly. Meanwhile, those who desire any information can address Ryland Phillips, at 1507 Walnut Street, Philadelphia.

While we are extending substantial aid to the afflicted peoples of Europe, we cannot neglect the memory of the good men and women who, by their noble, exemplary lives, made our world the better to live in and showed many of us the way to duty towards mankind. Gustav Cramer was preëminently such a man, and it is fitting that the photographers, who, as a class, loved him for his solid friendship, joyous nature and estimable character, should unite to form and perpetuate a suitable memorial — not one made of bronze or stone, but one that shall, in a way, suggest his own sweet, generous nature. The committee in charge of this memorial will soon make known its plans, so that every one interested may share in this beautiful work and himself derive inspiration, joy and comfort.

Lectures for Camera-Clubs

One of the live topics at the present time, and one of absorbing interest to every American, is Mexico, our neighboring republic. Most of the reports that have been received from various sections of that interesting country are inadequate or misleading, and it is important that only reliable information on this subject should be disseminated.

Mr. E. L. C. Morse, of Chicago, expert photographer and member of the Chicago Camera Club, with whose photographic experiences readers of Photo-Era are familiar, passed several summers in Mexico, mingling with the people and speaking their language, in this way becoming intimately acquainted with the customs and habits of the people. During his sojourn, Mr. Morse used his camera most judiciously, bringing home a large number of interesting pictures of Mexican life. He has prepared an interesting lecture, with numerous beautifully colored lantern-slides, and has given it in many places with distinct success.

Camera clubs and other bodies interested to hear this important lecture, may address Mr. Morse at 7456 Bond Street, Chicago, Ill. The fee is $10.00 and all expenses.

B. Y. M. C. U. Camera Club Exhibition

That the spirit of friendly competition will stimulate greater interest in an annual exhibition is shown convincingly by the long-continued success of the Boston Young Men's Christian Union Camera Club. If the artistic standard this year was not quite as high as last, it was all but forgotten in the greater variety of subjects and the marked degree of human interest which most of them aroused. In fact, it may be truthfully said that as a whole the work of this club will bear comparison with that of almost any other club in the country. Awards were made in five classes by a jury consisting of Charles Wesley Hearn and William H. Kunz, both well-known Boston photographers, and Phil M. Riley, Associate Editor of Photo-Era.

Landscape: First Prize, Louis Astrella; Second Prize, Arthur Hammond; Honorable Mention, H. O. Stanley.

Marine: First Prize, Arthur Hammond; Second Prize, Louis Astrella; Honorable Mention, Louis Astrella.

Portrait: First Prize, Arthur Hammond; Second Prize, Arthur Hammond; Honorable Mention, F. W. Hill.

Genre: First Prize, H. I. Saunders; Second Prize, Louis Astrella.

General: First Prize, Chas. Keller; Second Prize, Henry Shaw; Honorable Mention, F. W. Hill.

$500 for a National Trade-Mark

Here is an opportunity for photographers as well as artists, for a photographic trade-mark is certainly possible. In an effort to give definite form to the "Made in U. S. A." movement, the Detroit Board of Commerce offers a prize of $500 for the best "Made in Detroit, U. S. A.," trade-mark submitted by an American designer on or before February 25, 1915. The purpose is to obtain a trade-mark which shall be suitable for all classes of American products and which will represent them both in home and foreign markets. Full particulars may be had upon request of the Detroit Chamber of Commerce.

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices.

THE AMERICAN ANNUAL OF PHOTOGRAPHY. 1915. Volume XXIX. Edited by Percy Y. Howe. With copious illustrations in black and in tint. Price, paper, 92 cents postpaid. Cloth, $1.45 postpaid. New York: George Murphy, Inc., 57 E. Ninth Street, sole sales-agent.

This latest issue of our well-known and only annual is a worthy successor of the best editions that have gone before. Its 328 pages form a representative collection of cotemporaneous photography characterized by judicious selection, careful reproduction and printing. Among those who are exceptionally well represented may be mentioned Joseph Kanffl, John W. Gillies, William S. Davis, Gertrude Käsebier, G. T. Harris, W. H. Porterfield, Theodore Eitel, J. M. Whitehead, Heinrich Krebs, A. R. F. Evershed, J. R. Peterson, Rudolf Eickemeyer, Jr., S. G. Kimber, Thomas Carlyle, William Findlay, Edward H. Weston, William H. Zerbe, Helmar Lerski and B. J. Falk.

The contributed articles are of diverse character, some technical and others along art lines. Of these the more important are by John W. Gillies, Paul Lewis Anderson, G. T. Harris, Marcus G. Lovelace, E. J. Wall, F.R.P.S., F. W. Hill, H. Oliver Bodine, William H. Zerbe, Malcolm Dean Miller, M.D., F. M. Steadman and A. L. Gareis.

EUROPE IN THE MELTING-POT. Edited by Gregory Mason. War-map of Europe in colors. Large 8vo. 92 pages. Complimentary to subscribers of *The Outlook*. New York: The Outlook Company.

The output of books on the present European war is enormous. Publishers are besieged by persons eager to tell in book-form their individual story of the war, very few of whom have a correct conception of this vast subject. It is amazing how much has been written on almost every phase of this, the greatest and most sanguinary war the world has witnessed, and the causes that have led up to it; yet very little, indeed, reaches the crux of the matter. So many misconceptions regarding this tremendous crime against humanity exist in the minds of really intelligent people that there is need of a simple, concise and impartial statement from an authoritative source.

Such an account is presented in the form of the pamphlet issued by the Outlook Company. With calm and dispassionate judgment Mr. Mason has assembled the views on the various phases of the present deplorable situation penned by writers, critics and diplomats of recognized standing, and included a collection of telegrams exchanged between the heads of the belligerent nations before the commencement of hostilities. It is, in all truth, the best and fairest presentation of the history of this huge conflict that has come to our attention. The work contains also biographical sketches of "Some Men of the Hour" — eminent personages identified with the war. With rare business acumen the publishers have withheld the sale of this important *brochure*, but offer it gratis with a subscription to *The Outlook*, the price of which is $3.00. Subscriptions on this basis may be sent to the publishers or to PHOTO-ERA.

TELL-ME-WHY STORIES ABOUT ANIMALS. By C. H. Claudy. With illustrations in color by Thomas Wrenn. Cloth-bound; 12mo. Price, $1.25 net; postage 10 cents. New York: McBride, Nast & Company.

It has been said that to write well for children one must first have children of his own. Mr. Claudy began in the proper fashion, and his success in this difficult field of literature must in part be attributed to suitable preparation. Many of the puzzling questions of his young hopeful have been utilized as the basis for chapters in this and the companion book, "Tell-Me-Why Stories About Mother Nature," and if even so well informed a man as Mr. Claudy found difficulty to answer them offhand, he has surreptitiously consulted many serious books of learning meanwhile, and is now prepared to explain them all in a manner which the youthful mind can understand and enjoy. In the present volume Mr. Claudy writes charmingly about the origin of our domestic animals, as well as the more timid creatures of the woodland, and how they have evolved from wild animals of the great forest and jungle. Youthful questions are much the same in every household, and this book will prove a life-saver to many a perplexed father and mother who, in reading it aloud at the fireside, may themselves glean much that they never knew before.

CONQUEST OF THE TROPICS. By Frederick Upham Adams. Many illustrations. Octavo. Price, $2.00 net. New York: Doubleday, Page & Co.

So much has been written, said and done to discredit "big business" in the eyes of the people that it seems high time for those well informed to chronicle "the case for the defense"; to point out the achievements and distinct benefits that require more than coöperation — in fact, that can result only from unified, well-directed effort. This laudable and tremendous task is self-imposed by the publishers of the present volume, the first of a series planned to describe certain large business-enterprises whose histories concern and should interest the public. The work is well begun by Mr. Adams, who writes in a very readable manner the absorbing story of the development of the United Fruit Company. He has given us an intimate picture of Central America as it was and as it is — thanks to American capital judiciously expended for the good of the native population, as well as of the stockholders in the United States. There is a marked absence of the glamour of romance so characteristic of the average travel-book, and a remarkable fertility of authenticated facts; Central America is pictured as she really is. The book will be read with pleasure by prospective tourists, investors and a public which is demanding that far-reaching corporations shall give an account of their stewardship.

Wilkes-Barre Camera Club

THE Fourteenth Annual Exhibition of this club will be held at the club rooms, 131 South Main Street, from February 22 to 25, inclusive. The last date for entries is February 6. Information may be had of the Secretary.

Academy of Science and Art of Pittsburgh

THE Second Annual Pittsburgh Salon of National Photographic Art will be presented by the Photographic Section of the Academy of Science and Art, in Galleries L and M of the Carnegie Institute, Pittsburgh, Pa., March 1 to 31, 1915. For particulars, address communications to Mr. Charles E. Beeson, Secretary, 19th floor, Frick Building, Pittsburgh, Pa.

Our Illustrations

(*Continued from page 45*)

be forgiven obvious lapses in composition. The technique is well-nigh faultless. Data: September 3; 3 P.M.; 8 x 10 studio-camera; Voigtländer & Sohn's Portrait-Lens; at full aperture; 1 second; 5 x 7 plate; Eastman plate-tank powders; 6½ x 8½ print, Artura Carbon Black.

We now pass from the semi-professional to a professional worker — L. L. Higgason, with his portrait of a violinist, page 34. The composition here is above reproach and evinces thorough experience. The poise of the figure, the depth of expression, the judicious subordination of important details — the violin and bow and the hands holding them, the white vest and shirt-front (the latter cleverly hidden by the flowing tie) — are evidences of a knowledge that belongs to a well-equipped artist. Data: August; light, large north window; Hammer; pyro; Cooke lens, 14½-inch focus; stop, F/5.6; 3 seconds; print, Eastman's E. S. Platinum 7 x 9½.

In "Meditation," page 35, we behold a beautifully modeled head, well poised and effectively lighted. The sitter proved to be an extremely artistic subject which, in the creation of a work of art, often spells one-half of the achievement. The artist, from the professional ranks, is to be complimented highly on this superb production. Data: November, 7 P.M.; Cooper-Hewitt light; 4 seconds; 8 x 10 studio-camera; 16-inch Willard portrait-lens; stop, F/4; Central Comet plate; pyro-metol; 4 x 6 Noko print, hydro-metol.

The Beginners' Competition

THE picture, "On the Trail," page 38, was entered at the time when the game-laws in New England were suspended, and everybody able to procure a hunter's license was permitted to shoot the deer, the fox and the rabbit. Many an amateur sportsman of uncertain marksmanship or inexperience in the woods would only wound his quarry, or, at other times, mistake a human being for a legitimate prey. That all is not right when promiscuous "gunning" is allowed, is evident. There would seem to be considerable room for some wise legislation. The figure of the hunter stands out in strong relief and appears as if he really were in earnest. Data: 3A Special Kodak; Zeiss lens; at F/6.3; 1 second; N. C. film; tank, Kodak powders; 6½ x 8½ Royal Bromide; Duratol.

Mr. Wendell's "Summer Sunset," page 39, is as perfect an illusion as straight photography can produce. A little effort of the imagination, and the mind could picture the glowing color of sky and water. It is an effective picture, well planned. Data: August, 1914; 6.15 P.M.; light, low sun through light clouds; Hammer, Non-Hal. Ortho; pyro in tank; Voigtländer Alpine camera, 3¼ x 4¼; Collinear, Series III; 4¾-inch focus; stop, F/6.8; 1/25 second; 3-times color-screen; 6½ x 8½ enlargement on Platinum Enlarging Cyko.

The author of an admirable picture of Michelangelo's famous statue of Moses, in St. Paul's without the Walls, Rome, entered a number of European views, all of uniform technical merit, showing that his success was not the result of mere chance. The jury selected the statue of the great lawgiver on account of particular excellence and the obvious difficulties encountered in the making. The effect of light and shade is very striking and helps to emphasize the beauty of the sculptures. Data: February, 3 P.M.; light, bright from one large window quite high; Century Grand, 4 x 5; Wollensak Planatic, Series III; 6¼-inch focus; stop, F/22; 10 seconds; Jougla Green Label; hydro-metol; Platona — medium soft 3½ x 4½ print.

The scene pictured on page 40 contrasts two small boys with the large mountains they are beholding. It is doubtful, however, whether the youngsters appreciate their physical insignificance as compared to the vast mountain-range; but pictorially they make an admirable foil to the extensive scenery and the magnificent vista. Data: August 18, 1914; sunlight; 1C Tessar lens; F/8; Cramer Medium Iso; 1/90 second; 3½ x 4½ Azo print.

Photographs by Parcel-Post

Post Office Department
(Third Assistant Postmaster-General)
Division of Classification

WASHINGTON, Nov. 13, 1914.

MR. WILFRED A. FRENCH,
383 Boylston St.,
Boston, Mass.,

Sir: Receipt is acknowledged of your letter of recent date, in regard to the rate of postage chargeable on photographs, and in reply I have to say that parcels of photographs weighing more than four pounds are fourth-class matter and are chargeable with the regular parcel-post rates. Parcels of photographs weighing less than four pounds are third-class matter and are chargeable with postage at the rate for that class, one cent for each two ounces or fraction thereof.

Your suggestion that the parcel-post rates be extended to all parcels of photographs has been noted and will be given careful consideration.

Respectfully,
A. M. DOCKERY,
Third Assistant Postmaster-General.

Once a Famous Photographer

DANIEL BENDANN, well known in art-circles and a famous old-time photographer, died early in December in Baltimore, Md., of infirmities incident to old age. He was born in Richmond, Va., seventy-nine years ago. Eminent men went to Baltimore to pose before his camera, among them President James Buchanan, General Robert E. Lee, Jefferson Davis, Chief Justices Taney and Chase, Horace Greeley and all the leading actors and actresses of the time when Bendann was in his prime.

Art-Photography at Columbia University

THE bulletin of Teachers College, Columbia University, announces two courses of lectures and laboratory-work under the direction of Clarence H. White. The first is devoted to the application of art to photography, with instruction in the use of the camera, field, studio and laboratory-work, developing, printing and mounting. The second is devoted to making negatives, positives, enlarged negatives, the manipulation of negatives and printing-papers, also coating of papers; photography in landscape, architecture, illustration and portraiture; mounting, framing and lantern-slide making. The fee is $30, with a laboratory-fee of $2, and the second half-year begins February 3. Further particulars may be had of Arthur Wesley Dow, Director of the Department of Fine Arts, 525 West 120th Street, New York City.

THERE are no beautiful creations in the presence of which one may not feel an emotion of mingled joy, admiration and surprise. — *Francis Aubert.*

LONDON LETTER

CARINE AND WILL A. CADBY

Our last letter was written before the close of the Salon, so that our information about the sales was not up to date. The last time we had visited the exhibition was on the occasion of the "draw" for the Art Union prizes when, compared to other years, there was only a small sprinkling of red "sold" labels on the frames. The last week, however, a perfect shower of these cheering, red spots fell, proving that a good many buyers had come forward at the last. This and the Art Union sales brought the total up to above last year's, and not so far below the record year of 1912.

As many of the exhibitors had given their pictures for the good of the Prince of Wales' Fund, the profits for this were materially augmented. The war and the need of self-sacrifice have let loose a surprising amount of good impulses, and the spirit of giving has by no means been left to the rich. Photographers, who naturally are amongst the hardest hit, have not been backward in helping. As an instance, we may cite a distinguished lady amateur of Hampstead, who has set about in a businesslike way to turn her talents to account. Her specialty is the photography of children, and now her friends and her friends' friends, who hitherto have been accustomed to get charming studies of their children presented to them gratis, are informed by public advertisement in the suburb that in future their children may still be photographed — at a price, and the proceeds are to be devoted to the relief of the many destitute Belgians who are now amongst us. There is a comforting feeling to most people in the double-barreled thought that they are helping a good cause and, at the same time, acquiring something that they really want. The consequence is that this lady amateur is already quite busy, and if business continues to increase, an assistant — who, of course, will give her services for nothing — will be necessary.

Another photographer we know, who lives in a sleepy little village not thirty miles from London, being too old to enlist, but eager to help, was at a loss how to manage it until the recruiting-sergeant came along, and a happy idea struck him. He put a short notice in the Parish Magazine to the effect that he would photograph every recruit from the village directly he had received his uniform, and give him half a dozen copies. He, too, was soon busy, for a big percentage of the men joined the colors.

Of course, there is another side to this "work-for-nothing" development, and many people deplore it, asserting that such activities deprive the regular professional of his legitimate business. But we are not at all sure that this is true, or at the most only in a very minor degree, for most photographs taken in both cases mentioned would, during the present bad times, never have been made at all, for all classes of society have set their faces sternly against spending money on anything that is unnecessary or suggestive of luxury.

In opposition to this view, Mr. Tickner Edwards in the current number of *Photographic Scraps*, the journal of the Ilford Company, contends that there has already been a reaction amongst amateur photographers, and as a distraction from the awful and continual contemplation of war they have turned to photography again for relaxation, finding ample scope in the portrayal of autumn-tints. Certainly the color of the leaves and the atmospheric effects, seen day after day during this exceptionally fine and windless autumn, impress one as having been even more wonderful than usual; but we are frankly doubtful whether photographers have recorded them, and feel somehow that Mr. Edwards' wish is father to his thought. But the reaction will certainly come when we feel a reasonable conviction of eventual and complete victory, and there are very few English photographers who are not prepared to wait patiently, if need be, till the color-schemes of yet another autumn are before us.

One of the writers has lately judged the annual photographic competition organized by the *Nursing-Times*. This is the third year in succession that we have examined the prints sent in, and the headway nurse-amateur photographers have made in that time is little short of amazing. The majority of the work, both technically and artistically, has steadily improved, and is a very conclusive proof of the benefit of such competitions. This year many of the photographs throw a sidelight on the war, and such notices on the backs of the prints, as, "My photography was stopped by mobilization of the staff of the hospital," or, "Am ordered to France on Red Cross work," were frequent. One enterprising lady even sent pictures of convalescent Highlanders, and a pathetic reminder of devastated Belgium came in the shape of sharply focused little views of ancient architecture in that sorely tried country, which is now nothing but a battered wreck. This nurse little thought that her holiday snapshots would be the last records ever to be taken of those priceless monuments of the past.

Mr. A. H. Blake has been absent from London lately. He has been visiting the principal big towns in England lecturing on the war. He has begun in the north and has had a great success in Manchester, York and Scarborough; and no wonder, for apart from his powers of entertaining his audience, there is no subject of such attraction as this upheaval of Europe. The lecture is illustrated with many of his own lantern-slides, the part concerning the violation of Belgium has some good photographs, and Mr. Blake also shows the new features of modern warfare — airships, aeroplanes, submarines, mines, etc.

Another popular lecturer is Mr. Martin Duncan, who had an appreciative audience at the Camera Club, last week, when he discoursed on "The Romance of Marine Biology." Perhaps the most interesting of his slides were those of anemones, star- and cuttle-fish. The work of the marine biologist is most valuable to the fishing-industry, and the lecturer deplored the fact that insufficient attention was paid to it.

Although it is not of strictly photographic interest, we feel that we cannot let this letter go without a comment on what has been quite a sensation in the art-world. Monsieur Rodin has presented to the British nation the collection of his sculptures which has lately been on view at the South Kensington Museum.

Three months ago this collection, which includes eighteen masterpieces representing all periods of Rodin's genius, was at the Duke of Westminster's house. Owing to the impossibility of getting the sculptures conveyed back to Paris after the outbreak of war, it was suggested that the collection be stored at the South Kensington Museum, where the public might have a chance to enjoy it. When M. Rodin returned from Paris to London, he was charmed how well it was displayed. In his own words: "As a little token of my admiration for your heroes, I decided to present the collection to England." This priceless gift has been accepted with gratitude by the British government, which feels that such generosity has forged a new bond between the two nations.

WITH THE TRADE

The Kinograph Motion-Picture Camera

Realizing the growing popular appeal of motion-pictures, the International Photo-Sales Corporation has brought out the Kinograph at the phenominally low price of $50, including an F/6 lens and two film-boxes. The instrument is high-grade in every respect and reduced to the simplest terms in respect to mechanism. It is the very instrument for use about the home, on the summer-or winter-vacation, or by professional men and women who can utilize motion-pictures occasionally to good purpose. The film-boxes accommodate any length of film up to 150 feet. Send for a circular containing a complete description.

A Rodenstock Speed-Card Free

W. J. Lafbury Company, 305 North Fifth Avenue, Chicago, will send upon request a compact little speed-card for the vest-pocket. Incidentally you will also receive information regarding the Eurynar lenses, a line of high-grade double anastigmats that you ought to know about. They are lenses of great speed, depth of focus and covering-power, and will work a wonderful improvement when substituted for your rapid rectilinear.

The Struss Pictorial Lens

For several years past Karl Struss has been a prominent figure among pictorial photographers. Much of his success has been due to lenses which he has made privately for his own use. Later, these lenses gave satisfaction to some of the most distinguished American artist-photographers, and Mr. Struss has now decided to place them upon the market. In this venture success seems assured, for Struss prints are characterized by a beautiful quality of image somewhat different from that obtainable with other soft-focus lenses.

A Photographic Colony in Florida

Mr. Wilbur C. Smith, well known throughout the photographic trade as Stereo Smith, has anchored in his "Garden of Eden." There he is establishing a photographic colony with grape-fruit and winter-home attractions on the side, and he invites all of his many friends, patrons and acquaintances to follow his lead and "live happily ever afterwards." See announcement on another page.

The Pocket Speed-Shutter

For the modest sum of $4 you can convert your No. 3 Kodak into a speed-camera. The Pocket Speed-Shutter, with its black curtain and slit like the focal-plane shutter of a reflex-camera, interchanges with the roll-film in Kodaks equipped with glass-plate adapters. Two compact metal cylinders, furnished in a neat pocket-case, contain the shutter-curtain and operating-mechanism, and may be placed in position for use as readily as a spool of film. Two types are made — one working at $\frac{1}{600}$, the other at $\frac{1}{1000}$ second — so that even the novice, at small expense, can obtain successful speed-pictures. Shutters for 3A Kodaks are in preparation, as announced in an advertisement on another page.

Collinear Series II F/5.4

In the November advertisement of Voigtländer & Sohn the speed of this lens was given as F/4.5, whereas the correct speed is F/5.4. The Voigtländer Heliar works at a speed of F/4.5.

Southern School of Photography

Daddy Lively has outdone himself in his new catalog of the Southern School of Photography; it is a work of art, as every piece of a photographer's literature should be. Readers of Photo-Era who contemplate a course of study to fit them for professional work should procure a copy at once, and they will do well to consider seriously the location, equipment and high standing of this institution.

Prosch Dry-Battery Cartridges

These mark a giant stride of progress in flashlight-photography, making it possible to fire an unlimited number of flash-bags simultaneously by means of a small pocket-battery. Commercial photographers will find them of inestimable value. A catalog will be sent upon application to Prosch Manufacturing Company, 206 East 19th Street, New York City.

Victor Specialties

If you do things the Victor way, the weather does not matter. Portraits, interiors and every sort of commercial work may be made with the aid of Victor Flash-Powder, no matter how dark the winter days. In the use of this powder for commercial purposes a Victor Portable Flash-Bag is indispensable; it makes friends wherever it goes. Those who customarily object to flashlight-work in their homes find that Victor smokeless flashlights overcome their every objection. For studio-work a Victor Flash-Cabinet is indicated; it is the equivalent of daylight and always dependable. Descriptive literature will be sent upon request by J. H. Smith & Sons Co., 3542 Cottage Grove Avenue, Chicago.

Solo Flash-Powder

Despite the high price of chemicals, particularly metal magnesium, the price of Solo flash-powder is exceedingly low — 22 and 80 cents per half- and two-ounce box, respectively. Solo gives a brilliant light, with very little noise and smoke, and is made from chemicals that form the safest possible combination. The wholesale agent, 766 Cauldwell Avenue, New York City, will deliver free all orders of forty ounces or more.

Autographic Kodak-Backs

With the Autographic Kodak has come another innovation — the Autographic Kodak-Back. This may be had to fit your 1A, 1A Junior, 3, 3A, 4 and 4A Kodak and thus transform it into an Autographic Kodak, with all its advantages, at very small expense. Any negative worth the making is worth a date and title, and the value of every picture is increased by the ability to identify it positively in years to come.

The Largest Portrait-Lens in the World

A GIGANTIC lens of 11 inches diameter and aperture F/4.2 has recently been constructed by J. H. Dallmeyer, Ltd., of London, for which Burke & James, Inc., of Chicago, are the sole American agents, for the use of a photographer in Egypt, who wishes to secure life-size pictures in natural perspective. The theoretical design presented considerable difficulties, as the standard of definition in the final picture must be of as high an order as in the case of a small lens. Aberrations which increase as the focal length increases had therefore to be remarkably well corrected. After weeks of calculation the desired form to give the individual lenses was found.

Over six months elapsed before the glass-makers were able to provide suitable material. The grinding and polishing, fortunately, passed off without incident. The total length of the lens is 20½ inches, flange-diameter 16 inches, width 12½ inches, and the lens complete weighs a trifle more than 100 pounds.

After the best results had finally been obtained it was thought that it might be of interest to see what stereoscopic effect was obtained by reason of the large glass-diameter, which far exceeds the separation of the eyes and might, therefore, be expected to produce curious results. The test-object which had to be very short on account of the little depth of focus was a thin plate painted on each side with alternate bands of black and white. These were so arranged that a black band on the right-hand side corresponded to a white band on the left-hand side. The object was put up about 20 feet from the lens and photographed in four ways.

1. With the lens covered, except for a small hole in the middle.

2. With the lens covered, except for a small hole on the right-hand side.

3. With the lens covered, except for a small hole on the left-hand side.

4. With the complete lens uncovered.

No. 1 corresponds to a photograph taken with a lens of the same focal length, but small aperture, Nos. 2 and 3 to photographs taken by shifting such a lens 5 inches to the right and left respectively.

No. 4 is similar to what one might expect in a stereopticon using both these photographs.

In No. 1 the end of the plate only is visible.

In No. 2 the end and the right-hand side is visible.

In No. 3 the end and the left-hand side is visible.

In No. 4 the end and also both the sides are visible, the whole being combined to form one view.

The photographs thus show the ability of a large lens to see around a corner.

Photographers have often stated that a large lens gives more roundness and modeling, and that, perhaps, is explained by this property of seeing around corners.

The Jamieson Studios

MR. A. L. JAMIESON, the accomplished Boston portrait-photographer, whose October cover of PHOTO-ERA elicited such high praise, now operates two studios. One is located at 394 Boylston Street, opposite the editorial rooms of PHOTO-ERA, in the Back Bay district; the other at 28 Avery Street, Boston's new thoroughfare in the heart of the shopping-district. Several of Mr. Jamieson's superb portraits of men have come to our attention, but more delicate work, particularly altogether charming vignetted portraits of women and children, is his forte. A conscientious, painstaking artist, he deserves a full measure of success in this new double venture.

Lifelike Portraiture

THERE is no doubt that high-class portraiture, such as has been known for many years, has nearly passed away, although it is still practised by conscientious and capable portraitists, who, however, are almost entirely professionals. This is due to the fact that these workers use genuine portrait-lenses and adopt a proper system of lighting. These portraits possess the admirable and distinctive quality of rotundity, or roundness in modeling, which is generally called by the craft a plastic or stereoscopic effect. Such a picture is the head of a young woman, by E. R. Trabold, reproduced on page 35. Mr. Trabold informs us that this superb picture represents his regular work, for which he uses an old-style Willard portrait-lens of 16-inch focus and a Cooper-Hewitt light.

Enlarging with Condensors

THE Bausch & Lomb Optical Company has issued a special circular, entitled, "Enlarging with Condensors." It describes how an enlarging-apparatus should be set up, and gives instructions for the adjustment of the light, the lens to use and information regarding the improved mountings of photographic condensors. A copy will be mailed on request to any one who is interested.

Lecture on Practical Optics

MR. WALTER G. WOLFE, lens-expert and manager of the optical department of Pinkham & Smith Company, has been giving his lecture, "Practical Optics," at camera clubs with great success. He describes in simple terms the construction and uses of the various types of photo-lenses, etc. Club-secretaries will do well to correspond with Mr. Wolfe, as he makes no charge other than his expenses.

Humor in the Morning Mail

SAN FRANCISCO, Nov. 18, 1914.

PHOTO-ERA Magazine,
Boston, Mass.,

Gentlemen: I am enclosing a draft for one dollar and 50/100 for another year's subscription to PHOTO-ERA. I think my subscription is up in November, and I do not wish to miss a copy. You certainly get out a fine magazine. I would like to be registered as a member of the Round Robin Guild. I would like to submit some of my prints for consideration in the Beginners' Contest to see whether they are up to the standard for workers of about two years' amateur experience.

I have been taking pictures (?) about two years. Started with a Premoette Jr.; now use a 3¼ x 4¼ Graflex.

I notice in the November issue you state that you are seldom informed as to the standing of the contestants. For your information I submit the following:

Name: C. H. C____.

Age: Twenty years.

Occupation: Assistant Cashier of The _____ _____ Bank, San Francisco.

Disposition: Chronic grouch except when reading PHOTO-ERA. Spend most of my money on photography and get the "dickens" from my friends for having such a hobby.

Address: 550 _____ Street, San Francisco, Cal.

Hoping that the above will help you, also that you will not think me a "nut," I remain,

Respectfully,
C. H. C____.

P.S. *Mental status* unknown.

CONTENTS FOR FEBRUARY 1915

ILLUSTRATIONS

ARTICLES

To Contributors: Contributions relating to photography in any and all of its branches are solicited and will receive our most careful consideration. While not accepting responsibility for unrequested manuscripts, we will endeavor to return them, if not available, provided return-postage is enclosed. Authors are recommended to retain copies.

To Subscribers: A reminder of expiration will be sent separately at the time the last magazine of every subscription is mailed. Prompt renewal will ensure the uninterrupted receipt of the magazine for the following year. Send both old and new addresses when requesting a change.

To Advertisers: Advertising-rates on application. Forms close on the 5th of the preceding month.

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WILFRED A. FRENCH, Ph.D., Editor and Publisher

PHIL M. RILEY, Associate Editor KATHERINE BINGHAM, Editor, The Round Robin Guild

383 Boylston Street, Boston, Mass., U. S. A. Cable Address, "Photoera"

A GERMAN MOTHER
A. GOTTHEIL

PHOTO-ERA

The American Journal of Photography

Vol. XXXIV FEBRUARY, 1915 No. 2

A German Practitioner: A. Gottheil of Danzig

SIDNEY ALLAN

LOCALISM, which was so characteristic of the art of Holland, has a charm and verity of its own. The Gottheil prints that are shown on these pages have this peculiar flavor. They are typical of the place where they were made. Comparatively few travelers stray to the coast-towns of the Baltic Sea. Life out there is still running on simple lines and knows but little of the cosmopolitan polish of Berlin, of Dresden and of Munich. And the photographer who is true to his mission, *i.e.*, faithful, straightforward character-interpretation, involuntarily reflects in his portraiture those provincial or bourgeois traits that are peculiar to the town he lives in.

And so we see before us pictures of a pleasant matron in a simple dress with the habitual shawl and some knitting-needles in her hand, of the clerks of some commission-house in lively discussion, and a suburban home and garden typical of North Germany. Anybody who has ever visited these districts will appreciate the unpretentious naturalism of these delineations. Gottheil is as masterly in his technique as in his interpretation; but he does not think it necessary to transport his sitters into distant worlds of beauty. What he sees about him seems beautiful enough. It is portraiture without the note of fastidiousness in it. There are no attempts at special drapery-effects, curious lighting-schemes and imaginative backgrounds. He does not search for an Oriental touch in a woman's beauty and, after discovering it, try to accentuate it by some Eastern stuff and a background that echoes the same note. It would not be appreciated in the locality where he lives.

No doubt every portraitist is somewhat of a poet. Much of the highbred dignity in the portraits of a Van Dyck or a Gainsborough may have existed only in the imagination of the artist: but they would not be considered good portraits unless they contained some of the traits of the people they depicted. Van Dyck in his portraiture seldom descended below a nobleman; but whenever he painted a burgher, he did not depict him with the noble, courtly air of a count or lord. He made him look just a little bit less elegant.

Every personality has its pictorial limitations, and will look more convincing when it is depicted within these limitations. The German portrait-school is very much given to serious characterization, and Gottheil has obtained a quiet, clarified mastery over expression and refined beauty of tone.

His picture of the lady before the oval mirror and that of the young violinist show that he is equally at home in light and dark tonalities. They are both interpretations of characteristic attitudes rather than legitimate likenesses. This is the only concession he makes to pictorialism. When the subject permits, he may indulge occasionally in picture-making. The detail in both these pictures is remarkably clear and precise. The figures look posed, they do not give the impression of instantaneousness; but they are free from any discordant feature. The line-work and spacing are, if not exceptional, at least without any false note to them. If the dress of the lady before the mirror were a trifle longer, she would look more elegant; but no doubt she was of rather short stature, so it meant either to sacrifice truthfulness to added distinction or *vice versa*. The decision in this matter depends on the sitter as much as on the portraitist. Judicious flattery generally is not disliked; but if it does not conform with the settled views of the interpreter, it would be unwise to practise it.

Gottheil seems to be an exponent of unmitigated frankness and sincerity. He delineates with a charming simplicity and directness. The portrait of the matron with the shawl is rendered without the slightest touch of affectation; it may be called sober and prosaic, yet all the

A BUSINESS-EPISODE

A. GOTTHEIL

A NEW PIECE A. GOTTHEIL

detail is handled with care and interest, and the head dominates the picture-area in a convincing manner. A good portrait does not necessarily need to contain anything particularly skilful or striking. An interesting and individual feature of Gottheil's work is the handling of out-of-door background, in which the sitter becomes an element in an intimate little composition like the sunlit breakfast-scene in the garden; and the environment, surroundings and belongings express the personality not less clearly than the face and figure.

The group of clerks shows the versatility in the treatment of this practitioner. It reveals a rare mastery of composition. A group of four is, at all times, a difficult proposition; but it has been solved in this instance in an animated and well-balanced arrangement. The placing of the figures is controlled by a real *motif*, an incident such as may occur at any moment in the office of a business-house. The head-clerk is arguing about some document, a record or account; he addresses the one clerk in particular, and the others are interested in the proceedings. A group always needs some decided point of interest, and if it can be made to look natural, it is doubly convincing. The facial expression in all four figures is excellent, and the attitude of the bodies perfectly at ease. The three figures to the left are connected by the half-circular line of the heads and the sheet of paper, whereas the fourth is in proper relation with the others, not merely by the glance of interest and the position of the head, which continues the "head" line, but by the linen coats. The light shades of these two coats balance per-

AL FRESCO BREAKFAST

A. GOTTHEIL

FINISHING-TOUCHES A. GOTTHEIL

fectly the middle-tint planes of the heads, the striped trousers, the bulky mass of the dark coats and the background. It is an exceptional piece of work, and a valuable lesson to all group-photographers and home-portraitists.

Gottheil is unquestionably a man to be reckoned with in the photographic world. Whatever his future development may be, it will be interesting and sound — sound by reason of the solidity of his artistic foundation, and interesting in virtue of his alert and versatile artistic individuality.

An occasional excursion into portraiture by a landscape-worker, or into genre by a portraitist, will result in a fresher viewpoint. — *Paul Lewis Anderson in "Pictorial Landscape-Photography."*

Lantern-Slides in Natural Colors

Part I — The Autochrome Process

WILLIAM H. SPILLER

AT the present time considerable interest is being manifested in this country in true color-photography — not color-values only, but real colors on glass positives or transparencies for viewing in the hand or by projection in the optical lantern.

Of the three principal methods in use, the first really practical, successful methods were the Autochrome of Lumière and the Dioptichrome of Dufay, with which a large number of workers have had practical experience. Both of these color-systems theoretically are somewhat similar.

The principle of the Autochrome plate and its chemical manipulation have been described several times in previous issues of PHOTO-ERA and should be well understood by its readers.

How to Make an Autochrome Lantern-Slide

It is not particularly difficult to make natural-color lantern-slides if one is careful, and even a beginner in color-photography will frequently make a splendid example at his first trial. The reader having only an ordinary plate-camera fitted with a view-lens or rapid rectilinear should not be deterred, and even those owners of a Premo or a Kodak, each of which is fitted with a plate-back, may enjoy the fascinating work and take just as much pleasure as the advanced worker who is using an expensive anastigmat lens in a Graflex camera.

The plateholder should be fitted with kits to take a standard 3¼ x 4 plate, which is lantern-slide size. In plateholders having springs in the back to press the plate forward into register, these springs should press very lightly, otherwise injury will be done to the delicate surface of the Autochrome plate, which is placed into the holder glass-side outwards. It is advisable to leave the black cardboard, which accompanies every Autochrome, in place against the film-side of the plate, as this protects the surface very nicely while in the holders.

Exposure

In order to obtain perfect results in the completed lantern-slide, the exposure must be very accurately timed, and with all systems of color-work a meter to determine the actinic value of the light is an absolute necessity; therefore, the writer has not furnished approximate exposures. The well-known meters on the market are the Heyde, Watkins and the Wynne, the two latter requiring a small piece of sensitive paper which changes color under the light-action and is compared with a standard tint beside it on the face of the meter. The Autochrome plate-speed, including the filter in position on the lens, is given by the manufacturers as Watkins 3 and Wynne 11.

The actual length of time in the exposure of an Autochrome will extend from a fraction of one second to several seconds, depending upon the character of the object, intensity of the light and the size of the opening of the lens-diaphragm. The Wynne meter takes into account all these factors with one setting of the dial, and, no matter what section of the country or altitude of the place where used, the indications will be found perfectly accurate.

The worker should not attempt to take distant views, as in general these are not satisfactory, and it is much better to confine all efforts to near views having some definite object of prominence, around which may be allowed lesser objects artistically arranged by proper position of the camera so as to make of the whole an attractive lantern-slide study.

Development

The makers of these plates furnish a very complete set of directions pertaining to development; but the writer has preferred to work out a simple method for this article which may prove of value to the beginner in the process. The developer used is dianol, or amidol, each giving similar results if mixed in accordance with this formula. Both of these agents use sodium sulphite only as an accelerator, and this is of great value in a warm climate, as sodium sulphite does not have any decided destructive or softening-action upon the sensitive film as experienced with alkaline developers containing carbonates or caustic alkalis.

Balagny, in Europe, first advocated the use of an acid-amidol developer, and later E. J. Wall, in this country, gave considerable study and approval to the use of this chemical for Autochrome-development.

Single-Solution Developer

Water	10 ounces	284 c.c.
Sodium sulphite, anhydrous	120 grains	7.73 grams
Acid-sodium bisulphite, commercial solution	4 drams	14 c.c.
Potassium bromide	5 grains	.32 gram
Amidol	30 grains	1.9 grams

The developing-solution should be carefully filtered through two thicknesses of filter-paper and used full strength at a temperature of 65 degrees F. In working with Autochrome plates every solution must be filtered and then there will be practically no complaint arising from spots on the finished slide. Place the plate in the tray and by the aid of a very faint light, through Lumière Virida papers, pour on quickly the developing-solution and immediately cover or remove the tray from the yellow-green developing-light. If, from a desire to watch development, the worker allows the developing-light to shine from time to time, it should be only for a fraction of a second. Continue development for precisely four minutes. If this time is exceeded, the resultant slide will be thin, owing to the large amount of silver reduced by prolonged development; if the time is cut short of that stated, the slide will be dense, as there will not be sufficient silver reduced to restrain the light-action during reversal, also there will be left a larger amount of sensitive silver-bromide than is required to produce the proper density of the positive image. For those workers who desire to use a ruby-light, the plate before development may be placed for two minutes in total darkness in the desensitizing-solution:

Water	3½ ounces	100 c.c.
Potassium bromide	15 grains	1 gram
Potassium metabisulphite	5 grains	.32 gram
Acid-sodium bisulphite, commercial solution	½ dram	2 c.c

To make the acid-bisulphite solution, take

Water	1 ounce	28 c.c.
Sodium sulphite	240 grains	15.57 grams
C. P. sulphuric acid	84 minims	5 c.c.

After desensitizing, rinse the plate for not more than ten seconds with clear water at 65 degrees in the tray before pouring on the developer. At the expiration of four minutes quickly pour off the developer and rinse the plate in the tray with four changes of clear water at 65 degrees flowed on in about 3-ounce portions, allowing each amount of water to remain not over four or five seconds.

Reversing

Have ready the following solution, which is to be poured on to the plate in the tray immediately after the last wash-water is thrown out. This solution dissolves the reduced silver, forming the negative image produced by the previous development. The tray and plate should now be brought out into daylight or placed under a strong artificial light, and the plate will be seen to clear, this action being completed in about five minutes.

Reversing-Solution

Water	8 ounces	224 c.c.
Potassium bichromate	8 grains	.5 gram
Chrome alum	30 grains	2 grams
C. P. sulphuric acid	30 minims	2 c.c.

Filter this solution through two pieces of filter-paper and use at a temperature of 65 degrees.

After reversing, the plate should be washed in five or six changes of clear water at 65 degrees, in the same manner as advised following the first development, only extending the time of each rinse to ten seconds.

The second development and production of the positive image is now proceeded with by pouring on in daylight the used developer saved from the first development when making the negative. This last development is carried out in daylight or ordinary light of the room and requires practically the same length of time as the first development. As soon as this operation is completed, rinse the plate as previously described in six changes of water for ten seconds each, and put into an ordinary lantern-slide or negative-rack to dry. After drying, the slide should be varnished by flowing over it any good negative-varnish which is free from alcohol, or the varnish may be obtained from the Lumière Company. To protect the slide further, it must be bound up with a cover-glass the same as any lantern-slide.

The reader should take particular notice that at no time after removing the plate from the holder and entering the solutions has the plate been touched with the hands, also all solutions have been filtered carefully through paper, and used at a constant temperature of 65 degrees. If the plate is treated as described, those workers living where the air is warm and balmy will have equal success with those readers in the extreme North where the temperature of water is like that of melting ice.

(To be continued)

IN THE GOOD OLD WINTER-TIME — C. E. KELSEY

Winter-Landscapes

FREDERICK F. AMES, JR.

SATISFACTORY winter-landscapes are no more difficult to produce than ordinary summer-landscapes when once the few underlying principles are understood.

Thousands upon thousands of amateurs set aside their cameras for the winter, largely, I think, because they imagine that one must be a master technician to obtain such examples of winter-photography as appear from time to time in PHOTO-ERA.

Quite naturally they are good examples of such work, but they are much less difficult to attain than they appear. The success achieved by some of the specialists is not so much a matter of technical excellence as of individuality.

In this article I will attempt to treat little other than the technical side, and even that is subject so much to individuality that the following suggestions are intended primarily to start one upon this work. After having obtained a foothold, the fascination of the new work will encourage experiments and the adoption of a method of working and style more or less individual.

So much has been written upon the subject of winter-landscapes that it seems as if there was little or nothing left to say, and I would not run the risk to bore the reader further upon the subject did I not feel that some of my ideas are so radically different from the accepted theories as possibly to be worthy of testing.

Even when working with an orthochromatic plate and ray-filter, many contend that, as the white snow acts as a powerful reflector, the exposure that would be given when making the same view in summer, and even at the same time of day, must be cut absolutely in half when making the view with snow on the ground.

For instance, if one were using the same make and speed of plate and aperture of lens as had been used to take the identical view in the months of July or August, and the exposure used then had been $\frac{1}{50}$ second, under like conditions, but in January or February, the exposure would necessarily be $\frac{1}{100}$ second. At first thought that sounds feasible enough, but if one will stop and consult a reliable exposure-chart that gives the light-values for the different months of the year, it will not take very long to see that the intensity, or actinic value of the light, is very much stronger during the months of July and August than it is in either January or February. Furthermore, it stands to reason that the reflected light from the snow cannot possess as much strength as the direct light itself. There is another point that some do not seem to take into due consideration, namely, that the average winter-view is seen to the best advantage early in the morning or late in the afternoon when the sun casts long shadows. In the winter-months this would be before 8.30 or 9 A.M. and after 2.30 P.M. As a rule, during the winter-months, the sun throws rather a yellowish light at these hours, and that one point alone, even when using an orthochromatic plate without a ray-screen, necessarily lengthens the exposure from two to five times what would be required in summer.

In the matter of development, I would advise keeping the plates just as thin as possible, just so that they will have sufficient printing-density for a normal gaslight paper. There is nothing to excel weak tank-development as a certain means to produce just the style of a negative that I mean, and if one gives to a winter-landscape approximately the same exposure as to obtain a fully-timed negative of the same view in summer, a negative will be the result that, while not particularly pretty to look at, will possess all of the delicate shadings in the snow. It is not necessary, as many suppose, to carry the development of a winter-landscape farther than you would a summer-landscape in order to obtain a clean white snow, as after a negative once reaches the normal stage any forcing tends only to block the detail in the highlights, and makes resort to an exceedingly soft-working paper an absolute necessity. It is often, indeed, in ordinary work, that a contrast or soft paper is truly "a friend in need," but there is little doubt that a print on normal paper from a normal negative will give the truest reproduction of nature. A winter-landscape, when taken in bright sunlight, fairly sparkles, and when printed upon soft paper practically all of its beauty is lost, as the results are generally more or less lifeless and entirely devoid of that sparkle. Even provided that the exposure had been anywhere near correct, developing the negative until the highlights were quite opaque would cause the loss of sparkle and flatness referred to.

Never attempt to develop a plate that has become chilled, as the resulting negative would be a hopeless printer in nine cases out of ten. After bringing in a batch of plates from the cold, allow them to assume the temperature of the room before developing. I have found it an excellent plan to keep my loaded holders wrapped in a blanket or something else that will keep out the cold, and immediately after making an exposure to return the holder to the cover as quickly as may be. This method is hardly practicable for an all-day tramp, but will do first rate for a few hours.

Now that we have discussed exposure and development, perhaps a few simple working-hints may be of some advantage to one who has had little or no experience in winter-photography. Winter-landscapes are by no means so disappointing as summer-views, as very often one is led to take the latter simply by the attractive masses of color upon the ground-glass or finder and, when reduced to black and white in the resulting print, lose nearly all of their charm unless supported by an excellent composition and good gradation. This absence of color simplifies to a great extent the photographing of winter-scenes and, as a rule, gives a better reproduction of nature.

The matter of subjects must be of your own selection and if you keep your eyes open, you will undoubtedly find no end of them. Whether you live in a city or in the country, early in the morning after a heavy hoar-frost take a little tramp either in some park or through the fields. There is small doubt but you will be well repaid for it. Good frost-pictures are rather a rarity, as but few seem to realize the possibilities to obtain most unusual effects that are put within their reach by Jack Frost.

Perhaps one of the rarest and most beautiful effects is after a so-called "ice-storm," when everything is covered with a glistening coat of ice that reflects the sunlight in dazzling rays of splendor. Such a scene contains more difficulties than attend the taking of an ordinary snow-covered landscape, but a double-coated orthochromatic plate will avoid halation successfully and take care of any reasonable variation from the correct exposure.

No special camera is required for this work, and be it an elaborate outfit equipped with an high-speed anastigmat, or the simplest of home-

THE KNICKERBOCKER-GIRL
WARD MUIR

made pinhole-cameras, the matter of artistic results depends upon "the man behind the gun." When the camera is taken from the heated house out into the cold, moisture will gather upon the lens, and were an exposure to be made with it in this condition, the results obtained would be fuzzier than even the wildest extremist could possibly desire, and there would be great underexposure. After the lens assumes the approximate temperature of the air, the moisture will evaporate, but it may be desirable to wipe it off two or three times to facilitate this.

In some manner or other, the lens should be shielded from the reflection cast by the snow, or from any other strong light that strikes its surface. If this precaution is not taken, fogging is often the result, and in the case of a plate-camera this may be observed readily by the difficulty experienced in seeing the image clearly enough upon the ground-glass to obtain an accurate focus. Very often it is possible to shield the lens successfully by means of a plate-holder-slide, your cap or even your hand, but it is a far wiser precaution either to buy a lens-cone or to make one of black paper, or even better of cardboard painted a flat black.

It should be some three or four inches long, and sufficiently wide at the mouth not to obstruct the view of the lens. With the use of such a cone, the results are bound to be clear, and focusing with a plate-camera is greatly simplified.

A light ray-filter should be used that requires about three times longer exposure, and a very satisfactory one may be procured from any dealer in supplies for fifty cents to two dollars, depending upon the size of the lens that it is to fit. In ordering a ray-filter, it is wise to get it slightly larger than is actually required to fit over the lens, as the little arms may be considerably bent in, and then in the event of ever buying a larger outfit, the original filter will probably fit the lens.

For the best results, orthochromatic plates, in conjunction with the ray-filter, are essential and as a rule cost little or no more than ordinary plates.

It is, however, not a bad plan to get double-coated (non-halation) plates, as unless great care is exercised not to photograph against the light, the results are quite likely to be very discouraging. There are now so many brands of dependable plates upon the market that it is not necessary, nor is it hardly possible, to recommend any one brand. Your best safeguard is to buy of a reliable dealer.

For those who have film-cameras no change whatever is necessary, as practically all of the modern films are orthochromatic. This does not mean that a ray-filter should not be used, as it is, indeed, but seldom that the full beauty of snow can be rendered without its use. There are, of course, times late in the afternoon when the light is particularly yellow and the ray-filter need not be used, but the exposure required would be approximately the same as if taken a little earlier in the day with the filter. The reason for this is that yellow light does not have a very powerful effect upon the film or plate, and therefore requires a longer exposure-time in which to act.

For one not well acquainted with photography, recourse had better be had to some reliable guide or meter. A very thorough, simple and satisfactory exposure-guide appears in every issue of Photo-Era, and if correctly followed will give any one a sound basis from which to vary the exposure to suit personal taste or method of working.

I mentioned weak tank-development as being particularly suited to the style of work advocated. Every man has his own pet developer, and he will tell you that there is nothing to beat "so and so," and here again it is altogether a matter of personal taste, and a most important factor in producing work that has individuality. With almost any developer the best chemical action takes place at about 65 degrees F., and for tank-development I use Citol at as near that temperature as can be maintained, making up a solution of one to one hundred parts of water. The time required with practically every brand of rapid orthochromatic plate does not vary perceptibly, and twenty minutes' development at the above-mentioned temperature will give just the style of negative best suited to a normal-working paper, provided, of course, that the exposure has been anywhere near correct. In the matter of latitude in exposure, double-coated orthochromatic plates are unsurpassed, and this, coupled with the additional latitude that tank-development will allow, make errors practically impossible.

In conclusion, bear in mind that the prettiest-appearing negatives do not always yield the prettiest prints, and do not be discouraged if the negatives appear very flat and thin, but give them a fair test upon any normal-working paper with which you are well acquainted, and then judge of the result for yourself; and as the motto that they taught us in school goes, "If at first you don't succeed, try, try, try again."

Art is an embracing of clouds. — *J. Barbey d'Aurévilly.*

A Parabolic Reflecting- and Enlarging-Lamp

F. A. FAHRENWALD

THE application of the parabolic reflecting-surface to the construction of automobile and locomotive headlights is very common. The writer has applied this same principle to the construction of a lamp for printing- and enlarging-purposes.

The definition of a parabolic curve for this purpose may be stated as a curve which, at every point, reflects a beam of light, originating at a point within, known as the focus, in a direction parallel to the axis of the curve. Dotted lines of Fig. 4 illustrate this. Its equation may be written $W^2 = 4\ fd$, where W equals one-half the desired width of the top of the lamp, d equals the depth, and f equals the distance of the focus F from the bottom of the box.

The lamp consists essentially of (1) an old printing-frame for the top or face of the lamp (the original back of the frame to be used as a cover when printing); (2) two ends cut out of ½-inch pine board, according to paper pattern (see Fig. 4); (3) a sheet of bright tin, as wide as the length of the printing-frame, for a reflecting-surface, and (4) a suitable source of light. The "bottom" and "sides" of the lamp are formed by the above reflector. At the point F of each end, holes are bored and a suitable arrangement made for attachment of the source of light. One of the long cylindrical electric bulbs with a single axial filament should be just the thing for this; but, none such being available, the writer used two 40-watt electric bulbs, placed as indicated. Of course, when these are used, the source of light is not concentrated exactly at the focus, but the slight diffusion thus caused is not noticeable on the opal-glass screen.

Fig. 1 shows the lamp in process of construction. A-A are the ends made of ½-inch pine and are cut according to the pattern-curve (Fig. 4). B shows the printing-frame serving as the top or face of the lamp.

C is a sheet of opal-glass into which the light from the reflector is thrown, giving a very even intensely-illuminated surface.

D is a small electric bulb, covered with post-office paper, and used as a safe-light when needed.

Small fasteners to fit into those on the back of the camera are marked E.

Two 40-watt bulbs are marked F.

G is a small dap, cut in the side of the printing-frame and provided with spring-clips for holding a negative or cover-glass.

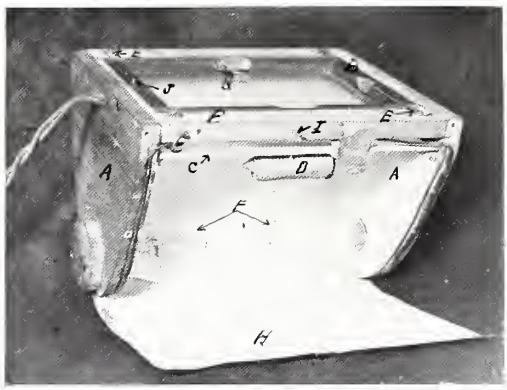


FIG. 1. THE LAMP PARTLY CONSTRUCTED

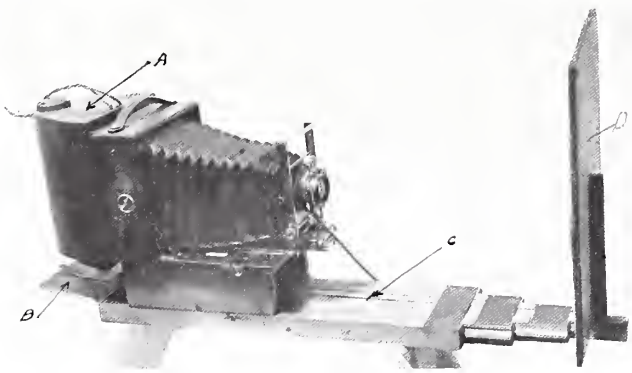


FIG. 2. THE FINISHED LAMP READY FOR USE

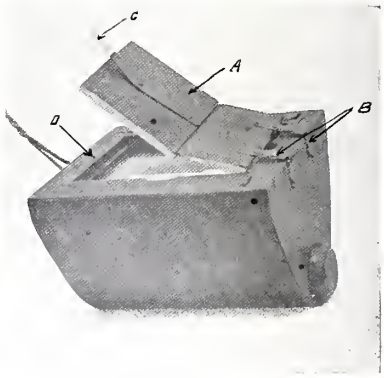


FIG. 3. SET UP FOR PRINTING

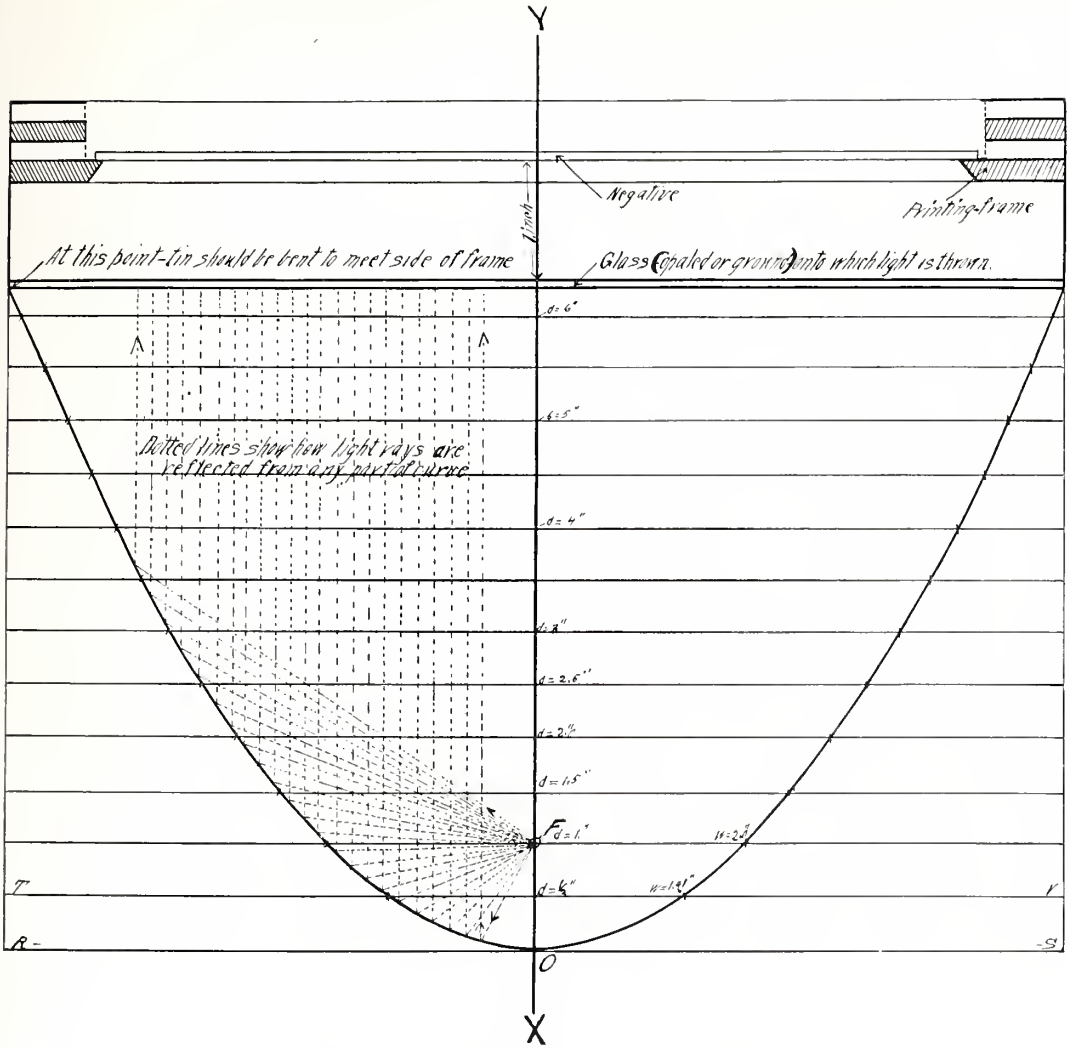


FIG. 4. SHOWING THE PARABOLIC CURVE

H is the reflecting-surface bent only halfway around. This is to be fastened to the side of the printing-frame and to the edges of the end with small screws. This also acts as a conductor to carry current across from one bulb to the other. The second conductor is an insulated wire passing from each bulb to grooves, around the edges of the end-board, leading to the side of the frame and thence to the led-in wire. The lamps should be arranged in parallel. The small bulb D is switched in on the same circuit by means of a push-button I. The circuit for operating the light is closed by means of a push-button J. The wiring is so arranged that the safe-light is independent of the operating-light.

Fig. 2 shows the finished lamp A in position for enlarging. The outside is painted dead black.

B is the cover used when printing (see Fig. 3) and which swings down and back, out of the way when enlarging. A slot could be cut for insertion of a negative-holder; but this lamp is so light and so easily removed and attached that it was not necessary in this case.

C is a very convenient extension-bed constructed by the writer for use with the above outfit. It has an extension of 8 feet and permits of enlargement up to ten diameters. D is a small easel which slips into a notch cut for it, and is also easily removable.

Fig. 3 shows the lamp set up for printing.

A is the original back of the printing-frame and is attached by means of spring-hinges B. C is one of original clamps which is used to give sufficient pressure between negative and paper, and, when bent farther down, to engage the pin D, which closes the circuit through the large bulbs. In releasing this, the circuit is broken before pressure is taken off the negative, thus ensuring good contact while the light is on.

Fig. 4 shows the parabolic curve which is used as a pattern for the ends. For the reader who is not mathematically inclined, and who has no mathematical friend available, the following example will illustrate the method of plotting a curve to fit certain requirements. Suppose that an old 8 x 10 printing-frame is available. (Any size which can best be adapted to requirements may be used in a like manner.) The outside dimensions of this frame will be about 10 x 12 inches. This gives you at once 5 inches as the value of W in the above equation of the parabola. Now, if the electric bulb is 2 inches in diameter, its center cannot be less than 1 inch from the bottom of the curve, thus limiting f to 1 inch. Solving the equation $W^2 = 4$ fd, in which are substituted these values of W and f, gives $25 = 4$ d, from which $d = 6.25$ inches, which is about right for this size lamp. If d comes out too deep or not deep enough, a different value for f should be chosen; the greater f the smaller d, and *vice versa*.

Now having fixed the width and depth of the box, procure a piece of drafting-paper, large enough on which to plot your curve. Proceed as follows: Down the middle of the paper draw a straight line, XY (Fig. 4), and near one end of this locate a point 0 as the "bottom" of the curve. Perpendicular to XY and at intervals of ½ inch, starting at 0, draw the lines RS, TV, etc. These ½-inch intervals will serve as various values of d from which the corresponding W can be solved. Substituting these various values of d in the equation given above, it follows that

where d = 0, W = 0 = the bottom of the curve;
where d = ½ inch, $W^2 = 4 \times f \times d = 4 \times 1 \times ½ = 2$;
where d = 1 inch (solving as above), W = 2 inches;
likewise
where d = 1.5 inches, W = 2.45 inches;
and
where d = 2 inches, W = 2.84 inches.

In like manner solve for points up to where d = 6.25 and W = 5 inches.

Then on the perpendicular line through the point where d = ½ inch, lay off the corresponding value of W on each side of XY, *i.e.*, 1.41 inches each way from the axis. The two points just located are on the desired curve. Also, on the line through the point where d = 1 inch, lay off its corresponding W value, in this case 2 inches. These points are also on the curve, and so will other points be which are to be plotted in a like manner. When these guiding-points are located, the curve drawn smoothly through them will be a true parabola. Next lay off the focal distance F, which in this case is 1 inch. This gives the point of focus F, which should correspond with the source of light.

The dotted lines of Fig. 4 show the way in which light originating at F is reflected, from any part of the curve, in a direction parallel to the axis XY. It is obvious that, with the reflector bent smoothly around the parabolic ends, every part of it will correspond with that curve, which theoretically, with a perfect reflecting-surface, should deliver one hundred per cent of the light given out by the bulbs minus that directly towards the ends, which should be painted white. While this efficiency is by no means attained, in a lamp of such necessarily crude construction, it nevertheless furnishes the most even and intense illumination of any device, excepting the arc, that the writer has ever seen in use.

The ideal combination would be a short mercury-vapor tube in conjunction with a parabolic reflector, arranged as above, as where color-rendition is not necessary the absence of red and yellow rays would not matter. The writer, however, has never attempted to print by a mercury-vapor light.

The lamp shown in the cuts will make an eight-diameter (64 times) enlargement on bromide paper in about thirty seconds, and, with Cyko or a similar paper, a direct normal print may be made in less than one-half second.

The cost of this lamp may be itemized as follows:

One old printing-frame	$.25
Two 40-watt bulbs	.70
One opal diffusing-screen	.40
One sheet of tin	.15
Sundries	.10
Total	$1.60

HAVE genius! In art, talent is nothing.
Théodore de Banville.

Nature's Camera—The Human Eye

CHARLES GOOSMANN, M.D.

MOST of us can remember the pleased wonder with which we regarded the result of our early attempts at negative-making, and how we marveled at the mystery of the black box, little thinking that we were constantly using a more wonderful instrument for recording light-images. The human eye is, indeed, a very efficient and compact camera, having a lens, shutters (eyelids), iris diaphragm (pupil) and sensitive film (retina). The eyeball is the camera, and is lined throughout with black pigment; and as the camera-extension (the distance between the lens and the sensitive surface) is fixed, the lens itself must be able to change in focal power, to obtain sharp images of both near and distant objects. The Cooke focusing-lens, among man-made lenses, is built on this same principle. In the normal eye, when the lens is at rest, it is focused for infinity; but if one is constantly looking at near objects, as in reading, nature's camera tries to adjust itself by becoming longer; the distance from the lens to the sensitive surface is increased, forming a camera of longer extension. The lens then focuses near objects with less effort, but cannot focus distant ones, and that is what we call nearsightedness or myopia.

Some people are born with shallow or short eyes, well adapted to distant vision, but requiring considerable effort in focusing near objects. This effort, if persisted in, causes eye-strain headaches. Such an eye is farsighted.

In all of us, however, the lens, like other parts of the body, grows old and stiff, and loses its ability to focus near objects; and that is why so few people reach the age of fifty without calling on the optician to help them in reading or other near work, just as you use a portrait-attachment on your hand-camera. "But!" you exclaim, "I know a man past sixty who reads without glasses." So do I. He was nearsighted during most of his life, and his lens has become hardened and set at the focus for near objects. Sometimes this normal hardening becomes so extreme that the lens loses its transparency, becomes turbid and milky white. Then we are dealing with a cataract.

Turning to the shutter of our camera, the eyelids protect the retina from the light during our sleeping-hours, and they also serve two important functions when we are awake. They cut down the glare of too much light, acting like a lens-hood, such as is used on rapid photographic lenses to prevent fogging of the sensitive film. They also keep the exposed portion of the eyeball clean and moist; and if the lids are kept from closing by injury or disease, the transparent surface called the cornea becomes inflamed and ulcerated.

The iris diaphragm of the eye determines the size of the pupil or aperture of the lens, and just as a photographer will open the diaphragm of his lens when working in a weak light, so nature's camera dilates the pupil whenever the light gets dim. That is why, in flashlight-portraits, the eyes are frequently unnatural and staring. The pupils are dilated because the room was too dark just before the flash. But the iris diaphragm serves another very important function. Its surface is covered with minute cells containing a dark pigment. If the pigment is in abundance, we have brown eyes; if scanty, they are gray or blue. And so these microscopic pigment-cells have for ages exercised a strong influence in the choice of affinities and the destiny of nations.

The sensitive film or retina of the eye is a curved surface, so that the marginal rays will be in focus at the same time as those in the center. And in order to render it highly sensitive, nature has molded the retina from the most sensitive tissue in the body, namely, the brain. In fact, the retina arises as a protrusion from the brain, and retains its organic connection by means of the optic nerve. But even the sensitive retina has its weak spot; where the optic nerve enters the eyeball to spread out and form the retina we all have a blind spot, as can be readily shown by the following test. Close the left eye, hold the page at arm's length, and look fixedly at the cross.

+ •

The round spot will also be visible. Now bring the page closer and the round spot disappears, because its image is thrown on the insensitive part of the retina, where the optic nerve enters. By bringing the page still closer, the round spot reappears.

Those who have studied color-photography know that this most nearly approaches normal color-vision. But there are many color-blind

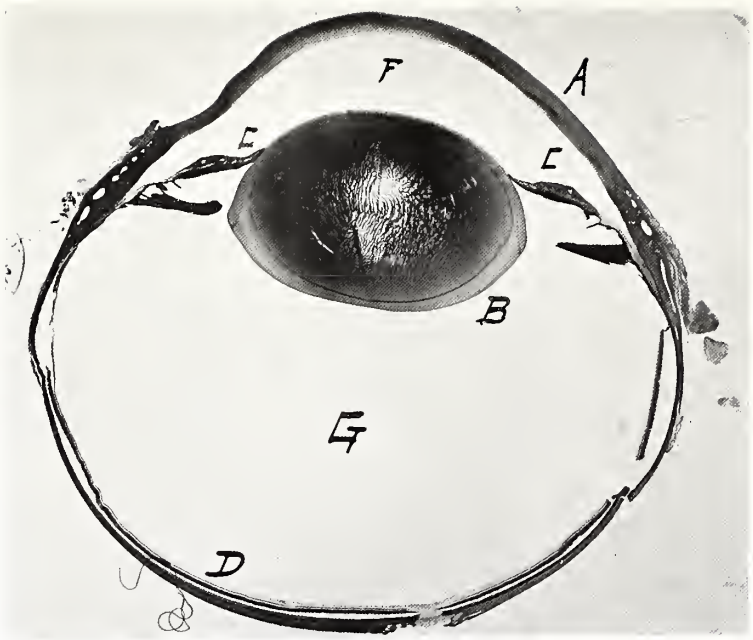


FIG. 1. HORIZONTAL SECTION THROUGH THE EYE OF A KITTEN

persons, who cannot distinguish red from green, and are, therefore, excluded from occupations such as locomotive engineering. And a very few cases have been reported of persons whose vision seemed to be all monochrome, and who, therefore, had no more power to appreciate colors as such than an ordinary photographic plate.

Now we have discussed the camera. But the most perfect camera in the world would be of no use to us if we did not have an expert photographer to use it. The expert is called the brain, and this is what it does. It receives the latent image through the optic nerve, develops and enlarges it and turns the picture around so that we see it standing right side up. If the image is not worth while it is allowed to fade; but if it is something important the brain fixes the image and stores it, carefully indexed, where it can be brought out at a moment's notice. In that way we accumulate a large collection of pictures, and call it visual memory. Sometimes that part of the brain where all the pictures are filed becomes destroyed by a blood-clot or a blow on the head, and as a result the unfortunate individual has visual aphasia. If he tries to read, having lost all memory of printed or written characters, he is quite as helpless as a new-born babe to interpret their meaning.

To those who want to compare the optics of the eye with a modern anastigmat lens, the following may be of interest:

Achromatism: The eye is not perfectly achromatic, being slightly near-sighted for blue. If one tries to read red letters on a violet background, a distinct effort is required.

Spherical aberration: This is almost completely eliminated. First, by the difference in the refractive power of the various solid and fluid media of the eye. Second, by the peculiar curvature of the lens — surfaces, not spherical, but spheroidal. This type of curvature is sometimes imitated in the construction of optical apparatus, but is very difficult to grind. The third factor in eliminating spherical aberration is the diaphragm or pupil cutting off the marginal rays.

Astigmatism is not entirely eliminated in the eye. Therefore, on looking at a star, instead of seeing a mere point of light, it scintillates. The rhymes about the twinkling stars would never have been written if mankind had no astigmatic defects. Nor would the conventional star-shape have materialized.

The image of a bright object persists (remains visible) about $\frac{1}{50}$ of a second after the object itself is gone. The modern kinematographic industry is dependent upon this persistence of vision. If a succession of images is thrown upon a screen at a rate not less than fourteen or sixteen per second, the eye fuses the various images and interprets them as a motion-picture.

This persistence of vision is also the cause of the unnatural and frozen appearance of wave-pictures, for instance, taken with very rapid focal plane exposures. In other words, the eye is incapable of seeing such rapid snapshots in nature, and therefore does not readily accept them in a picture.

Size of retinal image: If you look at a page seven inches long, holding it twenty inches from the eye, the image of that page is only about one-fourth inch long on the retina. If we could carry a pocket-camera of equal efficiency and

enlarge the negative sufficiently, it would be very convenient but, of course, no negative will stand anything like that. An object that produces a retinal image $\frac{1}{12000}$ inch in diameter is still distinctly visible, provided the image strikes the most sensitive spot of the retina, as it does when looked at intently.

Inversion of image: This occurs as in any camera, and can be shown by holding the eye of a white rabbit facing a window, and examining the back of the eyeball, while excluding all extraneous light from the observer's eye.

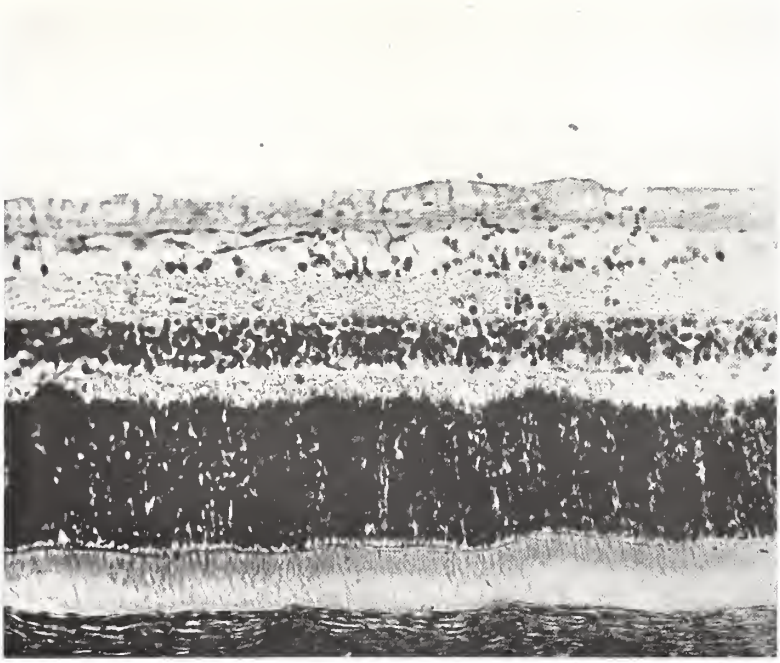


FIG. 3. RETINA MAGNIFIED ONE HUNDRED AND TWENTY-FIVE DIAMETERS

It will be admitted, I believe, that photography is only a modern imitation of a very old function, and stereoscopic photography is simply an effort to approximate binocular vision as it occurs in man and the higher animals, where two images are formed, slightly dissimilar, but still capable of fusing.

Explanation of photomicrographs:

Fig. 1. Horizontal section through the entire eye of a kitten. If an older animal's eye were used, the lens would be too hard to cut. This photograph was made with a five-inch anastigmat and magnified four diameters.

A. Cornea or front surface of the eye.

B. Lens. The center is already beginning to harden and degenerate.

C. Iris diaphragm cut through, showing part on each side of the lens.

D. Retina or sensitive film.

E. Optic nerve entering the eye. This is the blind spot.

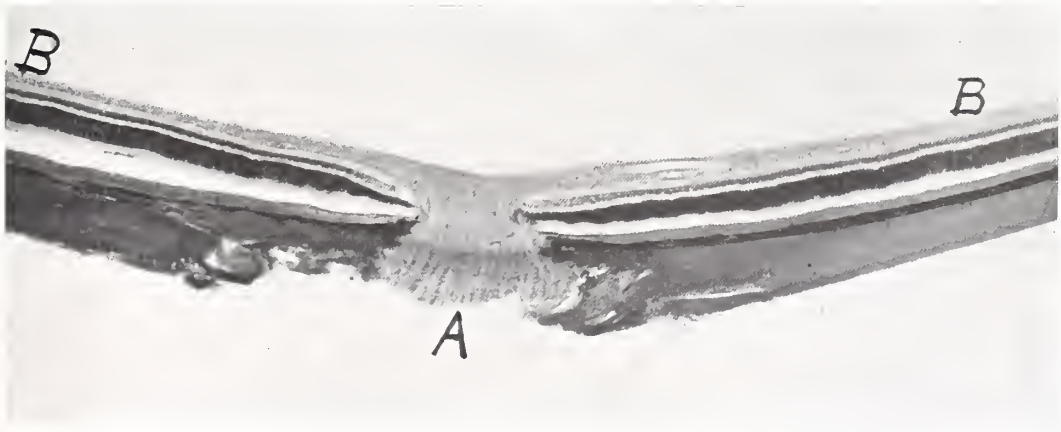


FIG. 2. RETINA AND OPTIC NERVE-ENTRANCE

THE SOMBER PINES H. C. MANN

The clear areas *F* and *G* are filled with fluid, called aqueous and vitreous humors.

Fig. 2. Retina and optic-nerve entrance. Photographed with a micro-planar, an anastigmat of very short focal length (1/5 of an inch). Magnification, twenty-five diameters. The optic nerve *A* is seen to enter through the outer coat of the eyeball, and spread in all directions to form the retina *B*.

Fig. 3. Retina photographed with a microscope lens of 2/3-inch focus. Magnification, one hundred and twenty-five diameters. This shows the many layers and complicated structure of the retina. A photographic emulsion equally magnified would be even more granular, but not in regular layers.

THE pictorial expression is a universal language capable of conveying our thoughts and feelings about what we see to every one in sympathy with them. — *William S. Davis.*

How to Focus a Hand-Camera

A. H. BEARDSLEY

NEXT to correct exposure there is no one thing that presents greater difficulties to the amateur camerist than focusing. The great popularity of roll-film cameras has caused the correct estimating of distance to become a vital factor in picture-taking. Previous to the exploitation of roll-film, mistakes in focusing were less common because an exact reproduction of the contemplated scene was always discernible on the ground-glass. Any inaccuracies that might exist were quickly corrected before the plate was exposed. Now, however, absolute dependence must be placed on the individual ability of the amateur photographer to estimate distance and then set the focus according to the scale supplied on the camera. The average owner of a fixed-focus instrument considers a focusing-camera to be far beyond his means of comprehension and, in consequence, he is deterred from enjoying the advantages of an anastigmat lens and a compact outfit. Both the photographic dealer and the amateur lose by this needless aversion. It is the purpose of this article to dispel some of these erroneous ideas and to show how any roll-film camera may be handled accurately by the beginner.

Let us take, for example, the very popular 3¼ x 4¼ folding pocket-type of camera fitted with the ordinary rapid rectilinear lens. The distances marked on the scale are generally infinity or 100, 50, 25, 15, 10, 8 and 6 feet. The situation which discourages the amateur is when the distance to his subject lies between the distances marked on the scale. Let us assume that he is photographing a group and that the measured distance is 18 feet. The question that causes all the trouble is whether to set the pointer at 25 or 15 feet. A safe course in such a case is to set the focus at 25 rather than 15 feet. The reason for this is that the hyperfocal distance — a term which will be explained later — for a 5-inch lens, at stop F/8, is 26 feet. In short, objects from half that distance to infinity will be reasonably sharp.

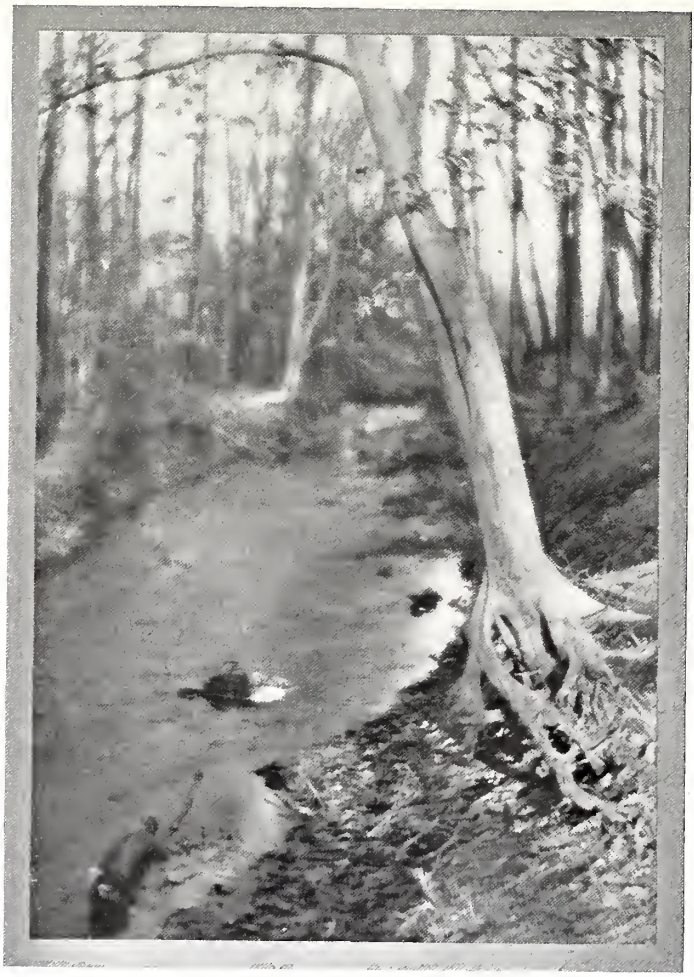
In general, it may be said that over-reaching the distance of the subject on the focusing-scale will bring better results than trying to get the exact focus. The advisability of doing this is readily noticed in photographing groups where those in front are separated from those in the rear by 3 to 6 feet. If the focus is set for the persons in front, those in the rear will not be reproduced clearly. In such cases, over-reaching generally avoids distortion due to incorrect focusing. However, if the group is quite near the camera, it is better to select a point midway between persons in front and those in the rear. Most snapshots are taken either at infinity (100 feet) or 25 feet, and if every amateur would study his pictures taken at these distances, he would discover that most of his pictures can be taken at one or the other of these points of focus. If the amateur is photographing a group, he can rest assured that in most cases the 25-foot focus will take care of nearly every one in the group and also show a little background. Ordinary views are taken care of by the 100-foot focus and, incidentally, any objects within 25 feet of the camera. In short, the whole problem of focusing a hand-camera may be said to resolve itself into the proper choice of one or the other of these two marks on the focusing-scale. It must be understood clearly by the reader that these remarks are not intended for a compendium on the art of focusing; they are intended merely for a solution of the troubles of the average amateur who owns a pocket-camera.

We now come to the consideration of the meaning and use of the term, "hyperfocal distance"—sometimes, though less accurately, called "universal focus"—as applied to the amateur. The correct application of the following principles will virtually do away with the problem of focusing as applied to all cameras fitted with a focusing-scale. Briefly, the hyperfocal distance of a lens is the indicated distance at which both near and far objects are rendered with most nearly uniform sharpness. This varies with the focal length of the lens and the stop used. Through the application of the following formula every owner of a focusing-camera can work out his own table to apply to each stop he is in the habit of using:

"Multiply the square of the focal length by 100 and divide by the F-number of the stop multiplied by 12." The result obtained will then be in feet. With a 5-inch lens at F/8 (U. S. 4) we have:

$$\frac{(5)^2 \times 100}{\text{F/8} \times 12} = \frac{2500}{96} = 26 \text{ feet } 4 \text{ inches.}$$

Now any object at half that distance, or about 13 feet away, will be reasonably sharp at the same time. Briefly, we may say that every



A DENIZEN OF THE WOODS F. VAN GILLUWE

object from 13 feet to the horizon will be sufficiently clear to suit the average camerist. Of course, the best definition will be at 26 feet, but unless the intention is ultimately to enlarge the negative, there is no need of more accurate adjustments. However, by stopping down to F/16, we have the following:

$$\frac{(5)^2 \times 100}{F/16 \times 12} = \frac{2{,}500}{192} = 13 \text{ feet } 4 \text{ inches.}$$

At this stop everything from 6 feet 6 inches to the horizon will be quite sharp. For critical definition in photographing groups this stop will answer admirably for enlarging. For views, stops F/8 and F/11 are, perhaps, better. In every case, reasonable clearness is obtained all over the plate. A good plan is to select the stops that are most frequently used and experiment with these two until the hyperfocal distance is mathematically and practically mastered. This done, the other stops may be taken up as desired. Even as in other phases of human experience, it is better to understand one or two things well than many superficially.

The entire question of focusing need not have any terrors for the average amateur, if sufficient time and thought are given to the matter. By reading the lines above carefully, the methods of accurate focusing suited to the individual needs can be worked out readily by the owner of any ordinary pocket-camera. By taking the instrument and devoting one hour to figuring out the distances to fit the stops to be used, the question need cause the camerist no more anxiety. Make the markings to suit your own convenience and do not attempt to make them

AN AMERICAN BOY — A. D. BRITTINGHAM

correspond to scales of other cameras unless you are thoroughly conversant with them. In short, consider the whole matter in the same light that a man who is building his own house would consider the location of his living-room — arrange things to suit yourself. By doing this, you feel a confidence that can be had in no other way.

As already stated, correct focusing really comes next in importance to correct exposure. If you can master these two requirements sufficiently to feel reasonably sure of your results, a new era in your photographic pursuits has dawned. It requires time, effort and patience at the outset; but eventually camera-manipulation becomes automatic and your mind can then be devoted to the task in hand entirely unhampered by the mechanical phases of your hobby. Try it and learn the truth of the matter so that this season will bring results instead of excuses. Start out with the determination to get six good pictures out of every six-exposure film instead of settling back with the idea that four good pictures out of every six is a good average. If the conditions for a photograph do not meet with your ideas on the subject, adapt yourself to the case in hand, but do so after some thought on the subject. Do not dismiss the matter in a here-is-hoping manner. Determine the exposure, focus your camera and get results.

WE rate ourselves according to our best work. We may be judged by our failures. That which is imperfect helps not the cause, defeats our ambition and retards the march of progress.

W. H. Porterfield.

Pictorial Landscape-Photography

Part III — Technical Methods (Concluded)

PAUL LEWIS ANDERSON

THERE is, at the present time, a strong movement in favor of straight photography, so far as pictorial work is concerned; but the writer does not feel this idea to be sound. It is admitted that the admixture of photography and hand-work, in such a manner that the mixture is apparent, is a violation of unity, and as such is to be avoided; but it is perfectly true that often the desired effect cannot be obtained without personal intervention, and the writer holds it to be justifiable, in such cases, to work on either the negative or the print, to any extent that may be necessary, taking care that the hand-work does not show, and some brief notes on the methods of attaining this result follow.

If it is desired to raise the value of certain small areas, a cloth may be dampened with retouching-medium and rubbed over the film which gives it a tooth, so that work can be done with a pencil, HB or B being the most suitable quality. The best retouching-medium that the writer knows, and one which is much better than the usual commercial article, is described in the Cramer dryplate manual. The formula is:

Rosin	120 grains
Turpentine	4 ounces

It is not necessary to use a very high grade of either ingredient, the ordinary commercial article being good enough. Should the work not be satisfactory, it may be removed by means of a cloth wet with the retouching-medium. If larger areas are to be worked over, or if it is desired to apply a greater amount of lead than can be deposited on the retouching-medium, the back of the plate may be flowed with the following solution, when work can readily be done on it with either pencil or stump.

Gum sandarac	2¼ ounces
Gum mastic	½ ounce
Ether	24 ounces
Benzole	12 ounces

This formula also is taken from the manual named above, and is an excellent one. Should any of the solution get on the film side of the negative, or should it be desired to remove the pencil-work, it can be done with a cloth moistened with alcohol.

If large areas are to be reduced in value, the best method is to employ Farmer's reducer with a soft brush, first soaking the negative in water for an hour or so, then applying the reducer locally, in very dilute form, rinsing the negative frequently, and bearing in mind that the action of the reducer will be slow at first, but will become rapid as it proceeds. When it is desired to reduce small areas, the best plan is to make a transparency on a dryplate, either by projection or by contact, or preferably by the carbon-process, using the transparency-tissue and transferring to a fixed and hardened plate, and to do the work on this with a pencil by one or the other of the methods outlined above, afterwards making a negative from this transparency. The use of an etching-knife is not recommended, as it is difficult to work with such delicacy that the means will not be visible. For reducing density on a paper negative, a hard pencil-eraser is good, though the results from its use on a glass negative are not likely to be very satisfactory.

Any of the methods suggested above can be used equally well on the original negative, the intermediate transparency or the enlarged negative, so that great control is possible even without resorting to any work on the print. It is, however, advisable that as little work as possible be done, the effect being obtained, so far as possible, by purely photographic means, as there is great danger of doing too much, while it is not always apparent to the worker that he is going so far as to render the mixture of photography and hand-work visible.

In addition to the above-named methods, it is also possible to intensify either negative or transparency locally, using, preferably, some single-solution intensifier; but the writer has never felt much interest in this form of modification, as it is not so readily controllable as the pencil-method.

In choosing a printing-medium, the first quality to be required is permanence, for it is assumed that, if the worker has given time and thought to the production of a work of art, he will not want it to disappear in the course of a few years; whereas if he sells it, honesty demands that it be as stable as possible. There are certain printing-papers which can be depended on for permanence, and others which

THE LONELY TREE

PAUL LEWIS ANDERSON

THE HILLSIDE
PAUL LEWIS ANDERSON

will give results that are permanent if care has been taken in their production, but not otherwise, whereas some are absolutely unstable in the best of circumstances. A black and white platinum print on linen paper or vellum may be relied on for permanence, and the same is true of a carbon or gum print in a stable color; but a gum print superposed on a black platinum will be durable in the same circumstances. Unfortunately, we have no means to know what pigments are used in making carbon paper; but the various color-manufacturers will furnish information about permanent pigments for use in the gum or gum-platinum process. If mercury is used to produce brown tones on platinum paper, the permanence of the print becomes doubtful, though a permanent warm black may be obtained by using the developer hot, this treatment also serving to reduce contrast. In most cases the best effect will be attained by making the print in a warm or cold black or a brown, other colors not being desirable, and these tones are readily obtained in permanent form on platinum, carbon or gum paper, but a stable warm brown may be obtained on bromide paper. It should be noted, however, that no black and white print on bromide or gaslight paper can be considered absolutely permanent, despite the claims of the manufacturers, and this is true of any color except one that is obtained by the redevelopment process, in which potassium ferricyanide, potassium bromide and sodium sulphide, or an equivalent, was used. Albumen paper gives very beautiful results, particularly in the lower portion of the scale; and if the prints are properly toned, fixed and washed, they may be relied on to remain in good condition; but failure in any of these processes will result in fugitiveness.

The next important characteristic to be considered in choosing a printing-medium is quality, which is more easily appreciated than described: but it is partly a question of rendering the gradations of the negative throughout the scale and partly a question of surface-texture. The finest of all processes in this respect is photogravure: but it is a difficult and laborious one to handle, and few persons will be inclined to give the time necessary to become familiar with it. Next to this in the matter of rendering the gradations is carbon, though this fails somewhat in the lighter values, as it is difficult to get absolutely pure lights without aiding development with a brush, and it has a luster which is not so pleasing as the dull surface of the former process. Platinum has a dull surface, and the commercial papers render the upper and middle-tones to perfection, but cannot give the richness in the lower part of the scale that is characteristic of carbon and photogravure. The rendering of the lower tones may, however, be improved by making one's own paper and coating and printing several times, or, if using the commercial papers, by diluting the developer with an equal volume of glycerin, which slows development so that it is under control, printing somewhat deeper than otherwise, and arresting development before it is complete by means of a strong acid-bath — about one part of hydrochloric acid to thirty parts of water.

The gum-process is probably next best to photogravure in quality, for it renders the values throughout the scale perfectly, even to the most delicate gradations in either the higher or the lower portions, and has less luster than carbon. It is not an easy process to work, by reason of its flexibility, but, once mastered, it is of the greatest value to the artist. The variant of it known as gum-platinum, wherein one or more printings of gum are superposed on a platinum print, is also of value, and is easier to work than straight gum.

From what has been said in the earlier parts of this essay, it follows that the landscape-photographer who endeavors to arouse some sentiment in the observer will work mainly in a low key, and, as pointed out above, the best mediums for rendering this kind of effect are gum, carbon, gum-platinum and photogravure, so the worker will probably choose one or another of these. It is not recommended that any one process be adhered to exclusively, for each has its good features; but it will be found best to use one more than any other, for only by extensive use is familiarity with the characteristics of the medium attained.

It may be well to recapitulate briefly the conclusions we have reached in the course of this essay.

In the first place, it was found that the fundamental purpose of that branch of landscape-photography which can be classed as fine art is the arousing of some sentiment or emotion in the observer, and that the deeper emotions are the quieter ones. It was also found that these emotions are best aroused by prints which represent quiet scenes, particularly those of evening, for brilliant sunlight and extreme darkness are less impressive than the effect of late afternoon, when the light has begun to fail, but still retains strength enough to show a certain amount of detail in the deep shadows.

Such effects are usually rendered best on an orthochromatic or a panchromatic plate, and developed for only a moderate degree of contrast.

Due attention must be paid to composition of line, and this is more necessary to the photographer than to the painter, for the latter has the element of color to aid his arrangement, so that monochrome reproductions of the work of great painters are not necessarily good guides for the photographer.

Good technique is of the greatest importance ; but undue attention to technique will result in loss of imaginative quality, and this is far more important than technical excellence, as a picture may be great without the latter, but can never be so without the former.

Finally, it may be added that no one can hope to attain preëminence in landscape-photography without much hard work and study ; but no one should be discouraged by this fact from attempting it, for, even if he fail to reach the highest possible point, he will find that the pursuit affords him and, perhaps, his friends great pleasure, together with a not inconsiderable amount of physical benefit.

Warming and Cooling Solutions

ALTHOUGH time-development, particularly of panchromatic plates, is chiefly responsible for forcing home the importance of temperature in photographic manipulations, there are other processes, such as gold-toning of P.O.P. and developing gaslight papers, where the relative warmth will greatly affect both the final result and the time taken. Generally speaking, the best temperature for developing is about 70 degrees F., though some processes, such as gold-toning, work best at 60 degrees to 62 degrees F., and a few hints may be acceptable as to how these degrees may be most easily obtained at different times of the year with a fair degree of accuracy. The ideal, of course, is to have the workroom kept at a suitable warmth, and a supply of water as well as the stock-solutions stored in it ; but this is seldom obtainable in practice, and one finds in extreme weathers solutions changing greatly during a few minutes' use. To cool a bottle of any solution that has been made up with hot water, it can be stood under a stream of water from a tap, but, in the case of a stoppered bottle, the stopper is very likely to be sucked inward, and will be found very difficult to remove, so a small beaker inserted over the mouth can be used to prevent the tap-water entering the bottle. Another plan is to wrap a wet rag around the bottle, which is stood in a shallow dish of water, and the whole placed in a draught. The water will be constantly evaporated from the cloth, and as quickly replaced by capillary attraction from the dish, and this process exerts great cooling-power. Ice is naturally often used for cooling solutions in hot weather ; but it is not much use to drop a bit in the dish, a very much quicker plan being to move a piece of the ice briskly in the solution, and if a thermometer be used, the rate of cooling will be seen to be surprisingly rapid.

To raise the temperature of a solution, several methods are available. In the winter — in fact, during any weather that the tap-water falls below 60 degrees F. — it is advisable to keep developers, etc., in double-strength bulk, so that warm water can be added as required. A constant supply of hot water can be easily installed, where not already available, either by one of the miniature geysers marketed for the purpose, or by a cistern or container heated by a Bunsen burner and fitted with a tap. If the water is kept near boiling-point, it is really more economical than gas, as a very small quantity of water, in proportion, needs to be kept heated. Where only small quantities at a time are required to be warmed, such as a few ounces of developer for panchromatic plates at long intervals of time, the best plan is to place the solution in a flask of Bohemian glass, obtainable from any wholesale chemist, and heat it for a few seconds over a Bunsen burner. If great accuracy is required, a vessel of hot water can be used as the heater, and a thin flask or beaker (these being made to stand heat) containing the solution, and a thermometer placed therein until the column of mercury reaches the desired mark. In such a case, of course, the dish intended for development should also be warmed up for this purpose ; it is useless just to pour warm water in and out again, as it must be warmed right through, and it is best to stand it in a large dish of water previously raised to the required temperature. Where much of such accurate work is done, a quantity of sand warmed up will be found to retain its temperature well, and will not spill about as the water in an improvised double vessel is inclined to do.— F. Rae in the *British Journal of Photography.*

If you are capable of expressing your individuality by means of the camera, and in so doing give satisfaction to yourself and to others, then you have justified your art and need blush before no man. — *A. E. Sawyer.*

EDITORIAL

Photographic Terminology

WITH the advance of the practice of photography and the important position it occupies among the sciences, it has become necessary to institute a photographic terminology consisting of words and terms that describe fittingly the various processes, apparatus and accessories. Hence a "darkroom" means an apartment devoted to photographic operations from which all white or actinic light is carefully excluded. This room may be illuminated by suitable media, or used while totally dark, just as required; but it hardly answers other purposes which require a dark or darkened room.

A dryplate, a photographically sensitized sheet of glass — to differentiate it from a wet collodion plate — ought not to be confounded with a dry plate, a table-accessory.

Motion-pictures is the correct designation of a motion-picture film projected on a screen in front of the audience. "Moving pictures" is a misnomer, and is not recognized by photographic authorities or even at the United States Patent-Office, although used carelessly by the daily press. Literally, it means the act of conveying pictures from one place to another.

Then there is the fragment, "photo," which, as PHOTO-ERA has long maintained, is not a legitimate equivalent of the words, photograph, photographer or photographed. Its employment as an abbreviation, in the sense that it is sometimes used, shows a contemptuous disregard for the dignity of the photographic science.

"Photo" is logically used, however, in such recognized compounds as photo-mechanical, photo-micrography, photo-engraving, photo-relief, and — with apology for the presumption — *Photo-Miniature* and PHOTO-ERA. And is there any reason why the employment of this useful prefix, which means "photographic," should not be extended to photo-chemicals, photo-journals, photo-pictorialists, photo-dealers and photo-finishers — words that already have been adopted by progressive writers and publications?

A term that has been firmly established in photographic literature is telephotography — the photography of distant objects by means of a lens-system telescopic in character. This method is about twenty-five years old and has been practised extensively. Nevertheless, the daily press — unmindful of this well-known fact — applies this familiar term to what the highest photographic authorities know as photo-telegraphy — the transmission of photographs over a long distance by electrical means. This process, although in a state of experimentation for many years, has only recently yielded eminently successful results. As a matter of fact, telephotography aptly designates the electric transmission of photographs to a distant point; but priority of its application to the practice of photographing distant objects — a quarter of a century ago — should be considered well by the dispensers of daily news.

Obtaining Business on False Pretenses

NOT content with invading a town or city and taking business away from tax-paying photographers, certain itinerant photographers are now adopting dubious methods to increase their business. They will represent themselves as official photographers of well-known publishing-firms, call on professional men in whose interest a certain magazine is issued, induce them to sit for pictures and to purchase a few dozen at a "nominal price."

A photographer of this class will sometimes pose as the representative of a dozen or more trade-journals, which will enable him to reach all of the leading business-men in the city. A way to put a stop to this practice is as follows: as soon as a photographer discovers that such a craftsman is operating in his city, he should communicate with the publisher of the trade-journal the itinerant photographer professes to represent and, if his suspicions are well founded, bring the matter to the attention of the police, and thus cut short the career of the impostor.

Loss of business may be ascribed to one cause or another. When the professional photographer sees valuable patronage slip away from him, he is naturally eager to stop it. The cause may be slack methods, inferior quality of work, excessive charges or an offensive personality. It is fatal for him to insist that his finished product is the best, when actually it is not. If only a proprietor, he may be unable to recognize first-rate work, and thus cannot hope to succeed. Promptness, accuracy and politeness should mark all the transactions of a strictly high-class photographer.

MEMORIES

FIRST PRIZE — DECORATIVE APPLICATIONS

E. G. DUNNING

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.

4. Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter, SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15 unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value. Persons interested to have one of these PHOTO-ERA prize-collections shown in their home-city will please communicate with the Editor of PHOTO-ERA.

Awards — Decorative Applications

Closed Nov. 30, 1914

First Prize: E. G. Dunning.
Second Prize: Anson M. Titus.
Third Prize: Fannie T. Cassidy.
Honorable Mention: Fred C. Babcock, C. F. Fieckman, Tazio Kato, Alexander Murray, Louis R. Murray, A. F. Snyder.

Special commendation is due the following workers for meritorious prints: Franklin I. Jordan, W. B. Meyers, Chas. H. Partington, Frank J. Schindler, A. T. Tumbleson, Elliott Hughes Wendell, Alice Willis.

Subjects for Competition

"Winter-Scenes." Closes January 31.
"General." Closes February 28.
"Flashlights." Closes March 31.
"Interiors with Figures." Closes April 30.
"Street-Scenes." Closes May 31.
"Wet-Weather Subjects." Closes June 30.
"Outdoor-Sports." Closes July 31.
"Public Buildings." Closes August 31.
"Clouds in Landscape." Closes September 30.
"Winter Street-Scenes." Closes December 31.
"Night-Pictures." Closes January 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the publisher will give them the choice of photographic supplies to the full amount of the prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Practical Neutrality

Waiter — "What will it be, sir? Sauerkraut or *pâté de foies-gras?*"

'18 — "Ham and eggs. I'm neutral!" — *Harvard Lampoon.*

Flashlights — Photo-Era Competition

Closes March 31, 1915

Time was when the requirements for making portraits were — the brightest of bright, sunny days and a fifteen- or twenty-minute exposure; but great improvements have come about since the days of Daguerre. Now the feat may be accomplished on the darkest of dark nights, and in so short a space of time that the "patient" has scarcely time to wink.

What a tedious process the sittings must have been in those olden days — both for operator and subject! But how beautiful oftentimes were the results. Surely, it was impossible to hold a "picture-expression" for that length of time, and that may be the reason for the charming "naturalness" of so many of the old daguerreotypes, though how one could feel natural with one's head in a vise of cold steel is hard to imagine.

The use of the "portable skylight" or some other flashlight-device greatly simplifies the matter of exposure on these short winter-days, or when the daylight is too feeble for satisfactory use.

The greatest difficulty of the home-portraitist is the proper lighting of his subjects. Very often the light is inadequate or, if strong enough, is wrongly placed for the background one wishes to use. The flashlight operator is independent of all this, as he is also of daylight. He may go in the evening when "my lady" is ready for the opera and perpetuate not only the new gown, but the corsage-bouquet that will be a wreck on her return and unfit for a visit to the studio to-morrow.

There should be a great field for an "evening photographer," even in the smaller towns. There are always doings of one sort or another, and the Odd Fellows, the Masons, the Guards and even the churches are fair game for the man who can make good flashlight-pictures of banquets, amateur-theatricals and things of this sort.

For work of this type, good, straight, clean photography is the chief desideratum. A lens of great depth of focus and a very wide angle is best, and the illumination must be both broad and brilliant for best results.

Sometimes a college-student can help out materially with his expenses by taking such pictures of school-festivities and by taking the students in their rooms, either studiously (?) working over their books, or gathered for a "feed" or other jollification.

When working in the evening, the mistake is sometimes made to turn out the lights before making the flash-exposure. This is not necessary; and when it is done, the expanded pupils of the sitters' eyes are very apt to give a staring and startled expression which is far from pleasing or desirable.

The average amateur flashlight is little better than an atrocity. The group is posed facing the camera and the flash, the lights are turned out, and the exposure made by exploding a flash-cartridge. The result is a group of frightened-looking people with fixed and glassy stares or, perhaps, some closed eyes, and not infrequently the image of the operator obscures half the group as he tries to dash to his place with the others before the fuse ignites the powder.

The results would be much more satisfactory to all concerned if the people in the group were intent on some occupation or interested in each other, or some common point of interest other than the camera or the flash. If the flash is placed at one side rather than back of the camera, the illumination will be more pleasing; but care must be taken that it be not placed where its light will strike the lens. It is a safe way to focus with a light of some sort in the position in which the flash will be placed. The operator can then be sure that neither the light nor any strong reflection from it strikes the lens. He can also see the effect of the lighting and judge whether the walls reflect sufficiently, or if he needs some additional reflectors.

The eyes of the sitters not being directed towards the flash will not be so blinded by it and will have a more natural expression.

Where firelight-effects are to be made, the natural thing is for the persons to be looking into the fire; but in that case the eyes will be looking downwards and seen in profile usually so that the results are not unpleasing. But even then, if the eyes are directed a little to one side of the direct flash, it will not be detected in the print and will be safer for the eyes.

With young children, particularly, care must be taken not to allow the flash to strike the eyes directly, as the delicate optic nerves may be overstrained by the sudden brilliant light.

When one has no fireplace, the effect may be obtained by the use of a fender with a rug in front of it and the flash placed on the floor, just out of range of the lens. The light is then thrown upwards and casts long, heavy shadows, such as are given by the open fire. The fender completes the illusion.

There are many ways to produce lamplight-effects, and some of them have been described in previous articles. The medium most easily handled for such purposes is the magnesium-ribbon. The amount of exposure being determined by the length of the piece of ribbon is easily adjusted and, though the exposure is not instantaneous, it is short enough to be entirely practical for most subjects and is comparatively safe and clean.

Such subjects as these, firelight- and lamplight-scenes, are best printed in some medium that gives the ruddy, artificial-light coloring. The ideal print is a deep red or brown carbon on an orange-tinted support; but a similar result may be obtained by coloring a print made on developing-paper.

The American Annual gives the following formula for producing red tones:

No. 1

Water	5 drams
Copper sulphate (10 per cent solution)	15 minims
Ammonium carbonate (10 per cent solution). Add till precipitate first formed is redissolved.	

No. 2

Water	4½ ounces
Potassium ferricyanide	6/10 drams

Mix separately and add No. 2 to No. 1. The print will turn bright red; wash well.

Another time when the flashlight is most useful is in taking interiors. Many times the only way to get a satisfactory picture of a room is to point the camera directly at the windows which are the only source of light, and to get detail in all parts without halation is a difficult proposition by daylight. This sort of problem the flashlight easily solves for one.

Sometimes when a daylight-exposure is to be made, the dark corners may be helped on by using a small flash, or by using one of the lamps that burn magnesium by blowing the powdered metal through the flame of an alcohol-burner. A little holder for magnesium-ribbon, previously described, is also a good thing for this purpose.

GRANDMOTHER'S WEDDING-GOWN — KATHERINE BINGHAM

If one wishes to make portraits of the studio-type by means of the flashlight, an apparatus of the portable kind should be used.

There is a decided choice in portable flashlight-apparatus, as a few of the really dangerous kind are still on the market. Of course they are not advertised in PHOTO-ERA, whose strongly expressed guaranty for efficiency and safety is behind those which are advertised in its pages.

If one expects to do much work of the sort, nothing could be better than to purchase this outfit; but if one does not expect to do enough work to justify the outlay, a simple arrangement can be devised at home. The chief requirements are a firm support, some sort of device to hold and operate the flash, a reflector and a screen between flash and sitter.

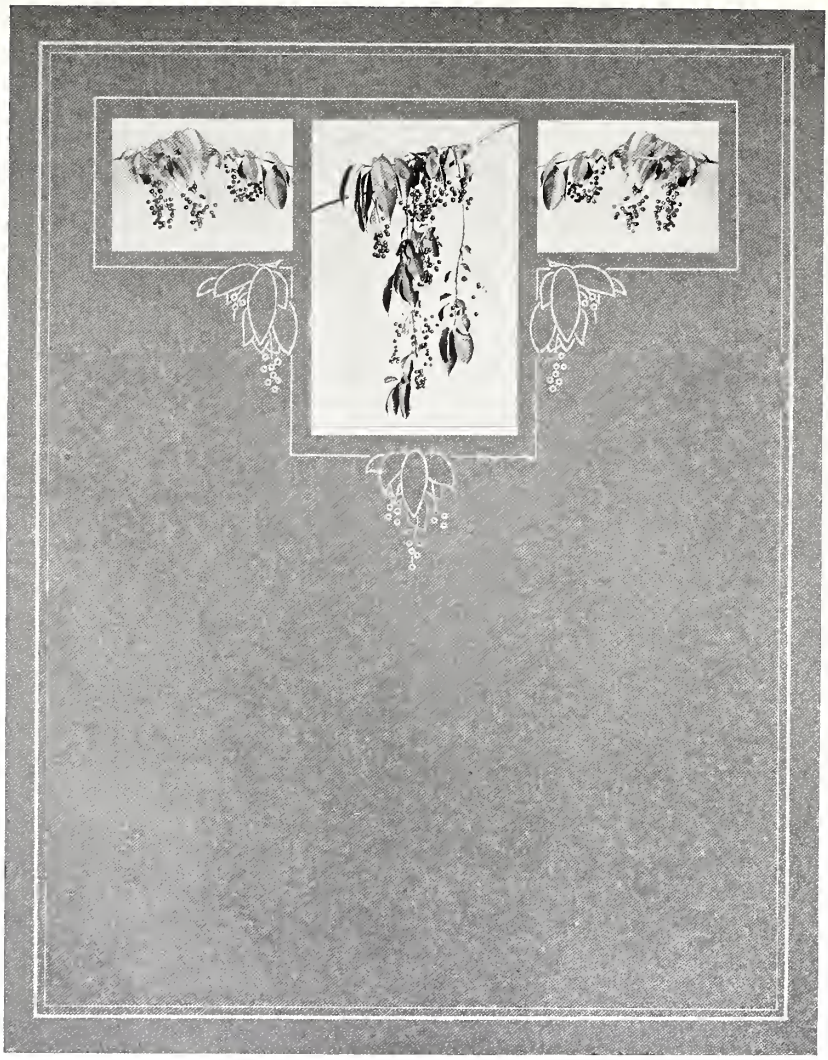
Flash-sheets are very convenient for such use, as they can be attached and ignited easily. Great care should always be taken in handling any kind of flash that it be not too near anything of an inflammable nature. If screen and reflector are of cotton, they must be at a safe distance; and it is not a bad idea to have them wet. If an open flash is used, see that it is not too near lace-curtains or other easily ignited material, and also look out for fingers and thumbs if the pan is to be held. Better to place it on a step-ladder or some similar support.

The same rules of lighting apply to the flashlight-portrait as to those made by daylight; but extra care should be taken to have adequate reflection that the shadow side of the face be not too dark.

Aim for roundness and softness throughout. Do not use too strong a developer or carry development too far, for the common failing of flashlight-workers is the production of prints of the "ink and white-wash" variety. More or less of this is allowable, even desirable, in firelight-studies; but is neither pleasing nor necessary in the ordinary portrait.

KATHERINE BINGHAM.

THE best technique is the simplest that will permit the worker to express himself, any addition being a hindrance rather than a help. — Paul Lewis Anderson in *Pictorial Landscape-Photography*.



WILD CHERRIES — ANSON M. TITUS

Adding Skies to Enlargements

The worker who has been in the habit of printing-in skies to his landscape-prints, whether local views or private commissions, will have found no difficulty to do the same when making bromide enlargements. The requisite exposures will be found for both landscape and sky, and the position of the sky-line in the landscape will be indicated by pencil-dots at opposite sides of the print, these dots being made after the exposure has been given and while the paper is still on the easel, protected by the yellow-glass cap on the projection-lens. The drawback to this method of working is that a good deal of time is consumed by the making of tests, and, although the experienced worker can estimate the exposure for a one-negative enlargement, it is almost impossible to do so when two negatives and two exposures have to be given, for the least suggestion of heaviness in the sky may totally spoil the effect. The rapid method is undoubtedly to expose the landscape first, taking care to give such an exposure as will allow the print being developed to the limit without becoming too dark. The print is then rinsed, the cloud-negative is placed in the lantern, and the wet print placed on the easel and the exposure made, the landscape-portion being shaded in the usual way. The sky may now be exposed fully and, the print being returned to the developer, it may be developed until of correct depth, and then quickly removed, rinsed and placed in the fixing-bath. A somewhat longer exposure will be needed for the wet paper, and we have found it quite necessary to avoid touching the surface of the wet bromide paper, otherwise marks will be made. Care is needed, particularly when pinning up the developed print for the sky-exposure. The enlarged print is not to be fixed until after the second development. — *The British Journal of Photography.*

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

With Reviews of Foreign Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston

Copying Oil-Paintings

It is a fairly easy matter, nowadays, with a Panchromatic plate and a two-and-a-half-times light-filter to obtain a correct rendering in monochrome of an oil-picture, of the most varied and brilliant colors. Some years ago with a plate that needed a fifty-times light-filter, this was a long and tedious business, particularly in winter, when daylight was poor and did not last long. Panchromatic plates and light-filters are now admittedly necessary to picture-copying. Exposure and development are really no more difficult than formerly, as it was little or no use then to attempt to correct a wrongly exposed plate in development, and I find myself that better results are obtained by time-development in total darkness, than were possible with light of any kind to watch the progress of development. Ilford Panchromatic plates, for instance, are so sensitive to all colors that no light of any kind can be used with them.

The condition of pictures varies so much, that one often feels tempted to freshen them before attempting an exposure; but unless the photographer knows a good deal about pictures and the various mediums in which they are painted, he should do nothing beyond dusting them carefully, and even if he has a good knowledge of pictures he should take no step without the owner's express consent. One of the Burne-Jones masterpieces, "Chant d'Amour," is said to have been totally ruined by a photographer to whom it was sent for reproduction. This operator, finding some parts were dead and others glossy, applied a preparation of oil to make it shine all over. He did not know that the picture was painted in *tempera* and not in oil-colors as he supposed.

If a picture which has to be photographed is very dirty and smoky, and the owner does not object, sponging with clean water will do much to freshen it, but will often be insufficient to remove enough of the dirt, so that something more may be required. Nothing better can be used than a raw potato cut in two, one of the cut surfaces being rubbed gently over the picture. The frothy scum produced must be sponged off with clean water and the picture dried with a clean, soft cloth. The surface will then be dull in places and will need rubbing over with pure linseed-oil as prepared for artists, or, better still, poppy-oil. This must be applied carefully with a clean, soft linen rag or absorbent cotton, and well rubbed in, the dullest places being gone over three or four times if necessary. The picture should then be ready for photographing.

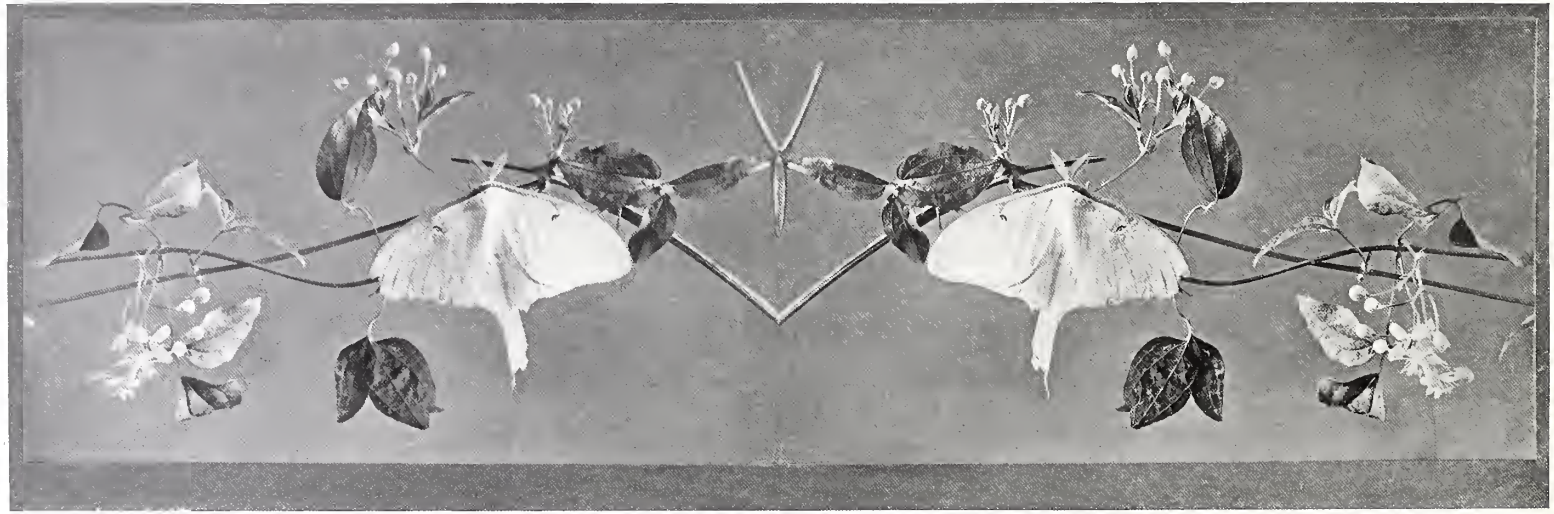
I have seen glycerin, olive-oil or vaseline recommended for freshening up oil-pictures; but if I were the owner of a valuable picture that had been treated with any of the three, I should promptly claim damages from the man responsible. The glycerin would penetrate the minute cracks in the paint and reach the canvas at the back; then, always greedy for water, the glycerin would absorb damp from the air and provide a good culture-ground for mildew and mould. Olive-oil and vaseline being non-drying would always remain greasy, filter through the cracks and get to the canvas, so that no amount of washing would remove them. Even when linseed- or poppy-oil is used, the picture should be freed from the film of greasy dirt which forms, sooner or later, on any surface exposed to the polluted air of our towns. Unless this is taken off with soap and water, or raw potato, the oil applied will not dry properly and will remain "tacky." Much patience is required in preparing a dull picture, as the oil must be rubbed in thoroughly.

Sometimes, with pictures belonging to me, I have tried a rather risky experiment, but which has, so far, proved a great success and I believe has helped to preserve them. My method is to flood them with rather thin celluloid-varnish, just as one would a negative; but the surface must not be touched until the varnish is perfectly hard and dry, as the solvent goes right through the paint and makes it quite soft. It will, however, grow hard again as the varnish dries. This answers admirably with pictures that are cracked and scaling off the canvas. The varnish goes through the paint, swells it, closes the cracks and cements the pigment to the canvas. This same varnish is also excellent for watercolor-drawings, but I should hesitate to use it either for water or oil, unless the owner agreed to take all risk if anything went wrong. One well-known watercolor-artist uses it a great deal in his own work and looks upon it as a safeguard against mildew and mould. Such a varnish should cure cases of "bloom" where a picture has been varnished and dried in a cold place, instead of a warm one, the varnish being white and almost opaque, instead of clear and transparent. Rubbing with linseed- or poppy-oil should be a cure; if not, the picture should go to a restorer and have the varnish removed.

Sometimes an oil-picture, even a modern one, may have become very dark in places which were originally light, such as the sky, through absorption of sulphur from the atmosphere, particularly where lead pigments have been used. This can be put right by sponging the whole picture with dilute hydrogen peroxide which drives out the sulphur, re-oxidizes the pigment and restores the original color, without the least risk to the picture; but here again nothing should be done without the owner's consent. One sometimes gets the "impossible" to photograph. I remember an instance in Fred Walker's "Mushroom-Gatherer," a very dark picture of a man gathering mushrooms before dawn, the mushrooms being the only touches of light in the composition. It had been begun in oil-color, part of which glistened and part was dead, then strips had been added on all four sides and painted in watercolor. Of course, as it was in both oil and watercolor, nothing could be done to the surface; but I managed, with patience, to get a very good copy of it.

Copying pictures is very interesting and fascinating work, particularly if one has, as in my own case, been born and has lived among pictures all one's life.

Harold Baker in *Photographic Scraps.*



BORDER-DESIGN

FANNIE T. CASSIDY

THIRD PRIZE — DECORATIVE APPLICATIONS

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value $5.00; *Second Prize:* Value $2.50; *Third Prize:* Value $1.50; *Honorable Mention:* Those whose work is worthy will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is **"General"**; but only original prints are desired.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era; or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data. ***Criticism on request.***

4. Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15 unless they are packed with *double thicknesses of* **stiff** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express, very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed Nov. 30, 1914

First Prize: Warren R. Laity.
Second Prize: O. Holmes.
Third Prize: Elizabeth Wotkyne.
Honorable Mention: F. A. Hasse, Carl Kattelmann, E. D. Leppert, C. Howard Schotofer.

Special commendation is due the following workers for meritorious prints: George S. Akasu, Edward L. Austen, Carlos N. Bushnell, M. C. Housman, Wm. F. Lindstaedt, J. M. Richardson Lyeth, Charles D. Meservey, Mrs. Wilma B. McDeavitt, Louis R. Murray, Louise A. Patzke, James Slater, W. Stelcik, A. T. Tumbleson, L. F. Uhl, Cavett V. V. Turner, Elliott Hughes Wendell, Ralph B. Williamson, Sumner B. Young.

Opinions Often Differ

Editor Photo-Era, Boston, Mass.,

Dear Sir: It is pleasant to read an appreciative comment on a picture and realize that it is exactly the truth, and what I think, but I could never have had the sense to say it. The comment on the first-prize outdoor-portrait in November Photo-Era thus impresses a reader. It is not strange that the Photo-Era jury awarded the first prize to this picture. It is about the perfection of what might be called home-photography as opposed to studio-photography. The composition and the background seem to be faultless. Then there is the everyday, home-like simplicity and naturalness of figure, gowns and expression — no gushing, no straining nor artificial effort. This is the kind of picture to which one can revert. Its very simplicity and unpretentiousness are restful.

The second-prize outdoor-portrait is also a beautiful type of photograph; but I cannot but differ from the jury's third-prize award. This is an attractive picture; but does it express in any such delightful and natural way as the others did the outdoor spirit? The light on the dresses is soft and subdued, but the band in the hair and the flowers are harsh, as is also the background. Though an attractive picture, it does not seem to belong in the same class with the others. Why could not the jury have given this honorable mention and awarded the third-prize to "Watching the Baby"? Surely, this is as deserving a prize as the other. There is a kindly, sunny home-air about the picture, a rare quality in photographs by either professionals or amateurs. Would it have injured the dignified art-standard of the jury, for once, to have given friendly recognition to so genial a picture?

That the art-juries so often pass by much that is most elaborate and talented from an art-standpoint, and select such genuine and refined pictures as those of the Gerhard Sisters, surely speaks much for their willingness to approve good photography.

A Passing Comment by a Reader.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and all regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston.

THE BROOK IN WINTER — O. HOLMES

SECOND PRIZE — BEGINNERS' CONTEST

Masks

Not that the printing of pictures with a white border is always, or often, desirable, but it is sometimes necessary. If a print is to be mounted, the white line is seldom desirable, but it makes a more finished-looking print if left unmounted; and when small films are to be used for postcards, for example, it becomes a necessity.

There is hardly anything that gives a more untidy and disreputable look to a print than an ill-cut mask. The sides must not only be equal and the angles right angles, but the edges must be straight, not curved, and the paper smooth, not fringed and uneven.

The best surface I know of on which to cut masks is the film side of an old glass negative. It does not dull the cutting-implement quickly and it does not allow the paper to slip easily. The black paper that comes around developing-paper is excellent for making masks, as it is not too thick to cut easily and is impervious to light.

A good way is to cut a piece of this paper the size of the printing-frame to be used, then measure accurately the size of the picture desired, considering not only the size of the film, but also the size of the card, that the margins may be suitably spaced. Having determined the size of the opening, carefully measure off this space on the paper prepared and draw pencil-lines the whole length of the paper, not simply about the desired space, so that when a ruler is in place you will know where to start and finish the cut. Use a ruler with a good metal edge and a knife that is very sharp, and cut firmly and accurately along the pencil-line. In order to have no little tuft of paper left in the corners, cut a little past the corner, and if any line of light shows there, take a piece of paper and paste over the crossing-lines, bringing its edge just to the corner.

The Eastman Kodak Company furnishes so-called Mask-Charts that are a great convenience. They are ruled in eighth-inch squares and it is very easy to center and measure any opening. They have the added advantage of furnishing a guide for the accurate placing of the card in printing. When these are not used and the

FIRST PRIZE
BEGINNERS'
CONTEST

A SUMMER-LANDSCAPE — WARREN R. LAITY

film to be printed from is at all thick, it simplifies matters to draw a pencil-line about the opening to indicate the proper location of the card.

When many are to be printed from the same film, much time will be saved by attaching the mask to the glass of the frame and sticking the film in place over the opening by a very little glue in the corners. There is now on the market a " Noslip " mask having pockets at the corners into which the corners of the film may be fitted, but how securely they hold the film I do not know.

Density and Enlarging

Very often a negative which yields a pleasing print on P. O. P. does not enlarge satisfactorily without considerable dodging. The desirable degree of contrast for enlarging is much less than was formerly regarded as necessary for contact printing. This brings to light another of the several reasons for the popularity of gaslight papers. Tending slightly to increase the contrasts of a negative, unless the special soft-working brands are chosen, the paper supplies the vigor that was formerly necessary in the negative for P. O. P. printing. In other words, a negative that is right for gaslight printing is right for enlarging, and that means a moderately thin negative with a long range of gradation and no great density in the highlights. Full exposure and care not to overdevelop furnish the means to the desired end; tank-development is to be preferred.

Contrast should be used sparingly, whether in line or in light, as an excess will make the result either spotty or diffuse — in short non-homogeneous. — Paul Lewis Anderson in *Pictorial Landscape Photography.*

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

G. E. P. — **For Mountain-Photography** on an amateur scale there are several cameras that will do excellent work, a choice depending very much upon personal preference. Since you wish to work without a tripod, it may be assumed that you do not intend to do any telephoto or long-distance work with the single combination of a doublet lens. This simplifies the choice considerably.

Mountain-photography requires a large print to convey the spirit of grandeur, but of course small negatives may be printed by enlargement. However, a size smaller than 4 x 5 or 3¼ x 5½ is hardly to be advised. If you contemplate long tramps or climbs, roll-films or filmpacks will be found preferable to plates on the score of weight, so that you need never lack for plenty of sensitive material.

An anastigmat lens is a good investment, for there is a quality in every picture made with one that it is at once discernible, and which, once seen, is always wanted. Any of the leading makes of anastigmat lenses are good, notably the Tessar, Goerz, Sylvar and Hekla. Your choice may well depend somewhat upon the camera chosen, as a much better price is often to be had upon a lens and camera together.

Undoubtedly the most universally popular type of hand-camera is the Folding Pocket Kodak type, similar instruments also being found in the Ansco, Ica and Ensign lines. It is much used for mountain-work and will produce good results. Another exceedingly compact type of instrument intended for filmpacks or glass plates is found in the Goerz Tenax, the Sylvar and the Ica Trix and Ideal. These cameras are so compact that even a 5 x 7 size is neither cumbersome nor heavy; they can be used successfully in the hand or for almost every purpose on a tripod, and will adapt themselves readily to long-focus lenses and telephoto-work. For a wide range of general work it is far better than any other type and equally good for mountain-photography.

In making a choice it may be well first to decide whether roll-films or filmpacks and plates are to be used, and then look carefully into the prices and features of the various instruments named which will most appeal to personal fancy.

S. F. M. — **Developing portrait-negatives** is indeed a matter for delicate treatment. Much information will be found in an article entitled, "The Ideal Portrait-Negative," by David J. Cook, in PHOTO-ERA for June, 1914. As to textbooks, the best are the various numbers of the *Photo-Miniature*, published at 25 cents each, by Tennant & Ward, New York.

Of course you know that **flash-powders vary tremendously in illuminating capacity,** as well as rapidity of combustion, and that the instructions for one powder may be entirely incorrect for another. Since you are using Victor Flash-Powder, you probably know that it is made in three grades: normal soft, and extra fast. The soft has the greatest illuminating-quality and makes virtually no smoke or report. It is relatively slow burning so that the resulting negative shows better modeling and roundness of the features with less contrast and ghastliness of the highlights. Three grains of this powder will be sufficient for cabinet-portraits. Very likely this powder, used as suggested, would yield negatives better than those from which you sent prints.

These negatives indicate faulty development, however. Contrast caused by the concentrated nature of the light and its short duration is the thing to be avoided. Having made sure that the illumination of the sitter is well diffused, employ a soft-working developer. **Metol is the king of flashlight developers.** Use the formula of the plate-maker and avoid carrying development too far. Let it be too thin rather than too dense, for metol is very searching in the shadows, and a thin negative will print better than it looks. The ideal portrait-negative is seldom, if ever, clear glass anywhere, and nowhere dense. Aim to give enough light for any portion of the picture in which detail is wanted and then develop only for the highest light. When that is seen through the glass side of the plate by reflected light, or even before in the case of a few plates, stop development. In printing, use the softest of portrait-papers.

S. C. T. — **Enlarging-Cyko** is not a bromide but a gelatino-chloride paper of soft gradation fully equal in its effect to contact prints on Professional Cyko. Its speed is ten times faster than Soft Cyko and it may be had in Glossy, Studio and Platinum grades.

A SUMMER-LANDSCAPE — C. HOWARD SCHOTOFER
HONORABLE MENTION — BEGINNERS' CONTEST

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

B. T. B. — "Starting for a Walk" is an excellent home-portrait, the likeness of both man and child being excellent and the idea of the picture spontaneous and pleasing. "Lost in the Woods" is hardly a portrait, however, but ought to be none the less appreciated by those who know and love the child. Such little panels as these are seldom seen. It is a form of composition to which many home-subjects lend themselves. "Speeding" has much to recommend it and would be materially improved were it so trimmed as to plumb the vertical lines of the houses and correct the effect caused by not holding the camera level.

L. R. M. — As a composition "January" lacks unity. It has two centers of interest in the larger trees, neither of which is subordinate to the other, nor properly spaced to become the chief object. The rendering of the snow is excellent, though perhaps slightly increased exposure would have brought out more detail in the tree-branches, rendering them less black.

"The Poplar" is an interesting composition and well placed in the picture-space, yet so strong is the appeal of human interest, or an inanimate object suggesting human interest, that the house at the left attracts the eye immediately and is the chief center of interest. It is much too far to the left. The subject is one which requires color to subordinate the house to its true relative position.

A. W. — "Fishing the Gold-Fish," we believe, is one of the best pictures you have entered in the PHOTO-ERA contests for some time past. It is, of course, a genre-subject and not a portrait, but it is our firm belief that such subjects are often the best and most pleasing likenesses, even if they do not qualify as portraits in the strictest sense.

M. P. — "Comrades" is pleasing in sentiment and would be greatly improved as a composition had the white paper notices on the tree been absent. Technically, this subject is overexposed, resulting in solid black masses in dark objects and shadows. When a subject is so near, it requires two to four times the exposure of an average landscape. $\frac{1}{25}$ second at F/4 would have been none too much. A better print may be had by the use of Special Portrait Velox instead of the Regular; even Special Carbon or Special Velvet would give a longer scale of gradation and more detail in the white shirtwaist. Regular Carbon Velox is not at all suited to portraiture; in fact, it is best only for subjects requiring more than normal contrast, and the fault with your picture is that it has too much contrast already.

F. A. H. — Your photographs of water through the trees are extremely interesting, but in making such negatives, and also in making the prints, it is desirable to take extreme care that the line of the water-level be horizontal. In the prints you have sent, the water appears to be running up hill. Perhaps a softer-working paper would give more suggestion of receding planes in the distance of "Along the Hudson in October."

J. P. J. — Your little graphic pictures are technically excellent, but they seem to lack a center of interest, and without some definite object to hold the attention the picture is hardly worth while.

WAITING HIS CHANCE — ELIZABETH B. WOTKYNE

THIRD PRIZE — BEGINNERS' CONTEST

G. L. P. — In future competitions we suggest that your prints all be submitted without watercolor, as we cannot reprodnce such prints in case they should win a prize or Honorable Mention. If we may offer a suggestion in passing regarding your coloring, it would be to the effect that the tendency is always toward too vivid colors. If you will make it your aim to suggest colors in your prints rather than exactly to produce them, you will find that the prints will be more realistic. Brilliant colors, such as the red in "A Cozy Cottage," must be used with extreme caution, the difficulty being to make them appear in the same plane as the rest of the picture. If made too vivid, they appear much nearer.

"The Bath" is an interesting little subject and must certainly appeal to the parents of the child. As a composition it could be improved by trimming away about one-half inch of the background-space above the head.

"Day-Dreams" has had none too much exposure and is strongly developed. A better result may be had by holding back the dark area back of the foreground and forcing the printing of the gown by shading the rest of the entire subject; or, if you prefer, local reduction may be applied to the gown; in its present condition it is far too white and lacking in detail.

Exposure-Guide for February

Calculated to give Full Shadow-detail, at Sea-level, 42° N. Lat.

For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of time in table. From 8000 to 12000 feet use ½ of exposure in table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8 or U. S. 4. For other plates, or stops, see tables.

Hour	Bright Sun	Sun Shining Through Light Clouds	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2
10-11 A.M. and 1-2 P.M.	1/25	1/12	1/6	1/3	2/3
9-10 A.M. and 2-3 P.M.	1/16	1/8	1/4	1/2	1*
8-9 A.M. and 3-4 P.M.	1/5*	1/2*	1*	1 1/2*	3*

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions under which one works. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop.

* These figures must be increased up to five times if light is inclined to be yellow or red. Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.

For other stops multiply by the number in third column

F/4	U. S. 1	× 1/4
F/5.6	U. S. 2	× 1/2
F/6.3	U. S. 2.4	× 5/8
F/7	U. S. 3	× 3/4
F/11	U. S. 8	× 2
F/16	U. S. 16	× 4
F/22	U. S. 32	× 8
F/32	U. S. 64	× 16

SUBJECTS. For other subjects, multiply the exposure for average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to sky. **Average indoor-portraits** in well-lighted room, light surroundings.

Example:

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an *open landscape, without figures,* in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U.S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/12 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of "Table for Other Stops," opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply 1/16 × 4 = 1/4. Hence, exposure will be 1/4 second.

For other plates consult Table of Plate-Speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. 1/16 × 1/2 = 1/32. Hence, exposure will be 1/32 second.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

PHOTOGRAPHIC EXHIBITIONS

Information for publication under this heading is solicited

Society or Title and Place	*Date*	*Particulars of*
Wilkes-Barre Camera Club, Fourteenth Annual Exhibition, 131 South Main Street, Wilkes-Barre, Pa.	February 22 to 25	The Secretary
Academy of Science and Art, Photographic Section, Carnegie Institute, Pittsburgh, Pa.	March 1 to 31	Charles E. Beeson, 19th Floor, Frick Bldg., Pittsburgh, Pa.

Notes on the Use of Exposure-Meters

For those who wish to use a meter that is accurate in all conditions, we can recommend both the Wynne and Watkins. Full directions for use are given with each outfit and the manipulation is very simple. An actinometer or exposure-meter is a very useful adjunct to one's camera outfit, for it is so constructed that it measures the correct time of exposure under different conditions of light, speed of plate and size of stop used.

Plate-Speeds for Exposure-Guide

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Barnet Super-Speed Ortho
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Ansco Film, N. C. and Vidil
Atlas Roll-Film
Barnet Red Seal
Central Special
Cramer Instantaneous Iso
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho Extra Special Rapid
Seed Color-Value

Class 1, P. E. 111, Wy. 180, Wa.
American
Barnet Extra Rapid
Barnet Ortho Extra Rapid
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Central Comet
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho
Defender Ortho, N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho
Hammer Non-Halation
Hammer Non-Halation Ortho
Seed 26x
Seed C. Ortho
Seed L. Ortho
Seed Non-Halation
Seed Non-Halation Ortho
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho A
Lumière Ortho B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho Medium
Hammer Fast
Seed 23
Wellington Landscape
Stanley Commercial
Ilford Chromatic
Ilford Empress
Cramer Trichromatic

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho
Wellington Ortho Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Slow Iso
Cramer Slow Iso Non-Halation
Ilford Ordinary
Cramer Contrast
Ilford Halftone
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

Ward Muir, the noted English photo-pictorialist, furnished the print for the cover this month. It is repeated on page 64. The picture was taken last winter in the Swiss Alps, which are a favorite rendezvous of lovers of winter-sports — skiing, bobsleighing, curling, tobogganing, skating and ice-hockey, which nowhere in the world are practised with such enthusiasm as in Engadine, Grindelwald, Mürren and other favorable localities of Switzerland. Owing to the war, however, tourist-camerists from the belligerent countries, particularly the English — including our friends, the Cadhys — will have to forego their annual visit to Switzerland this season.

The element of sport is well suggested in this typical Swiss winter-scene, and the English skiing girl seems to be enjoying the invigorating exercise to the full. The composition is well balanced, the snow-area treated interestingly and the little figure placed felicitously. No data.

Few cities in Germany possess a greater master in photographic portraiture than A. Gottheil, of Danzig, the capital city of West Prussia. His portrait of a German mother, the frontispiece, is impressive in its superb dignity and repose and its nicely balanced arrangement. The finely-modeled face and expressive hands are indicative of masterly skill in characterization — a trait which distinguishes the German school of portraiture from that of other countries.

The group, page 56, is one of the finest achievements in photographic portraiture that it has been our pleasure to see. It exemplifies in a high degree that great desideratum of a group of two or more members, viz., the element of common interest. One might wish a little more room back of the clerk at the extreme left, if one chooses to be hypercritical; but *à quoi bon?* Sydney Allan, the analyst, has stated the case plainly and fairly, according the artist the praise that is due him. No data for any Gottheil prints.

The spirit of winter is fittingly personified by C. E. Kelsey's merry little figure, page 62. The composition is delightfully spontaneous, well proportioned and technically pleasing. The values are well preserved and a true wintry feeling pervades the entire picture. Data: 5 x 7 Press Graflex; B. & L. Ic Tessar; 8¼-inch focus; at F/8; January, 1914, 4 P.M.; sunshine; 2 seconds; Paget Color-Plate with screen and filter; Rodinal; 5 x 7 Iris A print; a transparency made from this negative, when placed with viewing-screen, produces a fine color-plate.

H. C. Maun's solid and effective manner of landscape-interpretation has been the object of warm approval several times in these pages. His pictures of early evening are cast in a serious vein and seem to invite contemplation. Data: 8 x 10 Century; Dagor No. 6; 12-inch focus; B. & J. 3-times color-screen; Hammer N. H. Ortho; pyro.

The quiet, unpretentious study of a woodland-brook, page 74, has been awaiting a convenient opportunity to be published, when, one day last autumn, it happened to fall from its place on the top of our desk to the floor. In recovering the print, we chanced to grasp it bottom side up, when suddenly we discovered that the brook had assumed the head and face of a rabbit. As the print lacked a title, we christened it "A Denizen of the Woods," and as such present it to our readers. It is interesting to note that the author of the picture had no hand in this, for he was genuinely astonished at our discovery. No data.

In A. D. Brittingham's "An American Boy," page 75, our readers are viewing an uncommonly fine portrait. It is purely photographic in character, yet suggests a finely executed painting. The face is exceedingly round and plastic, due to admirable lighting and consistent lens-work, and the rest artistically subordinated, the face claiming our chief interest. Data: 8 x 10 Century Camera; 14½-inch Verito Lens; used 24½-inch back-lens at F/8; flashlight; small ½ teaspoonful A. G. F. A. powder; Seed 30, Duratol; Angelo print.

Mr. Anderson's delightful treatise is concluded in this issue, and with it terminates the accompanying series of illustrations. Of these last two landscapes, "The Hillside" is particularly charming by reason of the poetic suggestion which permeates the subject throughout. The vibrating quality of the picture, the depth of perspective and the elusive contours of trees and shadows furnish adequate material for reflection. Data: "The Lonely Tree"; April 15, 6 P.M.; light, slightly cloudy; Single Achromatic lens, maker unknown; stop, F/8; Ray-Filter, Cramer Isos III (5x); 1 second; Standard Orthonon; Edinol; Artura print for reproduction. "The Hillside"; no data.

The Photo-Era Monthly Competition

In "Memories," page 82, the artist — a professional practitioner — presents a striking theme that is filled with suggestion. The pose is dramatic, complete, somewhat after the manner of Sarah Bernhardt, whom, indeed, the model strongly resembles; the costume fittingly mediaeval and in harmony with the insignia of war, and the mute expression indicative of serious, solemn thought — a momentous calamity, or is it a strange forebodingʔ — that only a vivid imagination can picture! The mind reflects on that which is already a sad reality or it may linger on what appears to be foreshadowed. Data: September, 4 P.M.; near window, good north light; 8 x 10 Century camera; 11¾-inch Spencer soft-focus lens; F/8; ½ second; Hammer Blue Label; pyro, tank; W. & C. Sepia Platinotype.

The spirit of this particular competition has been carried out in an obviously practical way by Anson M. Titus in his "Wild Cherries," page 86. The design and the execution merit high praise. The practical side of this contest — the decorative application of photographic themes — should be studied carefully by workers desirous to exploit their own abilities, for book- and magazine-publishers are constantly in need of striking and tasteful designs of this character. Data: August, 1914; light, bright outside; exposure made by light from north window; B. & L.-Zeiss Tessar, Series IIb, 5¾-inch focus; F/8; 1 second; 3¼ x 4¼ Standard Orthonon; pyro, tank; contact print on cyko.

Mrs. Cassidy's artistic taste is well exemplified in the beautiful design, page 88, the utility of which is, perhaps, less apparent than in the case of the two other prize-winners. The originality and beauty of the arrangement are undeniable. Data: August; clear sun, 10 A.M.; Auto Graflex; Goerz Dagor; 8¼-inch focus; smallest stop; 1/20 second; Seed L. Ortho; tank-development; Velox print.

It is virtually understood that competitors appreciate the valuable aid accorded them by Guild-editor, Katherine Bingham, by suggesting, with a specimen of her admirable work, how the subject of a certain contest is to be illustrated. So in the case of "Flashlights," she supplied a copy of her charming genre, "Grandmother's Wedding-Gown," page 85. Besides the superb technical quality of the picture (including the unusually correct drawing of the figure), the rich effect of chiaroscuro and the perfectly transparent shadows, one admires the sweet sentiment of the model so beautifully expressed. Data: 8 x 10 Century camera; No. 7a Goerz Double Anastigmat, series I b; 16½-inch focus; full aperture; Crown Flashlamp, in fireplace; Seed 26x; pyro-metol; W. & C. Japine print.

The Beginners' Competition

Warren R. Laity bids fair to become a pictorialist of rank. He is capturing prizes in rapid succession and, with the acquisition of the third first prize, he will cease to strive for honors in the beginners' class and try his fortune along with the advanced workers. His "Summer-Landscape" has solid merit, the shadow-dotted meadow with its winding brook, the stately elm, the distant woods and smiling sky — all constitute a delightfully picturesque and unconventional *ensemble*. "A bit off the top!" did some one exclaim? Yes; a generous half-inch trimmed away would produce a better-proportioned picture. Data: August, 8.30 A.M.; light, strong; Century, 8 x 10; Goerz Dagor; 8¼-inch focus; stop, F/11; ⅕ second; 4-times color-screen; plate, Central Comet; Duratol; print, Noko medium grade, redeveloped.

Another picture of pronounced pictorial excellence is "The Brook in Winter," page 90. Of great artistic importance is the treatment of the foreground in a landscape, and this has been taken care of most admirably. The path in the snow running along the course of the curving brook is somewhat of a pictorial novelty and both have been managed with artistic discretion, which, indeed, is true of the entire landscape. This picture is a worthy achievement. Data: Feb. 14, 1914; A.M.; strong sunlight; Seneca triple convertible lens; stop, F/32; quick bulb-exposure; Standard 5 x 7 plate; developed in tray with Seed's Eiko-Hydro; Velvet Velox.

The domestic episode, pictured on page 93, well deserved the camerist's interest. Excellent judgment was shown in the choice of the watcher, as either a black or a white cat would not have lent itself so happily as the present model. Data: Nov. 10, 1914; good light; Eastman Speed-Film; B. & L. R. R. lens; 5-inch focus; stop, U. S. 4; 1/25 second; 5 x 7 glossy enlargement.

An excusable departure from the conventional is the sketchlike landscape-study on page 92. The effort is attractive and well balanced, but the clouds betray their artificial origin. If clouds are to be introduced into a black sky, it must be done with exceeding cleverness.

Development in Quantities

The photographer who handles one or two plates at a time may well have an idea that plates cannot be developed in large batches and at the same time justice be done to the exposures. This is, however, quite an erroneous idea, for the more plates are dealt with at one time the more deliberately they can be treated, the less they are handled, and there is less liability of staining or marking. Before tank-development was introduced I had large numbers of plates to deal with, very often as many as 400 per day, in sizes varying from 6 x 4½ centimeters to 30 x 24 inches, and I developed all these in flat dishes in, I believe, the minimum of time, and the results were as good as if each one had been handled singly. My plan was a simple one: I used large dishes capable of taking a 30 x 24 plate, and these were made with a wooden frame and a stout millboard bottom rabbeted in. They were lined with a canvas-like material and were varnished with asphaltum dissolved in benzole.

The negatives had no tendency to slip upon this surface, yet they were easily picked up. The bottom of the dish was covered with exposed plates and a liberal quantity of diluted developer poured on. The dish was rocked until development was complete, the solution poured off, a good rinse given with plain water and a fairly strong hypo-solution poured on, six ounces to the pint, ensuring rapid fixing. When the negatives were thoroughly fixed, the hypo was returned to jar and the plates washed in two or three changes of water, being finally transferred to a washer consisting of a series of perforated trays sliding into a casing, somewhat like a chest of drawers. By using two or more dishes no time was lost, as by the time the second batch was developed the first was fixed, and the hypo could be poured direct from one dish to the other. This method is particularly applicable to amateur work, as any odd sizes can be worked in. The developer used was ordinary pyro-soda diluted to at least half normal strength, with a three-percent solution of sulphite. This prevents the yellowness which so often appears when the developer is diluted with plain water. Cases of over- and underexposure are dealt with by reduction or intensification, as may be necessary, and this should always be done before drying, so that the batch can come out of the washer complete.

Roll-films may, of course, be developed in the special tanks sold for the purpose, but the process is too slow to be adopted for quantities. On the other hand, I do not approve of the method used by some of the trade-houses; for this they use a large tank as deep as the longest film to be treated, and, putting a weight on the end of the band of film, hang it from a rod or clip at the top. This takes a large quantity of developer, and there is always the danger of it deteriorating by age and use and giving negatives of poor quality. To work this plan successfully, there should be some means of circulating the solution, so that evenness of action is assured. It takes a considerable amount of courage to throw away many gallons of developer, particularly at present prices, and there is always a tendency to overwork it with occasional strengthening, with the result that poor negatives are made, and the camera, the film and everything but the worn-out developer blamed.

I have found a far better plan, and one taking but little longer, is to develop in an ordinary large dish with a roller in it, dragging the film to and fro until it is dense enough. If the work is important, fresh developer can be used for each film, this, of course, being always necessary when using pyro-soda. A modification of the drum as used for kinematograph-films should answer well for very large quantities. The exposed films could be fastened on with drawing-pins, and could remain on the drum until they were fixed and washed. A drum 2 feet in diameter and 4 feet long would easily accommodate a dozen quarter-plate spools of twelve exposures each, and development and fixing should not take more than a quarter of an hour.

The one temptation to be resisted in working upon a wholesale scale is to use worn-out developer. This is false economy, firstly, because the results obtained are not uniform, and, secondly, because of the extra length of time required for development. If your time is worth anything, it is worth far more than the cost of a fresh dose of developer. — "Practicus," in *The British Journal of Photography*.

ON THE GROUND-GLASS

WILFRED A. FRENCH

The Resourceful Press-Photographer

DWIGHT L. ELMENDORF, the well-known travel-lecturer, told me of an annoying incident that occurred during a lecture-course in a large western city a few months ago. A certain sensational newspaper requested of Mr. Elmendorf's manager permission to reproduce a few of the lecturer's choicest lantern-slides in conjunction with its review of one of the lectures. The request was politely but firmly refused. Nevertheless, the following morning the paper in question contained a glowing account of the lecture accompanied by excellent reproductions of a number of Mr. Elmendorf's finest pictures.

It developed later that the newspaper's expert staff-photographer had surreptitiously photographed the coveted stereopticon-views with a small pocket-camera, giving an average exposure of sixty seconds, and then enlarging the results. He probably rested the camera on a railing or on the back of one of the seats; or he might have used one of several devices for clamping the camera to any convenient base, if, indeed, he did not make use of a tripod and work without being noticed. Trust a press-photographer invariably to get what he is after.

Theory and Practice

I WAS making a number of record-photographs of historic tombs in the Old Granary Burying-Ground, on a dark December afternoon, when a strolling amateur approached and took a lively interest in my doings. He

IN THE OLD GRANARY BURYING-GROUND

evidently took me for a novice and presently began to offer suggestions. "What! only one exposure for each subject? I always make two or three, varying the length of the exposure, and generally succeed in getting one good one. Excuse me; but how much time are you giving ——? What! three seconds at F/16 at only three o'clock in the afternoon? That's too much. I've just tested the light with my meter, and find that with a fast film one-quarter of a second is exactly right. Well, if you don't lose them all, I'll miss my guess." I thanked him for his kindly advice and proceeded as I had begun, using stop F/16 throughout, but gave the last exposure four instead of three seconds. I was after detail, and got it.

Calling His Bluff

I WONDER if the mail-order business can match the Publisher's recent experience with an audacious impostor? Last October PHOTO-ERA received a letter from a photographer in a small town in North Carolina, asking why he had not received a set of C Aurora Life-Studies, advertised in PHOTO-ERA, which he had ordered and paid for. After a hasty investigation the inquirer was informed that no such order had arrived at this office, and was requested to give particulars. According to his reply, received promptly, he had sent an order for Set C Life-Studies, enclosing a $5.00 bill. Another investigation revealed no trace, whatever, and we so informed the insistent correspondent. His third letter stated that Set C had been received at last; but instead of the *twenty* prints called for, the portfolio contained but *ten*. He demanded the other ten by return-mail, otherwise — (here followed a threat). We informed the erring one that he must be mistaken, as we always sent these studies by *express*, and not by *mail*. We requested that he produce proof of delivery by the express-company, or cease annoying us. Then came a peremptory demand for the missing ten prints, accompanied by some harsh words. Being sure of our ground, we informed the individual that we should lay the matter before the post-office inspector, on the ground that he was using the U. S. mails trying to obtain goods under false pretenses. We received by return mail from the fellow an humble apology — "It was all a mistake, for us to forget it," etc.

Practical Amateurs

THE participants in the two PHOTO-ERA competitions — one for advanced workers, including professionals, and the other for beginners — are aware that the work which they submit must be entirely the product of their own efforts. They must select and compose the picture, expose and develop the plate and prepare the print, be the latter a contact one or an enlargement. Once in a while a print is received for the Beginners' Competition which on inquiry proves to have been made only in part by the contestant, and, therefore, is not eligible, whatever artistic merit it may possess. Before entering prints for either PHOTO-ERA contest, would-be participants should carefully read the rules which are printed in every issue.

Nature-Study

Teacher: "If there are five flies on the dinner-table, and I kill one, how many remain?" Johnnie remains silent. *Teacher:* "Please use your brain. Don't you see that with the motion and noise I made in killing this one fly, the rest have all flown away? Now, how many are there on the table?" *Johnnie:* "Four, ma'am." *Teacher:* "Four flies? Oh, you stupid! How can I ever make you understand?" *Johnnie:* "You see, while you've been talking, they've all come back."

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

New Year Congratulations

It is delightful the way our friends remember us at the threshold of every new year, 1915 in particular. From Greater Boston and every section of the Union, from Canada, from the distant Philippines and from war-choked Europe have come sincere wishes for Christmas and the New Year in varied forms of beautiful and artistic cards, folders and pictures. Among these hundreds of well-wishers were subscribers to Photo-Era, including a large number of noted professionals (J. C. Strauss, Joe Knaffl, E. E. Doty, Harold A. Taylor, Pirie MacDonald, Homer J. Harden, Mr. and Mrs. William H. Rau, Mr. and Mrs. Helmar Lerski, Grace Pearl Loehr, the Gerhard Sisters, the Goodlander Sisters, the Cadbys, E. O. Hoppé, F. J. Mortimer, among the many), pictorial workers and not a few Photo-Era advertisers.

To these, one and all, we herewith express our heartfelt gratitude, and hope most ardently that 1915 may prove a fortunate year and that this country may be spared the afflictions that have been imposed upon the countries of Europe.

Women's Federation, P. A. of A.

Officers for 1915

President, Maybelle D. Goodlander, 409 East Main Street, Muncie, Ind.

First Vice-President, Clara Louise Hagins, 8 North State Street, Chicago.

Second Vice-President, Sara F. T. Price, 7430 Sprague Street, Mt. Airy, Pa.

Secretary-Treasurer, Bayard Wotten, 94 Middle Street, Newberne, N. C.

Press-Representative, Leslie Curtis, "Hazelwood," Muncie, Ind.

Chairmen of Sections

Section 1, Hallie Elizabeth Wilson, Berlin, N. H.

Section 2, Ella G. Ball, 119 College Avenue, Lancaster, Pa.

Section 3, Harriet Edna Conk, 1012 East McMullen Street, Cincinnati.

Section 4, Elizabeth Schliepman, 369 Boyle Avenue, St. Louis.

Section 5, Helen Francis, 612 Kansas Avenue, Topeka, Kans.

Section 6, Gertrude E. Man, 145 Auditorium Bldg., Minneapolis.

Section 7, Margaret Craig, 817 West 23d Street, St. James Hotel, Los Angeles, Cal.

The London Salon

At a recent meeting of the members of the London Salon of Photography the Honorable Secretary was pleased to report that it would be unnecessary to make any call upon members towards the expenses of the last exhibition, and that the sum of £21 12*s.* 4*d.* has been sent as the Salon's contribution to the Prince of Wales' National Relief Fund.

Gustav Cramer Memorial Fund

We do not recall a charitable movement in which the photographers of America were concerned that has caused such widespread interest as the Gustav Cramer Memorial cause. The idea is a popular one, because not only of the love and affection entertained for the man whose memory is to be perpetuated, but the manner in which this shall be done, viz., a free room and bed for a worthy patient in a St. Louis hospital.

The committee in charge is desirous that every individual engaged in photography shall have an opportunity to participate in this noble enterprise, and has suggested various forms of making donations. One which has been received with general approval is for the donor to devote the proceeds of a working-day's business — the day to be May 20, 1915, the natal day of Gustav Cramer. This has been suggested as a pledge, and may be used as shown in the following form:

A Pledge

E. B. CORE,
Sec.-Treas., Gustav Cramer, Memorial Fund,
76 Landscape Avenue, Yonkers, N. Y.

I agree to send at the close of business on May 20, 1915, a cheque equal to the gross amount of the orders received in my establishment during that day as my contribution to the Gustav Cramer Memorial Fund.

Date .....

Signed .....

There is no question that this method of contribution will appeal to every man and woman engaged in the photographic business, and that a large amount will be derived from this source. Of course, there are many who prefer to give a fixed sum, in proportion to their means, and others who cannot afford to contribute. The latter class will be glad to know that even one dollar from them will be accepted gladly, as it represents the limit of their pecuniary ability, but with not one whit less of affectionate remembrance of the man whom they knew as a kind and devoted friend.

The Dangers of Flashlight-Work

There is little that is new in flashlight-portraiture, except safe and portable apparatus, and these will be found in our advertising-pages. Thoughtless methods of using flashlight-equipments still continue, and to obviate accidents recourse may be had to fool-proof devices, of which several have been lately introduced.

Our Guild-Editor, Katherine Bingham, herself one of the most skilled and experienced of American workers in any photographic department, including flashlight-work, has treated this particularly important subject most ably in her department this month. There is no flashlight-specialist who cannot find something of real benefit in this up-to-date article.

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices.

American Pageantry. By Ralph Davol. With many illustrations. 7 x 10 inches. Price, cloth, $2.50. Davol Publishing Company, Taunton, Mass.

Whether the pageant is an ephemeral fad or a permanent acquisition to the arts, at least it has come to be a communal pastime of ever increasing popularity during the past decade. Scarcely a city of any considerable size in America has failed within that time to hold one of these festivals commemorative and descriptive of its early history. The pageant invites examination through many avenues of thought, and the writer of this book, having become particularly interested in the subject as a result of assignments as a newspaper-correspondent, has collected his notes and observations on its psychology, structural composition and various by-products. The book is one of inestimable value to municipal authorities, club- and society-officers who have the conduct of such events in charge. In addition to an intimate consideration of the technique of pageantry, including such practical matters as subject, site, committees, publicity, dialogue, costumes, music, dancing and presentation, there is a serious presentation of the philosophy of pageantry as one of the fine arts, as an educational factor, as a nursery of patriotism, as a moral agent and as a sociological influence. In other words, this volume is a much-needed handbook of the pageant, not for itself alone but for those many far-reaching influences without which it would be but pointless play. It is obvious that pageantry offers superb opportunities for photographic work of a high order, and although the many illustrations, chosen from a thousand subjects, are chiefly of a record character, they clearly indicate the possibilities and will prove of interest to any camerist.

Unit Photography. By F. M. Steadman, Concord, N. H. Numerous illustrations. Octavo. Price, cloth, $2.00, postpaid.

Realizing the irrational manner in which photographic negative-making is now practised by the majority of camerists, the author has made it virtually his life work to establish a scientific yet readily understood foundation for the study of light as it is daily observed in nature. The demand for home-portraiture in conditions unfamiliar to the photographer is increasing yearly, so that professional men are finding it more and more necessary to become adept in the technique of camera-work. Obviously under these ever varying conditions the actinic value of light can be "judged" with only approximate accuracy, and some sort of measurement is imperative, yet simple units of measurement for the chemical energy of light, the relative aperture of lens and the degree of sensitiveness of photographic emulsions, which are the fundamental elements in photography, seem to be strangely lacking. These Mr. Steadman has supplied in a complete, rational and simple system of photographic practice which he calls "unit photography." In our opinion this is the book of the year — in fact, the book of many years, and that it will do more to put the beginner on the straight road to successful camera-work than any volume that has yet come to our attention. Certainly it is indispensable to the studio-photographer who contemplates entering the field of home-portraiture.

The simplicity and credibility of Mr. Steadman's philosophy is well illustrated by the following extract from the preface:

"As a matter of record, the author desires to state that the idea of the unit of convergence or cone-unit came to him about the year 1895 while working at his business of home-portraiture, and was suggested by a plan to admit as nearly as possible the same volume of light from ordinary windows which in different homes varied greatly in width. It was conceived that by placing the subject so that the head should be in the room opposite one of the window-casings and at a distance from the outside of the wall equal to the width of the window, the geometrical form of the beam of light illuminating the head would be the same, regardless of the width of the window and also of the thickness of the wall. On closing the window with a dark cloth from the level of the head down, and adjusting the window-shade so that the effective opening is square, this form is seen to be that defined by one-quarter of one side of a cube in its relation to the center of the cube, where the head is supposed to be located. This leaves the sky-intensity as the only variable element of the light-source.

"From this idea came that of the rationality of considering a convergent form as a fundamental element in the calculation of the photographic energy of light and lighted surfaces, and from these considerations the present system has resulted."

Photographing Projectiles

Through a remarkable advance in high-speed photography, the problem of photographing shells in actual flight has been solved. By means of this novel camera, military experts hope to reveal important secrets of ordnance.

The camera used for this purpose differs from the ordinary one in two respects — size and shutter. It is almost four feet in height and equipped with the finest lens of two-inch diameter.

The shutter is worked by an electric motor that makes several thousand revolutions a minute, and as the speed of the motor is capable of accurate adjustment, the operator can calculate the exact length of the exposure up to $\frac{1}{5000}$ of a second.

The information of the "smoke-ring" which follows the issuing of the projectile is clearly shown by means of this camera. The ring of gaseous smoke can be seen, obscuring the muzzle of the gun and rising rapidly upwards, almost before the shell appears.

With this camera have been obtained views of mortar-shells in all positions up to the time they ceased their upward flight and started to descend.

Army-officials hope, with the aid of this camera, to discover exactly what the modern high-power shell does when it plows its way through steel. From negatives showing pieces of a shell $\frac{1}{5000}$ of a second after it has burst, it may be possible to find a way to make steel stronger by remedying defects in the hardening- and tempering-processes.

Misplaced Anxiety

Mrs. Clymer — "Good gracious! There goes our camera bouncing down the mountain!"

Mr. Clymer — "Impossible, my dear; Jones has got it strapped to his back."

Mrs. Clymer — "I know it; but *he* is bouncing down, too!"

LONDON LETTER

CARINE AND WILL A. CADBY

No one can forget war-time who looks at photographers' show-cases. Every studio is busily exhibiting portraits of men in uniform. There are enormous enlargements, colored miniatures and every imaginable process is shown; but the subject is always the same. Each photographer offers some special attraction to military sitters, and we noticed that even Mr. Arbuthnot's show-case in Bond Street displays a group of soldiers, under the notice which announces that men serving the colors can be photographed free of charge. And it is not only in the windows of professional photographers that one meets soldiers, for London is thick with them just now, and the town seems khaki-colored by day and inky black by night.

H. R. H. THE PRINCE OF WALES R. SPEAIGHT

The Prince of Wales, like every one else, was photographed before he joined his regiment to go to the front. The new portrait of him in his Guards' uniform was taken by Mr. R. Speaight, of Bond Street, and it has been popular, for the public has been very sympathetic towards and interested in the Prince's getting his heart's desire. It was rather characteristic of our royal family that the Prince went himself to Mr. Speaight's studio. We believe that this is the first occasion on record when a king of England's son has been photographed in the studio of a professional photographer instead of in the Palace.

This thoughtfulness was very like the king and queen, and we photographers know how much easier and more satisfactory it is to work in our own place.

The queen was very decided in her choice of the proofs; she preferred one with a dark background, and yet she wanted a light effect. Here was a problem for Mr. Speaight, and the only solution was to have the dark background blocked out in the negative, with the result that the photograph now appears as if it had been taken against a white background. We believe that this is child's play to a clever retoucher; but it seems to us an extremely delicate task. The outlines of a face, which the camera draws so gently, run very serious risks of having their subtle edge spoiled if it is to be touched by blocking out.

The members of the royal family must have been thoroughly pleased with the Prince of Wales' portrait; for, as soon as they saw the proofs, Prince Albert was sent for a sitting, and we hear that Mr. Speaight has succeeded in getting a really fine portrait of him.

Now that so many of our men who have served at the front are being given short leave home, all portrait-photographers have been busy again. Mr. Hoppé was telling us that the present rush is such a change after the early months of the war, when photography, like so many other things, had come to a standstill. We caught him yesterday between two sittings and saw some of his fine photogravure-work. This process of his, which gives a very faint, delicate color, is most attractive and remarkably suggestive of the colored mezzotints, which are now so valuable. Mr. Hoppé has bought Millais' old house in South Kensington, and it is strange to think of a photographer working in Millais' studio. If, perchance, the spirit of the master wandered back to his old haunts, we do not think that he would feel aggrieved to see Mr. Hoppé's work on his walls; for, although it is achieved by the despised camera, it, too, is the work of a master.

Mr. James McKissack's one-man exhibition, at the Camera Club, also shows signs of the returning interest in photography. Not only has it been visited by an unusual lot of people, but the number of its sales is astonishing. It has almost come up to Mr. Thomas' show of last year, and that was when people had interest and money to spare on photography. This is a matter for general congratulation; for Mr. McKissack is generously letting half of the proceeds of all sales be given to one of the war-funds. Although he is not a member of the London Camera Club, this collection of his work (there are sixty-one frames) is exhibited free of charge, and no commission is charged on any of the sales.

Viscount Maitland, a member of the club and a well-known photographer, has been the moving spirit in organizing the Sportsmen's Battalion, the only organization which accepts recruits up to the age of forty-five. There is also posted up a list of members who have joined the Camera Club Unit, among whom are Douglas English, Hector Murchison, Colin Campbell and the secretary, Fairholm.

Mr. Mortimer, of *The Amateur Photographer*, has been able to contribute $150 to the Prince of Wales' Fund by the sales of copies of his picture, called "The Empire's Watchdogs," which was exhibited at the last Salon. As he charged only a shilling a copy, a goodly number must have been sold.

Londoners by now are quite accustomed to their City of Darkness at night and, as they are very fond of telling one another, "It always used to be like this and not so very many years ago." We are glad to hear that there is going to be some photographic record of the city's abnormal night-time appearance. The photo-

graphs are to be made, we are told, with the consent of the Home Office and under the auspices of the lighting- or rather darkening-engineers. They will certainly be interesting records of London in war-time.

Press-photographers have rejoiced lately. At last there has been one event that the censor has allowed them to photograph, namely, the king's visit to the troops at the front, and every illustrated journal has been filled with the photographs. The most popular was one which shows the kings of England and Belgium watching a march pass, and the Prince of Wales standing in the background near some of the Indian princes.

We had heard rumors of interesting developments in cameras which were to be introduced by Messrs. Houghton & Co., of Holborn. Thinking, perhaps, that these novelties would be brought out before Christmas, we made inquiries about them of one of the firm's leading spirits, Mr. Percy Wright. However, the only answer obtainable from him was an enigmatic smile and the words, "Nothing till after the war." "You might, at least, give us a hint," we urged; "the war may go on for years." But he was obdurate, and all we could extract from him was, "We have more than one thing up our sleeve, but shall wait till the war is over."

Quarrel of the Kaiser and Edward VII Photographed

It is said that Sir Herbert Tree, the noted English actor, possesses a remarkable photograph which he prizes highly. It was obtained by him in Hamburg in 1909 from a prominent person who witnessed a quarrel between the late King Edward VII and the Kaiser, which the photograph depicts. The origin of the quarrel is not divulged, but Mr. Basset, the London correspondent of the *Petit Parisien*, relates how he first saw this snapshot, "taken five or six years ago, when King Edward VII irritated by certain underhand tricks on the part of his nephew, found it necessary to tell William II what he thought of him fairly sharply. The indiscreet photograph shows the end of the scene, that two sovereigns had been talking in a corner of the garden, and after a discussion, which seems to have been very heated, King Edward has turned brusquely away, called his dogs to heel and, obviously displeased, has refused to hear another word. The Kaiser, looking thoroughly ashamed of himself, is trying to detain him, his hands outstretched, in supplication. . . . I have never seen such a striking and prophetic picture."

A New Kodak Acid-Plant

When the war in Europe broke out, the photographic world, notably the American photographic trade, was confronted with the problem of providing photographic chemicals, particularly acids, the chief supply of which has been of German origin. Supply-dealers were particularly at a loss for pyrogallic acid, used so widely to develop plates and films. Only a few of the many German manufacturers were producing this, for it is one of the most delicate chemicals to manufacture. At least a partial solution of this difficulty now presents itself in the recent purchase by the Eastman Kodak Company of the Eastern Chemical Works, Elmwood, Conn., and the reported intention greatly to enlarge the plant. A new method of manufacture perfected at Elmwood is, of course, somewhat secret, but by removal of a greater percentage of water than is the custom by European methods denser and more solid crystals are formed which are more readily handled and can be kept for a longer period. Moreover, they occupy much less space for a given weight.

Lecture by Jno. W. Allison

There are few men in the photo-supply business who possess a practical knowledge of photography which often proves a source of power. Mr. Jno. W. Allison, of New York City, is well known for his expert ability in every branch of the art-science. Recognized as an authority in color-photography, Mr. Allison was invited to deliver a lecture on this topic before the Boston Art Club December 17 last. Though exceedingly busy, he complied, and with his special Balopticon furnished brilliant, large-sized projections of Autochrome, Paget and Dufay color-plates, explaining the history of each process. He also displayed a large and varied collection of Polychromide prints, of which beautiful reproducing printing-process his firm has the sole American agency. Facsimile Polychromide reproductions represent the greatest advance in this difficult branch of color-printing, even connoisseurs finding it difficult to distinguish reproduction from original, as the former duplicates the very brush-marks and any dust that may be lying on the surface of the picture. A large and brilliant audience attested its satisfaction at Mr. Allison's illuminating talk.

Edward H. Weston Wins a Grand Prize

Edward H. Weston, of Tropica, Cal., whose photographic work has appeared occasionally in Photo-Era. is receiving congratulations upon winning the Grand Prize at the recent convention of the Northwestern Photographers' Association. One print of the collection, also exhibited at Atlanta last June, was one of the twelve pictures purchased by the Photographers' Association of America for its exhibit at San Francisco. The Illinois College of Photography proudly claims Mr. Weston as a student in 1908.

Frank Scott Clark Joins the Boston Art Club

Frank Scott Clark, of Detroit, enjoys a national reputation as a successful home-portrait photographer, the demands made upon his artistic skill coming frequently from patrons a long distance from his home-city. Some of his friends in Greater Boston, realizing that he frequently includes the Hub in his business-trips, proposed his name for membership in the Boston Art Club, and he was promptly elected, so that whenever his engagements take him to Boston, he makes the Art Club his headquarters.

Wilson's Photographic Magazine

This, "the oldest photographic magazine in America," will appear as *The Photographic Journal of America* beginning Jannary, 1915, and the subscription-price will be reduced to $1.50. This is in line with the publisher's policy of broadening the scope of the magazine to make it of greater practical value to the professional and advanced amateur. The American Journal of Photography, Photo-Era, extends sincere good wishes for the success of the venture.

One of Many

Photo-Era, Boston, Mass.

Have received set E of the Aurora Life-Studies. They reached, and in some cases exceeded, my expectations. Please send me sets D and C, for which find enclosed ten dollars.

Yours respectfully,
F. Pressler.

WITH THE TRADE

A Narrow Escape

THIS issue of PHOTO-ERA is somewhat late, owing to a disastrous fire in The Barta Press Building where PHOTO-ERA is printed. Our entire supply of paper was destroyed, but happily the halftones and type-matter for the entire February issue were preserved by the efficient work of the Protective Department. We trust, therefore, that the issue will give as much pleasure at this late day as we had intended it would afford our readers much earlier.

The March issue is nearly ready for the press and with the coöperation of our advertisers will appear promptly about February 20.

Negatives Wanted

To introduce Rexo, the new, rapid developing-paper, Burke & James, Inc., 242 East Ontario St., Chicago, desize to obtain a quantity of negatives of unusual interest for making sample prints. For each acceptable negative one gross of Rexo paper of corresponding size will be given. A sample print of each negative should be forwarded; do not forward negatives unless the sample prints are approved and the negatives asked for. The utmost care must be taken in packing glass negatives for safe transit as responsibility for breakage must be assumed by the owner. The paper will be forwarded prepaid upon acceptance of any negative. This is an offer which should interest every reader of PHOTO-ERA, and of such good quality is Rexo paper that the payment appears to be ample.

Willoughby's Bulletins

THESE bargain-lists, watched so carefully by many camera-users in all parts of the country, will henceforth be issued more frequently on very light paper so as to be mailable in an ordinary envelope. The latest, No. 126, contains much of interest to professional and amateur alike.

Watch for a Stolen Kodak

THE Obrig Camera Company, New York City, advises us that a used No. 3A Folding Pocket Kodak, bearing the serial number 1636A and fitted with a Goerz Dagor lens, was stolen from the store about Aug. 1, 1914. If presented to any dealer for sale or exchange, the owner will appreciate being notified.

Prohibition of German Lens-Exports

OUR German cotemporary, *Photographische Industrie*, in its issue of Dec. 9, 1914, is naturally much disturbed over the latest action of the Imperial government in prohibiting the export of all kinds of photographic lenses. Up to November 30 it was possible to ship to neutral countries lenses not exceeding 180 mm. (7 inches) in focal length; but as such objectives found their way, through neutral territory, into hostile Russia, where they were used for military purposes, the Imperial chancellor has issued a ban on the entire optical export-business, much to the detriment of the German lens-industry.

Opal Glass for Enlarging

THE admirable article, "A Simple Device for Making Enlargements," by R. W. Dodson, published in December PHOTO-ERA, has produced a large demand for the opal glass called for in the directions to construct the enlarging-apparatus, and in a short time — Mr. Dodson informs us — his entire stock of this commodity was exhausted. However, he has arranged for another supply to meet the increased demand for this particular kind of opalescent glass, which comes from Germany, and which must not be confounded with similar kinds, particularly porcelain plates. Persons interested to procure the necessary glass, the price of which, because of the war is now 75 cents, may address Mr. Dodson at 107 McCartney St., Easton, Pa.

The A. & H. Twin-Arc

To Allison & Hadaway, 235 Fifth Avenue, New York City, has come the distinction to furnish the Edison, Vitagraph, Lubin and other big motion-picture studios with a full complement of Panchroma Twin Arc-Lamps. This, the latest and most efficient portable arc, folds quickly and compactly into a handy carrying-case weighing only twenty pounds, and possesses the distinct advantage of being adapted to either direct or alternating current by plugging into any lamp-socket. Motion-pictures or ordinary photographs can be made in private houses, hotels, restaurants, dance-halls or the subway without interference because of fire-laws or similar reasons; 8000 candle-power is attained with a current consumption of only 15 amperes at 100–120 volts. Both arcs are fed automatically by the same solenoid, thus ensuring even feed. The light is rich in actinic quality, soft yet brilliant — the light of midday, and so perfectly natural and not injurious or annoying to the eyes. The price is only $60.

Knapp's Pictorial Calendar

THE Annual Abreiss-Kalendar, or tear-off calendar, for 1915, issued by Wilhelm Knapp, at Halle on the Saale, Germany, and received in perfect order by us from the publisher, is remarkably attractive. It is a veritable symposium of pictorial outdoor life and scenery — pictures from the nation's most artistic workers. The 128 halftone reproductions cover every phase of pictorial photography — summer-landscapes, wood-interiors, winter-landscapes, harbor-views, genres, animal-studies, etc., each picture being accompanied by the name and address of its maker. Most of the subjects are models of pictorial composition and constitute valuable object-lessons for the student and the progressive worker. Together with the numerous printed suggestions and formulæ, Knapp's tear-off calendar is a veritable text-book in photography and, hung in a convenient place, will perform a triple function of daily calendar, technical assistant and art-instructor.

The price is low, indeed, for so attractive a pad-calendar, 2 Marks or 3 Marks (75 cents), including postage. This amount forwarded to Wilhelm Knapp will, in all probability, yield a copy of the calendar despite the uncertainty of the mails consequent upon the war which affects German mails particularly.

Rexo Paper

It has been our pleasure to test Rexo, the new, rapid developing-paper recently brought out by Burke & James, Inc., and it now becomes our duty to report the satisfaction it gave us. The surfaces, matte, semi-matte and glossy are excellent, and three grades — hard, normal and soft — provide a suitable medium for any printable negative. Great latitude in exposure and development are qualities well calculated to make instant appeal to beginners in photography, nor will they be despised by professionals and advanced amateurs. A Rexo print will stand extreme development without stain or fog and works well with any standard paper developer. The advertisement on another page includes a coupon entitling any reader of Photo-Era to a generous sample package prepaid and absolutely free of charge. Do not fail to make the most of this rare opportunity at once.

International Exposition of Photographic Arts and Industries

At the 1914 Convention of the Photographic Dealers' Association of America, held in Chicago last March, an attendance of more than 150 dealers from 33 states and representatives of more than 60-odd manufacturers demonstrated the lack of space for a suitable display of the varied lines of merchandise, and this together with the fact that the convention as a whole was such a pronounced success made it advisable to obtain larger quarters for the 1915 Convention.

With this end in view arrangements have been made not only for the Third Annual Convention, but for the First Annual International Exposition of the Photographic Arts and Industries, to be held at the New Grand Central Palace, New York City, March 27 to April 3, and open to the public from 11 A.M. to 11 P.M.

The exposition will consist of exhibits of photographic apparatus and materials from all over the world, as well as merchandise closely allied thereto. Working-exhibits will also be in continuous operation, thus giving an opportunity for the first time to see several of the processes of manufacture. A general admission-fee of 50 cents will be charged, and with a population of 7,000,000 to draw from in New York City alone it is expected that the attendance will be large. At least 150,000 free tickets will also be distributed by dealers among their customers.

Applications for exhibit-space should be made at once direct to the International Exposition of Photographic Arts and Industries, New Grand Central Palace, New York City, upon receipt of which diagrams of floor-space, contract-blanks, etc., will be furnished.

The Intensive Plate

There is little hope for the camerist who cannot guess correct exposure within twenty times, and to do that now means success. With the new Jougla Intensive plate the chief concern is to ensure ample exposure; overexposure need not be feared up to twenty times normal. Although a rapid emulsion (F/111 Wynne, 250 Watkins), it is thus seen to possess extreme latitude so that it adapts itself automatically to indoor- and outdoor-photography, reducing the percentage of failures to a minimum. Our trials yielded excellent negatives of good gradation, fine grain, ample vigor and excellent printing-quality after development with a standard pyro formula. The exposures were fifteen times those indicated by a Wynne meter. With this plate shadow-detail is assured and it possesses non-halation and orthochromatic qualities to a marked degree.

The Dependable Flashlamp and Bag

Although the conventional apparatus of this type is intended only for use on a standard, J. H. Smith & Sons Co. provides for its use in the hand as well. This is often convenient for holding high above the head in large interiors. A device of this sort, adaptable to so many different kinds of work, should form a part of every photographer's equipment. It gives a soft yet strong illumination which cannot be had with flash-cartridges.

Tessar Lenses for Motion-Picture Cameras

The Bausch & Lomb Optical Company has issued a revised edition of the circular H-d on the Ic Tessar lenses for motion-picture cameras. This circular is of particular interest to those who have tried to make large pictures of distant objects. The new rack and pinion mount, which is illustrated, takes lenses from 2-inch up to 7¼-inch focus, giving various telephoto-effects. A postcard request directed to the Bausch & Lomb Optical Company, 622 St. Paul Street, Rochester, N. Y., will bring you a copy.

English Photo-Material for Germany

England, who is herself experiencing the consequences of her commercial war against Germany, is now trying by way of neutral countries to supply the German photographic market, as the direct trade of English subjects with Germany is punishable with severe penalties. According to reports, it is intended to introduce English dryplates via Holland and Switzerland. In view of the circumstance that in England the fight against German products is being waged with all possible vigor, it is necessary that in the interests of the German industry efforts be made to prevent the importation of English manufactures. Besides, such importations can be effected only through deception of the English authorities, which oblige the English manufacturers to demand of their consignees abroad the assurance that the goods shall not be forwarded to Germany or Austria-Hungary. — *Photographische Industrie.*

The Cirkut Camera and Its Uses

Few cameras differing widely from conventional types have achieved great success, but the Cirkut Camera is a notable exception because it filled a definite need. Many are the applications of panoramic pictures to advertising and record-work of every kind, and it takes the supreme place among scenic and group-photographs. The commercial photographer of to-day who does not include a Cirkut Camera in his outfit is neglecting almost numberless opportunities to create new and profitable business. Even the amateur camerist who desires to make his hobby pay for itself will find the new No. 5 Cirkut Camera a lucrative investment. This compact instrument makes a picture 5 inches wide and any length up to 42 inches.

The many possibilities of this interesting field of work are well set forth in a handsome brochure entitled "The Cirkut Method," just issued by the Century Camera Division of the Eastman Kodak Company, Rochester, N. Y. It is one of the best and cleverest pieces of printing which has come to our attention recently. A copy will be sent upon request to the above address.

The art of a nation is the synthesis of its dominating thoughts. — *Henry Havard.*

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ARTICLES

To Contributors: Contributions relating to photography in any and all of its branches are solicited and will receive our most careful consideration. While not accepting responsibility for unrequested manuscripts, we will endeavor to return them, if not available, provided return-postage is enclosed. Authors are recommended to retain copies.

To Subscribers: A reminder of expiration will be sent separately at the time the last magazine of every subscription is mailed. Prompt renewal will ensure the uninterrupted receipt of the magazine for the following year. Send both old and new addresses when requesting a change.

To Advertisers: Advertising-rates on application. Forms close on the 5th of the preceding month.

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A HILLSIDE-PASTURE

WILLIAM E. MACNAUGHTAN

PHOTO-ERA

The American Journal of Photography

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The Work of William E. Macnaughtan

PAUL LEWIS ANDERSON

IF one tries to form a mental picture of an artist's personality, judging simply from his work, the attempt will often be successful; but, on the other hand, it will often fail, and failure will be the lot of one who, having seen Macnaughtan's prints, summons up a mental concept of their author. The prints show a depth of feeling, a quiet reserve, a sympathy and, in some instances, a gentle melancholy, which would lead one to picture Macnaughtan as tall and slim, with long fingers, flowing tie and large, deep-set brown eyes. The real Macnaughtan is rather under average height, solidly built, with round, jolly face and a pleasant laugh. By no means a Bunthorne; no "soulful-eyed young man," but one whom we would expect to find handling a billiard-cue, a paddle or a main-sheet, rather than making such pictures as are reproduced with this critique. He "would never be taken for an artist. He looks much too healthy and normal and human." But, perhaps, the aptest characterization is to be found in the remark of the immortal Henry Simpson, on meeting Mr. Kimborough. After conversing with the great pianist, Mr. Simpson asked the musician's host, "Ye don't mean t' tell me that the fat mariner is y'r friend with the high-pressure nervous system?" And, on being assured that such was the case, "All I can say is that he don't look it. He ain't the breed I was thinkin' about at all. To me he'd look more natural eatin' pork and beans in a lobster-factory."

But Macnaughtan conceals under this apparently everyday exterior a love of the land that is strong and deep — perhaps even stronger than he himself realizes — a love comparable to that expressed between the lines of Kipling's "Sussex," and stated definitely by Lavengro's gipsy brother:

"A Rommany Chal would wish to live forever!"

"In sickness, Jasper?"

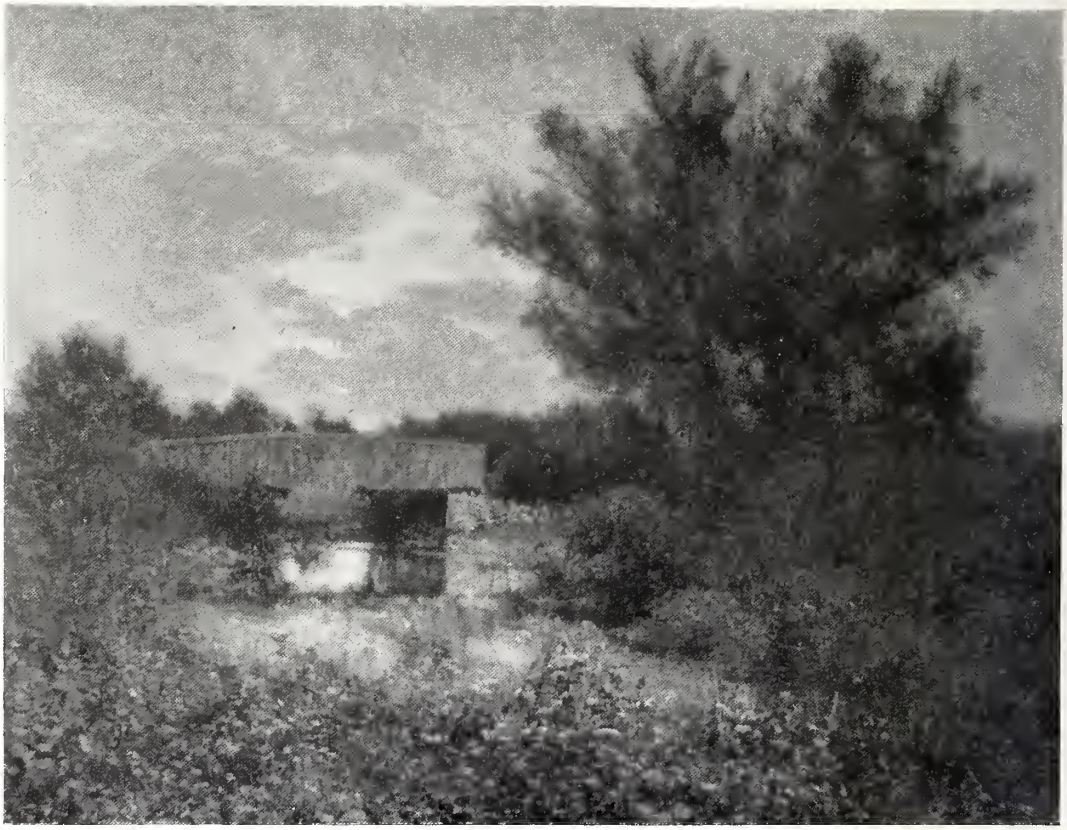
"There's the sun and the stars, brother."

"In blindness, Jasper?"

"There's the wind on the heath, brother; if I could only feel that, I would gladly live forever."

It is this love that is shown so poetically in Macnaughtan's prints, and it will be apparent that the poetry is not of a dramatic nature, nor yet is it what we might call pictorial *vers de société*: but, coming as it does from a genuine feeling, it must necessarily be simple, straightforward and, above all, sincere. Macnaughtan shows none of the introspective, self-conscious mental attitude which impels so many of our landscape-workers, who seem too often to consider landscape as an opportunity to display either their technical skill or their feeling for design, and, as a result, produce melodramatic pictures and "decorative studies" or "studies in tone" — no, I am wrong; the latter title is generally given to a low-keyed, full-faced head of a girl with her hair down. However, the point is that Macnaughtan's work, like that of all true artists, seems to have been done for his own pleasure, and quite without reference to what the public may think of it: whereas too many prints that we see on exhibition seem to shout, "See what a wonderful man my author is!" As a natural consequence, Macnaughtan's pictures are not so conspicuous in exhibitions as many others, because less striking in their esthetic characteristics; but the spectator returns to them again and again, while giving but a passing glance to the more refined and "precious" work and to the pyrotechnic displays. One can live with Macnaughtan's prints.

I have elsewhere stated my opinion, which I have reason to believe sound, though I cannot give the full argument here, that a picture, to have permanent value, must — unless, of course, it shows some new technical development — arouse in the observer some emotion, that the picture is more likely to be enduringly success-



THE OLD BRIDGE — WILLIAM E. MACNAUGHTAN

ful if the emotion is one of the quieter ones — calm, peace, reverence, rather than terror, mirth or joy — and that the quieter emotions are the ones which we call psychic rather than intellectual. Some psychologists deny the existence of a third portion of the entity, claiming that all human manifestations are either physical or intellectual; but whether this be true or not, we can at all events say that certain emotions or sentiments are the result of individual memories, whether conscious or sub-conscious; whereas others are congenital, being the result either of atavistic memories or of cumulative racial experiences, and the latter are the more powerful, so that the artist who appeals to these is more likely to make a lasting impression than one who strives only to reach the intellectual memories. It might be thought that the ideal picture would be the one which would appeal at once to the mind and to the soul; but this is not the case. In the first place, such a picture would be almost inconceivable, for the constructive elements which are demanded by the two types are, in general, very different. Next, it would be almost impossible to find an artist who could make such a picture; for as the intellect develops it does so at the expense of the psychic qualities — whether necessarily so or not, I cannot say — so that the artist who thinks is seldom the one who feels. Finally, such a picture as I have suggested would please no one: the intellectualists would find the sentiment offensive and the emotionalists would be bewildered by the intellectual characteristics. Therefore, the artist must choose whether he will appeal to the mind or to the soul, and Macnaughtan has decided in favor of the latter appeal. (Of course, I do not mean to imply that he has done this consciously, any more than he has deliberately selected a certain technique. On the contrary, I believe his entire work to be purely the result of feeling.) He possesses the power to make this appeal, showing thus a characteristic which has distinguished the great artists of all time, and which, in my opinion, is the factor that has made them great. Tech-

THE CONNECTICUT RIVER — WILLIAM E. MACNAUGHTAN

nique is to a certain extent necessary, but a masterly technique never made a man great, and some have been great without it; but the one thing which an artist must have if his work is to be more than superficially pleasing and ephemeral is a great soul, and Macnaughtan has this. Macnaughtan will doubtless laugh when he reads these words, for, like every other healthy human being, he probably does not know that he has a soul, but it is nevertheless the factor which makes his work of value. I do not mean that Macnaughtan is one of the great artists of all time; a Rembrandt or a Michelangelo is born, perhaps, but once in a century, and adds to an extraordinary psychic power an intense and single-hearted devotion to his work. But, as I have pointed out in other essays, the artist of lesser ability is as necessary to the growth of the race as the greater one, for many will understand and be benefited by his work when that of the greater man would carry no message for them.

One of the advantages possessed by the camera over the brush is that it demands no long and arduous course of study before permitting a man to give expression to some measure of the art-impulse which he feels. This is by no means to say that the technique of photography is easier than that of painting, for the reverse is, in fact, the case; but the relationship may be understood by a comparison with music. It is well known that it is more difficult to become an acceptable performer on the violin than on the piano; but that to become a master of the latter instrument is far harder than it is to attain equal rank among violinists, and a similar state of affairs exists in graphic art; for if one is content to limit himself to a moderate range of expression, he may attain eminence more readily with the camera than with the brush. The analogy does not persist, for painting is a greater art than photography, whereas the piano is a greater instrument than the violin; but it suffices to show how it is that a business-man,

IN THE CONNECTICUT VALLEY

WILLIAM E. MACNAUGHTAN

with but a limited amount of time to devote to pictorial work, may produce works of value with the camera, whereas he would be extremely unlikely to do so if he should choose the brush. Macnaughtan is obliged to give the greater part of his time to earning a living, but, voluntarily restricting his technical studies to a small portion of those that are possible, has employed this technique in such a manner as to express most fully and satisfactorily the psychic impulse which urges him to the production of works of art. It is possible that, were he able to devote his entire time to study, he might be a greater artist; but it is also possible — this has often happened — that his interest might be diverted to the scientific part of the work, so that he would be even less of an artist than his present limitations permit, and it may not be amiss to point out that this peril is even greater in photography, with its extensive scientific possibilities, than in painting, so that the would-be photographic artist must be more on his guard against excessive interest in technique than the student of painting. Mere technique is a lifeless thing, having a purely intellectual appeal, and the man who devotes himself wholly to technical studies is not likely to accomplish much for the advancement of art unless he is either a teacher or a writer, in which case his work may be of assistance to artists of greater psychic power than himself, thus ultimately benefiting the race.

Macnaughtan has chosen to restrict his expression to pure landscape, doing nothing in either portraiture or figure-work, or genre, and has further elected to make his appeal to the quieter emotions, such as calm and peace, rather than to the more violent ones. In consequence, his pictures have a restful quality, reminding one of the words of the old song,

> "Love me little, love me long,
> Is the burden of my song.
> Love that is too hot and strong
> Runneth soon to waste."

One does not tire of these pictures. They may not be so stimulating as the bravura of some workers; but they have an enduring power that does not inhere in the more brilliant and striking results. In a world which is fundamentally and necessarily a world of strife, where every organism, from the amœba to man himself, is in almost constant conflict either with other organisms or the impersonal forces of nature, anything which can sooth the nervous system and relax the tension thereof is something to be thankful for, and this is exactly what is done by such pictures as Macnaughtan's. They are, precisely, restful.

The technique, both subjective and objective, of these pictures is interesting; for, though there is nothing new about it, it is perfectly adapted to the expression of the sentiments which the artist wishes to convey. Since Macnaughtan wishes to appeal to the quieter emotions, he has quite properly given predominance to the twilight-hours and to soft lighting, together with a restricted scale of values. If the reader will consider what I have said regarding mystery, suggestion and composition in my articles on "Pictorial Landscape-Photography" in this magazine, and will then study the reproductions which accompany this critique, he will see how absolutely Macnaughtan's subjective technique, that is, composition and chiaroscuro, is adapted to produce the desired result. The only criticism that I would have to offer is to the effect that the composition is at times a trifle too academic and too sweet; but this is, at all events, a fault on the right side, for revolutionary tendencies and ultra-modernism have no place in art of this sort. It may be that the feeling for a compressed scale of values is in part the result of the influence of Clarence H. White, with whom Macnaughtan has been to some extent associated; but at all events this possibility would not occur to one who was not aware of the association, for Macnaughtan's work stands on its own feet.

As regards objective technique, Macnaughtan uses a 4 x 5 Graflex, with a Cooke anastigmat of 8-inch focal length, sometimes, however, employing a 9-inch Smith, and prints from enlarged negatives. In one respect he is a disciple of the late A. Horsley Hinton, for at times two or more small negatives are combined to produce one large one, the result having, as Macnaughtan says, "A sky from Massachusetts, a foreground from Connecticut, and a portion from New Jersey." It must be said, however, that, though such a custom generally leads to very unpleasant results, Macnaughtan's technique is so good that I had known his work for several years without suspecting it to be the result of combination-printing, and I was astonished to learn that such was the case. Occasionally the technique fails slightly, as in the case of "In the Connecticut Valley," where the water seems a trifle hard and textureless; but such faults are rare, and do not detract noticeably from the high quality of the work. The prints are in platinum and are, in general, on a hand-sensitized Japan vellum, the color and texture of the stock combining with the brown platinum image to suggest the warmth of a

quiet summer-landscape, this warmth being particularly valuable in the case of twilight-scenes; for, as is well known, cold colors lose their identity in a fading light before warm ones do, so that the prevailing feeling of twilight is warmth.

To sum up, Macnaughtan is not an artist of the first rank, but is far above the average — even if we consider those who devote their whole time to the work — is a true poet and a man of genuine feeling, and he has produced works which, though limited in number and not without faults, have that psychic quality without which no work can endure, so that I can truthfully say that of all the photographers whose work I know there is none whose prints seem to me more likely to be valued in years to come than those of the man of whom I write.

An Enlarging-Device

About three inches in front of the paper on the easel I have an arrangement which holds a sheet of glass parallel with the paper itself. The glass is in a frame which can readily be slid in or out. In masking and shading the paper during exposure, this glass is very convenient, as the mask, after being cut out to the size and shape required, can be attached in position on the glass with a little gum, so that it does not have to be held. When it has done its work the glass can be slid out, and if there is other masking to be done another frame with a fresh glass and mask can be inserted.

This has been found by repeated trials to be a great saving of time and trouble when several enlargements have to be made of the same subject, as the frames with the masks can be kept all ready, and slid in and out without any readjustment. When the exposures are long, one can leave the whole arrangement and go on with other work for the time being. The distance from the enlargement to obtain proper softening will depend on the scale of the work, etc., but for enlargements up to 8 x 10 I find three inches separation about right. With care in cutting the masks and attaching them to the glass, the shading may be given quite a sharp shadow and yet not show.

F. L. Elliot in *Photography and Focus.*

AN OLD STONE BRIDGE — WILLIAM E. MACNAUGHTAN

Lantern-Slides in Natural Colors

Part II — The Paget Process

WILLIAM H. SPILLER

THE theory of this newest means at our command to obtain photographs in color has also been fully described in past issues of PHOTO-ERA, and it seems unnecessary to repeat it here.

The Paget plates are packed two plates face to face in a dark paper wrapper, and three pairs so arranged constitute a "box of plates." It is considered good practice to place both plates properly in the plateholder at the time of loading, and not to load only one plate at a time, for the reason that enclosing the remaining plate in the paper might cause markings on the sensitive film. Both the plate and the taking-screen should be very carefully dusted with a wide, soft camel-hair brush, or a piece of clean, silk cloth may be folded over a pencil, the two edges of the silk then fastened between two pieces of cardboard, like a squeegee. The pencil must now be withdrawn, and there will then be left a very efficient and non-scratching dusting-brush.

The panchromatic plate and the taking-screen, being very thin glass, when placed together will go into any plateholder, and care should be taken that both surfaces are in good, close contact and so maintained, either by a small pad or by springs in the plateholder-back. As these plates are panchromatic and sensitive to light of all colors, and also to the ruby dark-room-light, it is good advice to load holders in total darkness. The writer rarely makes use of any light, even when handling ordinary plates or films, thereby ensuring clean, brilliant negatives without fog.

If the reader feels the necessity of a small amount of light, the safe-light papers furnished by the manufacturers of the plates can be used in place of the regular orange- or ruby-glass in the lantern, exercising care that no direct light strikes the plates, for any length of time.

Exposure

Beginners in color-photography will look with favor upon a process which allows of some latitude in exposure, and if this exposure has not been absolutely correct, or if development has not been satisfactory, correction for the colors within certain limits can be obtained in the making of the separate transparency, either soft or harsh, dull or brilliant, as the worker may determine. It should be observed, however, that with any color-system it is necessary correctly to determine the first exposure-time, as this has influence on the perfection of the color-image, and it is practically impossible to make truthful color-correction by development-variations, or any subsequent reduction or intensification without distinct falsification of the true colors.

The speed of the Paget panchromatic negative-plate with the yellow filter on the lens and the screen-plate in contact with the sensitive film is given by the makers as Wynne 18, or Watkins 12; but E. J. Wall states that his experiments have proven the speed to be Watkins 8, Wynne 18, which is correct in accordance with plate-speed conversion-tables, and should be so taken when timing an exposure. These speeds, as well as the correct speeds of other makes of plates, are given monthly in each number of PHOTO-ERA, and upon every box of these plates also will be found a number showing the correct speed of the plates in that particular box. As the speeds of different emulsions will vary to some extent, this index is of great value and should be appreciated by every worker.

Exposures with these plates are best determined with a meter; but it is interesting to know that with a lens working at F/5 it is possible to obtain full exposure in summer in $\frac{1}{10}$ second with sunlight. Landscapes in sunshine at F/8 require $\frac{1}{4}$ second, and outdoor-portraits or flowers in diffused lights at F/8 require 3 to 4 seconds. In winter, when the rays of light are more oblique, additional time, as shown by the meter, must be given.

After exposure and before developing, remove the taking-screen from the plate and put it carefully aside wrapped in tissue-paper for use at some future time.

Development

The development of the negative, either in the tank or tray, should be for a soft, harmonious result, and Rodinal 2 drams, water 8 ounces, makes an ideal solution in every way, and with the proper exposure development will be quite complete in exactly three minutes, when the negative should be fixed for twenty minutes in

JEUNESSE

J. W. HUGHES

Hypo-Solution

Water	50 ounces	1415 c.c.
Hypo	1 pound	497 grams
Sodium sulphite, anhydrous	1 ounce	31 grams

Alum-Solution

Water	10 ounces	284 c.c.
Chrome alum	1 ounce	31 grams
C. P. sulphuric acid	120 minims	7 c.c.

After thoroughly dissolving the chemicals, pour slowly the acid-alum solution into the hypo-solution while stirring the hypo-solution rapidly. Wash the plates for twenty minutes in gently flowing water, and dry in the rack the same as ordinary plates.

From the finished negative, any number of prints having absolutely correct color-values may be made upon any kind of printing-out or development paper, this being the only color-process allowing of this immense advantage. From the negative, we may also make a positive or lantern-slide on glass, and then place upon this transparency a viewing-screen to obtain the true natural colors.

In addition to Rodinal, various developing-agents may be used, but the two mentioned are preferable. If the reader desires, he can make up the following developer, which is the writer's own formula, and from every angle of observation apparently gives perfect results upon every make of plate, film and paper. With dilution of the concentrated developer, any degree of softness or of contrast may be obtained, and on papers all tones from light gray to black are obtained by dilution, addition of a few drops of a 10-percent solution of potassium bromide, and varying length of printing-time while exposing to the light. For tank-use and for high-speed exposures it is excellent, owing to its great searching for detail, freedom from fog and long scale of gradation.

Concentrated Paramidophenol Developer

Distilled water	4 drams	14.2 c.c.
Sodium sulphite	60 grains	3.8 grams
Acid-sodium bisulphite, commercial solution	2 drams	7 c.c.
Paramidophenol hydrochloride	25 grains	1.62 grams

Mix the above chemicals in the order given, which will form a thin white paste. Add to the above, potassium or sodium hydrate, 50 grains, 3.24 grams (pure stick caustic).

The caustic will dissolve the paste if stirred in a graduate with a glass rod, and there should then be added sufficient distilled water to make the solution total 1 ounce, or 28 c.c. This clear solution will darken rapidly if left exposed to the air, and to improve the keeping-qualities, prepare some animal- or bone-charcoal by washing a couple of spoonfuls of the pulverized charcoal in a graduate with 1 ounce of water acidulated with 1 dram of sulphuric acid. After the gas has ceased from being evolved, wash all acidulated water from the charcoal with clean water by pouring on, stirring and allowing the charcoal to settle several times. The charcoal should then be placed in two pieces of filter-paper which have been properly folded and fitted into a small glass funnel, and the concentrated paramidophenol-solution filtered twice through this charcoal-filter into two ½-ounce vials and tightly stoppered.

For papers, use 1 dram to 4 ounces of water, with 4 drops of a 10-percent solution of potassium bromide to each ounce of solution, or sufficient to keep the whites clear. For darker blacks, double the amount of developing-agent may be used in the same amount of water. For plates and films in a tray, use 2 drams of the developer, water 4 ounces, the developing-factor being 30, or three minutes for the Paget panchromatic plate. If a tank is used, take 2 drams of developer to every 12½ ounces of water for thirty minutes at 65 degrees F. This will give soft, quick-printing negatives when the exposure has been correct. This is a 1 in 50 proportion of dilution, and is correct for tank-development of the Paget negative, and is preferable to tray-development.

The Paget Transparency

In making the transparency, place in the printing-frame a sheet of clear glass, which should be about 4 x 5 size if the negative is 3¼ x 4¼, then upon this lay a paper-mask covering entirely the glass and having an opening in the mask about 1/16 inch smaller in all dimensions than a standard 3¼ x 4 lantern-slide. Adjust the Paget negative over this opening in the mask and then place the film-side of the unexposed transparency-plate down on to the film of the negative, being careful that the edges of both are flush with each other, then clamp on the back of the printing-frame. The exposure will average about one second at a distance of 2 feet from a gas-jet, or 16 candle-power incandescent light; but as there is considerable variation in light-intensities of illuminants and densities of different workers' negatives, it is impossible to foretell accurately what length of exposure will give every one the best results.

Development of the transparency should be for brilliancy, care being taken to prevent too

great density, as this would preclude the finished slide from showing the colors properly in the lantern. The same developer as used for the negative will give excellent results if mixed in the following proportions:

Water	3 ounces	100 c.c.
Paramidophenol-solution	1 dram	4 c.c.
Potassium bromide, 10-percent solution	3 drops	

If the printing is determined correctly, development of the slide will be complete in one and one-half to two minutes. Fix thoroughly, and fifteen minutes in the same acid-alum hypo-bath as previously used for the negatives will ensure good, clean results. Wash at least fifteen minutes in running water and then dry in a rack. After drying, take a fine file and carefully remove any hardened gelatine on the edges of the slide, and also carefully dust off any particles from the gelatine surface to prevent scratching the face of the slide or the viewing-screen when mounting them together.

It is very easy now to obtain the natural-color picture by the simple addition of one of the viewing-screens, which is almost identical in character to the taking-screen, placing the prepared surface of the screen in contact with the dry film-side of the lantern-slide, having the screen nearest you. By transmitted light colors will be seen, and these colors appear as squares of varying size if one plate is revolved upon the other. Continuing this movement, these squares become larger, all pattern finally disappears and solid color predominates. The writer's method of registering the viewing-screen and the lantern-slide or transparency may well be adopted, as it has been found to be comparatively easy. Carefully line all edges evenly of the screen and transparency, then with the left-hand finger and thumb only, grasp the two plates together at their centers, your thumb being on the middle surface of the screen-plate towards you. while your finger reaches around to the other side. With the finger and thumb of the right hand gently twist very slightly by any corner the two plates upon each other until a solid color is seen all over the image; green preferred, providing this is one of the principal colors of the view.

Having secured this, complete one color, still holding the two plates firmly by their centers; extend your arm and, while looking through the plates squarely, tilt the surface slightly towards you, first the top, then the bottom, and lastly one side. This angular movement should not exceed one-half of an inch and at one of these four positions there will be seen the image in its true natural colors. If, when tilting an edge towards you, the proper colors are seen, the screen should be very slightly moved in that direction by placing finger and thumb of the right hand at the edges of the two screens and pushing one past the other by a slight movement from side to side or from top to bottom until, when looking squarely through the image, the colors are seen to be correct and remain so even when the plate is tilted slightly.

It is preferable to do this work by daylight, using the reflected light from the sky on to a piece of white paper or mirror, or by holding the plates to the upper sash of the window.

If it is desired to use artificial light, a piece of black cardboard about 12 inches square may have a 3-inch square opening cut in the center, and with a ground-glass fastened to the hole it is possible with a strong Tungsten electric light or Welsbach type of gas-light to arrange the viewing-screen and the transparency as well as though one had daylight. Place four strong metal clips one on each corner, clamping the plate and screen, or fasten in a lantern-slide vise, and then touch at about four places with a drop of LePage's glue the edges of both screen and plate, and thus prevent either one moving while putting the black binding-strips in place along the edges, as you would any lantern-slide.

The ability to judge a natural-color lantern-slide will be acquired rapidly if careful examination is made of every slide produced by the worker. If those parts known to be pure white, a white collar or dress, for example, show in the finished slide pure white and free from any tint of color, and if the blacks are shown as black, then look carefully at the grays also, and if these three portions are free from any predominating tints, you may feel certain that your color-slide is very nearly perfect in coloring.

In making this examination, be sure that you are free from reflected light from trees or lawns. Red buildings nearby might also cause a false impression when looking through a slide in their direction. The examination is best made by light direct from the sky or through a white sheet of tissue-paper in the upper sash of the window.

These are superb and simple processes, and it is impossible to conceive of a more valuable or prettier present than one of these color-pictures, either lantern-slide or transparency. Many a heart can be gladdened with a natural-color portrait of a loved one, and a beautiful color-picture of the old home when the gardens were in bloom will bring joy to some lonesome one far away.

THE POPLARS
FEDORA E. D. BROWN

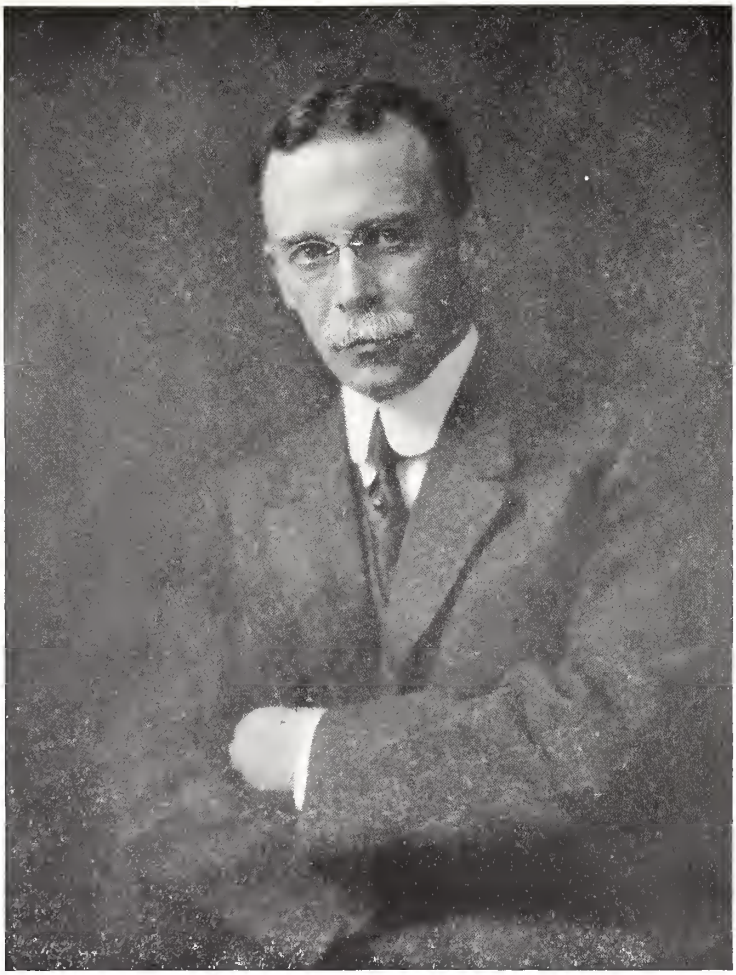
THE DÉBUTANTE — HOWARD D. BEACH

Wanted — A Uniform System of Plate-Testing

E. J. WALL, F.R.P.S.

IT is curious that here in America, the birthplace of popular photography, the country that has done more than any other to place within the reach of the world's people the means of making photographs at low cost, there is absolutely no recognized system of testing plates. Every maker adopts some system of his own and marks his plates "slow," "fast" or "extra fast," and gives in his booklet the ratio of these speeds — more or less correctly. But if one wants to try the plate of another maker, there is absolutely no relation between the designations of the two makers, nor can one translate the one into the other without actual trial.

As an excellent example of the extraordinary want of system now extant, I will cite the following case: A plate-maker issues three fast plates, that I will call 1, 2 and 3, and states that the ratio of their speeds is 1, 1½, 2½. The actual speeds are 1, 2½, 1¾. What system is adopted by this maker for testing in his factory I do not, of course, know, but I can give a very good guess. Plate 2 is really a fast plate, which gives exceptionally high density and works very cleanly. Plate 3 is what is



SELF-PORTRAIT HOWARD D. BEACH

generally known as a soft-working plate. It will not give great density and naturally forcing it produces fog, the result being that nine out of every ten users would say that it was the faster plate of the two, and assume that the negatives were overexposed, whilst the real trouble is that this plate has not got the "guts," and though of lower speed looks the faster.

In the studio, plate 3 seems the faster, because it does not give blocked up highlights nor very clean shadows. The result being that in the hands of the average operator the latter plate will give the better print, although if the operator knew enough plate 2 would enable him actually to cut down his exposures if he only knew how to manipulate this plate properly.

In England, the Hurter and Driffield system has been almost universally adopted for speed-testing, whilst on the continent of Europe the Scheiner system is used. On theoretical grounds, into which we need not enter, the latter is defective. The former system is also defective, unless used strictly according to the rules laid down by Hurter and Driffield.

The grave trouble ahead of the adoption of any common system is that, without a universally recognized center that shall be responsible for the checking of the readings, we might very soon obtain precisely the same state of affairs which is now prevalent in England; that is to say, whilst the H. & D. system is used by all, yet every maker adopts his own particular method of reading the results. The consequence of this is that a plate may be advertised as possessing a speed of 350, whereas actually it is about 200.

KATHERINE WILLIAM C. NOETZEL

This trouble, of course, is due to the fact that plate-users have acquired the idea that a high-speed plate is the best, and makers, feeling this, have just boosted their numbers in the hope of making greater sales.

This bubble of speed can be at once pricked if the user will recognize that his negative is merely the means to an end and that end — the print. If with a given method of working a particular plate will give the most satisfactory result, and it is perfectly immaterial whether the printing-process be carbon, platinum or a development paper, then the speed of the plate is absolutely a minor point.

Now if this statement be true, then a uniform system of plate-speed testing is absolutely valueless. Nor can this be denied. The speed of a plate is not its only quality. What we want is a uniform system of plate-testing that will give us the speed, the contrast obtainable, the fog or absence of fog and the color-sensitiveness in absolute units, so that every user can choose the plate that is the most suitable for his work.

Whether plate-makers generally would accept the readings of such a central testing-establishment is open to question. Some undoubtedly would, whereas others would not; but the plate-user would soon force even the most stubborn to fall into line, because after all it is the plate-user that controls the maker and not *vice versa*. — *The American Annual of Photography.*

NOTHING is as useful as comparison.

Alfred Stevens.

KERMESSE
ALICE BOUGHTON

The Goods and the Market

FRANK MORRIS STEADMAN

WOULD you go out at harvest-time and try to sell pumpkins to a farmer? Bad market! But drop into Nome, Alaska, with a Zeppelin-load about the twenty-third of December. Plenty of loose gold-dust here, but no pumpkins, and the sight of those yellow globes raises a taste in the mouth that

> Nothing but good old pumpkin-pie
> Shall ever be able to satisfy!

Don't be bashful about raising the prices. "Just hand over those two big fellows and don't bother me with the change." How things are divided over the face of the earth! The law of supply and demand is the first solid rock on which to build a healthy business. This matter of having a reception-room lady who is expert in selling people more than they want, while very good in its way, always strikes me as an artificial straining after business, and is distasteful to me compared to the more natural way of finding the people who are in sore need of what I can do for them.

Whenever I think of "supply and demand" in photography, I am reminded of a winter spent with my old partner, Mr. Trager, in Texas. We landed in Houston and found photography in a most exceptional state of stagnation. One photographer had some little diamond-shaped photographs in his case and was advertising them at thirty-five cents per dozen. Also, he was hungry and his trousers were thin where they hit the chair.

We stayed over night and the next day dropped down towards Galveston and branched off to the little town of Columbia, on the Brazos River. Here we found a little community which had not been visited by a photographer for fifteen years, or, as they told us, "since the flood." We did a very good business, besides having an interesting time in the little town. Along down the river we found another very good place for a week's stay, and at Velasco, on the Gulf, we also did well.

A LITTLE FRIEND IN MERIDA

From this town we made our first journey into Old Mexico, landing in the now historic place of Parras, Coahuila, in the north, the home of the Madero family. While spending five months here, studying Spanish and learning the nature of the people, in order to know how to deal with them effectively, without giving offense — business-ethics vary in different countries — we did more work than we had ever done in two years before — mostly for the Madero family.

I remember that the first order we took was one for one hundred pesos' worth of photographs of a doctor's daughter. We were astonished and quite fearful of ever being able to collect such a bill. In fact, it seemed to us quite foolish —

A YUCATAN PATIO F. M. STEADMAN

such had been our education in the States — for people to spend so much money on photographs. (We had always worked in small towns up to that time.) We were told not to worry, however, as they did not consider it proper for them to send the money immediately as the transaction would be entirely too commercial in its nature. Sure enough, in a week or so a servant brought us a fine new hundred-peso bill, together with a letter of thanks and satisfaction for the work.

When one realizes that, outside of the largest cities, and even in some studios in them, they are still making the little card-photographs (for the small-sized openings in the old family-albums) and that the photographer has no opportunity to see modern work or to keep up to the times and, on the other hand, that in all these communities live at least a few very wealthy people, one can easily guess the relation of such conditions to the work of home-portraiture.

Mexico now is not to be thought of as a field for the American photographer; but these conditions must, of course, change in time. The whole of Central and South America, however, presents such a field, and among the things essential to success are — a knowledge of the language; a wholesome, not affected, respect for the good qualities of the people; a knowledge of how to deal with them according to their own ideas of what is *gentlemanly;* the ability to satisfy their good natural taste; a knowledge of lighting in nature that will make possible the production of good, normal photography at all times and under widely varying conditions; a light apparatus for films so that supplies can come by mail,

"PARA LOS CABALLOS" F. M. STEADMAN

and, of course, the ability to retouch and finish one's work well.

A properly-conducted campaign in South America, with facilities to finish the very latest style of work, to color it in oil, etc., would be an undertaking to delight the spirit of a man who loves to explore and who seeks adventure.

Mexico has spoiled me for soliciting here in the States. It goes against my good judgment to start out and solicit people who have at hand a superabundance of studios to which they are continually invited to go.

Me for the people who need me! The deepest and strongest key in the music of home-portraiture sounds to me like this, "Find the spot on the earth where your work is really needed."

IN THE SUBURBS OF MERIDA F. M. STEADMAN

Softening the Definition when Making Enlargements

IF the worker is quite sure that under no conditions will he be at all likely to want a well-defined picture — a lantern-slide, for instance — then there is no reason why he should not put out of focus the ground-glass picture just as much as he thinks will be desirable when the softened negative is enlarged. But it is quite likely that he has in his mind's eye a fairly sharp lantern-slide, and also a somewhat softened bromide enlargement. In that case he will aim at getting a sharp negative, because, as the showman said, "You can pay without coming into my show if you like, but you cannot come in without paying;" that is to say, from a sharp negative you can make an unsharp print (slide or enlargement), but you cannot make a sharp print from an unsharp negative. The question now is as to which of the various methods at our disposal for softening the image shall we use? Let us glance at some of them, as each has its advantages.

(1) We can deliberately put the easel-picture out of focus, as much or little as we please.

(2) We can do this, and during the exposure rack the lens to and fro, thus giving a special kind of softening-effect, which is by no means unpleasing in some cases.

(3) We can make part of the exposure with the image in sharp focus, and part with it slightly out of focus. This method deserves special attention at the hands of those interested in portraiture.

(4) We can focus sharply, and then overlay the paper on the easel with a sheet of stout plate glass. The central part of the underlying print will be but little affected, but the parts towards the edges and corners will be softened.

(5) We all have observed the quivering image of a distant scene viewed through the warm ascending air-currents when the summer-sun shines on the sand-dunes, etc. This has given the hint of causing an ascending air-current in front of the lens by holding a foot or so below the lens a red-hot poker or small spirit-lamp.

(6) Another curious suggestion is that of tying a piece of elastic to the lens — stretching the elastic slightly, and then twanging it, as one does a harp-string.

(7) An ingenious smoker-friend puffs clouds of tobacco-smoke across the path of the projected ray, *i.e.*, between the lens and easel, during the exposure.

(8) Analogous in some degree is the plan of covering the projecting-lens with one or more thicknesses of chiffon — producing a light-scattering effect. In both these two methods (7 and 8) we have "scatter" as the softening-element. This tends to soften definition and light up the shadows.

(9) These methods naturally lead to another method, which at first glance seems more similar than is really the case. I refer to the plan of placing a woven fabric screen, *e.g.*, bolting-cloth, milling-silk, net, chiffon, canvas, etc., and any other open-mesh material, either in contact with or within a short distance of the paper on the easel. Here there is a *little* scattering-effect, but this is slight compared with the shadow-effect. Each thread or knot of the fabric hides the underlying paper, and casts more or less of a light shadow. Thus a dark patch is cut up by light lines and angle-corners. The closer the fabric or screen to the paper, the smaller and sharper the light shadow-image of each thread. Thus there is an essential practical difference between lightening a shadow by scattering light all over it (7, 8) and breaking it up into light and dark small patches.

(10) With the idea of shortening exposures with artificial light, it is very usual to employ a modern anastigmat of large aperture, F/4.5 for example, or a still more rapid portrait-combination. Many readers may object to using their expensive anastigmat lenses for enlarging-purposes, but it is remarkable that while some will use a lens of this character for obtaining the original negative, they will promptly discount the good results thus secured by enlarging with a lens of indifferent quality. There is another reason also to be given in favor of the large-aperture anastigmat for enlarging, or very large aperture portrait-lens of good quality; and that is, the roundness of modeling and breadth that are obtained in the enlargement when the biggest aperture is used and the image is focused as sharply as possible. This peculiar quality in the enlargement appears to be due to a certain lateral spreading of the light that occurs only when a very big aperture is used, and the result, even from a hard and perfectly sharp negative, is very soft and pleasing.

(11) A result akin to that described in the preceding paragraph, but giving more diffusion and, at the same time, a delightful and characteristic effect, is that obtained with one of the new semi-achromatic lenses, such as the "Port-Land." This lens is of single construction and works at a large aperture. For direct work in the camera it produces negatives of beautiful quality, both for portraiture and landscape, and

this quality can be conferred on the enlargement by using the lens when enlarging from a quite sharp negative: although it should be borne in mind that to obtain the best results the enlargement should be made from a positive, and prints then made from the enlarged negative.

(12) At the other end of the financial scale we can buy for about sixpence or so a single uncorrected and unmounted spectacle-lens of about any desired focal length. The handy man can easily make of card and glue a mount and stops. Now, a single lens of this kind, stopped down to F/11 or F/16, is quite a characteristic tool, giving a quality of its own with apparently sharper definition in the center than the edges, or *vice versa*.

(13) Yet another method is the double stop. This may be most conveniently employed in those lenses which have a slot cut in the tube for the insertion of a loose Waterhouse stop. A piece of thin, stiff black paper is cut of size to fit the slot. By way of example let us suppose an 8-inch focus lens, so that F/8 stop would be 1 inch in diameter. We now cut out a circle of this size. Then to the black paper we fix a piece of quite clean and flat white or clear gelatine. Out of the center of this is cut a circular opening ½ inch in diameter. Another plan is to coat a piece of polished glass with enamel collodion, let it set, and now wash it until it is no longer greasy in appearance, and then dry it. Take the black paper with the 1-inch opening, and with a paint-brush run a ring around the opening, and lay this side down on the collodion on the glass. The paper is thus cemented to the collodion film. The two are stripped, and the small central hole cut in the center. This gives an effect comparable to that obtained by method 3. — *The Amateur Photographer.*

The Early Days of the Motion-Picture

DR. ROBERT GRAU

IT will be interesting to the layman to learn that the question as to who invented the kinematograph is one that has not yet been truthfully answered. Perhaps the greatest credit is due to Eadweard Muybridge, of Oakland, Cal., who, at the request of the late Governor Leland Stanford, made numerous pictures of the governor's celebrated trotter, Occident, the first horse to trot a mile in two minutes and twenty seconds. Occident was the pride of the governor, and he engaged Muybridge to photograph the horse in various positions. In making a series of snapshots of the horse's actions, Muybridge was able to show his motion. In order to satisfy his employer's wishes he evolved a novel scheme of placing a number of cameras side by side in a line covering at least one-third of a mile. From these cameras he stretched silk threads across the track at about the height of the trotter's knee. Each camera made a distinct picture of the horse and, by putting them together and riffling with the thumb, the illusion was produced of the horse being in motion.

In 1885, almost a decade before the kinematograph was demonstrated at Keith's Theaters, Muybridge sailed for England and there, associated with half a dozen others, he evolved the first motion-picture camera. A year later some of these cameras reached this country. In 1887, the Patent-Office at Washington began to receive applications from a large number of inventors who desired patents for apparatus for taking- and projecting-purposes. In 1893, the Edison Company introduced to the public its Kinetoscope and this began the motion-picture movement. In 1895, Herman Casler, of Canastota, N. Y., introduced the Biograph. In 1896, at the Eden Musée, New York City, the Lumières, of Lyons, France, showed for the first time a camera and projecting-machine known as the Kinematograph, and it was this device which really revolutionized the industry, in that the flicker was less apparent in their pictures and the clarity of the pictures was greatly enhanced. Nevertheless these were decidedly primitive days in the progress of kinematography.

A MAN may be a great artist without being a great technician, provided he has something to express; but the finest technique will leave us cold if it expresses no spiritual quality. In short, technique may be regarded as a tool, and it is as foolish for a man to refine it beyond his needs as it would be for a machinist to insist on using the tools of a watchmaker, whereas the watchmaker could not work successfully with the coarser appliances. — Paul Lewis Anderson in *Pictorial Landscape-Photography.*

Courtesy of the Illustrated London News

SALISBURY CATHEDRAL FLOODED

An Acid Toning-Process for Developing-out Papers

GEORGE S. HOELL

A RECENT issue (April, '14) of PHOTO-ERA contained a description of a process by which chloride or bromide developing-out papers may be sepia-toned by immersion in a bath in which newly-generated sulphur combines — in some manner not yet fully determined — with the silver of the photographic image on the paper, so that a subsequent action of water turns the unknown compound into silver sulphide which constitutes the image of a fully sepia-toned print. This process, in one form or another, is probably known to most of the readers who are seriously following developments in photographic processes, although all may not have taken the trouble to make experiments of their own. It is an extremely interesting process, however, and a modified method, which will be described below, is well worth the somewhat longer wait for the finished picture, when one considers the decidedly agreeable tones and lack of discoloration to the highlights that is sometimes apparent when employing potassium ferricyanide followed by sodium sulphide. This discoloration is hidden, to a great extent, when employing cream-colored papers, such as Royal Bromide, but the yellowish tints in the highlights generally spoil an otherwise good print on white paper.

When to a solution of ordinary hypo is added an acid — preferably hydrochloric acid — sulphur is precipitated at once in coarse grains which soon settle to the bottom of the vessel. If, however, even a small quantity of gelatine is dissolved with the hypo-solution, the sulphur grains will be finer, will be precipitated gradually, and will not settle except after long standing. The gelatine solution employed may be so weak that it will not set even after several days. The writer's first experiments in this direction were with such a gelatinous solution of about twenty per cent hypo, adding a calculated amount of HCl exactly to combine with all the hyposulphite of soda in the solution. This seems unnecessary, however, as an excess of one or the other of the chemicals seems to have no influence on the result. A print immersed in this emulsion for ten to fifteen minutes would turn to a fine brown color after being washed in running water for a couple of hours. If the same emulsion were used after twenty-four hours' standing, however, there would be no apparent effect on the black and white print. This seems to prove that the acting agent will combine with the silver *in statu nascendi*; while we presume that this agent is free sulphur, it has yet to be proved that sulphur dioxide is not the agent, this being liberated at the same time. The only reason for this argument is the fact that the change of color (silver to silver sulphide) takes place only after the print has been immersed in the emulsion *while* sulphur and sulphur dioxide *are being liberated*, and although we know that many elements have the power of combining direct *in statu nascendi*, but not *after* they are liberated, the sulphur dioxide (not an element), which may be considered in solution as a weak acid H_2SO_3, may have the same power *in statu nascendi*, and form a subsalt with the silver, black in color and not visibly different from reduced silver, and which the continued action of water will reduce to Ag_2S. It is unthinkable that sulphur should combine directly with silver without changing color at once. It occurred to me, however, that if the silver can be acted upon in this manner by being immersed in a gelatinous solution, I might as well use the gelatine already in the paper for the support of the chemicals employed. Following this theory, a number of experiments were carried out, until the following method was found to give reliable results:

Soak the finished and dry print for ten minutes (if hardened in acid-hypo, say fifteen minutes) in a fresh solution of sodium hyposulphite of a proportion of about 1 ounce of hypo to 4 ounces of water. If the solution is colder than 65 degrees F., soak somewhat longer. Prolonged immersion will reduce the print perceptibly; and if two prints cling together for any length of time, uneven toning will result. After soaking, drain off all superfluous hypo, and pour into the tray a mixture of 4 drams of pure concentrated hydrochloric acid and 10 ounces of water. This solution should be preferably at about 70 degrees F. Rock the tray for five minutes, and ensure even covering of each print of the HCl solution. After this treatment no visible change has taken place; pour out the acid solution, which now has a milky appearance, and wash the print for an hour in running water, which will free the paper of any acid that has soaked in, and the print can now either remain in the running water or be transferred to a tray of clean water, where it should remain until the complete change of color has taken place. In winter, in a cold room, with

water at 40 to 50 degrees, the change will take place after ten to fifteen hours, whereas in warm weather it may take only one hour. If the immersion in the hypo-bath has been too short, the deep shadow-portions will not have absorbed as much as the lighter shades, particularly if the print has been hardened while being fixed, and the middle-tones will turn light brown while the shadows remain black. If, after a short washing, the print is taken up and dried, it will remain black and white, and although experiments have not been carried on to prove it, it is possible that the toning will take place, due to the moisture in the air, after several months or more. It occurred, in the writer's experience, that a Regular Velox print, containing large and deep shadow-portions, was hung up to dry after having been treated as above described and washed for four hours in cold water without showing any sign of change in tone, remained in this dry state for two weeks, and was then immersed to a little over half its width in a tumbler of water. Within twelve hours (and possibly before this) the immersed half had toned to a beautiful brown, and upon reversing the position, with the black and white half in the water, the whole print had turned within the next day to an even brown, showing no sign of a streak where the center portion had been immersed twice as long as the ends. This proves that the toning reaches a certain degree beyond which it will tone no further, and this, moreover, is proved by keeping a print immersed in water for a whole week, when it will neither fade nor become reduced. A print that shows signs of reducing has been in the hypo-bath too long, or the bath has been too strong or too warm. The weak hydrochloric acid bath seems to have no bad effect, except that prolonged immersion or too warm a bath will cause frilling at the edges when the print has not been hardened. The final tone is not dependent upon the accurate strength of the hypo- or acid-bath if the change of tone is complete; but like ordinary sulphide toning is dependent upon the emulsion, the original developer used, and the extent to which development has been carried out, full, strong development giving the best results. A flat negative that gives but little contrast in the print or enlargement is no more desirable for this process than for ordinary sulphide toning; but the results are better by the acid-method, *i.e.*, the resulting color is more pleasing to the eye.

An enlargement made by the writer on P. M. C. No. 2 bromide paper, size 11 x 14 inches, was toned by the acid-method described, framed, and given away as a present in May, last year. Twelve months later he had occasion to examine critically the same picture and found no signs or defects that would bring in question the permanency of the image formed by this toning-process.

ALL real talent is tact. — *H. Taine.*

VIEW FROM MT. WILSON — FRANZ OTTO KOCH

A Reflecting-Hood for the View-Camera

H. E. BALFOUR

IN order to get the greatest amount of pleasure and satisfaction from the use of one's camera, there should be as many annoying details eliminated from the operation thereof as possible. Having read a good deal about the joys to be derived from the use of the Graflex and other reflecting-cameras, and the ease with which one could compose a landscape or other view on the ground-glass, with the possibility of moving about to note the changes in composition, etc., brought about by any changed position, all without the bother of setting up the tripod and fussing with the focusing-cloth, I decided that I just had to have one of those beautiful instruments. But, having consulted my bank-account and having calculated the balance after making a few additions to, and a few more deductions from, it, I decided that the purchase of one of these instruments was out of the question. Then I decided to make the best of what I had, and will endeavor to describe the construction of an attachment that makes the ordinary camera "almost a Graflex," and makes it possible for any one else to enjoy this form of photography who would not consider it wise to invest in the high-priced reflecting-camera.

THE HOOD AND ITS USE

The camera for which my attachment was made is the 4 x 5 Revolving-Back Graphic fitted with an anastigmat lens of 7-inch focus, F/5.6, and the dimensions shown on the drawings are for a 4 x 5 camera. Cameras in other sizes would require a different sized attachment, and the dimensions for them can be easily estimated or calculated.

The attachment consists of a mirror attached to the little "door" behind the ground-glass, and held at an angle of about fifty degrees with the vertical, to reflect the rays of light from the ground-glass upwards to the eyes of the operator; a "hood" surrounding the mirror to exclude all light that might enter and fall upon the ground-glass, and means for holding the different parts together.

The "hood" can be detached and folded for carrying in the pocket or in the camera-case, and is shown open in the side-view, Fig. 1; Fig. 2 is a front-view of same, and Fig. 3 shows the "hood" folded ready for carrying. Fig. 6 is a vertical "section" through the "back" and the ground-glass frame of the camera, showing clearly the position of the reflecting-mirror "B" on the door "D."

The first thing to do is to cut out a piece of thin plate-glass mirror to fit loosely inside the opening behind the ground-glass, then bind it to a piece of good mounting-board the same size as the mirror, with passe-partout binding. Now remove the door from the back, and place the hinges on the *inside* of the door, and round off the outside corner as shown in "F," Fig. 6. Having attached the door to the back with the hinges in the new position, locate the mirror in the proper position on the door so that it will enter the space behind the ground-glass when the door is closed, and glue it securely in this position, first roughening the surface of the door where it is covered by the mirror to give a better "hold" for the glue. When the door is closed it will project about its own thickness from the back, so the little socket for the "catch," "G," Fig. 6, will have to be raised an equal amount. This can be accomplished by bending a piece of brass as shown in Fig. 7 and attaching with small screws, which will hold the door closed.

To make the hood, cut from heavy mounting-board two side-pieces as shown in Fig. 5, and one back-piece, Fig. 4, the upper side of which is to be shaped to fit the face as shown. The angle of fifty degrees was arrived at by experiment and was found to be about right for this camera — other cameras might require a slightly different angle — a little experimenting after the mirror is glued on will show the best angle to use. Hold these parts in their correct relative position as shown in Figs. 1 and 2, with the sides *at right angles* to the back-piece, and glue on some black velvet previously cut a little larger than the side- and back-pieces so as to

allow its being turned back over the edges and on to the outside for about one-quarter of an inch all around. Then place the front-piece, also of black velvet, across between the two side-pieces as shown in Fig. 2 and glue it to the *outside* of them; when this is all dry, the side-pieces should be folded over as shown in Fig. 3, and soft leather, cut to size and in one piece, should be glued to the outside, covering the turned-over edges of the velvet, and allowed to dry while the hood remains *folded:* this will allow the hood to fold and unfold without straining the leather, and the velvet on the inside having been glued in place while the hood was *open* will also allow the same easy operation.

To hold the hood in position it will be necessary to place a screw-hook in the ground-glass frame and also one in the door, as shown in Fig. 6, and to stretch a rubber band of the right length between them. When the two side-pieces are placed against the door with the edge "EB," Fig. 5, alongside the mirror and the projecting part "DE," Fig. 5, against the ground-glass, the tension of the rubber band will hold all securely, and the apparatus is ready for business.

A neater method of holding the door against the hood would be to attach a spiral spring along the bottom of the door, as shown in the large "section" in Fig. 8. The holder for the spring is made of thin brass, "A" and "G," Fig. 8, and the "lugs," "C" and "C," turned up and a pin made from a wire nail pushed through the holes and the spring when in position, as shown in "G," Fig. 8; this is screwed to the ground-glass frame, as shown in section in Fig. 8. The spring will always be in place and will not require renewing as the rubber band would.

To get to work it is only necessary to have the hood in position, as shown in the photograph, open the shutter, point the camera towards the view chosen and apply the eyes to the top opening, when the image will appear "right side up and full size" and can be focused; stops can be changed and any other adjustments can be made while holding the camera in the hand, and when the final

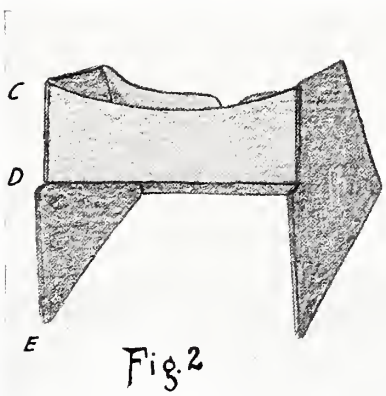


Fig. 2

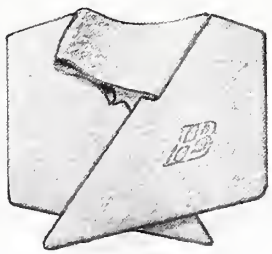


Fig. 3

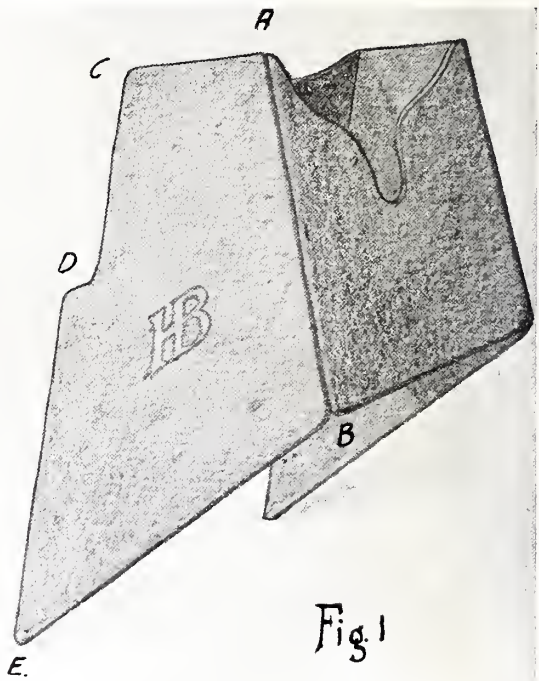


Fig. 1

PERSPECTIVE VIEWS OF THE HOOD

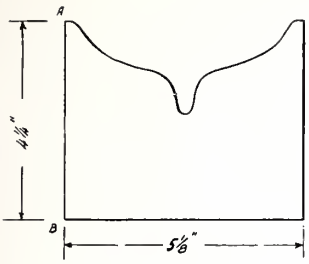


Fig. 4
One reqd

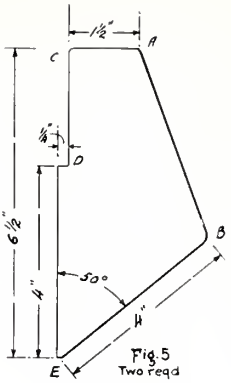


Fig. 5
Two reqd

Fig. 7

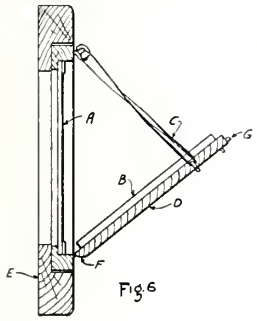


Fig. 6

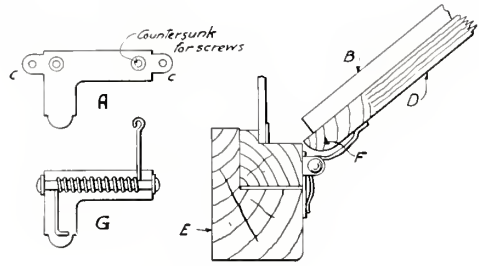


Fig. 8

DETAILS OF CONSTRUCTION

point of view has been decided upon, the holder can be inserted, the shutter set and the exposure made while still holding the camera, by locating the view in the "finder"; or, as is customary, even with the reflecting-camera, for serious work the camera can be set upon the tripod to make the exposure, which is the better method, as it enables one to change the size of stop and "think about" the proper exposure to give, without any danger of moving the camera and perhaps cutting off some important part of the view.

With a leather strap attached to the sides of the camera, near the top, to carry it suspended from the shoulder, and a good level attached and adjusted, one has a first-class equipment and is enabled to do anything from the study of a flower at close range to catching the fire-engine as it tears by, and all with the least possible number of bothersome parts.

The material necessary to construct this attachment consists of: thin plate-glass mirror, good black velvet, some soft black leather, heavy mounting-board, a piece of thin brass (Fig. 8), a small spiral spring (quite stiff), some small screws, glue and passe-partout binding. This attachment has been in constant use by the writer for about four years, and he has derived a great deal of pleasure from it, and hopes that others who wish to construct one may be as well pleased with results.

Drying Negatives

When it is a question of finishing a negative in the quickest possible time, the drying is done usually by artificial means. There are various ways to dry the gelatine coating quickly; but extreme speed is not always necessary, and, besides, one is not disposed to go to much extra expense even if some shortening of time is required.

The easiest and best way to dry a negative is to stand it in a place where there is a good draught of air, as near an open window, or in the breeze of an electric fan. In ordinary circumstances, when a negative is dried in a room where there is a moderate change of air, the operation will take about three hours; but if the room is in use, care should be taken that there is no dust floating in the atmosphere that would settle on the plate. If particles of dust attach themselves to the wet gelatine film, they adhere very firmly, and they can be removed later only by again soaking the negatives and wiping them off with a wad of absorbent cotton.

PORTRAIT ANONYMOUS

If negatives are placed in a warm, closed room, they dry very slowly, and the coating may suffer in consequence. If the drying is dragged out extremely long, say eighteen hours or more, chemical decomposition is likely to take place. This makes itself known by a distinctly perceptible odor given off by the gelatine. When this condition occurs, the gelatine becomes granulated, and although the change of structure is seldom noticeable in contact-prints, in an enlargement it becomes plainly visible.

On hot summer-days, when the air is still and sultry and extraordinarily moist, it is almost saturated with vapor, and any absorption of water from a wet negative must necessarily take place very slowly. On such days many amateurs who want their negatives finished in a hurry, and have no electric fan at their disposal, use an alcohol bath. This method, however, is unreliable and is apt to cause trouble. When the water is rapidly withdrawn from the negative by soaking in alcohol, the film shrinks so quickly that cracks are apt to appear. Moreover, if a trace of hyposulphite happens to remain, the coating will become streaky or spotty as soon as it comes in contact with the alcohol. Spots are also likely to be produced if impure alcohol is used. Another and more important disadvantage with alcohol is that it renders the gelatine film hard or horny. Wood spirit should never be employed. — *Photographische Rundschau.*

EDITORIAL

Avoiding Distortion in Portraiture

THERE are amateurs who still believe that, even with their own regular equipment, they can equal the best professional work in portraiture. Admitting that the talented amateur, with his eminent advantages in spontaneity and originality, frequently surpasses the high-class professional practitioner, it has yet to be shown that he bests him in the technical side of the art. Here the professional excels because of the high efficiency and latitude of his apparatus, and the conditions of light and room at his command, not to mention his long training and experience. With him it is not a question of lightness and compactness of equipment — factors which are well in their proper place — but rather of extreme efficiency, regardless of bulk and weight. For instance, the camera — preferably one adapted to 8 x 10 plates — with a number of double plateholders rests on a substantial stand — not a tripod — that can be raised or lowered easily, the combined weight being seventy pounds and upwards. To this should be added a regular portrait-objective, which sometimes attains the caliber of a small-sized cannon, but which, on account of its peculiar optical construction, has not only great light-transmitting power, but imparts to the result a round, plastic effect, combined with accuracy of drawing, true perspective and softness of texture that make the portrait a living, breathing thing. Of course, this much-desired end is due considerably to the skilful use of the light, of which there must be an abundance and which should always be under the artist's absolute control.

True, the professional is often guilty of using habitually a short-focus portrait-lens, but this is because his studio is of insufficient length, and portraits made in such circumstances generally betray the lack of perfect drawing. What is true of the restricted professional is equally true of the amateur who, ignorantly or knowingly, employs a lens not suited to portraiture. The enlarging of such improperly made portraits only magnifies their deficiencies. One of our friends began his photographic career twenty years ago, provided with a plain 5 x 7 portrait-camera and a regular portrait-lens of 10-inch focus — a bulky outfit, to be sure; but his portraits possess a roundness, a lifelike quality, that makes them pleasing and distinctive compared to others that are flat, inanimate and without interest.

There are other advantages that are included in a well-furnished professional studio; but the most important of them have been mentioned. As the lens is plainly the most important item of the outfit, the student will find it profitable to examine the qualities of such pictures — portraits and genres — as "Kathryn" (August, 1914); "A Ticklish Subject" (November, 1914); "Prof. George H. Bartlett" (December, 1914); "Meditation," "Vesper Bell," "The Sisters" and "Virtuoso" (January, 1915), and "An American Boy," "Memories" and "Grandmother's Wedding-Gown" (February, 1915), each of which was made with a portrait-objective of an average focal length of over 15 inches and directly on 8 x 10 and smaller plates. This accounts for the perfect delineation and other delightful qualities of these artistic achievements and which could scarcely have been obtained with lenses of shorter focus. From the data which were published in connection with "Kathryn" and "The Sisters," it will be seen that these satisfactory portraits were made by amateurs with adequate apparatus, and under favorable conditions of room and light — in fact, in the studio of the Capital Camera Club, which is virtually a high-class professional atelier.

Instead of essaying difficult tasks such as these, with compact equipment designed only for general work, the amateur should content himself with the making of small portraits — miniatures — which, printed on suitable papers, are very pleasing; and when these small portraits are produced with a long-focus lens which is in relative proportion to the size of the plate or film — as in large professional portraiture — they may be enlarged without any fear of linear distortion. If, however, the amateur desires to practise portraiture on a larger scale, he may procure a strong, long-extension camera, a fine old portrait-lens of the Petzval type and a light, collapsible wooden camera-stand; he will discover that a one-inch head is not so terrible a thing, after all, although an achievement well-nigh impossible with his handy pocket-camera. Yet, if he be made to understand his shortcomings in posing and lighting, he will see the need of an artistic education and the right sort of practical experience before he can hope to cross swords with the professional expert.

MY HOME IN SCOTLAND
FIRST PRIZE — MY HOME
ALEXANDER MURRAY

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reprodnction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blne-print, may be entered, but they must represent the nnaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.

4. Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter, SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15 unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve snccessive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the ronte-list. This collection is every year of rare beauty and exceptional educational value. Persons interested to have one of these PHOTO-ERA prize-collections shown in their home-city will please communicate with the Editor of PHOTO-ERA.

Awards — My Home

Closed December 31, 1914

First Prize: Alexander Murray.
Second Prize: Will G. Helwig.
Third Prize: L. A. Olsen.
Honorable Mention: Pierre S. Boisse, Chas. E. Epsworth, A. B. Mears, Guy E. Osborne.

Special commendation is due the following workers for meritorious prints: Mrs. Charles S. Hayden, Franklin I. Jordon, Walter J. Klein, James Martin, Louis R. Murray, Dr. Charles B. Piper, W. H. Rabe, W. T. Starr, Ed. Terrible.

Subjects for Competition

"General." Closes February 28.
"Flashlights." Closes March 31.
"Interiors with Figures." Closes April 30.
"Street-Scenes." Closes May 31.
"Landscapes with Figures." Closes June 30.
"Outdoor-Sports." Closes July 31.
"Public Buildings." Closes August 31.
"Clouds in Landscape." Closes September 30.
"Garden-Scenes." Closes October 31.
"Vacation-Pictures." Closes November 30.
"Winter Street-Scenes." Closes December 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the publisher will give them the choice of photographic supplies to the full amount of the prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

THE introduction of figures into landscape-work increases the number of emotions that may be expressed, adding fear, despair, love and others, and at the same time facilitating the expression of those that can be conveyed by pure landscape; for if a figure expresses by its attitude any emotion, the influence on the spectator may be considerable.—Paul Lewis Anderson in *Pictorial Landscape-Photography.*

Interiors with Figures — Photo-Era Competition

Closes April 30, 1915

It is sometimes a little hard to tell just where the dividing-line should be drawn between the "portrait" proper, and the "genre" composition. "Interiors with figures" seem rather to overlap both of the others. For the purposes of this competition we may consider that figures may be either in the portrait or the "story-telling" class, so long as the "interior" is in sufficient evidence. The old Dutch masters have given us some of our finest compositions of this type, and there could hardly be a better preparation for work of this sort than a study of famous paintings.

You will find as a rule that where figures are introduced the interest centers in them, even in some of the quaint old Dutch pictures where almost the whole home seems to be included. I recall one in particular where one seems to be looking from one room into another which is large and high and rather bare, but lighted by the sunlight which streams in through the windows. Through the open door one looks into the kitchen and again through the door or window into the yard beyond. In the kitchen a woman is busy washing dishes, but her back is turned and one notices her only incidentally, for in spite of all this expansive setting the interest centers in the little figure of the housewife seated in the sunlight of the larger room sorting linen.

I would not advise the camera-artist, however, to attempt a setting of such spaciousness. He might lack the skill of an old master in concentrating the interest just where he wished; far better to follow such examples of simplicity as the pictures of Josef Israels, whose portrayal of simple peasant-scenes is so charming. His setting is seldom more than a bare room with perhaps a rough fireplace, a table of crude workmanship and a common chair or two. The charm is in the naturalness and simple honesty of the peasant-figures which form his theme.

Another picture that is a splendid example of appropriateness in all details is one called "A Hopeless Dawn," by Frank Bramley. The cold morning-light comes in through a window that looks out on the sea. Not one thing in the setting but is there for a purpose and helps to tell the story: the frugal meal still on the table; the candles guttered out on table and window-sill; the big Bible open on the window-seat, and the old clock on the wall — all help to tell of the sleepless night spent by the old mother and young wife in watching for the sailor-lad who has not returned from the sea. The keynote of artistic success in such work is the elimination of everything that does not help towards the expression of one's idea.

It would be far easier to obtain simple and pleasing compositions if one could start with a bare room and put into it only the things desirable; but, alas, the opposite course is nearly always the only possible one, and one must start with a room full of all sorts of things entirely foreign to one's purpose, and from which one must weed out and weed out until only such things are left as are needed. In such a method of procedure one is not unlikely to leave in some one or more articles which "look well" in the room or have beauty in themselves, but which, after all, detract from the perfection of the composition instead of adding to it.

Some of our modern painters seem to overlook this desideratum and lumber up their settings with articles which seem to have no reason for being there unless it be for the purpose of showing the skill of the artist in painting them. Sometimes the models also seem to have no purpose save to look pretty and show their beautiful gowns.

Now I have no quarrel with the model who is beautiful to look upon — on the contrary I know of nothing more charming and attractive than a beautiful face — but for the purpose we are now discussing the model *need* not be beautiful and *must* not be *merely* so, there should be some suggestion of action or of some reason for being in that particular place at that particular time. To be sure we have not the real peasant-type from which to choose our models; but if we heed the slogan, "back to the soil," we find a characteristic American-type that is entirely worthy of being perpetuated. The camera cannot catch the dry wit and quaint dialect, but the whimsical expression and homely garb are within its province and worthy of our lenses.

The modern farm in the vicinity of a town of any size has lost much of its "farminess." What with its telephone, automobile, electric lights and furnace it is only a detached village-home, and one must get back into the less frequented districts to find the old-fashioned farm-kitchen, with its big fireplace and unspoiled rural simplicity. Probably "mother" will want to put on her "Sunday clothes" and spoil the whole idea; but don't allow her out of your sight, lest she reappear with "slicked-up" hair or some detail out of key. Give her some familiar occupation to take her mind from the painful fact that her picture is being taken. If the room is quiet and unencumbered with irrelevant things, the figure may be made to occupy a comparatively small part of the picture-space; but if the background is too "busy," it will be better to include less and make the figure larger in proportion, only be sure that enough of the setting shows to take the composition out of the merely portrait-class.

But perhaps one must use material that is near at hand, instead of going far afield in search of the primitive. The modern home is "harking back" to older and more simple ideas, and the Craftsman style of decoration, in particular, is as unobtrusive as one need desire. It is the houses of the Victorian era, with their figured wall-paper, ornate gilt-framed pictures and contorted furniture that give the photographer in search of the picturesque the very worst kind of a struggle, and he may find it absolutely "impossible."

The subjects that may be chosen are limitless. A favorite theme with painters is the meal. What innumerable instances one can recall! The father asking God's blessing on the food; the mother feeding her brood; father and mother at the table while the children feed the family-pets near by — and similar subjects without number. Perhaps one reason is that the table forms a means of unifying the group and gives a reason for their being together. Anything which serves that purpose is equally legitimate; but if more than one figure is introduced, something must be done to concentrate the interest and preserve unity.

There are several ways of making the figures stand out from the background and draw the eye. The first is by the lighting. Obviously, if the room is kept in comparative darkness and the light concentrated on the figures, they will be given proper emphasis. The same effect may be secured by giving them light garments while the surroundings are dark, or reverse the scheme and use dark garments in a light setting — the result is the same.

The position which they have in relation to the picture-space is also important. The center of a space is the weakest spot and should be avoided. A point one-third of the way from either margin is a strong position and may be strengthened by lines leading towards that point.

When a group of any size is used, it is sometimes wise to divide it into two parts, but never equally; the interest must be decidedly with one group or individual. In an old Dutch family-group by Metsu the seven figures are scattered over the entire picture-space, but there is no

SECOND
PRIZE
MY HOME

HOME-INTERIOR — WILL G. HELWIG

question where the interest lies, for all the older members of the group have turned in amused interest to the young son of the family just entering from the left, holding up a falcon. The one figure balances all the others and holds the interest because the attention of the others is directed towards it.

Concentrate your interest, preserve unity, eliminate unnecessary details, and let us see your results.

KATHERINE BINGHAM.

Orthochromatic Photography

THE novice who hears his more advanced photographic friends discuss the matter of ray-screens or filters, and orthochromatic plates, may be puzzled to know what it is all about; but although it may sound rather complex, it is in reality very simple.

Perhaps you have been disappointed sometimes in finding the color-values all wrong, in some flower-picture; for instance, where blossoms of red or yellow which looked very bright and stood out sharply from their surroundings were represented in your picture by so low a tone that they were hardly distinguishable from the green of the foliage. Or, perhaps, some attractive sky with floating white clouds may have come out a blank white expanse, or a dress of blue and white has shown no difference of tone. This is due to the fact that the ordinary photographic plate is far more sensitive to the blue and violet rays than to the others, particularly red and yellow. For this reason the balance of color as we see it is upset, and the reds and yellows which appear so brilliant to the eye get too little exposure in proportion and come out dull and dark; while the blues and violets are overexposed and clog up, coming out as dead white.

Certain plates are chemically treated to aid in overcoming this and by themselves will help somewhat towards securing a more evenly balanced result; but they are intended for use with a ray-filter, and the two together give a far more truthful result. The ray-filter is a piece of yellow glass placed over the lens. This absorbs certain rays and allows others to pass, thus evening up the exposure. If too deep a color is used, however, the difference is over-corrected and the innocent blue sky is made to look dark and threatening. There is also a loss of atmosphere and the distant blue hill is brought forward until it looks like a knoll in the neighboring pasture.

A screen that lengthens the exposure only two or three times is better than a deeper one for most uses. The users of film-cartridges will find that they are very well corrected in this regard and render color-values far more accurately than the cheaper brands of plates. They are also comparatively free from halation — that spreading of light beyond the outline of an object which is the bane of plate-users. It is caused by the light reflected back into the emulsion from the back of the glass, and obviously the thin celluloid support would practically do away with it. The filter with films makes a splendid equipment for work when color-values are of importance.

KATHERINE BINGHAM.

A Lens-Hood

A VERY economical way of constructing a lens-hood is to make use of the cardboard boxes or tubes in which incandescent gas-mantles are sold. Those for upright mantles are the best, as their length permits of their being cut down until the circle of illumination is just large enough to include the plate. The ordinary diameter of these tubes is just under 1½ inches — a very fair average size for a lens — and it may be found that they will fit without further alteration. If not, strips of paper may be pasted inside or outside the tube. The whole should be coated inside with a "dead black" paint. — E. P. B. in *Photography and Focus*.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

With Reviews of Foreign Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston

Combined Developers for Many Purposes

I — Edinol-Hydro

Combination developers possess certain advantages in embracing the characteristics of two reducing-agents of widely differing action. Hydroquinone figures in most of them as a rapid, hard-working, density-giving agent, whereas metol is most frequently used as a slow, soft-working, detail-giving agent. By combination in suitable proportions almost any desired quality of negative may be had readily; full shadow-detail is assured with more or less vigor at will. In paper-development the presence of hydroquinone yields richer blacks than are possible with any of the other agents alone. Formulæ and full directions for the use of this universal combined developer were published in Photo-Era for August, 1914.

Hydroquinone is employed with several reducers other than metol, however, and if the latter proves irritating to the skin, one of them should be chosen instead. The various combinations will be treated month by month on this page in the following order: Edinol-Hydro, Duratol-Hydro, Ortol-Hydro, Eiko-Hydro, the present instalment being devoted to the first-named.

Hydroquinone, the basis of all these combinations, is a low-cost developer which comes in the form of fine grayish-white prismatic needles somewhat less readily soluble than most developers, but keeping well in solution. It is capable of giving great density and of being easily restrained. Potassium carbonate is considered preferable as an accelerator.

Edinol, the other agent to which particular attention is directed at this time, occurs in the form of a faint yellowish crystalline powder that stands midway between the slow- and fast-working developers in its action, yielding negatives of remarkable clearness, abundant detail, fine gradation and soft brilliancy with a minimum of halation. It is a universal developer suitable for plates, films, lantern-slides, paper, etc.; it does not stain the hands or finger-nails, is absolutely non-poisonous and extremely sensitive to the action of bromide as a restrainer. Stock-solutions keep indefinitely, and as they remain clear can be used over and over again until exhausted. Development must be thorough to prevent loss of density in the fixing-bath. For this reason, and also as a matter of economy, the addition of hydroquinone was suggested. In the treatment of development-papers Edinol seems to permit the maximum latitude in printing-time and works with virtually no tendency to fog or stain in prolonged development. Edinol-developed prints retain their brilliancy to an exceptional degree after drying, and the results with old, deteriorated paper are surprisingly good.

Thus it is obvious that a combination of these two agents will form an economical developer of excellent working-qualities. The following formula is a favorite:

Water	5 ounces	150 c.c.
Acetonesulphite	75 grains	5 g.
Sodium sulphite, anhydrous	225 grains	15 g.
Edinol	30 grains	2 g.
Hydroquinone	15 grains	1 g.
Potassium carbonate, anhydrous	1 ounce	30 g.

For commercial work, use 7½ grains of potassium bromide to the above formula.

MY HOME AMONG THE BIG TREES — L. A. OLSEN

THIRD PRIZE — MY HOME

HONORABLE MENTION

MY HOME

MY HOME BY RAINY TWILIGHT — GUY E. OSBORNE

For more contrast, omit the acetonesulphite.

For studio-work and other soft effects, omit the hydroquinone, use 45 grains (3 g.) of Edinol and add potassium bromide as desired.

For tray-development, dilute 1 ounce of stock-solution with 7 ounces of water. The factor is 15. Development will average about five minutes at a temperature of 65 degrees F.

For ten-minute tank-development, dilute 1 ounce of stock-solution with 10 ounces of water and use at a temperature of 65 degrees F.

For thirty-minute tank-development, dilute 1 ounce of stock-solution with 25 ounces of water and use at a temperature of 65 degrees F.

For bromide paper, dilute 1 ounce of stock-solution with 15 ounces of water and use at a temperature of 70 degrees F.

For gaslight paper, dilute 1 ounce of stock-solution with 10 ounces of water and add 1 ounce of a twenty-percent solution of sodium carbonate.

Many workers prefer Adurol to hydroquinone in combination with Edinol. Certainly it dissolves more readily and is said to keep longer in solution. However, the most noticeable difference is to be seen in the more intense blacks. Edinol-Adurol is also said to have the least tendency to fog or stain of any combination of developing-agents. The standard formula is as follows:

Edinol	20 grains	1.3 g.
Adurol	10 grains	.7 g.
Sodium sulphite, anhydrous	120 grains	8 g.
Sodium carbonate, anhydrous	200 grains	13.3 g.
Water	10 ounces	300 c.c.

Add enough potassium bromide, ten-percent solution, to keep the whites clear.

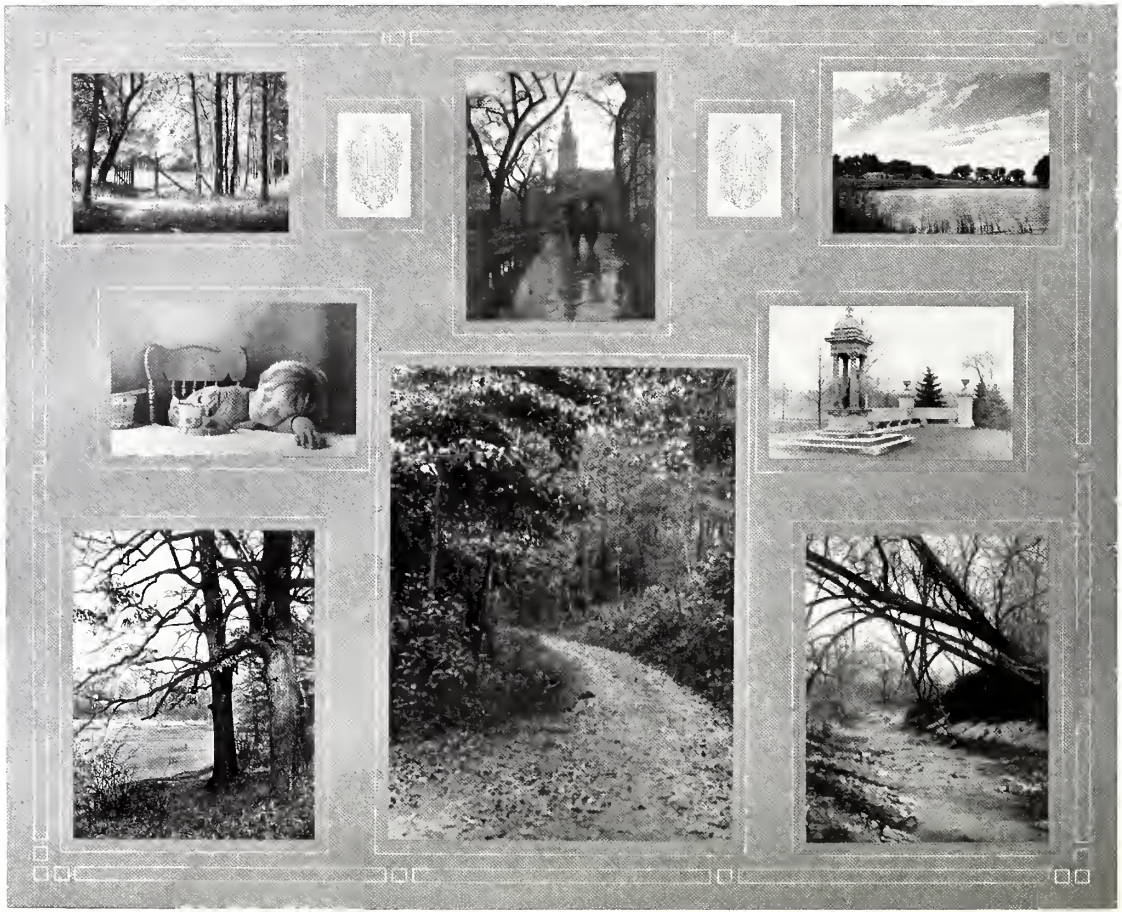
All artists really strong are kinsmen. — *Ernest Hache.*

Sensitizing Canvas for Enlarging

To sensitize canvas with a coating sufficiently rapid for making enlargements by daylight or with an arc-lamp proceed as follows: If the canvas has already been prepared for artist's use, the first thing is to clean it with a mixture of one part strong ammonia and four parts methylated spirit. Rub this over with a clean rag until the canvas is free from appearance of greasiness. Then let it dry thoroughly and prepare the first solution as follows:

Potassium iodide	80 grains
Ammonium bromide	35 grains
Ammonium chloride	10 grains
Gelatine	60 grains
Albumen, dry	440 grains
Water	10 ounces

The first three are dissolved in the cold water, then the gelatine added and the solution gently warmed and allowed to stand in a warm place until the gelatine has quite dissolved. Then the albumen is stirred in. The solution must be only tepid when this is done, for, if too warm, the albumen is precipitated. The mixture is applied to the canvas with a sponge. The canvas so prepared may be kept for any reasonable time. To sensitize it, a solution of silver nitrate, 35 grains; glacial acetic acid, 40 minims; water, 1 ounce, is poured in a small pool at the center of the canvas and evenly spread with cotton wool. The canvas is exposed wet, the exposure being about a minute in a daylight-enlarger set to about six-times enlargement and using a wide-aperture lens. The developer is made by dissolving 60 grains of gallic acid and 10 grains of lead acetate in 10 ounces of water. It is applied to the canvas with the same piece of wool used for the sensitizer, the silver solution left in the wool being sufficient to provide the necessary vigor in the image. Finally, the canvas is rinsed and fixed in an ordinary hypo-bath. — Frederick W. Morris in *The British Journal of Photography.*



HONORABLE-MENTION-PRINTS — BEGINNERS' CONTEST

Left to right: "A Woodland Gate," Joseph Masi; "Rainy Weather," Fred Widder; "Sunday Afternoon," Elliott Hughes Wendell; "The Land of Nod," Louis O. Bogart; "The Fountain," A. C. Roe; "A Glimpse of the Little Cuyahoga," R. C. Schultz; "An October Road," Emil G. Joseph; "The Wreck of Nature," Robert P. Nute.

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value, $5.00; *Second Prize:* Value, $2.50; *Third Prize:* Value, $1.50; *Honorable Mention:* Those whose work is worthy will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is **"General"**; but only original prints are desired.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data. ***Criticism on request.***

4. Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer, and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express, very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed Dec. 31, 1914

First Prize: Howard J. Patton.
Second Prize: Warren R. Laity.
Third Prize: B. L. Wright.
Honorable Mention: Louis O. Bogart, Emil G. Joseph, Joseph Masi, Robert P. Nute, A. C. Roe, R. C. Schultz, Elliott Hughes Wendell, Fred Widder.

Special commendation is due the following workers for meritorious prints: Theodore E. Brodie, Lawrence A. King, Charles D. Meservey, Louis R. Murray, Harlow L. Rockwell, Kenneth D. Smith, G. S. Tagaya, S. Tsuru, A. T. Tumbleson, R. P. Wells, Calvin Yost.

Practical Amateurs

The participants in the two Photo-Era competitions — one for advanced workers, including professionals, and the other for beginners — are aware that the work which they submit must be entirely the product of their own efforts. They must select and compose the picture, expose and develop the plate and prepare the print, be the latter a contact one or an enlargement. Once in a while a print is received for the Beginners' Competition which on inquiry proves to have been made only in part by the contestant, and, therefore, is not eligible, whatever artistic merit it may possess. Before entering prints for either Photo-Era contest, would-be participants should carefully read the rules which are printed in every issue.

Saving Extreme Underexposures

A good tip worth remembering when developing very bad cases of underexposure which are bound to occur at times, is as follows: After the plate has been in the normal developer for a minute or two, and only the highlights and faintest trace of shadow-detail are visible, if the negative is of an important event that cannot be reproduced, it may be saved by exposing it to white light for a second or two, or by holding a lighted match over it for a few moments while still in the developer. Instead of completely fogging the plate, as might be imagined, reversal will take place, and a complete and, in many cases, plucky positive will develop up, showing a wealth of detail that would appear to have been impossible to obtain had development been continued in the ordinary way. After drying, a good negative can easily be made by contact from the positive, and prints from this negative will show little trace of having been obtained from such a bad exposure.

F. J. Mortimer, F.R.P.S.

Doctor — "You must go away for a long rest."

Overworked Merchant — "But, doctor, I'm too busy to go away."

Doctor — "Well, then, you must stop advertising."

Boston Transcript.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and all regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston.

Improving the Negative

Unless he is most unusually fortunate, the amateur finds that many of his negatives do not yield satisfactory prints and he is at a loss to know what to do to improve them. One common difficulty is a negative too thin and flat to yield anything but a weak, dull gray, mealy print. The cause of this is usually underdevelopment and the remedy is intensification. If there is any doubt about the thorough fixing and washing of the film to be treated, it is best to be on the safe side and repeat these operations, as an innumerable number of stains and spots may appear as a result of either of these being neglected.

This having been attended to, place the film in a solution of 2 ounces of mercuric chloride to 50 ounces of water. It will rapidly bleach, and as soon as the white appearance has reached the back of the film remove and rinse very thoroughly, then reblacken by immersing in a solution of sodium sulphite 2 ounces to 20 of water. This gives a permanent but not very great increase of density. If, after rinsing from the bleaching-solution, the plate be immersed in a weak solution of ammonia, the intensification is greater, but less permanent.

The *American Annual* gives directions for intensifying with red ink, which would at least have the advantage of freedom from harmful chemical action. The plate is to be soaked for a time, then immersed in a tray of water in which a teaspoonful of red ink has been thoroughly blended. It is left face up in the tray until well and evenly colored, then dried without washing. If too deeply tinted, repeated soakings in clear water will reduce the coloring.

Another type of negative that gives unsatisfactory prints is the overdeveloped or overexposed film. This is very thick and takes a long time to print, and in the case of overexposure yields a flat, gray print. This may be improved by reduction with potassium ferricyanide. To enough plain hypo-bath to cover the plate add enough of a ten-percent solution of potassium ferricyanide to color it a light straw-color. Immerse the negative and observe frequently. When enough density is lost, wash well and dry.

Another type of plate that is improved by reduction is the one with too great contrast — one in which the highlights are clogged and do not keep pace with the rest of the plate in printing. The treatment for this class of negative is reduction with persulphate. This attacks the highlights first and evens up the negative. Take 15 grains of ammonium persulphate to the ounce of water and make the solution just before use. When the highlights are sufficiently reduced, or the shadows begin to lose density, transfer the plate without washing to a ten-percent solution of sodium sulphite for a few minutes, then wash for twenty minutes.

Sometimes a negative of good printing-quality is caused to print unevenly or too slowly by a yellowish stain covering it wholly or in part. If this is merely a surface-trouble, as is sometimes the case, a tuft of cotton dipped in alcohol and rubbed firmly over the film may remove it; but if the trouble is deeper seated, it may be necessary to try the following method for its removal: dissolve ⅛ ounce of pulverized alum in 20 ounces of water and add 1 dram of sulphuric acid. After immersion in this solution for a few minutes the stain should disappear. Wash well and dry.

Many times an otherwise good negative will have a spot of less density which causes an unsightly dark spot in the print. These may be caused by uneven development or uneven drying. The best way to treat them is to rub the spot with some retouching-medium. (A good and simple varnish may be made by dissolving a little resin in turpentine.) With a soft pencil well pointed, work up the spot to the density of the surrounding portions of the negative. If the spot comes in the sky, it will test your skill to make an even tint of it; but if it comes in foliage or other places of varying densities, be careful to match each change in density and to carry out the forms correctly. If the spot be of greater instead of less density, the task of reduction is less easy, but can be accomplished, unless it seems easier to spot the print. One good way is to cover the finger-tip smoothly with a piece of old, soft linen dipped in alcohol and rub gently and evenly until the proper tone is obtained. If the spot be small, it may be necessary to use some small implement, like the small end of a penholder with which to work, but it should be covered with several thicknesses of linen and used very carefully. If too great reduction results, or unevenness appears, the spot can be coated with varnish and evened up as has been described above.

Small spots and pinholes can be stopped up with a small brush and black watercolor. If care is taken in matching the density of the plate, it ought not to be necessary to spot them again on the print.

Scratches on the plate are hard to deal with. If the scratch is a light one, it simply roughens the film and prints light. The best treatment seems to be to scrape this down with a sharp knife until it matches the tone. If carried too far, a little varnish and lead will even it up again. But if the scratch has penetrated the film and prints dark, the brush and watercolor must be resorted to.

Photography Reversed

After discarding a cartload of new developers and other chemicals from my darkroom and returning to a simple pyro-developer and tanks for all negative-developing, I set to work to rid my pockets of dizzy exposure-tables, stop-reduction tables and tables of plate-speeds

FIRST PRIZE
BEGINNERS' CONTEST

MILDRED — HOWARD J. PATTON

etc., and to evolve a rational system that an ordinary "snap-shooter," who thinks only of photography when he is not working, could remember and put into use quickly and without having to waste valuable time in looking up tables.

I found that an average view lighted with bright sunlight that would tint up my sensitive paper in one second required one second exposure with F/64 stop when using one particular plate.

Therefore, I call this light my unit of light, or rather a light of unit slowness, for another light which takes 4 seconds to tint up has a factor of 4. F/64 is my unit stop, or stop No. 1. F/32 is stop No. 4. F/16 stop No. 16, F/8 is stop No. 64, and so on, because they give 4, 16 and 64 times as much light as stop 1 and require $\frac{1}{4}$, $\frac{1}{16}$ and $\frac{1}{64}$ second exposure with unit lighting and a plate of unit slowness.

A plate that is 4 times as slow as my unit plate has a factor of 4, and one that is twice as fast has a factor of $\frac{1}{2}$.

Now, if I decide to use stop No. 32 on a certain subject, I know that the time of exposure is $\frac{1}{32}$ of a second in light of unit slowness; but if by judging or testing I find that the light requires 4 seconds to tint the paper, it will take 4 times as much time, or $\frac{1}{8}$ of a second, and if I am using a plate that is $\frac{1}{2}$ as slow as my unit plate, it will take only $\frac{1}{16}$ of a second.

On the other hand, if my shutter-speed is fixed at, say, $\frac{1}{25}$ of a second, then I must use stop No. 25 for unit lighting, or stop No. 50 for a light that is twice as slow as unit light; and then if my plate is twice as slow as my unit plate, stop No. 100 will be required; but if in addition to this it is a distant landscape, the stop is reduced by half, or back to No. 50, and so on, multiplying by every factor that must be considered, and the whole calculation performed mentally and quickly; and if the final result is a stop much larger than the largest on my scale, I don't shoot. As will be noted, the stop-scale is reversed, the light-intensity scale is reversed, and the plate-speed scale is reversed, but the image on the negative is not.

I use Heyde's Aktino-Photometer also with the scale reversed: 20 equals 1 and 0 equals 3000, thus making the reading an integral factor with which to multiply the stop or its reciprocal, the shutter-speed.

T. A. Bedford.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

C. Y. — **Printed matter on flour-bags** is fast, according to the best belief of a professor of chemistry of the Massachusetts Institute of Technology.

To sensitize self-toning paper which will require fixing only to finish it, float the paper for two minutes before drying on a solution containing gold chloride, 60 grains; ammonium chloride, 120 grains; water, 30 ounces. When dry, sensitize on silver nitrate, 3 ounces; distilled water, 16 ounces. Add enough liquid ammonia (.880) to dissolve the precipitate first formed, and add enough water to make the solution up to 20 ounces. Float the paper for three minutes and dry. Paper prepared in this manner will keep about a week. Fix in hypo, 5 ounces; water, 20 ounces. The addition of 14 grains silver iodide is an improvement.

We have no formula of this sort for **sensitizing fabrics,** but a test of the one given for this purpose would be interesting. Before applying a sensitizer the fabric should be thoroughly washed in hot water, ironed and sized to prevent the image from sinking into the material. The size consists of: gelatine, 50 grains; common salt, 50 grains; magnesium lactate, 50 grains; water, 10 ounces. Soak for two or three minutes and dry thoroughly.

The ordinary sensitizers of fabrics are for toning, fixing and washing like P. O. P. Sensitize for three minutes in silver nitrate, 25 grains; water, 1 ounce. Immerse for a minute in citric acid, 50 grains; sugar, 50 grains; water, 20 ounces. Dry in the dark.

H. S. — **How to make enlarged negatives** is rather too big a subject to handle in a letter. In July, 1908, there was an excellent article on this subject by George C. Elmberger, a prominent member of the Chicago Camera Club. If you have a file of PHOTO-ERA you can look it up, or we will send you a copy if you desire. In brief, the process consists in making a contact transparency on glass, using this instead of the negative for making a paper negative in the enlarging-lantern, the developed negative print being rendered transparent for printing by contact supported by a plain glass in the printing-frame. The chief advantages of paper negatives are their cheapness, absence of breakage, light weight and the ease with which modifications in pencil may be made on the paper side of the negative.

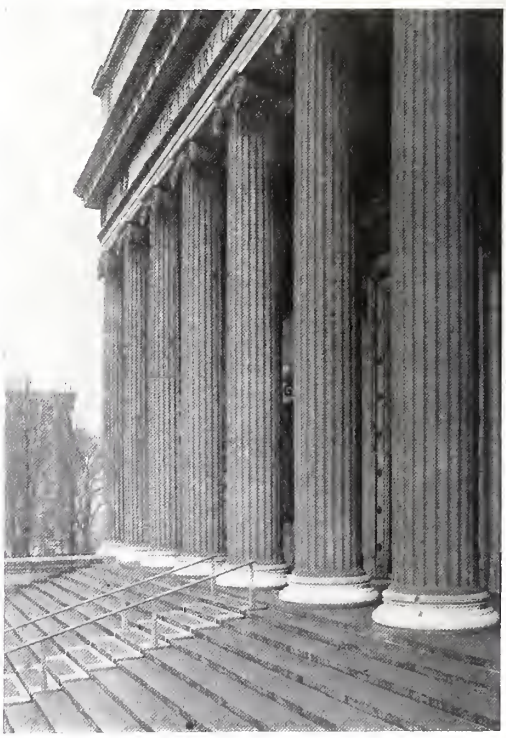
C. C. F. — **What is the *best lens for portraiture* in the world?** To answer this question intelligently and without prejudice is impossible, as there is no *best lens* in the world for *portraiture.* PHOTO-ERA advertises in every issue a number of optical firms of the highest reputation, whose lenses are giving the fullest satisfaction for the purposes intended. There are a number of high-class anastigmats made by as many distinguished optical firms in Europe and in this country. One of them makes a type of lens which will give extreme sharpness and which, by simply manipulating one of the combinations, will give a diffused definition in any reasonable degree desired. Certain firms also make what is known as a soft-focus type, which likewise is advertised in PHOTO-ERA. Examples of both kinds of work are published in nearly every issue of this magazine.

A. L. H. — **The white frosted appearance about the edges of your negatives** after drying, following the use of a fixing-bath containing too much alum, is probably due to the fact that too great hardening prevented thorough removal of the hypo in the usual length of time. In other words, the crystallization is hypo. Immediate thorough washing may remove the crystals; but if staining has set in, there is no satisfactory way to remedy the defect. By all means throw away the fixing-bath or increase the bulk by the addition of more water and the various chemicals in proportion to the amount of alum used.

J. M. — The best way for you to do is to **read the back numbers of Photo-Era** which contain articles on the subject about which you inquire. The idea of enlarging a motion-picture film is feasible and simple. Some workers use their own cameras for this purpose, provided the film can be placed behind the lens. Almost every manufacturer of printing-paper publishes a booklet on "Home-Enlargements," so that you would not have to purchase an expensive equipment for this purpose.

Your lens is first-class, provided the focus is not too long; you forget to mention this item in your letter. Clear-cut motion-pictures generally yield very satisfactory enlargements up to 8 x 10, and even larger.

J. H. D. — **Bromide prints which have been bleached from too long immersion in the fixing-bath** may sometimes be restored by sulphide toning, although it is usually simpler to make a new print if the negative is available. The print must first be completely bleached and for this two solutions are required, the same as for a negative.



A ROW OF COLUMNS — WARREN R. LAITY
SECOND PRIZE — BEGINNERS' CONTEST

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

K. D. S. — The highlights of your subject are too white and suggest overdevelopment. Were all these whites grays in the print, you would have a better print.

J. G. D. — Of your outdoor-portraits we prefer Nos. 1 and 3, because they are so much more spontaneous and natural than the others, which seem studied and self-conscious. The technical work is excellent, unless a different paper, softer-working, which would yield less contrasty prints with more gradation in the high-lights, might be considered an advantage. The back-grounds are natural and unobtrusive, and the compositions good, although the figures are rather too centrally located. Slight trimming from the left-hand side of Nos. 1 and 3 will work an improvement.

"The Water-Mill" and "A Tombstone-Pergola" both suffer from equally bright lighting on the two sides shown. Better results and a more stereoscopic effect may be had at a time of day when the principal side is in sunlight and the other side in shadow.

"DADDY'S COMING!" B. L. WRIGHT
THIRD PRIZE — BEGINNERS' CONTEST

L. R. M. — As a whole, your work shows the result of overdevelopment and, in several instances, underexposure, which is probably the cause. Many of the subjects will be improved by printing on a softer-working paper. Several of the exteriors are very good, with gray skies where there is an absence of cloud-forms.

F. I. J. — The child in your print, entitled "My Home," lends to it a pleasing touch of human interest, but unfortunately the print itself suffers from a lack of detail in the white dress, and also the lines of the white house. We notice that the latter is decidedly not plumb, as vertical lines always should be in an architectural subject.

"Apple Blossoms" has apparently been overdeveloped, so that detail and texture in the petals have been lost; also the print appears to have been enlarged rather beyond the limitations of the subject. Except for some definite decorative purpose, we do not consider that the silhouetted effect you have worked out is particularly attractive.

G. S. T. — Your indoor-portrait presents an interesting subject, but is undertimed. Such solid black shadows without detail are undesirable in portraiture.

A. E. R. — Greater care devoted to the matter of focusing will probably improve much of your work, as it is noticeably indistinct in the foreground — often in the principal subject, such as a figure, when it ought to be most carefully defined. The sharpest focus should rarely be in the distance.

S. B. Y. — Your miniature camera is doing excellent work, and of your several prints we like the Nürnberg-scenes best.

"A Summer Day" is, of course, somewhat underexposed and possibly a trifle too strongly developed, giving rather a spotty effect in the highlights. Printing on a softer paper might prove beneficial.

L. E. U. — "Sweet Solitude" seems to be rather too contrasty and indistinct in definition for the character of the subject. Such a treatment demands a readily recognized center of interest, which this subject does not possess; in fact, there are here three objects of virtually equal interest. It would be possible by careful trimming to get an attractive picture out of the building, boats and trees on the left-hand side of the stream; another one showing the buildings on the right bank of the river as far to the left as the boat, and still a third at the bottom of the picture, including the boat, a few reeds, a corner of the wharf and the reflection of the big tree.

E. T. — While otherwise excellent, your two architectural subjects show the effect of tipping the camera upwards, thus giving convergence of the vertical lines from the top of the building. The proper course is to keep the camera level, so that the plate or film will be plumb, and to push up the rising front; it is provided on purpose to cope with such subjects as these.

T. E. B. — The prints you have sent are not particularly interesting in subject and it occurs to us that reading Poore's "Pictorial Composition" might be a benefit to you in the selection of the subjects.

R. P. W. — "Shadows" is a very attractive subject and you have obtained a well-spaced composition. It would be improved, however, by enlargement on a paper which would give to it a little more snap and richness of tone. The print submitted is rather flat and lifeless.

"The Stream" also contains good material and might be worked up to an interesting print of larger size. Unfortunately, however, the rock in the foreground is the most conspicuous thing in the picture, yet perhaps the least important. By printing this negative through tracing-paper with a little penciling on the paper over the rock it would be lightened somewhat in tone.

"Twilight Hours" is much underexposed and also suffers because of the white hair-ribbon on the girl's head which is much too light.

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.

For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class **1** plates, stop **F/8**, or **U. S. 4**. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

HOUR	MONTH AND WEATHER																			
	Jan., Nov., Dec. †					Feb., Oct. ‡					Mar., Apr., Aug., Sept. ¶					May, June, July §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1*/12	1*/6	1*/3	2*/3	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1*/5	1*/2	1*	1 1*/2	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1*/15	1/8	1*/2	3*/4	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1*/10	1*/5	1*/3	2*/3	1 1*/2

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop.

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class 1 are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.	U. S. 1	F/4	× 1/4
	U. S. 2	F/5.6	× 1/2
	U. S. 2.4	F/6.3	× 5/8
	U. S. 3	F/7	× 3/4
	U. S. 8	F/11	× 2
	U. S. 16	F/16	× 4
	U. S. 32	F/22	× 8
	U. S. 64	F/32	× 16

For other stops multiply by the number in the third column

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply $1/16 \times 4 = 1/4$. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. $1/16 \times 1/2 = 1/32$. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1, 3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Barnet Super-Speed Ortho.
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington Xtra Speedy

Class 3, 4, P. E. 120, Wy. 200, Wa.
Ansco Film, N. C. and Vidil
Atlas Roll-Film
Barnet Red Seal
Central Special
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid
Seed Color-Value

Class 1, P. E. 111, Wy. 180, Wa.
American
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Central Comet
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

THE profound sympathy for unhappy Belgium that has been shown in this country, from one end to the other, and in a most substantial way, is one of the consolations in the present great world-struggle. Although the Belgian Relief Fund has been swelled to splendid proportions by direct contributions, it has been increased materially by the proceeds from bazaars, also from entertainments in the nature of a Flemish Kermesse which were held in the large American cities. The picture by Alice Boughton, which serves as a cover-embellishment of the present issue, and is repeated on page 121, is reminiscent of those brilliant festivals at which striking and gaily-colored costumes *were* much in evidence. The artist has depicted one of the inevitable *masqués*, who add much to the gaiety of the occasion. No data.

The beauty and completeness of the sympathetic tribute paid by Paul Lewis Anderson to the artistry of William E. Macnaughtan precluded the utterance of a single additional word in praise of the exquisite mood-pictures which adorn the initial pages of this issue. However, the artist's "Top of the Hill," which appeared in PHOTO-ERA, November, 1914, and elicited the following from Mr. F. C. Tilney, the reviewer in *Photograms for 1914*, "The Top of the Hill" is, first of all, simple in the extreme, and not once in a thousand times does a photographer content himself with a strip of earth and a single tree. The nobility of this design is due entirely to its simplicity. Incomplete data: "The Connecticut River" — June, 11 A.M. "In the Connecticut Valley" — August, 3 P.M. "Old Stone Bridge" — September, P.M. For all three pictures were used 4 x 5 Graflex; Standard Ortho.; Rodinal; 1/20 second; good light; prints on Japan paper; 9-inch "Smith" soft-focus lens; stop, F/11.

The sculptors of classic Greece never chiseled a more exquisite head than that of the American maiden whose beautifully refined profile is presented on page 114. The delicate beauty of the cameo-like contour, indicative of the sweet graces of adolescence, is enhanced by the becoming simplicity with which the hair has been arranged — a secret of feminine charm. The artist, J. W. Hughes, of Detroit, deserves much credit for having achieved so notable an artistic success by straightforward photography. Data: Professional studio and equipment — 11 x 14 Century Portrait-Camera; 16½-inch Wollensak lens; used at full aperture; north light; Central Plate; pyro; platinum print.

The row of poplars, page 117, is a worthy product of the talent of a well-known pictorialist of Grand Rapids. We are not disposed favorably towards a winter-scene in low tones; but in this case the snow had become discolored in the ordinary way and, aided by the depressing effect of a gray day, the scene took on a somewhat somber aspect, which the artist was not slow to appreciate and to interpret. The picture was taken several years ago, but the poplars have since been removed. Data: February, 1909; 1A Kodak; R. R. lens; full aperture; instantaneous; pyro.

The interesting portrait of a young girl, page 118, is an example of concentrated interest and complete subordination of all accessories. It was intended by the artist, Howard D. Beach, more as a study than a completed portrait, and is valuable as showing the result of purposely slighting the hair and dress of the model in favor of the face. The arrangement of the figure is extremely pleasing and the face is replete with expression. Data: Professional studio and equipment — 20 x 24 portrait-camera; Wollensak Verito lens; at F/6.5; January, 11 A.M.; light, good; Haloid print.

On the opposite page (119) is a superb likeness of the artist, Howard D. Beach, of Buffalo, a former president of the Professional Photographers' Society of New York and a photographer of pronounced ability. As his portrait indicates plainly, Mr. Beach is a forceful, intellectual personality, possessed of ideals and ideas, and occupies a high position in the photographic activities of his city and state. No data.

As a photographer of children, W. C. Noetzel, of Newton, Mass., has achieved a high reputation. The numerous pictures we have seen from his studio seem to indicate a tendency to bring out the serious side of the little folk, to emphasize the intellectual side of their nature, as if, in his judgment, it afforded an index of their character, rather than the sunny smile for which most photographers strive — obedient to the mother's wish. Mr. Noetzel appears to be a philosopher, and it may be true that his earnest interpretations of childhood will wear better than those that indicate a temporary state of merriment — obtained by artifice and laborious efforts.

The child-portrait, page 120, suggests a pensive, contemplative attitude of the mind — of concentrated interest, perhaps. In any event, the little features are not distorted by a laugh, and, in years to come, it will serve better as a means of comparison with later portraits of the same subject. For similar portraits by Mr. Noetzel, we refer the reader to PHOTO-ERA, July, 1912. Data: 19-inch Ic Tessar; at full aperture; ½ second; print, E. B. B. Smooth Platinum.

The four pictures by F. M. Steadman, author of the valuable work, "Unit-Photography" — carefully reviewed in February PHOTO-ERA, 1915 — are typical of our neighboring republic, now, alas! in the throes of internal dissension, and give a glimpse of several widely different aspects of that really interesting country. Unhappily, Mr. Steadman was obliged to quit his Mexican abode very suddenly, and consequently left behind many valuable negatives, including those of which he took with him only green-toned prints, and which were all he had to offer with his brief sketch. This accounts, in a measure, for the somewhat contrasty appearance of the halftone reproductions. Mr. Steadman apologizes also for the technical defects of the "Yucatan Patio," which are due to the character of lens and plate used. No data.

Those PHOTO-ERA readers who are familiar with the aspect of the great cathedral interiors of England will be startled to behold the view of the magnificent nave of Salisbury Cathedral, presented on page 126, which shows the floor of the edifice submerged several inches and the interior reflected up to the roof. An immense volume of water was recently brought down the valley, in which Salisbury lies, by the rivers Avon and Nadder, and all the low-lying parts of the city, as well as thousands of acres in the surrounding country, were flooded. The water rose to the west door of the cathedral on the night of January 4, and at four o'clock the next morning it had spread over the floors of the nave, cloisters and chapter-house, reaching a depth of several inches. It is sixty or seventy years since this last happened. The east end of the building is on a higher level, and it was found possible to hold services in an antechapel. The water in the cathedral continued to rise during the day, but fortunately

the monuments that it contains were well above the level of the flood, and no permanent damage was caused. The water has since subsided. The Cathedral of St. Mary at Salisbury was founded in 1220, and is a beautiful example of Early English architecture. The nave is 230 feet long and 82 feet wide. The view is a fine example of first-rate architectural photography.

As a camera-record of a sublime spectacle, the view from Mount Wilson, page 128, is very valuable. Of artistic merit there is no evidence, unless the distant mountain-range and one-half of the width of the low-lying area of cloud-land were trimmed away, leaving the extremely beautiful snow-banked road with its delightful light and shade-effect. No data.

The technically admirable portrait, page 132, has lain in one of our cabinets for a long time vainly awaiting a clue to its authorship. It is, therefore, published with apologies to the nameless artist. The Editor will promptly announce his name as soon as it shall be discovered — with the kindly assistance of our readers.

The Photo-Era Monthly Competition

No more interesting competition has been held in this department than the one devoted to "My Home." The number of entries was very large, and included pictures of the home as illustrated by elegant mansions, luxuriously furnished apartments, sections of long blocks (each "house" an exact duplicate of its fellows), cottages, humble dwellings and log-cabins. The only form lacking was the house-boat, which, to many persons, is an ideal sort of habitation. The work of the jury was by no means easy, for the element of sentiment, consistent with a convincing degree of technique, was one of the important considerations.

Few — if, indeed, any of our pictorial contributors — can exceed Alexander Murray in the expression of that tender attribute, as, for instance, in his affectionate regard for his native home in bonnie Scotland, so well interpreted with the aid of his beloved camera, page 134. Though happy in his American home, in one of Boston's suburbs, his attachment for the thatched cottage in the historic land of Burns and Scott is ever strong — "his native home deep imaged in his soul." Data: August, 1913; bright, clear day; 4 x 5 Premo; B. & L. Special Universal lens, 6½-inch focus; F/16; ray-filter; 2 seconds; Ilford Chromatic; Amidol; Eastman P. M. C. Bromide enlargement.

With justifiable pride, Will G. Helwig presents a technically admirable interior of his attractive home. The picture has the merit of sensible arrangement without being stiff. There are no discordant notes, such as white objects — bric-à-brac, marble or plaster statuary, curtains or tidies. The white or light-tinted lamp-shade, easily an offending object, in this instance has been managed with discretion. Data: June, 11 A.M.; 6½ x 8½ Century; 11-inch Plastigmat; F/32; bright light; mission furniture; 100 seconds; Seed 26x; pyro; Artura Rough 6½ x 8½.

The home in the quiet, salubrious woods looks particularly alluring to the city man. Perhaps the occupant might not be inclined to exchange his simple abode with the furnace-heated, car-tortured, though otherwise quite comfortable, thank you, domicile of the Editor. But covetousness is not a passion to be fostered and, above all, there is no need to suggest even the possibility of a real-estate transaction. Neither do we desire to know whether our log-cabin is used as an occasional retreat or as a place of permanent abode. Data: Aug. 1, 1914; bright, heavy shadows under trees; 3-inch focus Beck-Mutar; F/8; Eastman N. C. film; 1½ seconds; pyro-soda; 8 x 10 R. P. W. Velours Black enlargement.

The home of unpretentious architecture often lends itself to more artistic treatment than one of ostentatious magnificence, and, when gloomy weather-conditions prevail, a pleasing camera-result may be looked for. This seems to be the case with "My Home — by Rainy Twilight," page 139. The human element imparted by the author emphasizes the sentiment suggested; and one could easily imagine the children singing, "Be it ever so humble, there's no place like home." Data: Jan. 15, 1914; 5 P.M.; dull light; Conley Double Orthographic; 8-inch focus; F/16; 10 seconds; Hammer Extra Fast; pyro; Professional Studio; Hydro-Elon.

The Beginners' Competition

In reviewing the merits of prints submitted, the question of the degree of technical ability called for in their production is also considered by the jury. Portraiture is generally regarded as the most difficult among the various branches of photography, hence a successful portrait ought to be given the preference to a landscape or an architectural piece, unless either of these possesses extraordinary merit. We believe our readers will concur in this opinion.

The portrait by Howard J. Patton, page 143, is a praiseworthy performance for a beginner. The treatment is conventional, to be sure, but the good points in pose, lighting and workmanship are far above the average. The only print entered was a little contrasty, but none of the accessories detracts from the face and neck which are already in too high a key. Data: May, 1914; 6.15 P.M.; dull light, inside; 5 x 7 Premo; 8½-inch Plantograph; U. S. 4; 20 seconds; Seed 26x; pyro; Royal Bromide enlargement.

Of the classical façade of the Library of Columbia University, page 144, excellent prints have been published in Photo-Era several times. Although the workmanship of Mr. Laity's effort is perfect, the task might have been less easy had the sun been shining on the front of the building; besides, the effect would have increased the interest in the picture. Data: December, 1914; 9 A.M.; 8 x 10 Century; 8¼-inch Goerz; F/8; dull day; ½ second; Central Comet plate; M. Q. for both plate and print; Cyko Studio Normal print.

A softer printing-medium would have helped the prints of Mr. Wright (page 145). Hard-printing negatives need to be favored, and the paper that happens to be handy may not always be the most suitable. Here the values are wrong, the face looks anemic, and the entire figure has a washed-out appearance. The interest, however, is there. Data: September, 1914; 4 x 5 Cartridge-Kodak; B. & L. R. R. lens; U. S. 4; 4 P.M.; in shade; 1/25 second; Eastman N. C. film; Eastman developing-powders, in tank; enlargement on Cyko Enlarging Buff Linen.

The pictures condensed into an artistic group, page 140, give a glimpse of the variety of subject and the artistic promise of last month's contributors to the Beginners' Competition. As we have explained in a previous issue, the term "beginner," in the Round Robin Guild Competition, has been given a liberal interpretation, and very frequently contributors in this class have had considerable experience and do very creditable work, such as Elliott H. Wendell, Louis O. Bogart, A. C. Roe, Emil G. Joseph and others. The pictorial group will repay careful study. Data:

"Woodland Gate" — Sept. 1, 1914; bright; 5.30 P.M.; Standard Ortho; Rodinal; 6 seconds; 3-time filter; Cyko soft glossy.

"Rainy Weather" — November, 8 A.M.; Ross lens; F/8; 1/15 second; Hammer plate; pyro-metol; Cyko print.

(*Continued on page 155*)

ON THE GROUND-GLASS

WILFRED A. FRENCH

An Old Dodge

THE much-practised trick of snapping a difficult, but unsuspecting, victim while pretending to be making an exposure of a subject in another direction, reminds me of a similar stratagem in my own experience, over twenty-five years ago.

Many Boston camerists may remember Mother Sullivan, the old applewoman, who had her stand at the entrance to the passageway from Milk Street to Spring Lane, near the Old South Church. She was an interesting character, presiding over her basket of shining red apples, dressed in her rough costume and smoking an old corncob-pipe. She was very "chummy" with her customers, whom she would jolly in her rich Irish brogue, and very susceptible to flattery, but would resent my photographic advances with a vehement, "Awagh wid ye; none of yer cameera johks now!" I insisted, however. One day when I pointed my camera at her, saying pleasantly: "Come now, Mother Sullivan, let's have a nice picture to send over to your son in Tipperary," she bristled up, pulled off a huge, heavy shoe and threatened to throw it at me. I bided my time, resolving to get the picture surreptitiously. As she was busy entertaining a customer in her characteristic fashion one noon-hour, and not aware of my proximity, I arranged the scene in the finder and was about to press the button when, discovering my design, she hurled a large, decayed Gravenstein at my camera — a 4 x 5 Hawkeye of the box-type — which went wide of the mark, but knocked off my hat. That settled it. I gave up the venture; but only for the time being.

A few days afterwards, as I neared the apple-stand again, I hailed a newsboy coming up Milk Street. When he was within ten feet of me, I leveled the *side* of my Hawkeye at him and motioned him to take a certain pose, *at the same time* quietly getting the eight-foot range of Mother Sullivan, at whom the lens-front was being pointed. She was very much interested in my effort to get a successful picture of Jimmie, who was one of her favorites, exclaiming: "Kape shtill for the gintleman; will ye?" glancing from one to the other. Looking at me, she shouted encouragingly: "Now git him, Mister!" At that instant I pressed the button and secured the picture. I developed the plate at the camera club that day, and lent the highly successful negative to a member, who made a lantern-slide and showed it at the club one evening; but I never received it back. So Mother Sullivan never knew how successfully, though unwittingly, she posed for her portrait.

Faked Photographs of the War

IN the December issue I referred to some of the illustrated English weeklies, many of whose war-pictures, based on descriptions received by telegraph or hearsay-reports and rumors, exaggerated and misrepresented the so-called atrocities committed by German troops in Belgium, which were calculated to influence the public mind against the "barbarians." Sometimes the staff-artist would dexterously alter an enlarged photographic print of a famous building, in its normal state, as to suggest a semi-ruined condition caused by bombardment and subsequent fire. Now as the truth of these barbarities is gradually being revealed, the English papers are admitting that such beautiful historic structures as the Hotel de Ville, in Louvain, the Tower of Mechlin (Malines), the Belfry of Bruges and the Antwerp Cathedral with its wondrous spire, reported to have been demolished, or, at least, seriously injured, are still intact. Even the gorgeous Cathedral of Rheims, although its encrusted beauty is shown by photographs to have suffered severely, is by no means ruined permanently.

The excited correspondent, who reported that the twin-towers of Rheims Cathedral had been burned out so that one could see through them, failed to remember that for eight hundred years the people have been able to see through these great towers, for they were built that way. That the attacking parties showed little mercy for architectural beauty, is true. They showed unexampled ferocity in destroying fortified places; but such are the horrors of war. Let us hope that what still remains of beautiful Belgium, notably the city of Brussels, may eventually escape injury; for many an amateur camerist is hoping to visit these famous places after the war is over.

New Application of the X-Ray

THE exportation of American cotton to a European belligerent, particularly the famous cargo of the steamship "Dacia," which sailed from Galveston the latter part of January, has caused certain parties to suspect the presence of other contraband within the large bales. In order to determine this important question, each bale was systematically X-rayed, but the result has not yet been disclosed.

A Sarcastic Critic

AMONG the paintings at a recent exhibition, in a well-known art-center, was one executed in a manner aptly described by a certain critic as a "chromatic eruption." The artist here had made a good, well-drawn design of a landscape, but covered it entirely with large-sized polka-dots in red, green and yellow, which suggested, on a greatly enlarged scale, the polychromatic screen of an autochrome-plate. Surrounded, as it was, by pictures painted in the ordinary lucid manner, this violent chromatic rhapsody vainly struggled to assert itself. A critical visitor coming up to it was startled and confused, and, apparently remembering the well-known rule to view a painting at a distance about three times the length of the frame — under normal conditions — stepped back, shook his head and remarked to a nearby acquaintance: "That man has broken loose from convention, all right!" "Broken loose? Broken OUT! I should say," was the sarcastic reply.

Atrocities

THOSE who claim that there have been no French atrocities evidently haven't seen any of the sculptures by M. Henri Matisse. — *Boston Transcript*. And yet they are not half so bad as his colored drawings, which a *soi-disant* photographic quarterly publishes occasionally in place of good photographs. The outlook is improving, however, for the current issue, received as I write, contains no illustrations whatever.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

Meeting of the National Board

A MEETING of the executive committee of the P. A. of A. was held Jan. 11 to 14, 1915, at Indianapolis, Ind. According to the Auditing Committee's report, a balance of $2,084.83 is on hand, as compared to

$5,510.58, Jan. 1, 1914,
5,461.75, Jan. 1, 1913,
7,629.16, Jan. 1, 1912.

Committees were appointed as follows:

Applied Ethics — J. C. Abel, Sara F. T. Price, Geo. M. Edmondson.

Legislation — R. W. Holsinger, Geo. W. Harris, Ben Larrimer.

Progress of Photography — C. L. Lewis, F. Schantz, A. T. Proctor.

Entertainment — J. C. Abel, L. B. Jones, G. W. Topliff, Richard Salzgeber, A. Cramer, Floyd M. Wlüpple, J. T. Fenner.

Stationery and Buttons — J. I. Hoffman, W. H. Towles.

In the place of the regular Association Annual this year there will be a report of the proceedings in the *Association News*, to be published after the close of the Convention.

The Convention of the P. A. of A. will be held in Indianapolis, July 19 to 24, inclusive, at the German House — the Hotel Severin to be official headquarters.

Detailed information, as soon as in shape, will be furnished by Sec. John I. Hoffman, 12th and F Streets, Washington, D. C.

The Pennsylvania Convention

THIS event, to be held in the Monongahela House, Pittsburgh, Mar. 16, 17, 18, 1915, promises to be one of great importance, and every progressive photographer should be there. A splendid program has been arranged, and as meetings, headquarters and dealers' displays will be under one roof, a highly centralized and efficient convention should result. Further particulars may be had of J. B. Schriever, Scranton, Pa.

The New England Convention

THE Photographers' Association of New England, like other organizations and enterprises, has faced hard times; but it has always pulled through, met its obligations and preserved its integrity. Its present executive board spells progress and success, and each member has set aside his own personal interests for the benefit of the cause — the reputation and prosperity of the association. The board does not believe in making promises that it cannot keep, for the sake of producing a brilliant effect, or of spending the association's money recklessly and creating a deficit. As the auditor's report shows, the board has proceeded wisely in all its plans and surely deserves the support of every member of the association.

The executive board met at Vice-President J. H. Garo's studio, February 1. The books of the secretary and treasurer were audited and found correct, with a cash-balance of $225 and convertible assets of $330.

The seventeenth annual convention will be held Aug. 10, 11 and 12, 1915, at Copley Hall, Boston. Among the features will be a practical demonstration, by President Haley, of his special enlarging-process; valuable and interesting addresses by Vice-Presidents Champlain and Garo. Other talent will be procured and announced later. Every member should arrange to attend this important convention and prepare to contribute his best in pictures and practical ideas for the benefit of his fellow-members.

Gustav Cramer Memorial Fund

THE decision that this shall take the form of a free room and bed for a worthy patient in a St. Louis hospital was a happy one, we believe. It would have been approved by the man whose memory is to be perpetuated, and it appeals to photographers as a charity as well as a memorial.

The committee in charge is desirous that every individual engaged in photography shall have an opportunity to participate in this noble enterprise. Even one dollar will be accepted gladly, if it represent the limit of pecuniary ability of the donor. Various forms of making donations have been suggested. One which has been received with general approval is for the donor to devote the proceeds of a working-day's business — the day to be May 20, 1915, the natal day of Gustav Cramer. This has been suggested as a pledge, and may be used as shown in the following form:

A Pledge

E. B. CORE,
Sec.-Treas. Gustav Cramer Memorial Fund,
76 Landscape Avenue, Yonkers, N. Y.

I agree to send at the close of business on May 20, 1915, a cheque equal to the gross amount of the orders received in my establishment during that day as my contribution to the Gustav Cramer Memorial Fund.

Date.....

Signed .....

One of Many

LA CROSSE, WIS., Oct. 21, 1914.

MR. WILFRED A. FRENCH,
383 Boylston St., Boston, Mass.

Dear Sir: I wish to express sincerely my keen pleasure to find my name in the "special commendation" class in the PHOTO-ERA Competition of the October issue of your journal. To know that my landscape has attracted even a glance, is most encouraging and I feel honored.

Because so much of the mercenary spirit enters into the policy of journals committed to special lines of human endeavor, and often obtains in exhibits, contests and competitions, this partly accounts for the high esteem in which I hold PHOTO-ERA, and I count him

SEEING YOUR OWN WORK AS OTHERS SEE IT

peculiarly fortunate who receives praise through any of its pages.

Without wishing to give any offense, I can say safely that I voice the sentiment of numerous aspiring camerists when I assert that you exert a wide influence for the best pictorial art, and your readers are deeply impressed by the high plane on which you conduct your journal.

If this letter can give you only one-half the satisfaction and pleasure it affords the writer, you will pardon my presumption; if not, I cannot conscientiously retract. Believe me,

Very sincerely yours,
C. K. Harrison.

Photographic Dealers' Association of America

At its annual meeting, held January 7, the following board was elected: J. W. Allison, president; J. H. Andrews, first vice-president; J. H. Boozer, second vice-president; Henry Herbert, secretary; Carl E. Ackerman, assistant secretary. The treasurer's report showed a substantial balance and reports of the committees indicated that the organization has entered a period of active and prosperous work.

The Association is fortunate in the presidency of Mr. Allison at this time because of his enthusiastic optimism. Mr. Allison already predicts a "prosperity year" and promises 100 per cent of work and interest. Anybody who knows the man personally will realize that he is going to make his words come true.

Made in U. S. A.

"Made in U. S. A." has become a national movement. The legend is frequently seen in subway, newspaper and magazine-advertisements, on billboards and on the goods themselves. Manufacturers and merchants are advertising American-made goods and, better still, the public is beginning to ask for them; the campaign is bearing fruit. Meanwhile, the war in Europe is carrying many of these goods abroad and introducing them there so that this label promises to become a standard in the markets of the world, provided means can be obtained to ship these goods safely across the seas to European ports.

The Eastman School of Photography

Despite a severe snow-storm, the photographers of New England turned out in force and attended the three-day session of the Eastman School of Professional Photography which was held February 2, 3, and 4, in Lorimer Hall, Boston, U. S. A. The registered record showed a total attendance of about 700 photographers who displayed a profound interest in the various lectures, demonstrations and pictorial displays.

The program included practical lectures and demonstrations by such high-class experts as Milton Waide, Don C. Scott and H. J. DeVine. The chief novelty was an illuminated display of the new Eastman Color-Process, described, editorially, in Photo-Era, January, 1915.

LONDON LETTER

CARINE AND WILL A. CADBY

Already the days are beginning to give us more actinic light, and amateur portraitists, who have not the intensive artificial light of the professionals, can begin to contemplate getting to work once more.

Many of our inspirations can wait for still brighter skies; but there are occasions nowadays when we have to make shift with what light we can, for our models are off to the front and who knows when, or if, they will return. With winter-exposures the expression is the difficult matter, and means twice as hard work for the photographer and a quarter the chance of success. Our recent sitter was a Belgian Colonel of Artillery, who had helped to defend Liége and Antwerp, been invalided to England, and is now once more taking up his old command.

Now, when most people are busy getting records of those who are leaving, the Kodak Company has brought out what is called an Autographic Kodak, which, no doubt, will soon become very popular. It has an ingenious device by which the user can add date or any other particular to each negative. The photograph, when printed, shows the writing and has thus a decided extra interest. Besides, he can get all his tilting done at the same time as he takes the photograph — a great asset to those suffering from a bad memory.

The Camera Club, after its wide hospitality to the sister-arts, is now devoting its wall-space to an exhibition of photographs by the members of the club. There are a large number of autochromes by Mr. Jno. W. Allison, an American member of the club, who, by the bye, is the only American member who sends anything. His exhibits are, undoubtedly, the most interesting things in the show and have created considerable attention.

The general standard of the exhibition is certainly higher than in former years, and this despite the fact that each member has the right to exhibit one print. This year there has been a selection-committee which, for the first time, has genuinely selected, *i.e.*, the Arts-Committee, the direct result of which seems that the pictorial standard has risen.

We first saw Mr. Allison's autochromes one evening at a kind of private view. They were exhibited with quite satisfactory artificial light, but we found that, after all, their wonderful color could be more appreciated by daylight. Their particular interest lies in the fact that they were all taken with Panchroma Flash-Powder. This is a new flashlight-powder that permits of instantaneous exposure with Autochrome or Paget color-process plates by the aid of a properly compensated light-filter for the brand of color-plates employed. Other screen-plates may also be used in conjunction with their appropriate filters.

This is a distinct advance in flashlight-work, and it is claimed for Panchroma that it is the only powder that gives perfect color-rendering with instantaneous exposures with color-screen plates. Mr. Allison's autochromes may claim to be the first examples — or, at any rate, the first tolerable examples — of instantaneous color-photography, being taken in $\frac{1}{32}$ of a second. Two are examples of flashlight *and* daylight in the open air. All the subjects are figures, and the rendering of dresses, silk, satin, etc., is very good. This may already be a popular method in America, for all we know, as, unfortunately, we have no American letters appearing regularly in our English photographic papers; but, at least, at the Camera Club Mr. Allison's autochromes were regarded as almost a revelation, although, of course, we are familiar with experiments and attempts in the direction of flashlight autochrome and other color-plate work.

The photographic event of the month is the publication of "Photograms of the Year," the annual review of the world's pictorial photographic work that has undoubtedly become indispensable to many photographers in all countries. Under Mr. Mortimer's editorship it has developed into a bulky but handsome volume, a faithful record of the year's work, and one that must become increasingly valuable historically in time to come.

The pictures are beautifully reproduced, many of them full-page, and are printed either in sepia or warm black. There are examples of work from many countries, and in turning over the pages one is struck by the diversity of outlook and treatment and subject shown by people living in different latitudes.

The book opens with a thoughtful article by the editor on the year's work, and some ideas as to the future. It must have needed a certain amount of determination and pluck to set about deliberately the compiling of such an undoubted work of peace, when in the midst of war, and Mr. Mortimer gives his reasons, and very good ones, why the year was not allowed to pass without its usual photographic record. He looks forward to the time when there will be peace, for, after all, the war cannot be permanent, and photography is, and so the continuity of the record must be maintained, particularly through this intensely absorbing though horrible interlude.

Mr. F. C. Tilney contributes a chapter of observations and criticisms on some of the pictures of the year, which is certain to be of use to the beginner, who can refer to the works alluded to, which are mostly reproduced.

Mr. Antony Guest — the kindly, sympathetic critic-in-chief to the craft — writes some notes on "Expression in Photography," in which he contends that in the best contemporary work the spirit of the artist increasingly pervades the picture. This is the direction in which he considers pictorial photography is tending. There are also chapters on the progress of photography in the United States, Canada, Australia, Scandinavia and Spain.

There is a certain photograph that we are trying to obtain. It is interesting now and will grow in value as time goes on. One had not somehow imagined that cameras were to be found in the trenches in France; but cameras there must have been, for in all the letters from the front which describe that unique and friendly meeting of enemies on Christmas Day maintain that there were photographs taken. One letter from an officer that was published in *The Times*, after describing how the men on each side left the trenches and met in the neutral zone, exchanging cigarettes, chocolates and ideas, goes on to say: "All were very nice, and we fixed up that the men should not go near their opponent's trenches, but remain about midway between the lines. The whole thing is extraordinary. The men were so natural and friendly. *Several photographs were taken — a group of German officers, a German officer and myself, and a group of British and German soldiers.* The Germans are Saxons, a good-looking lot, only wishing for peace in a manly way, and they seem in no way at their last gasp."

It is reported that the Kaiser is angry at the episode, so that it is unlikely that any records of the event will be published in Germany. But we have no such feelings over here, and the evidence of the good-will between the combatants, when it is published in our papers in the shape of a reproduction of one of these most interesting photographs, will meet nothing but applause and pleasure.

A scheme is at present on foot to get together a collection of pictorial photographs by members of the London Camera Club, to be sent over to the New York Camera Club, and it is understood that there will be a return of the compliment.

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices.

PHOTOGRAMS OF THE YEAR, 1914. The Annual Review of the World's Pictorial Photographic Work. Edited by F. J. Mortimer, F.R.P.S. Price, paper-covers, $1.25; postage extra. London: Hazell, Watson & Viney, Ltd.; New York: Tennant & Ward, 103 Park Avenue, American agents.

Owing to the war, many believed that this popular annual would not be issued; but with exemplary pluck and optimism the publishers upheld tradition and the work made its appearance, a little late, to be sure, but as attractive as ever. The illustrations truly represent the world's finest pictorial work, and impress one by their variety and beauty. The press-work of the volume is superb, and each of the ninety-five sepia impressions is handsome enough to be framed. Among the most impressively artistic are "The Elements of War" — a sinking ship — by Mr. Mortimer; "Constance Collier" — study in light drapery — Malcolm Arbuthnot; "Candebec" — street-scene — J. H. Anderson; "Dr. Fridtjof Nansen," Dr. Ernest Rude; "Study of a Head and Hand," Louis Fleckenstein; "The Spirit of the Mist" — open-air nude — Kate Smith; "The Pit" — landscape — A. H. Blake; "The Poet, Rupert Brooke" — head in profile — Sherrill Schell; "The Ski-er," Cariue Cadby; "Summer Sunshine" — figure of young girl in light costume — Edward H. Weston; "Mrs. Lavery" — E. O. Hoppé; "A Little Rogue" — a pretty little girl in the nude — Olga Maté; "La Malade Imaginaire" — with apologies to Molière and Jan Steen — Richard Polak; "Sunlit Toilet," Dr. E. G. Boon; "Portrait," Madame D'Ora; "Showery Weather" — landscape in picturesque Belgium — Alexander Keighley; "Evening-Peace," T. and O. Hofmeister; "Portrait" — see PHOTO-ERA, November, 1914, as "Phyllis" — Marcus Adams; "Design in Nature," Ed. R. Dickson; "The Idol," H. Essenhigh Corke; "Day-Dreams," Guido Rey; "The Sentinel" — a group of Highland sheep on the hillside — Mrs. Constance Kinder; "Sun and Silver" — winter-landscape — Will Cadby; "The Sun-Hat," Mrs. Minna Keene; "Water-Babies," J. C. Warburg; "Castle of Harburg," James McKissack; a characteristic portrait of J. C. Strauss, of St. Louis, J. H. Garo; "The Lord of the Dynamos," A. L. Coburn; "The White Ensign," Wm. Farren; "Road-Menders," F. Seyton Scott; "Australian Landscape," J. Williams; "At the Blackberry-Bush," E. Osterloff; "Peonies," Miss E. L. Marillier; "Ruth St. Denis," Baron de Meyer; "Normandy Crucifix," Dan Dunlop; "Nude" — see PHOTO-ERA, November, 1914 — Paul Lewis Andersou; "Near Amalfi," Karl Struss, and "Portrait," H. Mortimer-Lamb.

The attractive text contains "The Year's Work," by the editor; a critical review of the pictures reproduced, by F. C. Tilney; "Expression in Photography," by Antony Guest; articles on pictorial photography in Canada, Australia, United States, Scandinavia and Spain, respectively, by H. Mortimer-Lamb; Walter Burke, F.R.P.S.; F. R. Fraprie; Henry Buergel Goodwin and José Ortiz Echague.

Unfortunately, contributions from Germany and Austria-Hungary are unavoidably absent this year, on account of the war; but the collection, as published, is a magnificent one. Copies of *Photograms, 1914*, may be procured through PHOTO-ERA magaziue, with which it can also be clubbed.

German Destruction May Not Be Photographed

Photography, London, states that it is a testimony to the convinciug power of photographic evidence that the photography of the ruin they have created in this war has been prohibited by the Germans. A proclamation issued at Antwerp imposes a fine of five thousand marks, or a year's imprisonment, and the confiscation of plates or process-blocks, on any one taking or selling such photographs, or displaying for sale postcards, illustrated papers, etc., with such pictures.

H. C. Zerffi

IT is with sincere regret that we announce the death, early in January, of Mr. H. C. Zerffi managing director of Ilford, Ltd., manufacturers of the well-known Ilford plates and papers. Mr. Zerffi has been for many years past a commanding figure in English photographic trade-circles and his vigorous personality will prove a distinct loss.

Buffalo Fine Arts Academy

AT its annual meeting held recently the following men were elected directors for a term of three years each:

Raymond K. Albright, Frank B. Baird, George Cary, Willis O. Chapin, William H. Gratwick, Spencer Kellogg, Jr., Ralph Plumb, Robert K. Root, Charles B. Sears.

Lens Stolen in Baltimore

ON or about January 10 a 6½ x 8½ Bausch & Lomb Unar lens, engraved on the barrel, "Presented to Photo-Club of Baltimore City by Dr. Wilkerson," was stolen from the premises of the club, 105 West Franklin Street, Baltimore, Md. A liberal reward is offered for the recovery of the lens.

Photographers of Four States Unite

THE photographers' associations of Missouri, Kansas, Iowa and Nebraska have amalgamated into the Missouri Valley Photographers' Association. Yesterday and the day before representatives from the four state associations met and organized the larger body, draughting a constitution and bylaws.

The mink was chosen as the association-emblem, because the word contains the initial letters of the four states.

The new association has five hundred members. The officers elected for the coming year are: Homer T. Harden, Wichita, Kan., president; C. D. Pierce, Ottumwa, Ia., vice-president; L. S. Kucker, Springfield, Mo., secretary, and Alva C. Townsend, Lincoln, Neb., treasurer.

The Aurora Life-Studies

THAT the interest shown in the Aurora Life-Studies, which are advertised in PHOTO-ERA each month, is very general, is evidenced by the following ingenuous inquiry from a Japanese in Californiia.

FRESNO, CAL., Jan. 10, 1915.

Dear Sir: I am inquiring to you are some thing. Because I was very glad to seen of your address at this time and I want to request to you of nude picture. Because I want that then please kindly your an answer as soon as you could and your whole of particular thing.

Very truly yours,

BILLIE FUKUDA.

Our Illustrations

(Continued from page 149)

"Sunday Afternoon" — August, 1914; 2.45 P.M.; hazy sun; Voigtländer Alpine camera; 3¼ x 4¼; 4¾-inch Collinear, series III; F/11; 3-time color-screen; ⅕ second; Hammer Non-Hal. Ortho; pyro; direct print on Soft Studio Cyko; M. Q.; enlargement on Wellington Cream Crayon Rough; M. Q.

"The Land of Nod" — 5 x 7 Premo; B. & L. R. R.; F/11; November 15; 3 P.M.; dark day; 10 seconds; north-window-light; Stanley; pyro-soda; print, Azo B soft.

"The Fountain" — Nov. 16, 1914; 3 P.M.; diffused light; Seed 30; pyro; Seneca 3¼ x 5½; Seneca 6¾-inch Convertible; stop, U. S. 4; ½ second; Velox print.

"The Little Cuyahoga" — Nov. 28, 1914; 2 P.M.; bright, but yellow; 5 x 7 Conley camera; 8-inch Seneca R. R.; F/16; B. & J. 3-time color-screen; 3 seconds; Cramer Spectrum plate; Seed pyro-formula in Ingento plate-tank; print, Artura Chloride Medium Rough; M. Q.

"An October Road" — 3A Kodak; Zeiss Kodak lens; 6½-inch focus; F/32; 2 seconds; 3-time ray-filter; Eastman N. C. film; pyro-soda; Artura Carbon Black enlargement; Tozol.

"The Wreck of Nature" — March, 1914; 3.30 P.M.; bright; 4 x 5 Film-Plate Premo; 6-inch Planatograph lens; stop U. S. 4; 3-time Ideal filter; Cramer Inst. Iso; metol-hydro-pyro; B Azo enlargement.

Trick-Photography

THOSE who have an idea that this subject yields nothing but comics and monstrosities, have much to learn. True, most efforts of this sort have tended in that direction, but there are many schemes which involve a trick or dodge apart from the usually accepted practice of straight photography that are often resorted to in motion-pictures, book-illustration and several other commercial lines that may well be applied to certain aspects of amateur photography. In a month or so we shall publish an article on this subject by Katherine Bingham, and those interested will find working-details of many sorts in a book entitled, "Photographic Amusements," by Walter E. Woodbury, price, $1.00. Copies may be had through PHOTO-ERA.

In order to stimulate interest in this long-forgotten subject we have decided to devote the Beginners' Contest, closing June 30, to trick-photography, thus giving ample time for study as well as practice.

Photo-Era Pictures in Baltimore

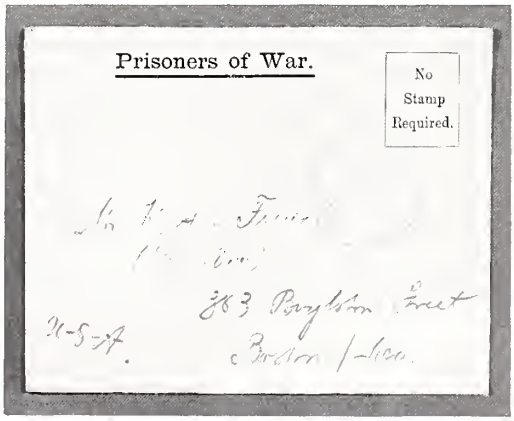
AN interesting collection of PHOTO-ERA prize-pictures has been on view at the rooms of the Photographic Club of Baltimore since February 8 and will continue until the 24th. They comprise a year's awards in the monthly competitions for advanced workers and provide an exhibition much in demand by camera-clubs. Secretaries desiring this collection should lose no time in making application to the publisher of PHOTO-ERA.

Our Berlin Correspondent a Prisoner of War

OUR readers have undoubtedly missed the interesting Berlin letter from our regular correspondent, Max A. R. Brünner. A prolonged interruption of these monthly reports was to be expected after hostilities had begun. For reasons unknown to the Publisher, Mr. Brünner took up his abode in London last summer, but managed to obtain material sufficient for his regular monthly letter. His last one, however, which appeared in the December issue, 1914, proved his inability to keep up the work, and thus his activity as a correspondent has ceased — at least, as regards PHOTO-ERA. From his latest communication it appears that he is held as a prisoner of war by the British government, the prison-ship Canada being stationed at the Isle of Wight.

RYDE, Jan. 12, 1915.

Dear Mr. French: Your letter of Oct. 28, 1914, and money-order reached me to-day, as I had changed my address four times. One day before my arrest, Oct. 21, I received through the Cadbys your other money-order. Please inform them. The voucher-copies of PHOTO-ERA were collected by my neighbour. The first week of Oct. I sent my last Berlin letter intended for Dec. copy. You may print a notice that I am prisoner of war and cannot send anything more. When war is over I shall try to find some successor for the Berlin correspondence, as I do not return to that city for permanence. The last three months I have undergone terrible privations. Nearly until Xmas I was in a camp in tents, wading in mud and rain, or lying on straw with no furniture at all, later on I —— —— —— —— —— —— —— —— soldiers (here the censor put in his work) who had come from the battlefields. Thus I had scarcely any opportunity to write



or read. On board ship I met 300 Germans who left New York to join their regiments, but were captured on the Atlantic. My address is: Anchorage Ryde (I of W), H.M.T. Ship Canada, I remain,

Cordially yours,
MAX A. R. BRÜNNER.

Fedora E. D. Brown, Photo-Pictorialist

THE friends of Miss Fedora E. D. Brown, the well-known pictorial worker, of Grand Rapids, Mich., will be pleased to know that she is now busily engaged in assisting in the preparation of illustrations for "Birds of California," the work to be published by Wm. Leon Dawson, some time during the coming year.

Back Numbers of Photo-Era

IN response to our advertisements soliciting back-numbers of PHOTO-ERA, which have appeared for several months past, our friends have been most generous, so that our needs have been entirely satisfied. For this reason we ask that no more copies be sent us, except those that are specified in the present issue.

WITH THE TRADE

Unreliable Advertisers

It is well that Photo-Era subscribers should know that the publisher disclaims any further responsibility for the Boston firm which advertised for photographs. He finds that packages of photographs sent there for consideration — possible purchase — were allowed to remain for months before being opened, and replies were made only after numerous energetic inquiries. The advertisement was discontinued several months ago, and is not to reappear in this magazine.

Several western concerns, photo-finishers, applied for advertising-space last autumn, and even sent the money; but as they failed to furnish references as to business-integrity and technical ability, which the Publisher requires from parties unknown to him, the space was denied them.

In cases of apparent deception, it is well first to ascertain the cause, whether accident, negligence or direct intent to defraud, before taking severe measures for adjustment or before denouncing the dealer as an impostor. If efforts to obtain satisfaction fail and the delinquent be an advertiser, the proprietor of the corresponding publication should be appealed to and reparation will be apt to result. In an extreme case, one of the results will be the discontinuance of the offender's advertisement.

An Important Lens-Bargain-List

Robey-French Company, 34 Bromfield Street, Boston, has issued an important list of portrait-lenses, anastigmats, rectilinears, wide-angles and shutters at greatly reduced prices. This presents a rare opportunity to buy or exchange to the best possible advantage and in the knowledge that the firm is absolutely reliable.

Ica Cameras Plentiful

Despite the announced embargo that has been placed by the German government on cameras, optical goods, etc., making it impossible to ship such goods out of Germany, the International Photo-Sales Corporation, 235 Fifth Avenue, New York City, advises us that Messrs. Ica, of Dresden, for which firm it is the American agent, have taken the necessary steps to get permission to export their cameras to the United States, so that there is every reason to believe that the coming season will see the American market well supplied with Ica goods. The Ica factory now has over 800 employees, and all departments except that devoted to motion-picture apparatus are very busy with German and American orders.

Goerz Dogmar, F/4.5

The introduction of this new high-speed, triple-convertible lens marks a distinct achievement in photographic optics. Lenses of this type in the past have not achieved such great speed, yet the Dogmar is of excellent covering-power, and coma has been practically eliminated; this is also true of flare. Although of uncemented and unsymmetrical construction, there is no distortion of lines over the listed sizes of plates. The lens is very compact and well adapted to hand- and reflecting-cameras. A circular will be sent gladly upon request to C. P. Goerz American Optical Company, 323½ East 34th Street, New York City.

Dynar Lens, F/6

Voigtlander & Sohn, 242–244 East Ontario Street Chicago, ask us to correct the error in the copy for their advertisement which appeared in Photo-Era for January, giving the speed of this rapid anastigmat as F/6.8.

Boston's Photo-Shop

The photographic department of A. E. Covelle & Co., opticians, 350 Boylston Street, Boston, U. S. A., has grown to such proportions that it was deemed best to dispose of it to their former photographic manager, Mr. A. S. Hawes, who, henceforth as proprietor, will continue the business in the same large elegant store, under the name of "The Photo-Shop," will carry a fine line of cameras and supplies and conduct a strictly high-class photo-finishing department.

Bargains

It is human nature to seek bargains; moreover, it is natural that many workers should want to exchange one lens, camera or other piece of apparatus for another, because of changing conditions or purposes. In seeking such bargains, however, it is essential to be sure of the integrity of the firm with which an exchange or purchase of second-hand goods is arranged. In Chicago, the Central Camera Company, 124 South Wabash Avenue, may be depended upon. Its store is one of the busiest spots in the "Windy City," and our readers in search of new or second-hand goods will make no mistake "to blow in."

What Is an Ounce?

Everybody knows that chemicals are sold in bottles or boxes containing one ounce and upwards, according to avoirdupois weight — one ounce being 437.5 grains. But how many consumers take the trouble to weigh the amount of their purchase? Very few, perhaps not one in a thousand. The name of the firm, if an old and reliable one, is generally accepted as a guaranty of good quality and correct weight, and if a new make of a popular product appears on the market, there is little likelihood that the manufacturer wishes to profit by shortage in weight. But, as it is human to err, there is a chance, though a slight one, that a careless employee may measure out an insufficient quantity of the chemical, whatever it may be, in which case a reputable producer will invariably hasten to correct the mistake and to indemnify the customer.

Now, there are certain substances, such as magnesium flashpowder, which are put up in containers, glass or wood, 480 grains to the ounce, according to troy or apothecaries' weight. Yet flashpowder is classed as a chemical, and if a box or bottle, marked to contain 1 ounce of this commodity, holds but 437.5 grains (avoirdupois weight), no fault can be found with the maker or the purveyor.

When, therefore, a consumer finds that his 1-ounce box of flashpowder contains 480 grains and his 2-ounce box 960 grains, he is getting more than he has a right to expect. Hence, the flashpowder that combines quality with quantity, regardless of price, will certainly rank first in popularity.

CONTENTS FOR APRIL, 1915

ILLUSTRATIONS

ARTICLES

To Contributors: Contributions relating to photography in any and all of its branches are solicited and will receive our most careful consideration. While not accepting responsibility for unrequested manuscripts, we will endeavor to return them, if not available, provided return-postage is enclosed. Authors are recommended to retain copies.

To Subscribers: A reminder of expiration will be sent separately at the time the last magazine of every subscription is mailed. Prompt renewal will ensure the uninterrupted receipt of the magazine for the following year. Send both old and new addresses when requesting a change.

To Advertisers: Advertising-rates on application. Forms close on the 5th of the preceding month.

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WILFRED A. FRENCH, Ph.D., Editor and Publisher

PHIL M. RILEY, Associate Editor KATHERINE BINGHAM, Editor, The Round Robin Guild

383 Boylston Street, Boston, Mass., U. S. A. Cable Address, "Photoera"

BROOKLYN BRIDGE
JOHN W. GILLIES

PHOTO-ERA

The American Journal of Photography

Vol. XXXIV APRIL, 1915 No. 4

The Grain of Negatives

E. J. WALL, F.R.P.S.

THE following notes are an answer to a letter addressed to the Editor of PHOTO-ERA, which runs as follows: "The adoption of the very small camera and frequent enlarging gives interest to the question as to whether one developer will deposit a finer grain on a given plate than another. The popular tradition is that glycin does so, but is this so? If so, does glycin give negatives of good enlarging-quality? By examination with a common linen-counter lens or a strong magnifying-glass, ortol apparently gives a finer grain than pyro. The question is — Is any one developer better than another when enlargement is the aim?"

As a matter of fact there are two distinct questions here: first, the action of the reducing-agent on the size of the grain; second, the best developer for negatives that are subsequently to be enlarged.

To answer the first one we must, first of all, define the word "grain." Strictly speaking, the silver grain should be defined as the microscopic particles as deposited by the reducing-agent; but practically we call the aggregates of the silver "grain," that is to say the "clumping," "flocks" or "group-particles" of the microscopic silver grain. A rough simile might be pictured as follows: Let us assume that we have a thousand dimes in a bag and shoot them out on to a smooth table-top in such a manner that they form a layer in no case higher than ten dimes. We should probably find here and there isolated dimes, which would represent the actual silver grain; we should also find clumps wherein several dimes overlapped partly as to their edges, or were contiguous without overlapping; and others wherein fifty or sixty dimes were piled, haphazard, one over the other. If now we limit the height of the clumps to ten dimes, it is obvious that the greater the number of dimes in the stated thickness, which would be the thickness of the sensitive film, the larger must be the diameter of the clump.

It is obvious that, bearing in mind the ultimate end, the enlargement, we must consider the clumping and not the actual silver particle itself. We must then decide whether any reducing-agent will produce smaller silver grains and smaller clumps than another. This question, of course, has not been neglected all these years, and it was examined quite early by Vogel for collodion and collodion-emulsion and, more recently, by numerous experimenters as regards gelatine-emulsions. I do not propose to set down in detail all observations, but only those of the most importance.

One of the earliest tests regarding this question was made by a committee of the Antwerp Section of the Belgian Association of Photographers. (1) A plate was exposed to a constant light-source, cut into strips and developed with ferrous oxalate, pyro, hydroquinone and amidol, and the strips microscopically examined. In all cases the grain of the image was virtually the same.

Abney, Kaiserling and Liesegang have examined the question, though probably the most extensive research was undertaken by Schaum, and Schaum and Bellach. The former (2) summarizes his results as follows: (1) with constant time of development and variable time of exposure: (*a*) the thickness of the layer of the silver grains is slightly dependent on the length of exposure; (*b*) the size of the silver grains depends greatly on the exposure; (*c*) the number of grains in unit surface and (*d*) the number of grains in unit volume are constant. (2) With constant time of exposure and variable time of development, (*a*) the thickness of the silver grain layer; (*b*) the size of the silver grain; (*c*) the number of grains in unit volume are dependent on the duration of development; (*d*) the number of grains in unit surface is constant. What Schaum calls grain is actually the clumps or aggregates of metallic silver. Bellach's work was published in the form of a monograph.

The next paper of any moment is that by A. and L. Lumière & Seyewetz (3), recording the results of their experiments. This is so interesting that I give a somewhat lengthy abstract of the same. Abney had found that the silver grain on an overexposed plate was finer than on one normally exposed, and that the addition of large quantities of bromide to the developer increased the size of the grain. Having obtained very transparent images with certain reducing-agents, which images were of a totally different color, these chemists assumed that there was some relation between the actual size of the silver grain and the color (a subject which has quite recently been successfully treated by Chapman Jones). But before entering into this question they thought it necessary to examine the influence of the reducing-agents, the dilution of the developer, the duration of development, the temperature and the alkalinity on the size of the grain, and also the effect of variation of exposure and short and long development. The following are their conclusions:

1. The size of the silver grain reduced by developers of normal composition as generally used is constant.

2. The temperature, the concentration of and the duration of the action of a developer do not appear to have any influence on the size of the silver grain.

3. Excess of alkali or alkaline bromide appears to produce a very small increase in the size of the grain.

4. Overexposure appears to be one of the factors that diminish the size of the silver-grain reduced by the developer.

5. Two reducing-agents that are not used in practice — paraphenylendiamin and orthoamidophenol — when used in the presence of sulphite only reduce the silver to a color, which is comparable to that obtained with collodion emulsions and with a far finer grain than given by other reducing-agents.

6. The color of the reduced silver seems to bear some relation to the size of the grain. The finest grain corresponds to a grayish violet, very similar to that presented by the silver reduced from collodion emulsions.

The various developers may be classified into four types; the first differs entirely from the others and gives by far the finest grain, whilst the other three types present but slight differences, though they are placed in the order of the fineness of the grain:

First type — paraphenylendiamin or orthoamidophenol with sulphite only.

Second type — the same agents with a small quantity of alkali.

Third type — paramidophenol and sulphite only; metoquinone and sulphite only, or with the addition of acetone; paraphenylendiamin with sulphite and the normal quantity of sodium carbonate; normal developers of metol, eikonogen and ortol.

Fourth type — normal developers of metol-hydroquinone, hydramine, paramidophenol, hydroquinone, pyrogallol, edinol, diamidophenol (amidol), metoquinone with caustic lithia.

In a subsequent paper (4) the same authors specifically recommend the following developer for negatives to be subsequently enlarged:

Paraphenylendiamin	10 grams	70 grains
Sodium sulphite anhydrous..	60 grams	420 grains
Water	1000 c.c.	16 ounces

and state further that slow development, which may be produced by dilution of the developer or by the addition of restrainers, should always be used for this purpose. Further, that a solvent of silver bromide, in not too large quantity, is advantageous, and they specifically recommend the addition of from 15 to 20 per cent of ammonium chloride to the developer. Lüppo-Cramer ascribes this particular action to the solvent-action of the ammonia set free by the alkali and consequently to a species of physical development.

The next paper to which attention should be called is by R. James Wallace (5). He prefers the term "group-particle" for the aggregates and has some extremely instructive photomicrographs of Seed 23 and 27, Hammer and Cramer plates developed under different conditions, and as most readers will be able to have access to the original it will suffice to give his conclusions:

1. That the original grain-particles of the silver bromide are by prolonged development considerably enlarged by reason of the formation of group-particles, which are relatively enormously increased in size, so that a method of rapid development (provided that the developer is compounded to give not too great contrast) is the means of obtaining a more definitely uniform deposit of particles, which most nearly approach the size of those in the original 2AgBr.

2. That of high-speed American plates the Seed 27, Gilt Edge, is of the four makes tested, that having the finest grain-particles of most definite uniformity; of equal speed with the Crown, but with less tendency to chemical fog.

3. That the intensification of the original negative should not be attempted where enlargement is to follow.

Sheppard and Mees (6) have dealt with this subject at considerable length and with numer-

YOUNG AMERICA
MISS REINEKE

ous tables, and reference should be made to the original. They very succinctly sum up by stating :

When gamma — the degree of development — is low, the size of the grain increases with the exposure. As the time of development increases, the size of the grain does also, and at gamma infinity is independent of the exposure. The following table given by them is interesting :

Reducer	Size of grain
Ferrous oxalate	0.0015 mm.
Hydroxylamine	0.00143 „
Quinol	0.0014 „
Rodinal	0.00162 „

It is fairly obvious from what has been said that the actual silver grain is virtually independent of the reducing-agent, but the group-particle size is dependent on the original " grain " of the sensitive emulsion. This is shown strikingly by taking two plates of totally different character, such as the Wellington S. C. P. or a Velox lantern-slide film, and a slow negative-plate, such as a process or photo-mechanical, and making a transparency from the same negative on the same, developing together and then cutting in half and projecting them, side by side, with a very large magnification. It will be seen at once that the image on the negative-plate will break down long before the chloride plate does. This is, of course, extremely easy to see with a low-power micro-objective and projecting the images side by side. The chloride image is more like a stain than a granular deposit.

A specific question is asked, however, as to glycin, and as I could find no actual test of this some plates were exposed to a standard acetylene light and developed with pyro-soda, metol-hydroquinone and glycin and the images compared, using a 3 mm. Leitz micro-objective and a No. 4 eyepiece, which give a magnification of 460. Subsequently a 1.85 oil-immersion was used and the image projected with a projection-eyepiece on to square millimeter paper with a magnification of 1500, and no appreciable difference in the size of the grain or group-particles could be detected. The following plates were used : Seed 26, Hammer Extra Fast and Wratten M Panchro. In each case the grain was virtually the same with all developers, but differed considerably for the different plates.

We may conclude, therefore, that glycin does not give an appreciably finer grain than other developers, which is the answer to the first question. The second one opens up another point, which was obviously in the mind of the querist, though he did not put it into words, and we must do it for him. It is a well-known fact that, under certain conditions, some negatives will stand far greater enlargement than others without the structure of the image breaking down, or the " grain " of the negative showing in the enlargement. As a matter of fact, the true structure of a negative, that is the actual and individual silver grain, never does show in an enlargement. But what does show is the interference and diffraction-effects produced by the passage of light through the small interstices of the silver group-particles. The microscopic interspaces act as light-sources and produce interference, or act as gratings and cause diffraction, and thus one does actually get breaking-down of the structure of the enlarged image.

The question ultimately resolves itself into whether we can avoid this when using small cameras ? The answer is most decidedly in the affirmative.

It can be avoided by abandoning the use of extremely fast plates, which always have a larger " grain " or complex than slower plates, by the use of a rapid developer, and placing the negative to be enlarged in contact with opal glass so as to reduce the scatter of light, produced by the silver particles, as much as possible.

The slower plates have not only a finer grain, but they are less liable to chemical fog ; they possess more latitude and are quite fast enough for all ordinary work with a shutter, unless one wants to be a speed-fiend and take auto-races and gun-projectiles, which are not pictures, as a rule.

The small camera has come to stay. It gives one far greater chances of successful work ; but I can hardly conceive of any one wanting to make an enlargement of such size as actually to break down the structure of the image. If one takes 3 inches as the base-line and enlarges this to 20, one has nearly a 7-times enlargement, and I have not yet seen a normal negative break down under such circumstances.

There are a lot of bogies in photography, and this question of enlargement and breaking down of structure is one of them. [References : (1) *Bulletin Association Belge*, 1893, No. 11 ; (2) *Eder's Jahrbuch*, 1903, p. 193 ; (3) *Bulletin Société Française*, 1904, p. 297 ; (4) *ditto*, p. 422 ; (5) *Astrophysical Journal*, 1904, p. 113 ; (6) " Investigations on the Theory of the Photographic Process," Longmans, 1907, p. 69.]

THERE are certain elements which are requisite in the construction of a picture, and the greatest of these is vigor. — Paul Lewis Anderson in *Pictorial Landscape-Photography*.

One Lens for Many Purposes

PHIL M. RILEY

IT has often been said that Americans do not know the meaning of economy. Doubtless this is true of the little things; we do not count the pennies, perhaps, but in making a considerable expenditure we go about it almost, if not quite, as systematically and cautiously as our more frugal cousins across the seas.

This contention is based upon the questions, of which I have had an ample share, which come to every camerist commonly reputed to know at least a trifle more about photography than most of his fellows. Many of these questions indicate intelligent investigation and frank perplexity, yet still more seek easily to shift the responsibility to competent shoulders by taking such a form as, "Confidentially, what do you consider the best lens?" camera, plate, film, paper, developer, or whatever the case may be. Of course, such a question is absurd; there is no best in any of these lines. Although marked differences exist in the output of the various manufacturers, the obvious advantages of one product offset equally obvious advantages of different character in another product; there is "a string," so to speak, tied to every one of them. Did the question take the form, "What do you consider the best lens for *me* to use?" there would be hope of at least narrowing the field down to a choice between two or three, because the best lens for anybody to use is the one most nearly suited to the particular character of the work to be done, and that provides a definite basis on which to begin a process of elimination.

There is, however, a great demand — sometimes I think it is the greatest demand — for what might almost be termed a universal lens — one lens for many purposes. Several days ago a letter from a friend put the matter into definite form in the question, "What lens may be used satisfactorily for the greatest number of purposes?" I answered unhesitatingly, "The so-called triple convertible anastigmat, see PHOTO-ERA advertising; anything you find there is reliable." Irrespective of this limitation, and in general terms, however, there are about a dozen American, English and German optical firms that are universally recognized as of superlative integrity and whose every product is skilfully and honestly made. These long-established firms of high standing are usually prominent advertisers in the photographic press and hence well known to every camerist. Therefore, when in doubt, it is always a safe rule to choose from long and widely advertised goods of whatever sort, for the eye of honest publicity does not long countenance the continued sale of inferior goods.

Beyond this, the choice must be a personal one, determined by the work in hand; and the type of the lens once fixed, a choice of manufacture becomes very largely a matter of price, for the labor and care of finishing constitute far greater items of cost than the value of the raw glass consumed. This accounts in large measure for the low list-prices of a few shallow-ground, uncemented and hence easily manufactured convertible anastigmats. Of course, import-duties slightly increase the selling-prices of foreign-made lenses; but anybody who has seen the painstaking care with which they are ground and polished will not begrudge the expense if he prefer the imported product and can afford it. In other words, when dealing with reliable firms, one is certain to get what he pays for in a lens.

Unlike the well-known double anastigmat, the convertible anastigmat is unsymmetrical, consisting of two single anastigmats of unequal focal length, the rear lens being about one and one-half and the front lens two times the focal length of the combined lens or doublet. Therein lies its versatility, for three distinct lenses are combined in one — even four might truthfully be claimed if the wide-angle possibilities of the doublet on a larger plate than listed are included.

Each single lens is an anastigmat in all that the name implies, being perfectly corrected for astigmatism, spherical aberration and curvature of field independently of its relation to the other. Indeed, so great is the anastigmatic flatness of field and spherical correction that a single anastigmat is actually superior to most rapid rectilinear doublets. The field of these single anastigmats has an angle of about 40 degrees at full aperture and of about 50 degrees with small stops. They work at F/12.5-F/16, according to make, and are virtually rectilinear. Like all single lenses, they distort the marginal lines; but this defect is scarcely apparent unless the angle of view exceed 35 degrees; in fact, it is so slight that a Series VII Single Protar of 11½-inch focus, for instance, covers a 5 x 7 plate with so little distortion that it rarely mars even an architectural subject.

Such single anastigmats are well adapted to the making of landscapes and portraits, and

BABY MINE

JAMIESON STUDIO

even instantaneous photographs under favorable light-conditions. Particularly in the field of landscape and portraiture there are many who prefer the quality of delineation of the single anastigmat to that of any other lens. It is hardly less detailful than that of the doubtlet, yet possesses a certain characteristic and admirable softness. Certainly, it solves the problem of a long-focus lens at moderate cost for large heads where the light is good and for landscape- and marine-work when a narrow angle is desirable. Up to an image twice the size of that to be had with the doublet, one of these lenses also answers the purpose of a heavy, expensive telephoto-equipment, and while its magnification is less than that of the telephoto, its speed is much greater. In this capacity it may, in many instances, be used at full aperture, or in architectural work stopped down to F/22 or F/32 for improvement of marginal lines. This rarely becomes a hardship, because of the great diffusion of light upon distant objects and the lack of intensity of shadows so far from the camera, as well as the slight intervening misty atmosphere, all of which tend normally to impose an increase of the shutter-speed or a reduction of the working-aperture of the lens.

The doublet which results from the combination of two such single anastigmats is virtually free of distortion. When made up of two lenses of equal focal length, the doublet has a speed twice that of the single lens; but when of unequal focal length the doublet is somewhat less rapid — the greater the difference the less the speed. The older and better-known lenses of this type include the VIIa Protar of Carl Zeiss, Bausch & Lomb Optical Company and Ross, Ltd., F/6.3-F/7.7; Ross Homocentric, F/4.5; Beck Isostigmar, F/5.8-F/7.7, and the Turner-Reich Convertible Anastigmat, F/6.8, whereas the Goerz Dogmar, F/4.5, has been added to the list very recently.

Three or four single anastigmats by their individual or combined use afford an extensive selection of rapid lenses of different focal length. Every component of such a set is a good single lens, no two being alike; while the combination of any pair forms a doublet of different focal length, each doublet being of shorter focal length than any of the single lenses. This applies to several lenses including the VIIa Protar and Turner-Reich, already mentioned; Goerz Pantar, F/6.8-F/7.2; Voigtländer Collinear, Series II and III, F/5.4-F/7.7; Rietzschel Linear, Series A, F/4.8, and Steinheil Orthostigmat, Series B, F/6.8.

The addition of one component (only half a lens) to the doublet adds three lenses, making six focal lengths in all, three being doublets; the addition of two components adds seven lenses, making ten focal lengths in all, six being doublets, and each fitting the same tube or shutter interchangeably at an average cost of a good rectilinear. When one of the two extra components duplicates the front or back element of the doublet, only four lenses are added, making eight focal lengths in all; but the double anastigmat of symmetrical design thus provided affords a lens twice the speed of an ordinary rectilinear for instantaneous work and poorly lighted subjects. With so many focal lengths to command, a lens for any purpose is instantly at hand, and it is possible, except under the most extreme conditions demanding telephoto or wide-angle lenses, to make any subject fill the plate satisfactorily from any point of view — a tremendous advantage which cannot be overestimated. Thus the convertible lens ensures the utmost for a very elastic investment, maximum compactness, minimum weight and number of parts to lose or wear out.

Such a convertible set may be acquired gradually at the purchaser's convenience, beginning with a convertible doublet, or all at one time. The complete sets are packed in a compact leather case and include, in addition to the lenses themselves engraved with the focal length, a tube-setting fitted with an iris diaphragm and provided with such a screw-thread that any of the components may be screwed into the front or back as desired; a screen-ring to screw into the front of the tube where it will intercept any reflected light when a single lens only is in use, and a table of the several combinations obtainable with the set. In the convertible Protars, for instance, the following table shows the possibilities of a 5 x 7 lens-set. Four components fitted with an aluminum Compound shutter provide ten anastigmats ranging in focal length from 7 to 18⅞ inches at a cost of only $18.70 each. Can the economy of such an investment be denied?

Plate covered with largest stop	Plate covered with small stops	Focus of single components		Equivalent focus doublet	Speed
		Front	Rear		
6½ x 8½	------	---	11 3/16	---	F/12.5
8 x 10	------	---	13¾	---	F/12.5
10 x 12	------	---	16 3/16	---	F/12.5
11 x 14	------	---	18⅞	---	F/12.5
5 x 7	6½ x 8½	13¾	11 3/16	7	F/7
5 x 8	6½ x 8½	16 3/16	11 3/16	7½	F/7.7
5 x 8	7 x 9	18⅞	11 3/16	8	F/7.7
6½ x 8½	8 x 10	16 3/16	13¾	8½	F/7
6½ x 8½	8 x 10	18⅞	13¾	9⅛	F/7.7
7 x 9	10 x 12	18⅞	16 3/16	10	F/7

When using a single lens it is preferable to screw it into the rear end of the tube-setting with the diaphragm and the screen-ring in front. Upon adding a second lens to make a doublet, the lens replaces the screen-ring. Placing the lens of longer focal length in front ensures the largest possible working-aperture.

The convertible type is the landscape-anastigmat *par excellence*. Good composition, not speed, is the prime consideration, and the right focal length to produce the desired scale and perspective from any chosen viewpoint have much to do with good composition. Working in this manner, no waste occurs; every inch of the negative is utilized. Thus the degree of enlargement is less when this form of finishing is chosen, and in contact-work wasteful trimming of the print to improve composition is eliminated. A Beck Isostigmar, for example, intended for 5 x 7 work, provides three lenses of 7¼, 11 and 13½ inches focal length, one of which is reasonably certain to do full justice to any landscape from the best viewpoint. Much the same can also be said of stereoscopic photography and of marine-work. In the latter, except for dock- and harbor-views, the distances are usually considerable, the light intense and the long-focus single lenses preferable and amply rapid.

In photographing architectural subjects, exterior and interior, the flat field of an anastigmat is highly desirable, and the convertible type, more particularly a convertible set of four components giving six doublets and a total of ten focal lengths, is the architectural lens *par excellence*, barring none. For towers, spires, cornices, gargoyles and other details, at a moderate distance, its single components will prove invaluable; whereas for more distant subjects the convertible doublet provides an excellent positive-lens to use with a telephoto-attachment. Again, the reserve covering-power of the doublet, enabling a 5 x 7 lens to cover a 6½ x 8½ plate with small stops, provides a moderate wide-angle lens permitting plenty of illumination for focusing and a larger working-aperture than many special wide-angle lenses.

Flatness of field also renders the convertible anastigmat well suited to copying, enlarging and stereopticon-projection as well as to lantern-slide making by reduction from larger negatives.

For standing figures and groups, the flat field already referred to obviates the necessity to stop down, as with the older types of portrait-lens, and so reduces exposure and minimizes the danger of blur due to the difficulty of holding standing-poses and the number of persons involved; every face in a group is equally well defined.

In the field of portraiture, and particularly portraiture in the home, there is a growing demand for the anastigmat. Speed and covering-power to the very corners of the plate, at full aperture, are requisites which F/4.5 convertibles such as the Goerz Dogmar and Ross Homocentric possess quite as fully as other symmetrical double anastigmats. These lenses have the usual anastigmatic corrections and are notably free of coma, flare and distortion besides, which are the chief defects to be feared in high-speed lenses. They meet the requirements of the many fields of camera-work already referred to and open up far-reaching possibilities in other directions as well.

The fleeting expressions of children at play require them, and without their aid many charming snapshots in well-lighted interiors would be impossible. In flashlight-work their large apertures make focusing easier, save expensive flash-powder and minimize smoke. In motion-picture and high-speed, focal-plane work, including athletic sports and games, races of all sorts, railway-trains, motor-cars, street-scenes and all views including rapidly-moving objects, motion must be arrested by sufficient shutter-speed irrespective of light-conditions, and this requires a lens as rapid as F/4.5. Press-work calls for an equally speedy lens, for news-events must be photographed when they occur without regard to time or place. In this field, too, a rapid lens for emergency-portraits of celebrities in hotel-rooms is not to be despised. Then there is flower-photography in the open, which requires speed because of the movement due to troublesome wind and the desirability to employ at least a three-time ray-filter for color-correction. Truthful proportion and perspective as well as artistic composition depend upon the right viewpoint, and a set of convertible lenses ensures filling the plate harmoniously at any distance. The allied field of naturalist-photography, so much of which must be conducted from a "blind" and sometimes at a considerable distance, often necessitates the use of long-focus lenses, and a convertible set of four elements ensures six rapid doublets and a sufficient variety of focal lengths to meet most requirements.

Thus it may be seen that the convertible is in every sense a universal lens, adaptable to every need except that which demands a telephoto or extreme wide-angle lens. Selection of the particular size and speed of convertible best adapted to any given line of specialized work also places at one's disposal equal facility in a greater number of widely divergent lines than any other lens-type. For the camerist who can afford but one anastigmat, it is the only type to consider.

Our Friends the Magazines

BELMONT ODELL

WHAT a chummy companion is a photographic magazine! An upright, sturdy friend with whom one may counsel in the sacred precincts of home. Courageous enough to point out our faults without, however, becoming offensively critical. Beacon-light to the wandering craftsman, lifting him from the fog of doubt to the realm of true ideals. A constructive, sympathetic sentinel destroying false idols with a ruthless yet gentle hand. I salute you! Friends of men! Inspirers of our worthy clan! Photographic magazines of America!

Of the twelve periodicals which regularly come to my desk, four are photographic. These I wait for; the others come as a matter of course. With satisfaction I turn from the muck-raking general magazine to one devoted to our craft and am always sure of an hour of real comfort browsing in its pages. They're wholesome things to have around the house; they cultivate the better side of nature and afford occasional glimpses of the land of fancy. And after all, we, the readers, make them what they are, for they are but a reflection of our tastes and artistic status. The advertiser substantially supports the publisher and makes possible the publication of an excellent magazine at a ridiculously low rate of subscription — actually below the cost of production. The Editor — he's the fellow who somehow manages to have the bulk of the cheques presented to the local banks worthless without his signature on the reverse side. I cannot think of an editor without swelling with envy. Think of it! Palatial office, Venus-like stenographer and a coterie of nimble messengers awaiting his bidding. A few trifling duties mornings, such as dictating something like sixty letters, tunneling through huge pyramids of mail, figuring "run-arounds" with the printer, decides some momentous question concerning the advertising-department and consults his artist about blocks for illustrations. A few odd things like that and the rest of the time he hunts and fishes.

What do you do with the magazines you have read and enjoyed? Want to do some charity work at practically no cost to you? Write the Editor, giving a list of the back numbers on hand, and he will see that they go to some worthy person. Know any unfortunate brother whose financial circumstances forbid him to renew? The Editor does. How about that struggling amateur battling with the mysteries of photography and never heard of a photographic magazine? Does your city library have the photographic magazines on its table? It should. You might write the secretary of a camera-club, offering the back numbers to the club or individual members wishing to complete files.

Some readers like to keep all copies for future reference. Good plan, too. Some process or branch of photography which does not interest us now may later; and it frequently happens that just the article we need to help us out of some difficulty is in some back number. Each number of a magazine is complete in itself, and besides, the editors seem to have some way of keeping each volume balanced. I have noticed that each year's issues contain from three to six articles on every practical phase of photography, besides approximately three hundred illustrations, so each volume is a valuable compendium of knowledge well worth preserving.

Magazines may be inexpensively bound at home by a method recently given in *Popular Mechanics*. Take off the covers, and with a knife-blade pry up the wire-staples and then pull them out with a pair of pliers. Strip off the advertising-pages, which will be found in layers on the front and back. Binding only the reading-pages reduces the bulk about one-half. Lay the twelve consecutive numbers in a pile and square the sides and ends, then place them between two thin boards and clamp the whole tightly in the jaws of a vise. Take a back-saw and cut four diagonal slits in the backs to the depth of one-half inch. Draw a strong cord into the end slit and carry it over into the next one and tie. Do the same with the other two and the magazines will be securely fastened together and make them ready for binding. Covers may be cut from heavy, thick cardboard and covered with art-denim, leather or tinted paper, as desired. Light-weight leather makes serviceable binding-strips for the back of the book, where it should be glued. Fly-leaves may be inserted and fastened with paste before binding. From the regular covers removed from the magazines select one which suits your fancy, cut off the outside margin and paste on the front cover of the bound book. A little ingenuity will devise many variations of the plan, and some really artistic and substantial results can be obtained.

THE beautiful is simple. — *Paul de St. Victor.*

THE SENTINEL E. D. LEPPERT

Making Improved Negatives by Photographing Enlargements

P. K. TURNER

MOST amateurs are in possession of negatives which are a perpetual source of grief on account of ugly backgrounds, blank skies, etc., which mean that every print taken from them, or enlargement made, is a terrific labor to get at all satisfactory. Personally, I find that modifications on the negative, by means of retouching, matt varnishing, stumpwork, and so forth, are very difficult, particularly in these days of small negatives.

By far the simplest method of dealing with such a case is to make an enlargement, shading and altering as desired. The enlargement is then worked up with pencil or pastel, any ugly background being bleached out with Farmer's reducer and a camel-hair brush. This work is immeasurably easier than work on the negative, partly on account of the larger size, and partly because it is positive and not negative.

When the handwork is complete, there arises the question of photographing the enlargement — and this is where most amateurs fail miserably. It is extremely difficult to work in the usual way, as all sorts of trouble will arise over the lighting, focusing — in fact, on every side.

The following method will be found ridiculously easy and monotonously successful:

The enlarger is pressed into service. The enlargement — or any other flat object to be copied — is pinned up on the easel just as a sheet of bromide would be pinned up. Any old negative, or a focusing dummy-negative, if used, is put in the carrier and accurately focused so that its image falls on the enlargement pinned up. The image of the edges of the carrier must fall on the edges of the enlargement.

The enlarger-light is then turned off, and a slow plate put in the carrier. The correct amount of magnesium-ribbon is burned, and the plate developed.

The whole procedure depends on the fact that if the image of a negative is focused on the easel, the image of the easel is focused on the negative; obviously, if the negative is replaced by a sensitive plate, and the easel illuminated, we get a copy of anything on it.

Two points need care: the plate and the exposure. The plate *must* be slow to get the right contrast. Personally, I use Paget transparency-plates — as used for color-photography — because they were the only slow plates I had by me when I made my experiments. They will give, if desired, a negative considerably harder than the original enlargement, and are very amenable to control.

The exposure depends on the plate and the size of the enlargement. The best way of finding it is to measure on the easel the length of

WHEN METERS DISAGREE — S. P. EMERICK

the image of the carrier when focused, and to compare it with the actual length of the hole in the carrier. The table below then gives the exposure in inches of magnesium-ribbon 30 inches from the easel.

Negative to be	Exposure, in Inches of Magnesium-Ribbon
1/6 or less times size of original	11
1/4 " "	16
1/2 " "	23
3/4 " "	32
1 " "	45

This table applies to the above plate, which is about 8 Watkins, and is to reproduce the original exactly. The intelligent amateur can readily make a new table to suit any other speed of plate. The ribbon should be divided in two portions, and half burnt on each side of the enlarger to give even illumination.

If modification of contrast is desired, expose and develop according to the following table:

To obtain	Expose for	Develop in Solution
Very harsh results	1/2	4
Harsh	2/3	2
Normal	1	1
Rather soft	1 1/2	1/2
Soft	2	1/4
Flat	3	1/8
Very flat	4	1/16
	times exposure given above	times usual strength

The Amateur Photographer.

The Enlarging-Lantern for Making Slides

E. MURRAY

MOST of the better-class enlarging-lanterns which are now made are specifically described as having sufficient extension for lantern-slide making. This means that, at the very least, there must be twice the extension generally required for enlarging; a good deal more will be required if the negative in the enlarger is to be reduced much to get it on to the lantern-slide.

There are, however, a great many lanterns which have not this extension; and if the slide-maker has one of these, he will find that it will pay him to make an extension-piece to carry the lens about as far again from the negative. Such an arrangement can be made quite simply, either of thin wood or of cardboard; it need not be very substantial, as it has to carry only a light lens; but care should be given to see that the front, which carries the lens, is strictly parallel with the negative, which is usually most easily done by taking care to have it at right angles with the baseboard. If perfect parallelism is not secured, the lantern-slide will not be sharp, and any slight want of definition in the slide looks very bad when magnified on the screen.

It is possible to use the ordinary easel, which is used in enlarging, for lantern-slide making also. A piece of white card the size of a lantern-plate and about the same thickness should be attached to the easel for focusing-purposes. The card should be masked to about 3 inches square with black paper, as an aid to arranging the subject on it. It is important to use card of about the thickness of the average lantern-plate, as when reducing instead of enlarging any slight difference in the distance of the easel from the lens has its effect upon the sharpness.

The ordinary easel, however, is not the most convenient arrangement for this purpose. The lantern-plate will not be very far from the lens, and may get in the way of one's head when focusing. If there are many slides to be made, it will be worth while to make a special easel for the purpose. It may be of a very simple form, a mere upright board with an opening in it 3⅛ x 3⅛ inches. The opening on the side turned towards the lantern should be beveled, or else the opening may be made, say, 4½ x 4½ inches, and covered with a piece of thin card, with an opening of the former size. If this is not done, we shall get streaks of irregular density towards the edges of the slides. Behind the opening is glued a piece of card with an opening slightly larger than 3¼ x 3¼ inches (3¼ x 4 inches American size), so as just to take a lantern-plate. A spring is fitted to press the plate up against the easel, and nothing more is needed beyond some kind of foot to support the board in position and allow it to be moved to and from the lantern strictly at right angles to the beam of light.

To use such an easel, the lantern must be arranged on the workbench so that one can get behind the easel for focusing. A piece of finely ground glass, lantern-plate size, will be required, and this is inserted in the opening with its ground side towards the lens of the enlarger. The focusing is done on this, looking through the glass, and a magnifying-glass or eyepiece will be found useful in getting the utmost sharpness.

The procedure with the lantern is the same as in enlarging. That is to say, one must first focus approximately, and then, taking out the negative, adjust the light until it is seen to be uniform over the whole area of the slide. Having done this — and it will be found to do it that the light has to be nearer the condensor than it is when enlarging is being done — the negative is put back for the final focusing. The lens is then capped; a lantern-plate, preferably backed, is substituted for the ground-glass, and the exposure can then be made.

It will be found that working in this way the exposures are so short that there is no difficulty in using the slow or warm-tone lantern-plates, even for warmer colors. Exposures with an incandescent gas-burner, and a quarter-plate lens working at F/6.3, are well under a minute, when the negative is clear and of good color and a warm brown or purple tone is wanted. The actual exposures depend so much on little details of the particular outfit in use that it would serve no purpose to give details of them here, particularly as a trial-exposure, which must in any case be given, will furnish more definite data at the cost of one lantern-plate, or, at the most, of two.

When once the necessary arrangements, as here described, have been made, it is as easy and practically as quick to make lantern-slides with the enlarging-lantern as it is to make them by contact.

The lantern allows us to select just those parts of the negative we wish to appear in the slide, and to get them on a convenient scale, without

A KITTEN — W. MIZRUMMA

any overcrowding of the area, such as one sees so often constantly in slides made by contact, and without having just a tiny picture in the center of the slide surrounded by an ocean of mask. We may enlarge the picture, if necessary, when making the lantern-slide, although in the great majority of cases reduction and not enlargement is what is wanted. I find this holds good even with plates 3½ x 2½ inches: while, with quarter-plates, it is almost always necessary to reduce the size of the image.

There is also the undoubted fact that lantern-slides which have been made with a lens in this way are considerably better than those which have been made in the usual manner by contact.

This has been questioned, I know: and I am not prepared to say that it is not possible to make equally good slides by contact, when the negative is of the right size for the purpose. But the general run of lantern-made slides will be found better, particularly in the matter of definition. Whether it is that the film of the lantern-plate is not in very close contact with the film of the negative in contact-printing, or whether the explanation is to be found elsewhere, the fact remains. Looking over a collection of slides with a hand-magnifier, one can classify most of them without much chance of error into contact or lens-made slides. When lantern-slides are made in this manner with a considerable reduction, as, for example, when the original negatives are 4 x 5, or larger, there is a fineness of detail possible which the contact slide seems unable to give.

I would, therefore, strongly advise any amateur who has an enlarging-lantern to use it for lantern-slide making as well. He will find that by so doing many negatives can be reproduced as slides which otherwise would be out of the question. — *Photography and Focus.*

THE old lives and the new is dead.

Auguste Luchet.

"Break, break, break,
On thy cold gray stones, O sea!"

WILLIAM ARMBRUSTER

Beauty Among the Ordinary Things of Nature

WILLIAM ARMBRUSTER

HOW many of us have deplored the fate which has kept us from seeing the many grand sights and scenes of our own and other countries! We have read with pleasure of the grandeur of Niagara Falls and of the beauty of the Grand Cañons of Colorado and Arizona; we should love to hear the ocean roar against the rock-bound coast of Maine — the castles of the Rhine, the quaint cottages of the German peasants or the snow-capped mountain-peaks of the Alps are not things for us to see. We must content ourselves with reading about them or, perhaps, with hearing a good lecture on the subject. But actually to see them is not for those of us who cannot bear the expense; some of us cannot leave our work or business, and some of us will not leave our families. Whatever may be the reason, if you belong to this class, I say, take heart. If you are a true admirer of nature for nature's sake, let me show you that the beauties of nature are all around you, and that if you seek, you will find.

Being a lover of nature with an innate admiration for the beautiful, I have frowned, for many years, upon the fate that kept me from visiting the many places about which I had read so much. Some years ago the thought struck me that nature, in the distribution of her gifts, could not have been so partial as to have lavished all on other places and to have left nothing for the poor unfortunates who are forced to remain in and about New York. I started to seek and, with my camera as my companion, I was astounded at what I found. A new life was revealed to me. I seldom strayed more than twenty miles from home. I would always start on my little trips in the morning and return in the evening. And yet I found the beautiful and poetical abounding in profusion. Things that at first seemed ordinary now stood out

with true value and beauty. Some of the pictures that I procured with my camera, I may be pardoned for mentioning, were thought worthy of being hung, and held their own in the art-exhibits of this and other countries.

One of my favorite spots is on the Bayonne shore of Newark Bay, near the Jersey City line, perhaps less than six miles from New York. At that point there is a large mass of rocks, said by scientists to have been carried there during the glacial period from the Palisades. Here would I sit or stand for hours. Some days I would watch the waves gently splash against the rocks, one following the other, each seeming to tell some tale of sadness, which would fill me with an agreeable melancholy. At other times I would find the water wild and turbulent, a veritable ocean, with wave after wave dashing against the rocks with tremendous fury, sending forth immense quantities of white spray. At such times I would be impressed with the power of nature and feel how weak we mortals really are. Here I have seen sunsets and moonlight-effects that have filled me with thoughts of the sublime.

Close by Newark Bay shore, near the rocks I have just mentioned, is what is known as Currie's Woods. These woods, although near a big city, are in their natural and primitive state, with the exception of an occasional foot-beaten path, between oddly-shaped trees, which invite you to enter the picturesque interior. On misty days these paths assume a mysterious and atmospheric perspective. At an entrance to one of these paths an old tree, with the bark partly gone and its life fast ebbing away, stands on guard like an old, weather-beaten sentinel.

Late in the afternoon of a somewhat warm day early in October, while walking through a little country-town, called Union, near Elizabeth, N. J., I came across a simple little scene that made my heart throb with joy. Lounging under an old willow tree were several cows. Peace and quiet, as it were, pervaded everything. The cows, themselves, seemed to have entered into the spirit of the surroundings, for they almost slumbered. The very air seemed to feel the spell. I feasted my eyes on the scene before me, and had but one name for what I saw — repose.

Another one of my favorite places for visitation is through the little towns and boroughs of the Orange Mountains. Here one will find in his walks winding country-roads, banked on both sides with trees of great variety, now and again a farm-house appearing, which would add to the picturesqueness of the view. One such scene I shall always remember. I was passing through the little town of Livingston. It had been raining all the afternoon and as evening approached it cleared and the sun, as it was setting, broke through the clouds, as if to bid good-by to the day. Presented before me was a winding country-road, on one side an old farm-house surrounded by numerous trees and the setting sun, peeping through the clouds, cast a parting glow over all. In a few moments all faded away and I involuntarily thought of a few lines from Gray's elegy —

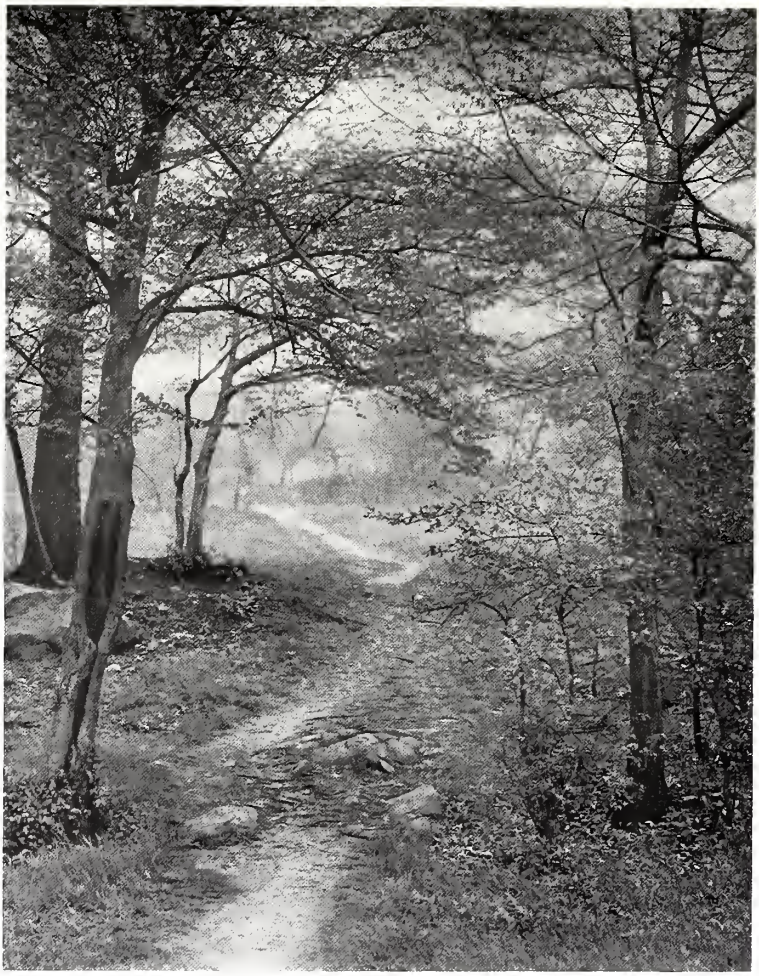
> "Now fades the glimmering landscape on the sight,
> And all the air a solemn stillness holds."

As one walks through this country, spurred on by the bracing mountain air, he will find many evidences of the work of nature in its various phases: hills with inviting paths between stately trees, a great variety of herbs and bushes and pretty little prattling streams. Recently, while in this country, passing through a little town or borough called Roseland, I was delighted to come across a flock of sheep. If there is anything in animal-life I like to study, it is sheep. I could watch them for hours. In all my trips I have seldom seen any of them, and they are such good subjects for the camera.

I have mentioned a few of the places I have explored and some of the things seen, with the impressions created. I believe the beautiful and picturesque are to be found almost everywhere, if in our hearts we have the true love for such things. While they may not be the great things we had in mind, there will be sufficient in the little or ordinary things to fill us with love and admiration. A little mountain-stream will find in you, who are a *true* lover of the beautiful and poetic, a more responsive echo than the great Niagara will give to that soulless creature who visits that gorgeous sight for no other purpose than the fulfilment of fashion's decree.

And now it occurs to me that it may be of some interest to know how I select my pictures and my manner of making them. To make good pictures, first of all one must study well the things he is going to take and then take them under the best conditions. "Chance" pictures, I believe, are seldom good ones. I take those things that appeal to me, and follow no hard rules of composition. I try to please myself and make what I consider a simple and harmonious effect.

The scene, "A Mystic Path," is a pretty bit of rough nature, not more than ten minutes' walk from my home, which I had seen a score of times and studied and admired; but I waited for a misty, almost foggy, day to get the atmospheric effect that I desired. If I had taken it



THE MYSTIC PATH — WILLIAM ARMBRUSTER

under ordinary conditions, it would have been a pretty but ordinary photograph. In focusing for landscape-work, I get the foreground sharp, with the middle-distance less sharp and the distance pretty well out of focus. I now find by "stopping" to about 12 or 16, I get a fairly sharp negative with the right kind of atmosphere, and good for all purposes. I give an exposure perhaps a little longer than required. And here let me say I have never used an exposure-meter and do not think I ever shall. I judge by the illumination on the ground-glass and other conditions, and do not experience much trouble in getting the right exposure.

Having exposed the plate, I develop with a pyro-soda developer, which, to my mind, after trying many others, is the best. I start with a weak developer — about one-third the normal strength — which I gradually strengthen to stronger than normal during the process of development. I endeavor to make strong negatives with good contrast, which I find best suited for the carbon process of printing which I use.

I now come to what I consider the most important factor for success in making pictures by the photographic process — the making of the print. I employ the carbon, or pigment process, and I think so much of this method that were I compelled to do without it I think I should give up photography entirely. I cannot understand why it is not more generally used by advanced photographers. Many seem to think it is something beyond their reach. And yet it is not so difficult as they imagine. It is true, one cannot grind out a dozen prints in so many minutes as can be done with the gaslight papers.

REPOSE

"The setting sun has left its colors bright
To mingle with the darkening clouds of night."

WILLIAM ARMBRUSTER

"Now fades the glimmering landscape on the sight" WILLIAM ARMBRUSTER

But who would not rather have one good carbon print than scores, yes, hundreds, of the others? Just think of the results of the carbon-process — pictures in pigment, almost the same as if made with paint and brush; absolutely permanent with almost no limit of choice of color; and what a variety of supports to select from for holding the tissue, and how the proper selection will harmonize with the finished print! But, best of all, you have with this process the print under entire control. You can with ease modify certain parts and strengthen others, as you may see fit. Perhaps a few remarks on the method I employ will not be amiss. I sensitize my tissue in a bichromate of potassium bath of about 3¾ per cent strength, to which has been added one drop of ammonia to two ounces of bath. I perform this operation in a moderately warm room just about dusk. I immerse the pieces of tissue in the bath for two minutes, and then hang them up by one corner with a push-pin. I keep the room dark and find before I go to bed, or, in about four hours, the sheets of tissue are perfectly dry. These I place in a printing-frame, which I wrap in a piece of rubber-cloth (wrapping-paper will, I believe, do about as well) and store away in a dry place. The tissue stored this way I find will remain soluble for about five or six days. In printing I place from one to three sheets of thin, transparent celluloid between the negative and tissue. This gives the much-desired "roundness" and softness in the finished picture. What particularly appeals to me in the carbon-process is, as I have already mentioned, the great control in developing the print, and the ability to express one's artistic taste and individuality. But enough of the carbon-process. To those likely to be interested there are many good works available.

I cannot conclude without mentioning that I owe a debt to the camera that I can never pay. Through its agency the latent love of nature within me has been brought out, and through its influence I have developed an admiration for the beautiful that might forever have been dormant.

Interiors in Natural Colors by Reflected Light

H. F. PERKINS, Ph.D.

IT is a well-known fact that occasionally the worker in color-photography obtains surprising results in the way of unexpected tints in his photographs. This is particularly true in the case of pictures made by light which is largely reflected from a colored object. In fact, it is only such subjects as are photographed by the white light reflected from a partly clouded sky or from a background of perfectly neutral tone that are reproduced in, what may be said to be, absolutely true color.

The worker in Autochrome or any of the other processes of photography in natural colors is often astonished to discover a prevailing tint of some distinct color over the whole or part of his picture. He failed to notice that there was any such tint present in the scene when he made his exposure. It is a question whether this is desirable or otherwise. Artists are often very much interested to discover this tendency in color-photographs, and express considerable astonishment that it is possible to obtain such an effect by the mechanical and chemical means at the disposal of the photographer. The painter seeks to impart to his portraits some suggestion of the colored light reflected from surrounding objects. This is particularly true of the Impressionist School, whose portraits often present a most unreal appearance when examined at close range, because of the splashes of peculiar tints — purples, greens, yellows — that appear on what is usually supposed to be the pink and white of a delicate complexion. It is necessary, of course, to view these portraits as the artist intended — from a distance.

Is it desirable to obviate this tendency in the color-plate? In some instances the results are as unexpected and queer as in the above-mentioned portraits. There are other cases, however, in which it may be looked upon as distinctly an advantage to reproduce faithfully these, as one might say, overlaid tints. For instance, while some object to the distinct blue in the shadows of snow-pictures, to my mind this is by no means a fault, at least if the blue is not exaggerated. As will be pointed out later, exaggerated color-effects are sometimes obtained by faulty technic; but it is not of this that I am speaking.

Whenever the overlaid tint is too strong to suit the taste of the artist, it may be counteracted in one of several ways. The class of photographs in which this objection may arise may be placed in two groups: (I) indoor-pictures and (II) forest-scenes.

I. Indoor-Photographs

The fact that the Autochrome plate requires from twenty to sixty times the exposure necessary to make ordinary pictures in black and white, seems to some beginners in color-photography a serious obstacle to the photographing of interiors. They are disposed to think an interior of a dimly-lighted building, as a cathedral — which would require with an ordinary plate some hours to photograph — would not be a suitable subject for the Autochrome. They question whether so dimly lighted an object would make any impression on a color-plate, no matter how long the exposure. This is not a treatise on exposures; but it may be proper to call attention to the fact that in spite of the above-mentioned difficulty, by using as large a stop and as fast a lens as possible, the use of the Autochrome plate is by no means out of the question, although exposures of half a day are not to be regarded as too long for certain cases. This may, however, be shortened by a preliminary treatment of the plate, with a "hypersensitizer," which allows the substitution of a much lighter screen, thereby reducing the exposure to one-fourth.

Such ordinary interior-subjects as the rooms of a private house, decorated interiors in public buildings, churches, etc., are well within the range of the Autochromist, and a great deal of work has been done by novices as well as by expert photographers in interior-photography in colors. The most natural subject for the ordinary worker to select, in practising with color-photography, seems to be in many cases the indoor-portrait. This he soon discards as impracticable, owing to the fact that he spoils his plates by too short exposure, or else the sitter rebels at the length of time he (or she) is required to remain motionless with unchanging expression in front of the lens. The photographer next proceeds to try exposures of interiors of rooms with or without some friends or members of his family introduced for the purpose of giving the "human touch." He soon decides that, for best results, he had better eliminate the figures, and thenceforth finds much

enjoyment in the photographing of ordinary rooms of pleasing color-scheme. It is well worth while to experiment with color-plates in the effort to get pleasing color-combinations in interiors. As in the case of most subjects, the addition of the colors to a photograph of an interior imparts a richness and character to it that would otherwise be lacking, and this is often just what is needed to make the picture. Views that would be flat and uninteresting in monotone become bright and worth while in Autochrome, even though the colors are not brilliant. The more pleasing effects are, sometimes, produced from the low-toned compositions; but to this end the harmony of colors must be well carried out. Distracting notes are the more glaring if they appear in the midst of a quiet setting. On the other hand, interiors that would be reproduced in the ordinary way as a meaningless jumble of light and shade may be reduced in the color-picture to a less discordant composition by reason of the addition of the new element. The colors may be, in other words, in pleasing combination in a room or other apartment that has little to commend it in the massing of light and shade, and this is the more easily believed when one remembers that rooms are generally furnished with a view to the color-effect as the most important if not the only important consideration.

The difficulty with which we are here to deal arises from the strangely altered colors of the objects in the interior when photographed by light from some colored reflecting-surface. The most common instance of this effect comes, perhaps, from the proximity of another building to the windows of the apartment to be depicted. If the light that enters the room be entirely or in part reflected from a red brick wall, for example, there is no question but the picture will show the tinge of red over its entire surface, and this may be a serious detriment if there be paintings, tapestries, etc., included in the field of vision. Obviously, then, any strongly colored object in the neighborhood of anything it is desired to photograph will impart some of its color to the picture. Only light from a white source — clouds, walls or hangings — can then be used, if one must get perfectly accurate rendering of the colors of the interior.

But this white source of light is not always easy to get. The red brick wall, or one of as objectionable a hue, may be immovable. Or we may have to copy in colors a painting between the windows of a room the opposite wall of which is permanently decorated in yellow, green or blue, which the owner prefers not to have whitewashed. The first thing to do then is to

Select the Best Available Light

By choosing the right time of day and the most favorable intensity of outdoor light, it may be possible to reduce, if not remove, the objectionable over-tint. The brick wall may catch the sunlight before noon and flood the apartment with ruddy rays, whereas, after luncheon, a visit to the place would reveal the fact that now the main source of illumination is the blue sky. The blue might be as bad for the complexion of the picture as the red, and in that case waiting until a day when light clouds give us a flood of white light for our picture would help us to obtain exactly the right color-effect. By studying the conditions, an exacting piece of photographing may be handled with this one very important matter out of the way of success. After a little experience, one will discover that, as in the case of the blue shadows on snow which one never sees until he tries to see them because the brain makes adjustments to the images cast upon the retina, we know snow is white, so we see it white even when it is blue. The same holds true for all objects with which we are at all familiar; but one soon becomes able to detect the over-tones of color as the musician does those in a musical note. It must be clearly understood that the tints, which we are sometimes astonished to find in a finished color-photograph, were there and perfectly visible to the eye when the exposure was made. The camera and the color-plate do not record any color that was not discernible to the eye in the scene before the lens.

Arrangement of the Colored Objects in the Room

It is a temptation to enter into a discourse upon the subject of the composition of the color-photograph. There, again, we should be digressing unpardonably, so let it suffice to say that it is sometimes possible to work wonders with an interior that, at first, seemed to be a hopeless jangle of colors, by a judicious elimination and rearrangement of the elements in the composition. It certainly devolves upon the photographer to do what he can in this direction, and not supinely accept the situation just because there happens to be a hanging or a vase that spoils the effect. Out with it!

In this same connection, it is remarkable how much a picture, otherwise devoid of character, may be brightened up by the introduction of a touch of color — a few flowers or a bit of porcelain — but this must be done cautiously. Simply to add a splash of bright color without regard

to its blending in the whole scheme may be exactly the wrong thing. And you cannot paint it out very well if you subsequently decide that you do not care for the effect.

Colored Hangings

If the walls of a room from which comes the illumination that is responsible for the false color in the picture be covered with some material of the complimentary hue, the difficulty may be overcome. This is in any event an interesting field for experimentation. Of course, the same result may be obtained by covering a window with muslin or other thin, colored fabric, providing it is an outside object, such as our red wall, that was making the trouble. It is remarkable how it helps in making portraits to use reflectors which have a pink tint, particularly for elderly persons or those with a pale complexion. And the same help may be procured in the overcoming of troublesome overtints in interiors.

Colored Cover-Glass

One of the most satisfactory methods of counteracting the difficulty under consideration is that of using for a cover-glass a tinted gelatine plate. The ordinary plate is fixed, washed and dried, and then stained in any good aniline dye. I have found that it requires little skill or experience to obtain most excellent results in this way. If, for instance, the picture shows a bluish tinge, a cover-glass stained for ten minutes in a weak solution of eosine in water or in orange dye greatly diluted will be found to neutralize the blue. If the first cover prepared is not stained deeply enough, no harm is done. Try again. It will be necessary to do some experimenting to master this method; but as most of the dyes used will color the gelatine film progressively, successive immersions in a weak solution can be made to produce the desired result. Diamond dyes will be found as satisfactory as any for this work.

II. Forest Interiors

So far as my experience goes, I have been led to consider it very fortunate that the color-plate renders with such astonishing faithfulness the light-effects produced in the woods. The golden warmth of the autumnal tints, the delicate greens of early spring, the brilliant emerald of summer — one would scarcely sacrifice the wonderful quality of the light at such times. Indeed, he is only too glad of the opportunity to enhance the beauty of his woods-pictures by the use of a method that will reproduce these effects. Some of the most beautiful Autochromes that it has been my pleasure to see have owed their charm to this subtle quality. Should the illumination be from too vividly colored a source, however, the use of the remedies suggested for interiors within doors is for the most part impossible. One could hardly hang up enough violet-dyed muslin to make much impression upon a woods-interior over-green from the leaves above. In such case, then, it becomes necessary to make use of the last-mentioned method — the dyed cover, unless the photographer finds it possible to select the time of day or the condition of the sky for his exposure in such a way as to obviate the trouble.

In this matter of the tinted cover-glass, there is here an opportunity for the ambitious experimenter to produce highly interesting effects when there is no fault in his picture which needs treatment. For the sake of modifying the color-effect in the finished picture, he may try his hand at all sorts of tinting. It must be said by way of warning, however, that it takes a very careful and clever counterfeiter to produce results that do not give him away unless he contents himself with merely modifying, neutralizing or emphasizing the tone already present in the plate.

From what has been said, it will be seen that there is no little opportunity for individual work and experimentation in the field of color-photography. This field is so new, and so few of the methods used by workers in the black and white are applicable in color-work, that there is plenty of chance for the ingenious amateur to try his hand at the devising of new methods of practice. The results will not be good in every instance, of course; but despite the fact that the plates are rather expensive, and likely to remain so by reason of the exacting conditions of manufacture, one is strongly tempted to see what can be done in the way to obtain the results that he desires in the quality and quantity and distribution of the colors in his picture. It is only by the exercise of the personal inventiveness and artistic sense of the individual worker that results can be obtained that may justify our placing color-photography in the list of the arts rather than styling it a mere craft.

THE triumph of the photographer's art is to know how, when and where to seize that aspect of light which, transitory and actual, is at the same time permanent, characteristic and truthful. — *E. L. C. Morse.*

Photograph the Baby!

ALBERT B. NIESS

IF you are fortunate enough to have around the house a new baby (one with a little of the newness worn off will do) and a new camera, or any baby and any camera, then I hope to interest you in my story. If you have a baby and no camera, then I plead with you to read it for your present and future pleasure. If you have neither baby nor camera — well, pass on to the next article.

I started with a very happy combination — a three weeks old baby and a seven-year-old, postcard-size, roll-film camera. The baby was not too young to be successfully photographed, and the camera was old enough for me to be fairly well acquainted with it and to know just what I could and could not make it do. Once started, the opportunities presented themselves more and more often. I did not try to follow in the footsteps of one well-known writer for the photographic magazines whose son, at seven or eight years of age, had been snapped several thousand times. But I believe that I did add a little to the film-manufacturers' profits.

Most of my pictures were taken on a porch, facing south, where there was always good reflected, but not dazzling, light. Here a rug or piece of carpet could be laid and baby-girl could roll or crawl around to her heart's content while I could await the most opportune moment.

Just here I might outline a scheme I worked out to catch the always-moving baby in proper focus. At one end of the porch, along the edge, I made a crayon-mark, at which point I stood to take the pictures. At the opposite end of the porch I set marks at 6, 8 and 10 feet from the first mark. The mother would then put the baby down at the far end of the porch, beyond the three marks, and as she crawled or moved towards me, I focused the camera on one of the marks and snapped the shutter as the baby passed it. This scheme never lost me an exposure on account of the picture being out of focus.

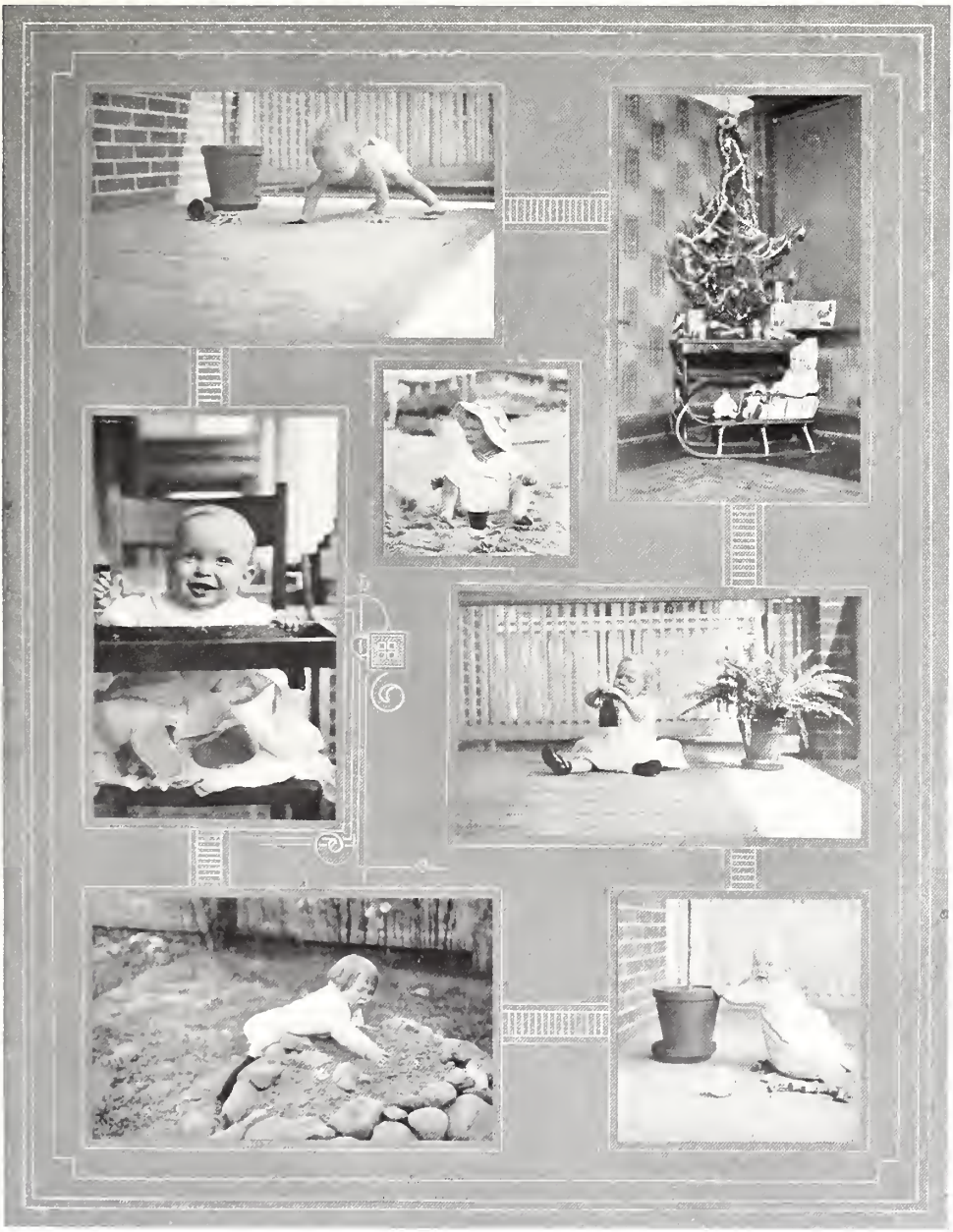
One of my earliest and most highly-prized pictures is one in which baby was making double-quick time on "all fours." This particular baby, named Dorothy, crawled on hands and feet, never on knees, and the picture on "all fours" never fails to bring a smile, no matter how often shown.

I made it a rule, during baby's first year, to get two or three exposures every Sunday and holiday, because the little ones progress so fast during this period. After the first year one good picture a month will be quite sufficient.

While talking with a friend a short time ago he said he had trouble to get his "young hopeful" to sit quiet long enough to be properly posed. I told him my experience had been that babies were not intended to be quiet, except when asleep. I never had much trouble to get "poses" because, whenever baby was near, my camera was also at hand, open and ready. Then, when baby, in her play, assumed a pretty pose, I snapped it at once. One picture, showing baby climbing up at a rubber-tree, I sent to one of the photographic magazines for criticism. It was reproduced in its columns with the statement that the posing and composition were excellent. As a matter of fact, it was a hurried snap without any attempt whatever at composition. At another time I was trying to get a picture of baby in a waste-basket, and was having only partial success because the baby's mother would not step out of the picture for fear the basket would tip over. At last she did move away a few feet, and just what mother feared really happened — the basket and baby fell over on the rug. And, oh, what a commotion! Mother saw her duty, but I saw only another fine opportunity, and duty had to take a back seat for one-fiftieth of a second. The resulting picture will be prized for years to come.

And then there is baby's first tooth; at one year old; first steps; the first Christmas, surrounded with toys; examining daddy's vest-pocket camera; in the crib in the morning; eating breakfast in the high-chair; the first dip at the seashore, and innumerable others. All these will be highly prized and looked upon, almost with reverence, when baby is a young lady.

Perhaps a few suggestions as to equipment might be pertinent. Of course, there is an endless line of cameras from which to select; but for



CHILDISH ACTIVITIES
ALBERT B. NIESS

MOTHER AND CHILD

THE ESKIMO AND THE POLAR BEAR

ALBERT B. NIESS

this class of work, if it can be afforded, the reflex-type is, in my opinion, the best, as the picture can be seen full size up to the moment of exposure. Another point in its favor is that this type of camera usually is equipped with a lens of such large aperture — F/4.5 or F/5.6 — that snapshots inside the house are possible. I have used a 3A Six-Three Kodak with much success, and in good light I have used the Vest-Pocket Kodak and Brownie. The new Autographic Kodak should prove of value in this work. Child-pictures should be labeled with the date of taking or the age of the child directly on the negative at the time of making the exposure, thus eliminating all possible chance of mistakes. An album is a necessity if you wish to keep your prints in proper sequence or from being scattered among fond relatives. The portrait-attachment I have found useful at times, but it has one disadvantage — the figure must be at a certain measured distance from the lens. It is difficult to use, therefore, when baby will not stay "put." I have obtained very good results at 6 and 8 feet, without a portrait-attachment, and at these distances one gets fairly large figures without so much danger of being out of focus. For indoor-pictures it is sometimes necessary to use the flashlight and for this purpose I found the Caywood lamp with prepared cartridges to answer very satisfactorily. The camera may be placed on a tripod and, with shutter-release in one hand and flashlamp in the other, baby may be watched for the desired expression or action and snapped instantly. Flashsheets take an appreciable length of time to burn and there is almost always some movement of the lively subject.

Of course, I do not mean to urge that amateur pictures should supplant entirely professional portraits. Periodical visits to a studio are desirable. But if you wish to fill in the gaps between studio-portraits, if you wish to perpetuate baby just as the little cherub plays around the home every day — those intimate likenesses of sweet, innocent, care-free childlife which no studio-picture can equal — take a day off occasionally and with your own little camera get some pictures over which you can muse when baby has long since forgotten childish things and, perhaps, left your fireside for another.

Do not torture your mind in quest of abstract beauty; be content with the beauty that is in a landscape or an attitude. Be sincere. Sincerity is easily said, but is not easily practised. Innumerable lessons learned are in its way. What one feels is altered in its instantaneous expression by what one has read or admired elsewhere. If one imagine that resemblance in portraits be absolute and uniform, how mistaken the idea is! The same subject may serve for radically different portraits, all relatively truthful. A portrait reflects its creator as much as its theme. There are psychological portraits in which every trait is subordinated to moral expression; there are mundane portraits which are clear and expressive, but less profound than graceful; there are portraits expressive without familiarity, individual and vivid, but generalized in careful regard to form. To question humbly and resolutely the human face is the only way of obtaining what modern writers call human documents. There never was another way. — *David de La Gamme.*

ON A SUMMER-DAY — ALBERT B. NIESS

Developing

WILLIAM LUDLUM, JR.

Illustration by the Author

A busy boy, below, you see
Developing a mystery;
The plate, as blank as paper white,
Of detail shows no hint or sight;
But soon the image starts to grow
With misty shadows forming slow.

At first there is a tiny spot,
And then another little dot,
With, here and there, a patch of shade
Which soon a magic change has made;
The blank has fled and, in its place,
A negative has grown a-pace.

Then if the work is done aright,
And printed by a proper light,
A perfect print will soon express
True form from masses meaningless;
Where hidden beauty, shy, reposed
A finished picture is disclosed.

And boys are like our hero's plate,
On which we flash the light of fate;
More sensitive to wrong or right
Than silvered surface to the light;
The brain of childhood grasps secure
The daily lessons they endure.

So flash with care the guiding ray,
The pliant mind will full repay;
Each lesson, taught with patient care,
Will find a firm impression there,
And, as the negative began,
The child develops to the — man.

EDITORIAL

Photography in War

WHATEVER may be the motive for making X-ray examinations of cargoes destined for European belligerents, the results exemplify the efficiency and trustworthiness of that branch of photography. Although in the case of the steamer *Dacia* nothing of a compromising nature appears to have been discovered, radiographic scrutiny was more productive in connection with the cargo of the *Cretic* which left New York February 16. Here, each of the one hundred and seventy-eight bales of cotton-waste which composed the cargo was found to contain about four pounds of contraband rubber. The consignment was left on the dock. Thus what was until recently an aid to medical surgery and a boon to humanity, particularly in the field-hospital, has also developed into an agency for the detection of imposture.

To what other strategical uses photography may be applied, is illustrated by a war-episode described elsewhere in this issue.

Deception in Photographic Supplies

AMONG the things that the honest businessman fears most is unfair competition — tricks of the trade. The daily press is constantly exposing swindles which, despite their age, are practised with astonishing ease upon unsuspecting people; indeed, unless a person is perpetually on his guard, he is sure to be imposed upon in one way or another. Safeguards, in the form of laws, penalties, guaranties and warnings, are excellent, so long as they are kept in mind; but there comes a moment when vigilance relaxes, and then assiduous imposture scores a point. Despite these precautions, however, there are occasional lapses which are due as much to the unbounded faith of the consumer in the integrity of the product as to the personal dishonesty of the manufacturer. The prudent housewife or housekeeper keeps a watchful eye on the grocer, the milkman and the baker, so that the commodities, in quantity and quality, shall be up to the standard. She takes nothing for granted. There is always a chance for an error, particularly during the course of the delivery.

Consumers of photographic material, fortunately, have little cause to complain of inferiority or of shortage; for the photographic industry — as PHOTO-ERA has always maintained — is characterized by high and uniform standards of production and exemplary business-methods.

Although the famous dryplate swindle of about thirty years ago — when, by means of sample boxes filled with plates of a standard make a spurious manufacturer marketed successfully twelve thousand dollars' worth of dryplates coated with a silverless emulsion — has never been rivaled, an attempt is made occasionally to introduce a product of inferior merit. But as it is visible results that count in photographic practice, the sale of such goods rarely gets beyond the preliminary stage.

In view of the virtually uniform superiority of photographic material nowadays, it probably never occurs to a consumer to count the number of sheets that compose a gross or a dozen packages of printing-paper, or to verify the contents of a box of dryplates. And we doubt very much that there are many photographers who examine the quantity of a chemical product contained in a one-ounce bottle or a one-pound can. Nevertheless, if a one-ounce can of pyro, for instance, should happen to contain much less than the required amount, namely, four hundred and thirty-seven and one-half grains, and the deficient quantity be used to form a stock-solution, there is likely to be a disturbance in the developing-process. It might, perhaps, be argued that it is well occasionally to test the specified weight of the contents of a standard package; for if there be a shortage — doubtless due to carelessness in packing — it should at once be reported to the dealer, and the error corrected to avert inconvenience to other consumers.

In the case of magnesium flashpowder, a very important commodity, short weight would be of less consequence, save that a one-half ounce box should contain at least two hundred and forty grains, that being the minimum quantity established by custom — as the result of competition among the several manufacturers. To be sure, flashpowder, even pure magnesium, being classed as a chemical, can be sold according to avoirdupois weight — four hundred and thirty-seven and one-half grains to the ounce — but it would be unbusinesslike for the maker to do this. All the same, no maker of this article has a legal right to place in the container one grain less than what the label calls for.

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.

4. Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter, SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15 unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value. Persons interested to have one of these PHOTO-ERA prize-collections shown in their home-city will please communicate with the Editor of PHOTO-ERA.

Awards — Winter-Scenes

Closed Jan. 31, 1915

First Prize: Dr. F. F. Sornberger.
Second Prize: Henry J. Schulz.
Third Prize: Foreman Hanna.
Honorable Mention: Lester C. Anderson, Henry H. Blank, Guy W. Boeché, H. L. Bradley, Ward E. Bryan, R. A. Buchanan, Arthur H. Campbell, Henry J. Sihler, A. B. Hargett, Thurston Hatcher, Esther Heacock, Will G. Helwig, Charles H. Hughes, D. Edward Jones, F. W. Kent, G. P. Kimberly, Aug. G. Koehler, K. H. Ludwig, A. B. Mears, Alexander Murray, Louis R. Murray, Charles H. Partington, Richard Pertuch, C. B. Sanford, Harry L. Standley, W. A. Ward, E. H. Wendell, Belle M. Whitson, Wm. J. Wilson, R. A. Worstace, Raymond S. Wright.

Special commendation is due the following workers for meritorious prints: Floyd Nash Ackley, James H. Andrew, Fred C. Babcock, Edward T. Barnes, F. E. Bronson, Adèle Brush, C. W. Davidson, C. S. Dickinson, Albert C. Ferry, F. E. Gustafson, Kenneth Hartley, Bertram Hawley, Ethel J. Heath, Alice M. Hobson, The Howes, Franklin I. Jordan, Carl Kattelmann, J. A. Kielty, Chas. B. Klais, Howard Lindsey, C. A. E. Long, Wm. Ludlum, Jr., Walter Magnuson, H. J. Osterhoudt, J. W. Ostrander, Irvin Peter, Walter S. Pollak, W. P. Potter, Edwin A. Roberts, Eda Bowers-Robinson, Oskar Sauer, John O. Scudder, H. G. Smieding, D. Vincent Smith, Stanley Stevens, R. P. Wells, Alice Willis, F. W. Wisman, B. L. Wright.

Subjects for Competition

"Flashlights." Closes March 31.
"Interiors with Figures." Closes April 30.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the publisher will give them the choice of photographic supplies to the full amount of the prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

THE MORNING-TRAIN — DR. F. F. SORNBERGER

FIRST PRIZE — WINTER-SCENES

Street-Scenes — Photo-Era Competition

Closes May 31, 1915

Streets, like the poor, we have always with us, and it is a good test of artistic perception to be able to isolate the picturesque from the commonplace and produce a real picture.

Even when taking "just a street" — two rows of buildings with a roadway between — there is opportunity for choice of viewpoint and of lighting. Such a view taken from the middle of the road with the sun behind you will be a mere map — a series of straight lines converging on a central point, having no pictorial value. The same view taken later in the day when the buildings on one side of the street are in shadow themselves and cast long, luminous shadows across the roadway and even upon the illuminated fronts of the houses opposite, will be a very different subject. The point of a view should be a little to one side of the center so that the lines will not be so evenly balanced on each side and the vanishing-point should be about one-third the width of the print from one side. A good point of vantage is at a cross street. Then a side- and end-view of the houses in the foreground may be obtained.

If the sky-line is irregular, broken by church-spires or other prominent objects, so much the better, only see that they are well placed and that they are all included — not cut off at the top.

When people are passing continually in the street it is sometimes hard to decide on the right moment for exposure; but if a time is chosen when no one is very close to the camera and when the chief movement is in a line with it rather than across the field of view, no great harm will be done by movement.

As in all work when architectural lines are of importance, care must be taken to have the camera absolutely level or distortion will occur. If the camera must be tipped slightly upward to include a tall building or spire, the swing-back should be used to correct the tip of the camera and make all parts of the plate equally distant from the object.

But to the keen observer the life of the streets is more interesting than the streets themselves.

To one in a foreign land — interesting as the historic buildings and quaint architecture may be — it is the street-life, the novel customs and costumes that are most absorbing of all. The old "fish wives" on the streets of Glasgow; the flock of goats with their herdsmen in the villages of Tyrol; the jaunting-cars of Ireland, and the wine-carts of Roman Campagne — these are the things that embody the life of the country and linger in the memory.

Here in America things of the sort are so familiar to us that their significance is lost and we pass them by unnoticed. It often takes a stranger's eye to detect the possibilities all about us.

Ours is such a polyglot civilization that it is hard to put one's finger on those things which are purely American in significance. The most picturesque figures of our streets are not infrequently the Italian hand-organ-grinder, the Irish ditch-digger and the street-venders of various nationalities.

Here in New England one can come as near to finding aborigines as anywhere in the country, possibly. Back in the country-towns, although the open market is no longer held, there are still times like Town-Meeting-Day when the streets are full of interesting types. A group of men from the farms in heated argument in front of the

CHEROKEE ROAD AT NIGHT — HENRY J. SCHULZ

SECOND PRIZE — WINTER-SCENES

"general" store, or wrangling over a load of produce; a herd of cattle being driven through the streets, or a troop of school-children with books and dinner-pails — all are good material for pictures of lasting interest, for this class of subject is more rarely seen now, and your farmer's wife is already quite as likely to bring her eggs to market by automobile as any other way.

The older New England cities offer many possibilities. Such old shipping- and fishing-centers as Salem and Gloucester are full of quaint old doorways and houses that are of great interest, and the streets near the water furnish a wealth of "local color" by way of fishermen, net-menders, rope-makers and such — all redolent of the sea and its fish! Boston itself is one of the most "old worldly" of our American cities, and in the older part are many narrow, winding, hilly streets that make excellent picture-material in themselves, and form picturesque settings for groups of newsboys, street-pedlers or other familiar figures.

When we come to New York we have a totally different problem. Here is pure Americanism in architecture, and in people — all the nations of the globe! The shadows are deep in its cañons of streets between its towering, sun-lit cliffs of buildings, and exposures must be lengthened accordingly. In the crowded streets of the "East-Side," what may one not find of pathos and humor? Here are representatives of every nation under the sun. The dark-skinned, curly-haired, beautiful children of Italy — fit models for the little "St. John" — are playing at marbles in the gutter. Then there is the Ghetto where the signs over the stores are in Hebrew, as is the newspaper the boys are selling at the corners. Here the pawn-shop and old-clothes dealer flourish and display their wares on the sidewalk.

There are pictures wherever one turns, but it behooves one not to make too great a display of the camera, or all the natural, unconscious poses will vanish, and in all probability the artist will find himself the center of an interested and clamorous crowd. Their only English vocabulary seems sometimes to be that of the European child on his native heath, Pho-tee-graf! Mo'-nee! — the inevitable greeting to an American with a camera.

The dweller on the Pacific coast has the picturesque Chinaman as an interesting model. The open shops and foreign wares of "Chinatown" make it admirable material for pictures, and "John" himself is always interesting to Occidentals.

In the South there is always the picturesque negro — a never-ending delight to the pictorialist. The women with their bundles of washing on their turbaned heads, the men in their queer donkey-carts, and the little woolly pickaninnies — all are legitimate prey; but here also one must be a little wary for the negro is not always so willing to be pictured and may vanish indoors with the parting announcement, "We ain't no circus to have our picters took!"

But the life of the streets is interesting not merely in summer sunshine. The driving wind and snow of winter have a charm all their own and may be very successfully depicted. The wind-driven garments of the humans and

DESOLATION — FORMAN HANNA

THIRD PRIZE — WINTER-SCENES

the cowering horses under the lash of the storm tell their own story very convincingly.

The wet streets after, or during, a summer-rain are also splendid material, with the reflection in the wet pavements, and if they be taken at night the street-lights, with their wavering reflections, add greatly to the effect.

As to the most suitable equipment, each worker will wish to determine that for himself; but, generally speaking, for architectural work a tripod-camera of the "view" type with a rectilinear lens of good depth of focus at large apertures is very desirable. For the catching of natural groups, by the way, the hand-camera is almost a necessity, and the less conspicuous the better.

A certain instinct for good composition will help one to determine the proper arrangement for these unpremeditated groups and will release the shutter at the strategic moment. It is surprising how well the figures will fall into line at times — far better than hired models could be posed — while another time it may take long, patient waiting for anything worth while to evolve. Let us have our eyes open for the possibilities of our home-streets.

KATHERINE BINGHAM.

The Swing-Back

PERHAPS the uses of the swing-back, as the movable back of cameras of the "view" type is called, may seem a little mysterious to the novice with that style of equipment, but it is in reality most simple.

Its greatest service, perhaps, is in taking tall buildings. If you ever tried to take a church with a high spire, perhaps you remember the difficulties. The camera is set up, the best viewpoint having been carefully determined, and the image on the ground-glass hopefully examined. Alas, the top half of the spire does not appear! Pick up the camera and retreat as far as the buildings behind you will allow. Another examination, but still no top to the spire and a lot of undesirable foreground; raise the lens-board as high as possible, still too low. Nothing to do but tip the camera up a little. Ah, yes — there it comes — but, alas — see how the lines slant! The sides of the building are no longer parallel with the sides of the plate, but converge towards the top, and the top of the steeple, although visible, is sadly out of focus. Now is the time for your swing-back. Stand back and look at your camera from one side. See how much nearer to the building the bottom of the plate is than the top. There is where the trouble lies. Now loosen the screw on the left and turn the right hand one until the plate stands perpendicular and parallel to the walls of the building, and the image on the ground-glass will be better.

Although this is the chief use of the swing-back, it is by no means the only one. In portraiture, for instance, where a seated figure is to be taken with a short-focus lens, the distortion of knees or hands is sometimes quite apparent. This is, of course, from the same cause. The knees are nearer the plate than the head and shoulders, and this time the plate is to be tipped out of the perpendicular line, bringing the top nearer the sitter and letting the bottom recede, thus evening up both size and focus.

There is also a lateral movement of the back, but one seldom finds need to use that. If one were taking, say, a group of people and it seemed necessary that those on one side be at a greater distance from the camera than those on the other, this lateral swing might be used to shorten the distance on one side and increase it on the other.

Easily Distinguished

HIBBARD was exhibiting his picture to a charming girl. "This one," he said, handing her a picture, "is my photograph taken with two French poodles. Can you recognize me?"

"Why, yes, certainly," she replied, looking at it intently. "You are the one with the hat on." *Youth's Companion.*

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

With Reviews of Foreign Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston

IN THE BLIZZARD — RAYMOND S. WRIGHT

HONORABLE MENTION — WINTER-SCENES

Combined Developers for Many Purposes
II. — Duratol-Hydro

Duratol, one of the newest of the coal-tar developers, is used only in combination with hydroquinone. While it differs but slightly in its chemical composition from metol, its action is considerably different in that when combined with hydroquinone fogging seems to be almost impossible. It is non-poisonous; it brings out detail as well as pyro, gives good density without blocking the highlights, keeps well in solution both before and after use, works equally well on plates, films and papers, is excellently adapted to tank-development. It permits the use of a large percentage of hydroquinone, which is very cheap, and it does a very large amount of work. The following formula is suitable for plates, films, lantern-slides, gaslight and bromide papers:

Water	40 ounces
Duratol	15 grains
Sodium sulphite, anhydrous	1 ounce
Sodium carbonate, anhydrous	2 ounces
Hydroquinone	75 grains

Dissolve the Duratol in 32 ounces of warm water, about 120 degrees Fahr. Do not use water that is hard. If boiling does not soften it, use rain or distilled water. Mix the sodas *dry* and add them to this solution. If they are added separately, a precipitate will result. Then add the hydroquinone, which will dissolve quickly. Allow the developer to cool to about 70 degrees, then filter, if desired, through absorbent-cotton or filter-paper, and make up the volume to 40 ounces by adding more water.

Used full strength, plates and films develop in 5 to 8 minutes. The factor is 9 to 15, according to the density and contrast desired. A small factor may well be adopted for portrait-work and all subjects requiring delicacy and softness, and a large factor for landscapes and other subjects in which more vigor is wanted.

For tank-development, take 1 part stock-developer and 3 parts water. The time will be 30 minutes at 65 degrees Fahr. For fast plates and films, increase the time of development about one-fourth.

If to that portion of the stock-solution which is reserved for developing plates and films a solution of acetone sulphite be added, the keeping-qualities of the developer are further increased and the fogging-ten-

HONORABLE
MENTION
WINTER-SCENES

A COUNTRY-ROAD IN WINTER — WILL G. HELWIG

dency of time-expired or faulty emulsions are considerably restrained. This fogging-propensity, which is too often erroneously ascribed to the developer, is enhanced by diluting the developer; hence the advantage of using acetone sulphite for tank-work. Prepare the solution by dissolving 1 ounce of acetone sulphite in 7 ounces of cold water, and add 1½ fluid ounces to each 40 ounces of D. Q. stock-developer.

For gaslight and bromide papers the stock-developer is used full strength; the amount of potassium bromide solution, 10 per cent. depending upon the tones desired and the particular emulsion in use. In general:

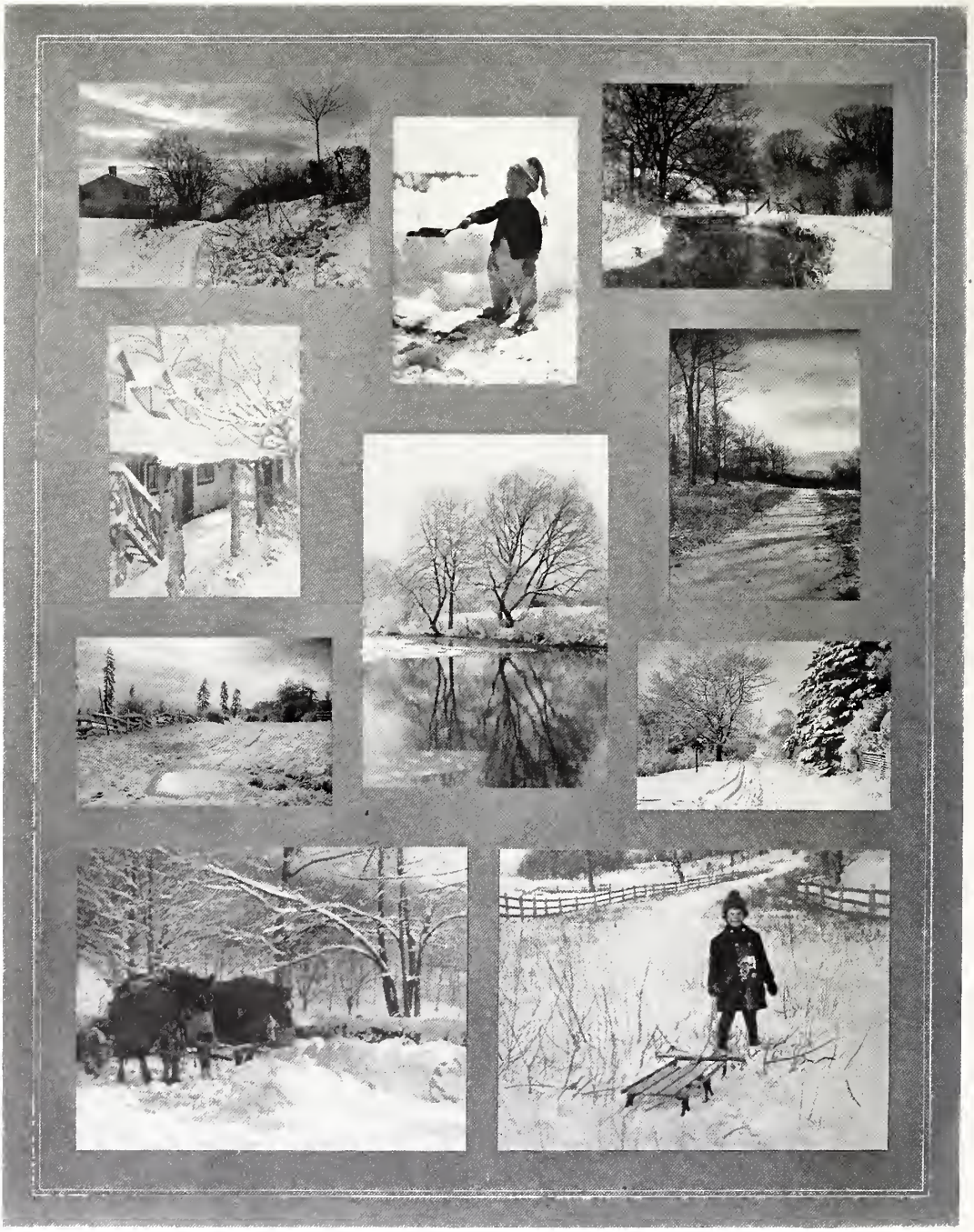
For blue-black tones, omit bromide.
For platinum-blacks, add 1 drop of bromide to each 2 ounces of developer.
For warmer blacks, add 4 to 8 drops of bromide to each ounce of developer.
For sepias by the sulphide process, omit bromide.
For sepias by the hypo-alum process, add 4 to 8 drops of bromide to each ounce of developer.

Development of papers will vary from ¾ to 2 minutes in duration, according to the brand, thus affording great control in development. Rinse prints before fixing, or use an acid short-stop.

Ebonizing Wood

Any wood which will take a good surface can be ebonized, and in this way given a finish which is very suitable for photographic apparatus. Amateurs who make their own appliances will find the following a satisfactory method: The surface is first well smoothed all over with glass-paper, and is then brushed over with a ten-percent solution of potassium bichromate, made with hot water, and applied hot. This should be used very sparingly, as the object of the application is to fill the pores near the surface with bichromate, and not to leave any of the salt on the surface itself. When this is quite dry, a hot, saturated solution of gallic acid is applied in the same way. Should these applications not be sufficient, they may be repeated. A nice, dull finish can then be given by rubbing the surface with a rag with just a trace of oil, or, if a gloss is required, the wood may be varnished. — *Photography and Focus.*

The key of a print is a matter of technique; but one cannot introduce the feeling of direct sunlight into a picture if it did not exist in the original subject. — Paul Lewis Anderson in *Pictorial Landscape-Photography.*



SOME OF THE HONORABLE-MENTION-PRINTS

Left to right: "The Afterglow," Chas. A. Hughes; "The Snow-Man," R. A. Buchanan; "The Creek in Winter," Richard Pertuch; "Christmas-Morning," A. B. Mears; "Wet Snow," C. B. Sanford; "Towards Evening," Henry J. Sihler; "A Trick of Old Boreas," E. D. Leppert; "After the Storm," H. L. Bradley; "A Frosty Dining-Room," William J. Wilson; "Off for the Hill," Esther Heacock.

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and all regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston.

A WINTER-NIGHT — G. P. KIMBERLY

HONORABLE MENTION — WINTER-SCENES

Trick-Photography — Beginners' Competition

Closes June 30, 1915

One hears it said that "the camera cannot lie," but it can certainly be made grossly to misrepresent the truth, and I'm inclined to think that it sometimes is persuaded to tell a real "out and outer."

The use of a duplicator is one common way of causing misrepresentation. There is a commercial article that can be obtained, but it is a simple matter to make one.

In Photo-Era for September, 1907, Mr. John Boyd describes a very easily made and practical one made by himself and capable of adaptation to many uses. It consists of a piece of heavy cardboard, about six inches long, and a trifle wider than the lens with which it is to be used. A hole the size of the lens is cut in the center and a collar of cardboard to fit tightly about the lens is attached to the back. A piece of card is fastened to each long side of the duplicator to form a groove in which two pieces of cardboard may slide, one from either end. These pieces should be cut a trifle narrower than the back and may be of thinner black paper if preferred, only they should be stiff enough to slide evenly in the grooves, and must be impervious to light. In the one described by Mr. Boyd there is a piece of card fastened through the middle of the lens-opening to form a permanent center and the slides close the space at each side alternately; but that limits the use to only two exposures, whereas without that three or more exposures may be made.

Great care is required in making the adjustment that the exposures neither overlap nor fail to join. The ground-glass should be ruled into the number of spaces desired and then the slides pushed in from each side so that each space in turn is exposed separately. The joining of the different exposures is, of course, the difficulty. The slides should be so arranged that the image will begin to blend off about one-fourth of an inch from the dividing-line and disappear entirely at about the same distance the other side. Care must be taken to see that the duplicator is exactly perpendicular, or a segment of the plate will be unexposed at one side and a corresponding one on the other side will get a double exposure.

The usual trick accomplished with the duplicator is to take a "group-picture" of a *single person*, in which he plays a game of cards with himself, or is seen in several different costumes and poses.

Having adjusted the duplicator for the first of three spaces, for instance, pose your subject in the space on the ground-glass that is now open. It is wise to select a plain, dark background and place the sitter — if a game is to be represented — at one side of a dark table and facing towards the center. Having made this exposure, remove the plate and adjust the slides to cover the space just

FIRST PRIZE
BEGINNERS'
CONTEST

DESERTED — L. VINTON RICHARD

used and leave open the next or center space. Change the sitter to the back of the table facing the camera, but with head turned either to right or left as if looking at or conversing with himself. In replacing the plate each time, be sure that it is in register and try to give uniform exposure. For the third pose the sitter should be on the opposite side of the table from the first exposure and the slides adjusted to cover the two previous spaces and expose the final one. If care has been taken in the arrangement, the result will be very mystifying to the uninitiated.

Variety can be given by a change of costume each time, and a person of ingenuity can devise any number of astonishing combinations at once bewildering and often highly amusing.

Another way of inducing the camera to prevaricate is to attach it, lens downwards, to a board between two high stepladders, thus allowing the subject to be posed on the floor. In this way many amazing feats of lifting may be portrayed, the model lying on the floor, the weight also resting on that support but in the finished product seeming to be upheld by one finger or balanced at arm's length. Wonderful flying-poses with streaming hair and garments are also obtained in this manner and all sorts of unreal floating-effects.

Ghostly figures may also be made to prove their existence by means of the supposedly veracious camera. An old man sitting by the fire is day-dreaming — and the wife of his youth, being plain to his mental vision, is seen in faint outline bending over him or sitting beside him — the outline of the chairs or other background being traced plainly through the figure.

To produce this illusion the background should be something with decided lines or pattern to show through distinctly and the figures both posed as desired in front of it. This done, a short exposure is given and then the "ghost" steps one side and a second exposure is made with no other change.

These are entirely straight and legitimate "tricks." A little less allowable are the methods of depicting large heads on tiny and fantastic bodies, and any fakes wherein a painted "foreground," if one may so denominate it, is used. In this case a painted screen represents the dwarfed body, while the head is placed in an opening so arranged as to connect with the painted shoulders.

This is more legitimate, however, than the cutting out of part of one print and pasting it upon another and then re-photographing the resultant freak.

Many modifications and adaptations of these methods will suggest themselves if one is interested in this class of work; but if they were widely practised, I fear that the camera would loose its reputation for accuracy.

Finally, the making of silhouettes, once so popular, whether done in pen and ink or by photography, seems to come under this class of work. Hang a white sheet in an open doorway and otherwise darken the room. Pose the sitter in profile in front of the sheet with the camera also inside the room. Focus accurately so that the outlines will be sharply defined and give a short exposure. Longer exposure would produce undesirable faint details. A strong developer must be employed in order to obtain a negative with clear glass image and solid black background. The same effect may be had at night by means of a flashlight behind the sheet. Bust-effects with a curved finish-line at the bottom, after the manner of a statuette, are easily worked up by painting over the clear glass of the image with opaque pigment or covering it with a piece of opaque red or black paper cut to the desired shape. Full-length figures are also interesting and genre-groups quite possible.

KATHERINE BINGHAM.

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value, $5.00; *Second Prize:* Value, $2.50; *Third Prize:* Value, $1.50; *Honorable Mention:* Those whose work is worthy will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is **"General"**; but only original prints are desired.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data. ***Criticism on request.***

4. Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter sent separately, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer, and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express, very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed Jan. 31, 1915

First Prize: L. Vinton Richard.
Second Prize: James Allan.
Third Prize: Richard D. McCue.
Honorable Mention: Philip Conklin, Herman Gabriel, Wilford E. Jost, Ikko Kurachi, Wm. F. Lindstaedt, Louis R. Murray, Robert P. Nute, R. C. Schultz, James Slater, A. C. Smith, T. S. Tsura, S. A. Weakley.

Special commendation is due the following workers for meritorious prints: D. Dorey, C. H. Judson, Eda Bowers-Robinson, Frank J. Scribner, Kenneth D. Smith, W. Steleik, Lena Tewkesbury, A. T. Tumbleson, Luke R. Vickers, S. N. Waring, R. P. Wells, A. J. Weis.

Why Every Beginner Should Compete

The trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the Photo-Era Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter. After having won a few prizes in the Beginners' Class it is time to enter prints in the Photo-Era Competition for advanced workers. In this class the standard is much higher and the camerist will find himself competing with some of the best pictorialists.

As soon as one has been awarded a prize in the Photo-Era Competition, he may consider himself an advanced worker, so far as Photo-Era records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the Photo-Era Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed, to the Guild Editor for criticism, will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments form an endless chain of advice and assistance; it remains only for its members to connect the links. To compete with others puts anyone on his mettle to achieve the best that is in him, and if, in competing, he will study carefully the characteristics of prize-winning prints every month and use the Guild correspondence privilege freely, he cannot help but progress.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

H. N. — **To make your proof of a broken negative permanent,** tone and fix it, for it is on gelatino-chloride paper. It will be much simpler for you to get a package of Solio toning and fixing powders rather than to bother to make up solutions from chemicals in bulk. Complete directions accompany the powders.

A

Potassium ferricyanide	1 ounce
Potassium bromide	1½ ounces
Water to	9¼ ounces

B

Mercuric chloride	120 grains
Potassium bromide	120 grains
Water to	10 ounces

For use, take ½ part of A, 2 parts of B and 9½ parts of water. After bleaching thoroughly, take the print from the solution, wash in three changes of water and immerse in the following acid solution for two or three minutes:

Water	6 ounces
Hydrochloric acid	30 minims

Follow this with a second and third similar bath and then wash for twenty minutes in running water. Then immerse the print in a solution of sodium sulphide to darken the image. Prepare a stock-solution containing 100 grains of sodium sulphide in 2 ounces of water, and take 40 minims and make it up to an ounce with water for the working-solution. The result should be a pure black. Final washing for half an hour and drying completes the process.

The danger in all after-treatment of prints is the formation of stains, due to insufficient fixing or washing of the print at the time when it was made, impurities of a chemical or greasy nature which have adhered to it in the meantime, etc. This is particularly true of attempts **to restore to their original density prints which have been too strongly intensified,** although this is often accomplished successfully by means of ordinary negative-reducers, such as Farmer's or ammonium persulphate, the formulæ being found in any good handbook or annual.

N. I. C. K. — Every first-class photographer soon learns **to judge with fair accuracy the length of exposure for any gaslight or bromide paper** by the density of the negative. Of course the easiest way to prevent waste of paper is to take narrow strips and give different lengths of exposure to each, develop them and adopt the proper guide. One sheet out of every dozen used in this manner will ensure eleven perfect prints, and is money well spent in the case of a beginner.

L. J. — There is no instrument intended primarily **to measure, not judge, the density of negatives,** but an improvided method is to employ a Chapman, Jones, or Scheiner plate-tester or a Wynne print-meter. These consist of series of spaces of different density, each denser than the last and numbered in serial order. When placed in contact with a negative, some of the spaces will be seen to be lighter or darker than any given area in the negative and one will be approximately the same. The number of this space may be used to indicate the density of the negative, and a test-print upon any brand of paper will quickly determine the correct exposure for the indicated density.

S. B. A. — Most of the best and most serious **magazine-illustrating** is done with 6½ x 8½ and 8 x 10 cameras, the prints being contact. This is by no means necessary, however, particularly for the standard magazine-page type-size of 5½ x 8 inches. Many leading photographers use 5 x 7 exclusively, and it is as large as many care to bother with. Contact glossy prints from this size negatives are, with rare exceptions, amply large, and with the new enlarging-papers which are so much better than the old bromide-papers sharp negatives may be enlarged in the print to the size of any required halftone. These new papers have put an entirely different aspect on the matter of enlargement.

Undoubtedly the popularity of the miniature camera encouraged manufacturers to perfect them.

A CHRISTMAS-DAWN — JAMES ALLAN

SECOND PRIZE — BEGINNERS' CONTEST

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

H. L. R. — "The Old Pond" contains much interesting picture-material, and a suitable sky or cloud-effect would improve your print wonderfully. Aside from that, the lightest object, and the only one which in any way suggests human life, is too far to the left of the picture-space. If this subject could be made again, it would be desirable to select a somewhat different viewpoint, if possible, or to use a wider-angle lens so as to bring the building well into the picture. If this cannot be done, lowering the tone of the building and its shadow in the water with watercolors would improve the print.

S. H. G. — "The Drawing-Room" has been enlarged much beyond the limitations of the subject, for an interior demands good definition and texture of the articles depicted. An appearance of false perceptive has been created by the camera being too near the piano.

E. L. A. — Your outdoor-landscape is excellent; a pleasing subject well spaced. It will be greatly improved, however, by trimming at least an inch from the top of the print so that the sky-area in this open landscape will occupy about two-thirds of the picture. Your other subject suffers slightly from halation, and the tree-trunk is rather too dark. The latter, of course, could be held back in the printing by pencil-work on a piece of tracing-paper placed over the negative, or by daubing Prussian blue upon it over the tree-trunk.

G. S. A. — "Chrysanthemums" is the best flower-study you have submitted yet. "Friend Mine" shows slight exaggeration of the hands due to the camera being too near. "Light-Study" seems to lack a center of interest; it contains many objects, but seems to feature none, and surely there was material at hand for at least a splendid architectural photograph.

L. A. K. — Suitable skies would greatly improve most of your photographs. Cloud-effects are desirable but not necessary. For instance, notice how much more pleasing is "The Sand-Dunes" than "The Sand-Hills," the former being of a pleasing gray in the sky and the latter, white paper. The use of orthochromatic plates or films and a three-times ray-filter, ample exposure and care not to overdevelop will ensure this quality at least and record a cloud-effect if there is one at the time.

J. M. R. L. — "The Trout Pool" could hardly be better, either in composition or technical qualities.

"A Woodland Theater" also presents an interesting subject which might perhaps be improved by printing on a softer paper, as the foreground of grasses is rather too light as well as the opening between the trees, which give rather too spotty an effect. The other two subjects in which water is included suffer greatly by a violently tilted horizon-line. Trimming of the prints to rectify this will improve the subjects greatly.

W. F. L. — Your "Still-Life Study" is greatly underexposed and too strongly developed, resulting in a subject of great contrast with pure white lines and an otherwise generally gloomy aspect.

Your two outdoor rainy-day subjects would be improved by printing on softer paper, as the contrast is now too great and in a hazy distance has the effect of halation.

P. C. B. — Your picture is not conceived in an artistic spirit and has little to recommend it; there appears to be no attempt at composition — a mere random snapshot of little merit. Most of the material is above the center of the picture, making it top-heavy. The technique is also very poor. The fault is not with your apparatus, but rather with yourself. The subject, too, appears to merit little consideration.

Sorry not to be able to praise the picture, but hope to praise your work in the future when you shall have improved it.

T. O. R. — Your photograph of sheep is not a fortunate composition. The large, straight tree-trunk in the middle-distance is so bold and strong that it seems like an intruder. Certainly it plays no part in the picture.

RAINY WEATHER — RICHARD D. MCCUE

THIRD PRIZE — BEGINNERS' CONTEST

A. S. — It is the quality of the print — its composition, technical excellence and beauty of human interest as a subject — rather than its size that influences the PHOTO-ERA jury. Many 2½ x 4¼ prints are received, particularly in the Beginners' Contest, but it cannot be denied that larger prints of any subject are usually more impressive and sometimes better, because of their greater breadth, dependent, of course, upon the nature of the subject.

Why not try enlarging some of your negatives with a fixed-focus enlarger? You will find it very simple, for bromide paper works like gaslight except that it is more rapid; the same chemicals are used, and slower development in a weaker solution gives better control and economy of the developer.

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.

For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

HOUR	MONTH AND WEATHER																				
	Jan., Nov., Dec. †					Feb., Oct. ‡					Mar., Apr., Aug., Sept. ¶					May, June, July §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1*/12	1*/6	1*/3	2*/3	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1*/5	1*/2	1*	1 1*/2	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1*/15	1/8	1*/2	3*/4	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1*/10	1*/5	1*/3	2*/3	1 1*/2

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop.

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class 1 are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.

U. S. 1	F/4	× 1/4
U. S. 2	F/5.6	× 1/2
U. S. 2.4	F/6.3	× 5/8
U. S. 3	F/7	× 3/4
U. S. 8	F/11	× 2
U. S. 16	F/16	× 4
U. S. 32	F/22	× 8
U. S. 64	F/32	× 16

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Leus, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply $1/16 \times 4 = 1/4$. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. $1/16 \times 1/2 = 1/32$. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Barnet Super-Speed Ortho.
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Ansco Film, N. C. and Vidil
Atlas Roll-Film
Barnet Red Seal
Central Special
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid
Seed Color-Value

Class 1, P. E. 111, Wy. 180, Wa.
American
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Central Comet
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

INNOCENCE and purity, as typified by babyhood, make not their appeal in vain and, as presented by the camera, more convincingly than by idealized canvas or marble, because emphatically truthful. In these days of materialism and doubt, visual evidence is sometimes more potent than is the descriptive word. Thus, we are taken captive by the chubby little face with its deep, lustrous orbs, which, by reason of Mr. Jamieson's artistry, beautifies our front-cover. It is repeated on page 165. By his talent, character and personality, Mr. Jamieson dignifies the photographic profession in the Hub. Data: July, 1914; 3 P.M.; 8 x 10 camera; Dallmeyer portrait-lens, No. 2A; 3 seconds; Seed; pyro; 8 x 10 Cyko print; hypo-alum.

Although John W. Gillies has achieved his great success in straightforward photography by means of impeccable clearness of definition, he has boldly adopted the diffused-focus effect in his finished pictorial work. He took this radical step only after profound and deliberate thought, and not as the slavish adoption of a fad. Mr. Gillies produces his soft-focus results directly with a special lens, or indirectly — original negative with an anastigmat and then enlarging with a soft-focus objective, whichever method is the more convenient. Data: April, 1914; 10.30 A.M.; Ica camera, 2½ x 3½; 4¾-inch Hekla lens; at F/6.8; sun; anti-screen plate; pyro; enlarged with "Smith" lens on Wellington Chamois; size, 7½ x 9¾.

Miss Blanche Reineke's picture of a young boy holding a white dove, page 161, has a prophetic significance. The dove is poetically regarded as a symbol of purity, gentleness and peace. In ecclesiastical art, according to the Scripture, it typifies the Holy Ghost. Thus this beautiful composition addresses itself to the lovers of universal peace, and to Christians on the approaching Easter season. Considered from a critical viewpoint, however, the picture may leave something to be desired — the reconciliation between studio-illumination and the open-air setting. In this respect the professional practitioner errs almost universally. A neutral, uncompromising background, one that harmonizes with the sitter in whatever costume he or she may be arrayed, would seem by far the more desirable, as it is generally inconvenient to adapt the lighting to surroundings, or *vice versa*, unless the sitting is made in the open. Data: August, 1914; 10 A.M.; in professional studio; very dark and rainy; 8 x 10 camera; Bausch & Lomb Unar; used at full opening; 8 x 10 Cramer Crown; Acetone; 7½ x 9½ glossy print.

What significance attaches to the title of what is presumably Mount Hood, on the Pacific slope, page 168, is here left to the imagination. It is to be hoped that the artist's designation of this magnificent eminence suggests a poetic sentiment rather than a military meaning. The mountain, whatever its name, may not look its extreme altitude, probably 11,000 feet, as the viewpoint itself appears to be very high. This aspect of the mountain is very imposing, enhanced as it is by a propitious arrangement of foreground and middle-distance. The judicious rendering of perspective enhances the feeling of immense distance, which is a characteristic of the Pacific landscape. No data whatever.

The cleverly conceived episode by S. P. Emerick, page 169, will be appreciated by every camerist eager to determine the correct exposure for the picture about to be made. Of devices used for this purpose there is a variety on the market, and for each is claimed particular advantages. Our two friends — John Gordon, Jr., and F. O. Butler — are convinced of this state of affairs; but the beholder hardly knows which of the disputants has the stronger case. In any event, the author of this admirable picture did not err in fixing his exposure at 1/80 second; but whether he used a meter, he failed to state. Data: March, 2 P.M.; good light; Mentor Reflex Camera, 6½ x 9 cm.; Carl Zeiss Protar VIIa; 5-inch focus; at F/9; 1/80 second; Standard Orthonon; pyro; 4½ x 6¼ Soft Cyko print.

Cat-lovers cannot fail to approve the somewhat kittenish expression of the youthful sitter successfully portrayed by M. Mizrumma, page 171. Data: 10 A.M.; dark days; 8¼-inch Goerz Dagor; stop, F/8; ½ second; Seed 26x; pyro; Royal Bromide print.

The superb view of New Jersey's rocky shore, by William Armbruster — published in PHOTO-ERA several years ago — called forth an expressed desire by a number of readers to see more of this artist's work. Responding to an invitation, Mr. Armbruster furnished us an account of his favorite pastime, together with a few prints, which forms a feature of the present issue. The charm of Mr. Armbruster's prints is enhanced considerably by an unusual beauty of tone, which cannot be even suggested in a black-and-white halftone. That he is directed in his camera-work by true artistic feeling, aided by a mastery of technical methods, is apparent in the few pictures which accompany his interesting story. Data:

"Break, break, break" — April, 3 P.M.; sun behind fleecy clouds; 8¼-inch Goerz Dagor; stop, F/12; A. & S. 6½ x 8½ Compact Camera; 1/20 second; Standard Orthonon; pyro-soda; Autotype carbon, sea-green.

"The Mystic Path" — May, 4 P.M.; hazy, a light fog; 1 second; Cramer Inst. Iso.; camera, lens and stop the same.

"Now fades the glimmering landscape" — November, before sunset; 10¾-inch Dagor; F/12; 10 seconds; Standard Orthonon; pyro-soda.

"To mingle with the darkening clouds" — December, at sunset; F/16; 10 seconds; lens and plate as preceding; camera and print same for all.

"Repose" — October, 4.45 P.M.; gray day; 8-inch B. & L. R. R. lens; F/16; 5 x 7 Premo; ½ second; Cramer Iso. Rapid; rest same as preceding.

All will agree that Mr. Niess has shown exceptional skill and originality in "snapping" his baby, pages 179–183. Some of the prints are exceedingly attractive, notably "Mother and Child," page 182. Mr. Niess is to be congratulated.

For data respecting the prints arranged into groups, we have 3A Folding Pocket Kodak, fitted with 6¾-inch anastigmat; stop, F/6.3; Eastman N. C. Film; pyro, tank; printing-medium, Normal Studio Cyko.

"Mother and Child," page 182, July, 1913; 11 A.M.; covered veranda; bright; 1/25 second; Professional Studio Cyko; same camera, lens and film.

"The Eskimo," page 182, October, 1914; 4 P.M.; rest, same as preceding.

The Photo-Era Monthly Competition

THE last competition, "Winter-Scenes," yielded an enormous number of entries, as was to be expected. The diversity of subjects was also large, as is indicated by the pictures selected for illustration.

The first prize was awarded for novelty of subject and artistic treatment, page 187. Dr. Sornberger is a born pictorialist, and he never develops a plate but it yields a thoroughly artistic result. His train with its atmospheric setting charms the eye. What is more, it moves with great speed. The sense of motion is conveyed with convincing realism; but an artist was behind the camera. Data: December, 1914; 10 A.M.; bright sun; Goerz Dagor, rear lens; F/16; 1/100 second; 5 x 7 Orthonon plate, Rodinal; 5 x 7 American Platinum print.

Henry J. Schulz has demonstrated successfully, by his "Cherokee Road at Night," page 188, that a landscape illuminated solely by electric light is capable of pictorial treatment by the camera. Technically, too, the picture is highly creditable. The chemical effect, as the professional would say, is supremely excellent. The radiance which proceeds from the arc-light fills the snow-covered branches with splendid effect, and there is no vestige of halation. The distant automobile gives added interest, but does not, as a very young person remarked on seeing this picture, give forth the brilliant effulgence that dominates the scene; neither should the shadow of the nearest tree be parallel to that of its nearest fellow. Data: 4 x 5 Orthonon; pyro; Zeiss, series VII; 8¾-inch focus; stop, F/12.5; 20 minutes; enlarged on 6½ x 8½ Cyko Platinum.

The soft definition, suggestive of a hazy atmosphere, increases materially the pictorial character of "Desolation," page 189. It is a picture of compelling idyllic beauty and is filled with poetic suggestion. As a pictorial composition, the performance seems to have nothing that can reasonably be desired for improvement. The placement of the log-cabin is admirable, the setting eminently fitting, and the illumination brilliant without being harsh. Data: January, 1915; between 11 and 12 o'clock; bright sunlight; 6½-inch Goerz Dagor; stop, U. S. 16; 3A Kodak; 8 seconds; Kodak film; pyro in tank; enlarged on Standard Bromide "C" with two thicknesses of chiffon over lens; print, 5½ x 9½.

Although the motive, as presented on page 190, has appeared in these pages several times during the past few years, it has never been treated quite so well as by Raymond S. Wright. The intensity of the driving snowstorm has been conveyed with great fidelity. One's sympathy goes out to the patient, suffering beasts. The driver is probably enjoying the comforts of a sheltering room, and what not, in the meantime. The door of the hack appears to have been blown open by the force of the gale and the air is filled with flying snow, which are obvious details of an extremely appropriate setting of an engrossing and well-rendered picture. Data: Feb. 10, 1914; light, very dull; Ansco No. 10 with 6-inch R. R. lens; stop, F/8; Ansco film; 1/25 second; hydro-metol; enlarged on regular Cyko; print, 6½ x 12.

One can rarely resist a well-composed landscape with figures, particularly if the human interest is fittingly introduced. Mr. Helwig's attempt, page 191, in this direction, has much to be commended. The straggling fence is a picturesque adjunct, but it has not been utilized with pleasing effect, as it breaks into the picture somewhat awkwardly. The two boys lend themselves happily to the purpose of the picture-maker; but had the smaller one been placed on the outside, the arrangement would have been improved. Data: February, 9 A.M.; 6½ x 8½ Century Camera; Planatic lens; stop, F/16; 2 seconds; 26x Seed; pyro; enlarged from part of 6½ x 8½ negative; print, 7½ x 9½.

The group of Honorable-Mention subjects, page 192, exemplifies the variety of pictorial interpretation of the motive, "Winter-Scenes," already referred to. Despite their reduction, these pictures show clearly the prominent artistic qualities for which they were selected. Data:

"The Afterglow" — December, 1914; 4 P.M.; 5 x 7 Montauk camera; 16-inch single lens; stop, F/16; 1/5 second; Stanley; Ortol; Azo glossy print.

"The Snow-Man" — March 24, 1914; 10 A.M.; sunshine; 5 x 7 Hammer Fast; M. Q.; 7-inch anastigmat; F/6.4; 1/25 second; Cyko print.

"The Creek in Winter" — February, 1914; 8.30 A.M.; bright; 6-inch Voigtländer & Sohn Collinear; stop, F/8; 4-times ray-filter; 4 x 5 Cramer Isonon; pyro; 1 second; enlarged on Velours Black.

"Christmas-Morning" — December, 10 A.M.; bright sun; 5 x 7 Century View-Camera; 9-inch Wollensak; stop, U. S. 8; 1/5 second; Standard Orthonon; pyro-acetone; Velox print.

"Wet Snow" (center picture) — December, 1914; 9 A.M.; cloudy; 3¼ x 4½ Auto Graflex; Ie Tessar; stop, F/5.6; 1/5 second; Standard; Celeritas; part of negative enlarged on Eastman Brilliant Bromide; 8 x 10 print.

"Towards Evening" (at right of preceding) — February, 1914; 3 P.M.; sunny with clouds; 5 x 7 Revolving Back Graphic; 8-inch Carl Zeiss, series IV; stop, F/22; Wratten & Wainwright Gray-filter; Standard Panchromatic; pyro with very little carbonate, about 8 drops; Cyko matte hard, duratol-hydro.

"A Trick of Old Boreas" — the pool of water in the foreground, caused by the wind; February, A.M.; 7-inch R. R. lens; stop, F/16; 8-times color-screen; 4 seconds; sun partly obscured; 5 x 7 Orthonon; 3-solution pyro; Grade B Azo.

"After the Storm" — January, A.M.; sunshine; 9-inch Voigtländer & Sohn Euryscope; stop, F/16; 1/50 second; Seed; pyro-soda; Prof. Cyko print.

"A Frosty Dining-Room" (admirable title) — January 12; 10 P.M.; bright; 4A Kodak (4¼ x 6½ picture); 8¼-inch Goerz Dagor; stop, F/8; 4-times color-screen; ½ second; Eastman N. C. film; Eastman Kodak Dev. Powders; tank-dev.; part of negative enlarged on Wellington Chamois Hard; Amidol.

"Off for the Hill" — January, 11 A.M.; sunlight; 3A Kodak; stop, F/8; inst.; plate; Eastman powders; tank; enlarged with Eastman lantern and 3A Kodak.

"A Winter-Night," page 193, illustrates a broad handling of a similar subject treated in the conventional way, "Cherokee Road at Night," see page 188. Here the pictorial interest is not well defined. It seems to be more in the interesting effect produced by artificial lighting than in the purpose to construct a well-balanced picture. Were the chiaroscuro reversed, it would make for a more attractive arrangement. Data: December, 1914; 7 P.M.; light from electric street-lamps, 5 x 7 Wollensak Velostigmat, series II; stop, F/4.5; 2 minutes; Standard Polychrome; hydro-ortol; enlarged from part of 5 x 7 negative on Cyko Plat.; 5½ x 9 print.

The Beginners' Competition

THAT the personality of one artist's work often influences that of another is well known; but whether this theory holds good in the case of William S. Davis and L. Vinton Richard, both photo-pictorialists practising in the same little town, on Long Island, or whether it is mere coincidence, I am not prepared to state. Certain it is that, as a photographic practitioner, the former has been in the public eye for about eight years; whereas the latter made his initial bow about a year ago. The resemblance of "Deserted," page 194, to similar scenes by Mr. Davis, is unmistakable. In this picture Mr. Richards strikes a high note in pictorial composition. It is a picture of simple and dignified beauty; yet how much it would gain, by the removal of the group of willows at the left, can easily be determined by the usual expedient of

(*Continued on page 206*)

ON THE GROUND-GLASS

WILFRED A. FRENCH

Advanced Methods in War-Photography

THE general public scarcely realizes to what extent the aerial camera is being used in the present war. Scouting aviators have been able to obtain accurate camera-records of the enemy's position, numerical strength, etc., that have proved to be of immense strategic value. Would it not be interesting to know something of the precise character of these aerial equipments? They are supposed to possess extraordinary efficiency.

But what of the potentialities of electro-photography with regard to operations in the Eastern theater of war? It was reported, last summer, that Russian scouts discovered, near the Eastern bank of the Vistula, a large-sized hole containing a man in the act of operating a mysterious sort of apparatus, a feature of which was a quantity of sensitive photographic plates, in their original boxes and in plateholders. The operator was made prisoner. Assuming that some of the plates had been exposed, the officer in command had the entire supply carefully conveyed to the nearest photographic studio — in a small near-by town — where they were developed at once. Not much could be discovered except a series of very faint, wavy markings which did not seem to indicate any definite purpose. However, the mysterious negatives were sent to Warsaw for safe-keeping. A few days later — so it was reported — another, similar underground station was found, several miles distant and also close to the Vistula. The occupant, like the first, refused to explain the nature of the apparatus, the whole of which was immediately dispatched to Warsaw. The developed plates revealed vague markings similar to the others. If the Warsaw authorities arrived at a definite conclusion regarding the performance of these two subterranean operators, they were shrewd enough not to make it public.

Recalling the circumstance that, in 1902, a well-known Cambridge physicist was experimenting in an effort to obtain photographic impressions of underground sound-waves, I am disposed to entertain the belief that the two German investigators, referred to in this account, had been communicating to each other the results of their superterranean observations by scientific means, the character of which would seem to afford much food for speculation.

Photographic Cheque-Raising

OUR attention was called recently to the caption, "Enlarging Notes," in the technical department of a cotemporary.

A perusal of the paragraph referred in no way to criminally increasing the amounts of notes or cheques, but rather to the process of enlarging from a photographic negative. Perhaps "Enlarging-Notes" would have been clearer to those who are disposed to take everything literally.

Nevertheless, the tendency to-day seems not altogether towards clarity of expression; and for this reason such obscure terms as dark room, dry plates, amateur finishing, selling methods and advertising talks are rapidly being superseded by darkroom, dryplates, photo-finishing, selling-methods or methods of sale, and advertising-talks or talks on advertising — terms that are equally expressive and more precise.

Unmerited Publicity

As the camera is held accountable for many an unworthy incident, loyal practitioners should do what they can to investigate press-reports of occurrences not creditable to the craft. When, about two years ago, a sensational press eagerly published the fictitious assertion of a Kansas individual that his six-year-old daughter had been pronounced, by prominent art-authorities, the most beautiful child in this country, I made immediate inquiries, only to find the affair to be a swindle. To be sure, excellent photographs proved the little girl to be very pretty; but no more so than thousands of others. The man saw an opportunity to make money, at the expense of the little one, by not only selling photographs to the newspapers and to interested individuals, but by seeking engagements to exhibit her throughout the country. The fraud, so far as references to the art-authorities were concerned, was soon discovered and no engagements to exhibit the child were made outside of his own state. A sequel to this attempt to profit by the child's pleasing face and figure was exposed, last summer — a scheme to defraud a local bank by depositing spurious jewels as security for large loans.

It would seem, therefore, that photography cannot in any way be held accountable for the vagaries of this individual, who called upon photography to help him in his first project. In these days, when the integrity of photographic practice is constantly being assailed, the *morale* of the craft must not suffer.

That Human Touch

AGED farmer, after a heavy snowfall, joyfully to his wife: "Look, Maria, we're 'goin' to git out, after all! There's a man at the door, now. He's waded clear up the hill, through the deep snow. S'ppose I ask him to shovel out a path fer us." Opening the door, he hails the stranger with a cordial, "Glad t' see yer, friend. Step in an' git warmed up. Say, how much will yer take to shovel out a comf'ble path down the hill?"

"'Scuse me, boss," replied the stranger, puffing, "I'm all in. I jes' been wadin' clear up here fer a young feller down there. He's got a black box on three sticks, one of dem cameeras, an' wants to make a picture, wat' he calls 'Home'ard boun'. Jes' been doin' de home-comin' job. Mighty tough work, I tell yer!"

A Peculiar Cloud-Effect

'TWAS eventide. The small lad stood on the bridge clapping his hands vigorously. Beyond the brow of the hill a dull red glow suffused the sky.

"Ah, little boy," remarked the stranger, who was a little near-sighted, "it does my heart good to see that you appreciate you cloud-effect."

"Yes, sir," replied the lad. "I've been watching it for ten minutes."

Upon the boy's face there appeared a smile of perfect bliss.

"A real poet without a doubt. And do you watch the sunset often, little boy?" asked the stranger.

"Sunset? Why, that ain't a sunset, gov'nor; that's our schoolhouse burning down." — *Exchange.*

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

International Exposition of Photographic Arts and Industries

THIS, the first exposition of its kind in America, to be held in connection with the Third Annual Convention of the Photographic Dealers' Association of America, promises to be a memorable event. It will take place in the Grand Central Palace, New York City, March 27 to April 3, and will be open to the public from 11 A.M. to 11 P.M. A large local attendance is expected, and the character of the exhibition certainly warrants attendance from other cities by all persons vitally interested in photographic progress, the admission-fee being only fifty cents. Apparatus and materials from England, Germany and France, as well as America, will be shown, and working-exhibits will also be in continuous operation, thus giving an opportunity for the first time to see several of the processes of manufacture.

At the time of writing the list of exhibitors includes: Abel's Publications, Allison & Hadaway, Ansco Company, American Photography, Berlin Aniline Works, Farron S. Betts, Bausch & Lomb Optical Co., Burroughs-Wellcome & Co., Burke & James, Inc., Emil Brunel, Central Dry-Plate Co., Frank V. Chambers, A. M. Collins Mfg. Co., Defender Photo-Supply Co., Ernemann Photo-Kino Works, Inc., Expo Camera Co., Fireproof Film Co., Forbes Dry-Plate Co., Gundlach-Manhattan Optical Co., C. P. Goerz American Optical Co., Hess-Ives Corp., Herbert & Huesgen Co., Ralph Harris & Co., Ilex Optical Co., Imperial Brass Mfg. Co., International Photo-Sales Corp., Japanese Water-Color Co., Kinograph Company, J. L. Lewis, Meyer Camera & Instrument Co., George Murphy, Inc., Northern Photo-Supply Co., William Nesbit, New York Edison Co., Pathéscope Company of America, Photographic Times, Presto Mfg. Co., Simplex Photo-Products Co., Seneca Camera Mfg. Co., Karl Struss, Sterling Studio, Tennant & Ward, Edward L. Wilson Co., Inc., Wollensak Optical Co., H. C. White Co., Charles G. Willoughby.

That Anonymous Portrait

SINCE publishing anonymously the charming portrait on page 132 of the March issue, we have learned that it is the work of Frank Scott Clark, the eminent portrait-photographer of Detroit, Mich., who prefers the spontaneity of home-portraits to those made in the studio.

Toronto Camera Club

THE Twelfth Salon and Twenty-fourth Annual Exhibition of this club will be held April 26 to May 1, inclusive, in the Club's Gallery, 2 Gould Street, Toronto, Canada. Entry-blanks and full particulars may be had of the Secretary, George Washington, at the above address.

From Father to Son

MR. Herbert Salzgeber, grandson of Mr. L. F. Hammer, the venerable and well-known head of the Hammer Dry-Plate Company, of St. Louis, is taking a thorough course in photography preparatory to entering the service of the company of which his father is general manager.

The Boston Photo-Clan

THE fourth annual exhibition of this group of photo-pictorialists was held at the Garo studio, 739 Boylston Street, Boston, February 15 to March 15. The ideals to be reached are probably too high for some of the Clan's members, as all but four were not represented this year. Their places were partly filled by Clark King and Dr. H. W. Smith with complimentary exhibits. Mr. Henry Eichheim's ten prints indicated industrious endeavor without any appreciable advance. Indeed, his eight portraits show a technical retrogression. There seems to be no comprehension of values. His flesh-tints are meaningless — whether the color of the printing-medium or whether they obscure it. There is little or no modeling. In the sitting posture of W. M. Paxton, the painter, there is little to suggest Mr. Paxton as the artist — due partly to the rigidly conventional street-costume of the sitter. His large, strongly lighted palette, however, is the most conspicuous object in the picture-area. The portrait of Philip Hale is all highlights — an anemic presentation of the warm-blooded critic. "Reflections," a bit of a tree-fringed pond, was the better of the two landscapes.

We have seen better things by Dr. Harry B. Shuman; but in "From the Road," an elevated road, with trees at each side, silhouetted a brilliant sunset, he outdid himself. It is a strong, well-balanced composition with a fine dramatic quality, a stunning bromoil, and easily the best of his ten landscapes. Dr. C. T. Warner seemed to have made little progress during the last twelve-month; but his work shown here displays a high degree of poetic fancy. "Two Pines" impressed us as the best of his six landscapes. Mr. King seems to specialize in architectural subjects: his Spanish chapel-interior delighted by its artistic arrangement, effective illumination and beauty of tone — qualities which were absent in his other prints.

Dr. H. W. Smith showed seven interesting prints of architectural ruins in Egypt and Asia Minor. Being a tourist he photographed amid light-conditions as he found them, and they were not always the best. A solitary palm grouped with a distant pyramid pleased on account of its artistic simplicity of composition.

The twelve masterpieces in portraiture, genre and landscape, by Garo, exerted an irresistible spell. He is the inspiring leader of this group of workers, all of whom, no doubt, esteem it a rare privilege to work under such exceptionally favorable auspices. Great as he is, Mr. Garo is the modest student always, striving after higher ideals of conception and interpretation. One of these achievements, an impressive landscape replete with poetic imagination and charm, will be published in an early issue of PHOTO-ERA.

Portland Society of Art

THE Photographic Section has been holding its annual exhibition at the L. D. M. Sweat Memorial Art Museum, Portland, Me., beginning March 8 and closing March 31. Those who have seen the collection state that its standard is fully up to that of former years, which is in itself high commendation. The exhibition was conducted by the Photographic Section Committee: Messrs. Sylvan B. Phillips, E. Roy Monroe and Henry A. Peabody.

Gustav Cramer's Sunny Nature

Uniform good cheer and optimism were distinct characteristics of the late Gustav Cramer. These, and his whole-souled sympathy, unfailing generosity and profound faith in humanity, endeared him to all the world. He was faithful in attending national and state conventions, and was ever ready with a joke or a good story. Some years ago, at a national convention, he introduced his famous chorus, "We're here because we're here," which

THE CRAMER CHORUS BELLE JOHNSON

met with instant favor and has been used ever since on suitable occasions. It is hoped that, though his genial and inspiring personality is but a memory, yet ever present with us, the "Cramer Chorus" will be perpetuated and continue to form a feature of each photographers' convention. Of course, it will be heard at Indianapolis.

Belle Johnson, appreciating the idea, very generously contributed her print of the Cramer Chorus which appears to have gladdened her busy studio.

A Pledge

E. B. CORE,
Sec.-Treas. Gustav Cramer Memorial Fund,
76 Landscape Avenue, Yonkers, N. Y.

I agree to send at the close of business on May 20, 1915, a cheque equal to the gross amount of the orders received in my establishment during that day as my contribution to the Gustav Cramer Memorial Fund.

Date.....

Signed .....

The Photo-Group

On January 15 this society, limited to fifteen members, was organized in Columbus, Ohio, for the exchange of ideas and experiences among men interested in pictorial photography, and the discussion and criticism of prints submitted by every member at each meeting. In order to keep the discussion within proper channels, J. W. Newton was elected Chairman for the ensuing year. Mr. E. B. Rowe was at the same time elected Secretary. There are now fourteen members, all enthusiastic business and professional men, so that the future outlook for this little "group" is very promising.

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices.

The British Journal Photographic Almanac, 1915. Edited by George E. Brown, F.I.C. Fully illustrated. Price, 50 cents; cloth, $1.00, postage extra, according to zones. New York, U.S.A.: George Murphy, Inc., 57 East 9th Street, general sales-agents.

Every reader of this indispensable English annual will rejoice that the 1915 edition has been issued despite the war. The current volume is just as voluminous and interesting as ever, and the prospect is that the supply in the hands of dealers will be quickly exhausted. Our advice is that workers lose no time to procure a copy.

The very practical and accurate contents includes, among the usual welcome features, a directory of amateur and professional societies in all English-speaking countries; recent novelties in apparatus; a list of English manufacturers of plates and papers; formulæ for the principal photographic processes; equivalents in German, French and Italian of the chief photographic terms; list of the principal text-books on photography; comprehensive list of tables of miscellaneous photographic interest and list of photographic periodicals.

Deutscher Photographen-Kalender. Edited by Karl Schwier. 33d year. Price 2 marks ($0.50). Weimar, Germany: Karl Schwier.

It is highly creditable to the publishers of German photographic periodicals that, despite a virtual blockade of Germany's ports, there has been no interruption in their activity and that their interesting weeklies have reached this country with continued regularity. Although, according to report, several hundred newspapers in Germany have suspended publication, not one of the numerous photographic journals has shared this fate. Now we receive, as usual, a copy of brother Schwier's pocket-diary, for the year 1915, neatly printed and bound, as if nothing in the world had happened to mar the serenity of the venerable publisher. It resembles in form and character the Burroughs-Wellcome pocket-diary, but is printed in German and in Roman type.

This is Part One of what appears in two separate volumes. The contents is similar to other annuals—recipes, technical methods and data, tables of all sorts for the practical worker, but carefully selected and edited. This pocket-calendar appeals particularly to the craftsmen of Germany and Austro-Hungary, but is equally useful to any worker familiar with German.

Cincinnati Chamber of Commerce

The portrait and commercial photographers of Cincinnati have formed an organization to be known as the Photographers' Association of the Cincinnati Chamber of Commerce. The new organization will consider ways and means to advance the photographic business in Cincinnati and territory adjacent thereto. The following officers and board of chairmen were elected: President, R. E. Carl; Vice-President, Wm. Schuster; Corresponding-Secretary, F. DeLisle; Chairmen of Committees: Legislation and Welfare, J. G. McIan; Entertainment, Charles Groene; Membership, J. A. Bill; Publicity, J. A. Jones; Finance, M. A. Schmitt; Managing-Secretary, H. Serkowich.

LONDON LETTER

CARINE AND WILL A. CADBY

SINCE our last letter was sent the *British Journal Photographic Almanac* for 1915 has made its appearance. This may sound an unimportant matter to the photographic new-comer; but if he pursue the art for any length of time and with some seriousness, he will soon discover that it is a book that he cannot afford to neglect. This is its fifty-fourth year of publication, and the subtitle, *The Photographer's Daily Companion*, aptly and somewhat quaintly suggests its uses. It is just the book the energetic photographer must have at his elbow, for every concrete photographic interest or development is dealt with, and the information is brought right up to the present moment. Close by such simple matters as hypo-eliminators, we stumble right on to an exhaustive study of photography with the microscope, with some very beautiful and wonderful illustrations. Then one comes to a list of the photographic journals of the whole world, and is amazed at the length of it. Indeed, every sort of information relative to photography is to be found in its thousand odd pages. Mr. George E. Brown, of the *British Journal of Photography*, edits the *Almanac*, and he announces that, in spite of the war, it is issued this year in an increased edition of thirty thousand copies.

The Camera Club had been expecting to have an exhibition by the members of the New York Camera Club. We think we mentioned in our last letter that the idea of such an exchange was in the air, and with the help of Mr. Allison, the New York member of the London Club, it had materialized and every arrangement had been made. Although it appears the exhibits have been sent off, they have not yet arrived over here and are considerably overdue. The club is beginning to fear for their safety.

There is a good deal of stepping into other peoples' shoes nowadays. Enlisting still goes steadily on and posts keep falling vacant. Both the secretary of the Camera Club and the secretary of the arts committee have now joined the colors and Mr. Ward Muir will probably double the parts and undertake the duties of both. Whether it will last long one cannot tell, for Mr. Ward Muir has offered himself for the service three times and been refused on account of health; but that does not prove that he will not be accepted for some less active service than that of the trenches.

The two new members of the London Salon are Richard Polak, a Dutchman, whose work in the Salon last year was not only very clever, but so characteristically Dutch as well, and Hugh Cecil, who has quite recently taken up photography in London and is one of the youngest members of the craft.

Mr. Cecil plunged straight into photography as soon as he left Cambridge and has already made a name for himself, particularly in the stage-world. He has not had to do with photography long enough to be bound by the trammels of the photographic world as most of us older inhabitants are, and his outlook is most free and refreshing. When we were discussing with him some of the bright stars shining in the photographic firmament, it was a little startling to hear one of them dismissed with: "No, I certainly do not admire him; do you? his work is so messy." We imagined the great one's wrathful surprise that a young generation should arise which would call him "messy."

Aviators have mostly to be photographers, as well we know, and we are all fairly familiar now with their photographs and the look of a landscape taken from a considerable height; but it seems a new idea that some of them should be expected to take animated films as well, when on the wing. We met a flying man, last week, who had been wounded in France, and was invaliding at home and heard from him an amusing experience. He had been having a duel in the air with a German opponent when his ammunition gave out. After firing his last shot, he started to take motion-picture films of the enemy-airman and his movements. He had no sooner begun to turn the handle, however, when his adversary made off as quickly as possible, evidently believing himself in danger of being fired at by some new kind of aeroplane machine-gun. So, practically, the kinematograph saved him an anxious few minutes, if not his life.

Perhaps in the States people are used to having their shopping made entertaining and interesting to them, but in England it is mostly a dull task. There are certainly some exceptions, where a shop is something more than a shop, which are, however, mostly of American origin. The other day, to our joy, we came on a bright English example — the Wellington Gallery in Oxford Street. We wanted to buy some bromide paper, which we expected to find at an ordinary photographic dealer's, when, to our amazement, we discovered an attractive gallery, the lighting of which suggests that hazy golden atmosphere one gets on still summer afternoons. The tone-scheme was also of a kind of maize color, the walls being the same shade as the floor, and the whole effect suggested restfulness and refreshment. Perhaps we responded more readily as we had just turned in from the murk and gloom of a dark winter-afternoon. On the wall was a little exhibition of photographs, some of which were worth serious attention on their own merits. The manager told us that this delightful kind of lounge was just the Wellington business-place where the firm's goods were sold. Mr. Wellington had realized, however, that the photographer is not like the ordinary shopper: he likes to talk over the goods he is buying with an expert, and it is a great advantage if he can see specimens of the sort of work he is intending to do. Here he has both opportunities — one customer was taking a lengthy advantage of the photographic chat while we were there — and the exhibits around the walls are the specimens of the different printings and papers. One of these was a particularly charming interior, a triumph of delicate gradation, which we were told was the work of Mr. Wellington himself, always so highly commendable.

Probably the Wellington "B. B." paper is the most artistic bromide printing-material we have in England. We are all accustomed to toned bromides and, somehow, the color has generally something blatant and obvious about it. And, again, many untoned bromides have a cold violet hue that proclaims them "bromides." But this new B. B. paper has a warm black tone of its own, and a texture that does not suggest "bromide" in the derogatory sense at all. There is also a toned paper coated, and this gives a slightly warmer tint still, which for some subjects is most satisfactory.

The officers on our cruisers must have among them many able photographers. First we had in the papers reproductions of photographs of the *Emden* being destroyed by the *Sydney*, taken from the deck of the last-named ship; and now the *Daily Sketch* has published what it calls "the most wonderful battle-picture of all." It is a snapshot from the crow's nest of H.M.S. *Invincible*, which shows many of the sailors of Admiral von Spee's flagship swimming in the sea, waiting to be saved after the battle of the Falkland Isles. Coolness and determination must be required in considerable degree, at such times, to divert deliberately the attention from the deadly guns to the tell-tale but harmless camera.

Our Illustrations

(*Continued from page 201*)

covering that section of the picture with a piece of paper. The dark mass of trees and water, at the extreme left, detracts from the chief point of interest — the old, disused barn and its accessories. Data: March 7, 1914; 11 A.M.; hazy light; 4 x 5 Graphic; B. & L. R. R.; F/16; 1/5 second; 4 x 5 Wellington Anti-Screen, backed; hydroedinol; 8 x 10 Velours Black enlargement.

In "A Christmas-Dawn," James Allan has produced a winter-scene with superb atmospheric effect and perspective. The admirable workmanship, however, does not make amends for the awkwardness of the pictorial arrangement, in which the sea-wall assumes to be more important than the adjoining graceful slope. Data: December 25, 1914; 10.30 A.M.; bright; 4 x 5 Reflex camera; 7-inch Goerz Celor, F/4.8; stop, U. S. 8; Ideal Ray-Filter; 1/25 second; Orthonon; Duratol-hydro; 6½ x 8½ Montauk Bromide enlargement.

The chief merit of the rainy-day episode in Union Square, New York City, page 197, is the breadth of treatment of a hackneyed theme. Most inexperienced camera-users are prone to direct the instrument upward, fearing to include too much foreground. The well-known consequence, where buildings are concerned, is a convergence of perpendicular lines, which may be obviated by the use of the adjustable lens-front, or, in the case of a plate-camera, the swing-back. The vertical lines in Mr. McCue's picture are virtually plumb. Data: November, 12.30 P.M.; dull light; raining heavily; Vest-Pocket Kodak; single lens; stop, F/16; 1/25 second; Eastman N. C. film; Rytol; enlarged from portion of 1½ x 2½ negative on Normal Studio Cyko; 5 x 7 print; Tozol.

Judges' Report of the Ansco Competition

In the name of the judges I report that all the pictures submitted for the Ansco Competition were submitted to the judges.

The judges examined every picture, their procedure being by process of elimination. When the first viewing had been finished, the judges called for the pictures set aside for further consideration and to their regret found that only forty-two pictures had been thus reserved, and upon further consideration three of these were eliminated and prizes were awarded to the thirty-nine remaining.

The attention of the judges was called to the fact that the Ansco Company had offered fifty prizes; notwithstanding this fact the judges were unwilling to designate eleven other pictures as worthy of award. While they greatly regret this decision, they felt that any other procedure would have been unfair to themselves and to the competitors.

The judges suggested that if the Ansco Company does not care to withhold the balance of the prize-money, the Company should, in its own name, award the other eleven prizes or, declining to do this, devote the amount to some charitable organization in the name of the Ansco Loveliest Women Contest, or in the name of all the contestants.

(Signed) Alfred Stieglitz.

Feb. 10, 1915. *For the Judges.*

The Yonkers Camera Club

The Second Annual Exhibition of this club is to be held in Hollywood Inn Hall, Yonkers, N. Y., May 17 to 22 inclusive. Two bronze medals will be awarded in the following classes: Portrait, Figure-Composition, Landscape, Marine, Still-Life and Flowers. Entry-forms and full information may be had of the Secretary, Mr. William Beck, 2 Guion St., Yonkers, N. Y.

"It's a Long Way to Tipperary"

At this writing reports were current of energetic activity, in this country, in the manufacture of aniline dyes, explosives and other products from benzol hitherto obtained from Germany, and which that country will no longer export lest they find their way into the enemy's country — England. The products mentioned, together with photographic developers, are derived from coal-tar, and this is one of Germany's most important industries which attained its present great development after a small beginning about sixty years ago. Edison has started the manufacture of benzol from coal-gas, at Johnstown, Pa.; a company, supported by the U. S. government, is likewise engaged in its production, according to the Rittman process, from petroleum; other concerns will produce it from coal-tar, following the German method. According to Edison, the Germans have with their customary thoroughness and economic ways brought the business to such a fine point that it is virtually impossible for Americans to compete with them.

Mr. Edison will undoubtedly produce all the benzol he needs — his consumption of this commodity is said to be a ton a day — but one cannot be so optimistic regarding the American-made dyes and chemicals, the kind which the Germans are withholding from us. Brains and skill are not lacking; but there are the inside processes and the high cost of manufacture which should be taken into account, and by the time the finished products are available, the war will be over. Then, what?

In the meantime, let not investors be carried away by overconfidence and patriotic zeal. Companies which manufacture benzol and synthetic dyes and colors, for their own consumption, will not require outside financial support; but others, those who profess to engage in its production for profit, may seek to raise the necessary capital in the usual, easy way by selling stock to a gullible public, and again we say — what, when the war is over?

Y. M. C. A. Boys' Club

Under the direction of Mr. L. C. Sholes the Y. M. C. A., of Omaha, Neb., has organized a camera-club for boys that should be a model for every city. This club is for all members of the Boys' Department of the local Y. M. C. A. A membership-fee of one dollar a year in addition to the regular dues is charged. This fee admits each member to the class-work and the use of the club-rooms at all hours.

It is not the object of the club and class-work to make photographers out of the boys. The main object is to create enough interest in the work to keep the boys at it and prevent discouragement from failure to get results if they are once interested.

Photography in an amateur way is a pleasant and instructive pastime. For boys from fourteen to eighteen years there are very few hobbies that can be taken up by them that will afford as many pleasant hours skirmishing through the country for views, obtaining record-pictures of their favorite haunts, the swimming-hole, their playmates and the like. Evenings devoted to development and printing keep them engaged at home and off the street.

The steps required in making a good picture from the beginning to the finished print are many and exacting. It requires concentration and cleanliness to get results that are satisfactory. The efforts of this club have caused most of the boys to see this and to put it into actual practice. Care and accuracy overcome the natural tendency in boys of that age, in their anxiety to see the finished product, to be too hasty and "sloppy." This lesson, when learned by them, not only gets results in photo-

graphic work, but, once learned, is naturally applied to other occupations requiring the same patience and exactness.

Photographic materials are expensive, particularly when the boy's allowance is meager. This fact is continually dwelt upon, and every effort is made by the instructor to teach the boys not to be wasteful.

The club-rooms consist of a work-room for enlarging and printing, etc., two darkrooms with sinks and apparatus. The equipment consists of enlarger, scales, printing-frames, mounting-materials, graduates, trays, washing-boxes, fixing-baths, etc., furnished by the Association. The dues are used to keep up and add to the equipment. The boys furnish their own chemicals, paper, plates, etc., and can keep them in their individual lockers in the building if they wish.

There are two terms or periods of instruction, consisting of twelve lessons each of two hours' duration, given one evening each week along the following lines:

1st lesson: The camera and exposure.

2d lesson: Development — tray, tank and machine.

3d lesson: Gaslight printing.

4th lesson: Reducing, intensifying and general correction of poor negatives.

5th lesson: Double-printing. Printing in borders, cutting masks, printing in clouds from separate negatives, and redevelopment for sepia tones.

6th lesson: Mounting and general review.

7th lesson: Enlargements.

8th lesson: Flashlights.

9th lesson: Home-portrait work.

10th lesson: Lantern-slides by contact and reduction, concluded by projecting the slides upon a screen.

11th and 12th lessons: General review and demonstration of subjects selected by the class.

In all lessons the instructor first gives a demonstration, explaining each step as he proceeds. This is followed by each pupil doing the same work in the class-room under the supervision of the instructor.

The club has now been in existence for two years; the results obtained by the class-work have been very satisfactory. The savings in wasted material, spoiled paper and films by the boys have been remarkable. The parents of the boys have also noticed the results. As one mother remarked: "I always dreaded to see Will start in to finish his pictures, as it meant that I had to clean up after him, and he did slop his chemicals around so. Since joining the club he has been so different. Why, he even washes and dries his trays now and puts everything carefully away."

Photo-Art Clan of New York

The initial exhibition of the Photo-Art Clan of New York was opened on New Year's Day in the Camera Club rooms of the Bedford Branch Y. M. C. A., of Brooklyn, N. Y. The exhibit consisted of pictorial prints selected from portfolios circulated during the past year among the fourteen members of the Photo-Art Clan. Thirty prints were chosen, covering a wide variety of subjects. The contributors were as follows: Miss K. A. Berger, Miss E. C. M. Holcke, Messrs. L. C. Crossman, P. C. Gabel, H. M. Hilton, Ed. Ostrom, Jr., A. S. Roe, P. W. Saul, F. J. Thornley, Martin Vos and John Wray.

The Photo-Art Clan has received requests from other photographic organizations for the loan of these prints for exhibition-purposes. Notice of such exhibits will appear later.

At a meeting held on March 1, the following officers were elected for the ensuing year: Director, Mr. John Wray; membership-committee, Miss A. K. Berger, Mr. L. C. Crossman, Mr. A. S. Roe.

The New York State Convention

The annual convention of the Professional Photographers' Society of New York took place on February 23–25, in the Seneca Hotel, at Rochester, N. Y. The program, which differed little from that of previous years, was carried out with satisfaction to all concerned. President J. E. Mock proved an efficient executive, and displayed a personality characteristically his own. He certainly showed good common sense in the management of the meetings of this convention. Unfortunately, the pictorial display was not up to the high standard of previous years; but this deficiency was more than made up by the superb exhibit of transparencies made by the Eastman two-color process.

Frank Scott Clark, of Detroit, delivered an address entitled, "Have Eyes to See and Ears to Hear," which was filled with practical, up-to-date ideas in conducting a successful studio. Mr. Clark, in his home-portraiture activities which take him to the leading cities of the United States, imparted much valuable knowledge on this important subject. He has a keen eye to the business-end of photographic portraiture and comprehends all phases of the business.

W. H. Towles delivered an illustrated talk on the subject of Balance of Light, which was received with great satisfaction. H. C. Goodwin talked on Efficiency in Advertising; Chester F. Stiles, of the Bausch & Lomb Optical Co., on the Mission of the Lens; George Nussbaumer on Dryplate-Development; E. H. Gilman on the Value of Card-System in the Studio; Dr. C. E. Kenneth Mees on Color-Photography and Pirie MacDonald on Self-Organization. The ten-dollar gold piece was awarded to W. E. Burnell, of Buffalo, for his idea of scoring cards for folders.

There was considerable discussion on the amalgamation of the New York society with other state organizations; but a motion to this end was defeated.

The usual banquet was a jolly entertainment and was characterized by a number of new and startling features. The attendance was very large and everything went off harmoniously. The next convention will be held in New York City, which in itself is a definite assurance of large attendance.

The officers for the ensuing year were elected as follows: president, E. B. Core ("Papa" Core), of New York City; vice-president, William Furlong, of Rochester; secretary, E. L. Mix, of New York City, and treasurer, F. E. Abbott, of Little Falls.

Appreciation of Unit-Photography

That Mr. F. M. Steadman's new method of light-computation is simplicity itself and supplies the natural link that unites the theory of light with the use of it, has been proved in several convincing ways. The latest instance has been described in a recent letter as follows:

"It would have been a revelation to you if you could have seen the work I did with the physics class (young people from 17 to 19 years of age) at the Ethical Culture Day School last Monday morning. They gave me fifteen minutes of the recitation-time and in thirteen minutes, through the use of diagram and blackboard and using the students' own powers of reasoning, I led them to develop for me, numerically and by analysis, my entire unit-method of light-computation, including the speed of emulsions, unit-measurement of actinicity and unit-numbering of stops. As long as I have worked to develop this method, I must say that even I was amazed at the plain revelation of the cause of the present crazy condition of photographic practice in the wrong use of numbers for stops and non use of numbers for actinicity.

WITH THE TRADE

Ernemann Photo-Kino Works, Inc.

THE co-partnership formerly existing between Messrs. Hoffmann and Bader in the importation of Ernemann cameras and photo-supplies has been dissolved. Mr. Hans J. Hoffmann has retired and Mr. Hans E. Bader retains control of the business, which has been incorporated as above by Hans E. Bader, Samuel Weinberger and Joseph Hoffmann. As in the past, Ernemann compact hand-cameras of splendid design and workmanship will be the leading feature of the line; also the Ernemann Motion-Picture Cameras are finding favor in America and will be kept in stock.

Solo Flashpowder Tests Well

WE take pleasure in announcing a series of tests of Solo Flashpowder which indicate unmistakably its high quality. It was found to compare favorably in actinic power with a standard flashpowder long on the market, and in burning gave off a surprisingly small amount of smoke; combustion was complete. As was to be expected, it was found that the "fast" grade possessed greater actinic power for a given quantity than the "extra fast" grade. The test was conducted by making several exposures, of the same subject, using 30 grains of each powder in the same flashlamp at the same position. Cramer Crown plates were used throughout and developed simultaneously in a tank with Rodinal, 1 to 32, for ten minutes. Harmonious, printable negatives were obtained in every instance, although the density varied considerably.

A British Camera-Combine

THE names of Houghton and Butcher, so well known throughout the photographic world, will henceforth be joined in the newly-registered firm-name Houghton-Butcher Manufacturing Company, Ltd. The object of this company, which takes over the Ensign Works of Houghtons, Ltd., at Walthamstow, and also the factory of W. Butcher & Sons, Ltd., at Blackheath, is to manufacture and supply entirely British-made cameras and apparatus. The new company, however, is entirely distinct from Houghtons, Ltd., and W. Butcher & Sons, Ltd., both of which will continue their retail places of business as in the past.

A Flashlight-Gun

AN innovation in flashlight-work is the flashlight-gun made and introduced by Imperial Brass Manufacturing Company, of Chicago, U. S. A. The gun has distinct advantages over similar devices, which are set forth in the firm's advertisement in the front section of this issue. It appeals to every flashlight-worker — professional and amateur — and, with the exception of the two types of portable flashlight apparatus indorsed by PHOTO-ERA, the Imp Flashlite Gun merits the confidence and support of the craft. Indeed, we have long ceased to continue the advertisement of a certain western concern, whose product is absolutely dangerous to manipulate. The "Imp" is a quick-acting and safe, simple and efficient appliance and has no reference to little demon or devil, but stands for "Imperial" — the Imperial Brass Manufacturing Company.

The Duonon Plate

G. GENNERT, 24 East 13th Street, New York City, announces the importation of a new Imperial plate known as the Duonon. Unlike most English non-halation plates, which are backed, this is a double-coated plate and so should find high favor on this side of the Atlantic, at least. It is a plate well adapted to almost any sort of work, being fine-grained, color-sensitive and embodying all the well-known excellences of Imperial manufacture. Request samples from your Imperial dealer.

Ilex Lenses and Shutters

A NEW catalog of this line of high-grade instruments has recently been issued and will be gladly sent upon request. Being constructed in accordance with advanced scientific principles, Ilex shutters are notable for their uniformity of action, and the Ilex Anastigmat, F/6.3, is doing excellent work in the hands of many satisfied purchasers. A postal addressed to Ilex Optical Company, Rochester, N. Y., will bring the desired information.

Pictured with the Struss Pictorial Lens

THIS is the title of a brochure issued by Karl Struss, primarily to introduce his lens, which is rapidly growing in popular favor. It is more than a mere catalog, however, for it sets forth the foundation of the art of photography as taught by Mr. Struss in the Summer School at Columbia University and so will prove of real benefit to all pictorialists. It is printed on Cameo plate paper to make the most of the numerous excellent illustrations and sells for twenty-five cents, which will be refunded to each purchaser of a lens. The strong appeal of the Struss lens is easily explained by the beautiful quality of image it yields — a quality somewhat different from that obtainable with other soft-focus lenses.

Celeritas

THE revival of this superb developing-agent will be a source of satisfaction to the craft and amateur workers. We remember the time, about twenty years ago, when Celeritas was the most popular developer on the market. To-day, in its improved container — a hermetically sealed glass tube — Celeritas constitutes a wonderfully practical package. There are no corks, and the tube can be opened in an instant, without the use of a cork-screw or ice-pick. The readers of "Our Illustrations" will have noticed Celeritas among the data of pictorial contributors. A universal developer as uniformally energetic, stainless and generally efficient, and put up so admirably as is Celeritas, is bound to become a universal favorite.

Eastman School of Photography

THIS annual itinerant institution has met with a record attendance this season, and every photographer, from however great a distance he has come, has felt amply repaid by the practical character of the instruction. The advance dates are as follows: Joplin, Mo., April 20–21; Little Rock, Ark., April 27–28; Dallas, Tex., May 4–5–6; Denver, Colo., May 11–12–13; Salt Lake City, Utah, May 18–19–20.

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To Contributors: Contributions relating to photography in any and all of its branches are solicited and will receive our most careful consideration. While not accepting responsibility for unrequested manuscripts, we will endeavor to return them, if not available, provided return-postage is enclosed. Authors are recommended to retain copies.

To Subscribers: A reminder of expiration will be sent separately at the time the last magazine of every subscription is mailed. Prompt renewal will ensure the uninterrupted receipt of the magazine for the following year. Send both old and new addresses when requesting a change.

To Advertisers: Advertising-rates on application. Forms close on the 5th of the preceding month.

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JOHN W. GILLIES

PHOTO-ERA

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The Consideration of the Picture on the Ground-Glass

JOHN W. GILLIES

THE brevity of a radical argument of this kind — or perhaps an argument radically worded, as you see fit — is essential in ensuring its effect, and I will try to use the fewest possible words, though it is a subject that may well be extended into a long treatise and worked out comprehensively.

This theme makes no pretense to be a solution of all troubles in composition, or that it is an easy road to pictorial accomplishment; for such a condition does not exist, and all results are the effect of serious effort. The method herein outlined, and outlined only, is suggested merely as a possible way to improve the understanding of the composition of the picture.

The consideration of the picture on the ground-glass — barring its presentation in colors — is identical with the consideration of the picture when it is projected on a flat surface. This is the basic element and foundation of my argument.

The scene, or portrait, which is being considered in the camera for an exposure, and which is being studied as to how it will reduce when reproduced in monochrome, consists of three dimensions: one vertical, parallel with the plate, portraying elevation; one horizontal, also parallel with the plate, conveying the impression of size or volume when measured horizontally, and a horizontal dimension on the axis of the lens, which gives the effect of distance. Color is not considered in this theme, as all work of this kind is reduced to monochrome; but it does not follow that its effect is small, for it is the best of all methods to give this last effect of distance, although we cannot use it in composing the picture, merely taking advantage of its help in getting atmosphere.

Of these three dimensions, spoken of above, the camera — unless it has two lenses giving stereoscopic delineation — is capable of indicating convincingly but two, and the indication of the third, or last of those mentioned, is impossible for any camera with one lens. It must be accomplished by the impression of distance, or what is called atmosphere, so easily obtained with the semi-achromatic lens, commonly and erroneously termed soft-focus.

The vertical and horizontal dimensions parallel with the plate are, however, easily shown by means of the camera, and I will attempt to prove that, inasmuch as this condition exists, they are the only two dimensions which should be considered when composing the picture on the ground-glass.

It is very evident that the ultimate picture — a print — is to be placed on a flat surface which has but the two dimensions referred to above; and if such is the case, the third and more elusive dimension, on the axis of the lens, will not show except by a certain alteration in the character and spacing of the lines composing the picture, its effect being accomplished in this manner and also by the atmospheric impression of distance. As this dimension is indicated rather than shown, it would seem that it should deserve only a casual consideration in arranging the subject on the ground-glass, and that the greater amount of attention had better be paid to harmonious composition of line, mass and motive in the picture. In other words, it is suggested that a reversion to the Chinese two-space art take place in your mind, in the determination of your picture on the glass, and that the composition be effected by a careful study of pattern or design, rather than by perspective. That this is not heresy can be proven by the fact that this early art is considered by the best authorities as the highest type and worthy of serious study. It is agreed that the early Chinese designs or patterns represent the very highest artistic conceptions.

It is not to be said that these early artists accomplished their ends precisely in the manner I suggest for the camera-worker. At that time they did not speak knowingly of pattern and designs, no doubt, and did not work to what they might have called patterns, but did their paintings inspired by a feeling evolving patterns, which have never been excelled. So their art-feeling came first and that feeling helped them to express themselves, and the expression of that feeling came in patterns. In working with the camera, as suggested, the photographer has the benefit of this precedent to go by in learning what this pattern or design is; but it is earnestly hoped that he will not attempt blindly to copy pattern, but rather to feel it in his arrangement of subject on the ground-glass.

With this idea assimilated, the next consideration is how the mind can be ordered into this method of thinking, and the accompanying reproductions convey the thought as simply as possible. Once it is fully grasped it is, indeed, simple. By laying a piece of tissue-paper over any of the three subjects and tracing with a soft pencil the essential lines and masses it will be noticed at once that the pictures are composed of certain harmonies in line or, more properly speaking, pattern, and that, when these patterns are reduced to simple line as shown in one instance, the indication of perspective is absent. The method is suggested to force the mind to a study of the picture on the ground-glass, as represented by these lines, and to neglect all other considerations.

At once it may be advanced that this is a mechanical method of composing a picture; but the writer takes issue on that argument with the statement that the feeling of pattern can be as esthetic an impression as any other, and that all great pictures, whether made by the camera or the brush, have this basic essential of harmony in line and mass, which is what I please to call pattern.

Enlarging from Unsuitable Negatives

REV. A. E. MURRAY, M.A.

IT has sometimes been stated in text-books that to make an enlarged print from a negative is really just as simple and easy as to take a contact-print from it; but this is soon found to be fact only when the scale of contrasts in the negative is suited to the bromide paper on which the enlargement is made.

It is perfectly true that when we have a really first-rate negative, which is not too opaque, which is soft and full of sparkling detail, and without any visible trace of fog — well, then to make an enlarged print from it is the simplest thing in the world, and it goes without saying that all negatives that are intended for enlarging should approach this ideal as closely as possible.

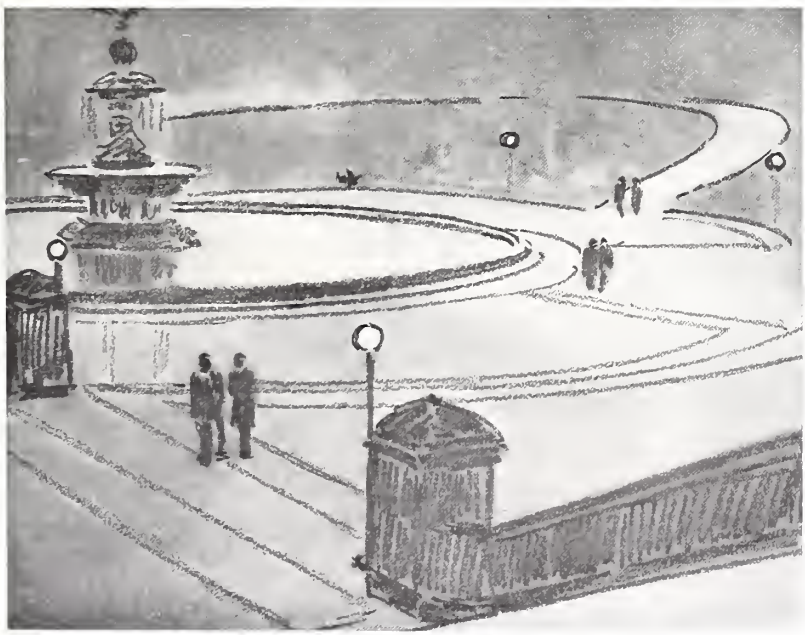
But the fact remains, that many of them are far from it. I have some, for instance, which, either by accident or on purpose, are exactly suitable for printing, say, in platinum, and in this beautiful process they give us as fine a print as could be desired; but when I come to try and make enlargements from them, they defy all efforts, and I find I can produce nothing but prints of the "soot and whitewash" order.

There are several well-known but little-used methods of enlarging from this class of negative — little used probably because in the hands of the amateur, who wants only to employ them on rare occasions, they seem to be uncertain in the way they work. The best-known method (and it ought to be even better known than it is) is Sterry's process. Another method that sometimes succeeds splendidly is to tone a harsh negative to a blue color, when it will yield a much softer print. But this not only changes the negative permanently, but also renders the control of the final result rather difficult.

For those readers who are not already acquainted with Sterry's process referred to above, the following description may prove useful:

The peculiar action of chromic acid, bichromate of potassium, etc., on bromide papers was observed by Mr. Sterry during experiments relative to the latent image. He noted that if an exposed plate or sheet of bromide paper were rinsed in a very dilute solution of chromic acid or bichromate of potassium, etc., and then developed, the range of gradation was considerably lengthened, and "soft" prints, therefore, were obtainable from "hard" negatives, or a "hard" paper was practically converted into a "soft" one. The process is particularly applicable to the making of enlargements, and there is absolutely no occasion for any one to turn out hard "black and white" enlargements.

Mr. Sterry recommended the use of bichromate of potassium, of which he used a ten-per-cent stock-solution as follows:



FOUNTAIN, CENTRAL PARK, NEW YORK CITY
THE ABOVE REDUCED TO A PATTERN
JOHN W. GILLIES

LANDSCAPE
JOHN W. GILLIES

Potassium bichromate	1 ounce
Water to make up to	10 ounces
Strongest ammonia (.880)	1 dram

For working-purposes it is found that the following strengths of the bichromate solution are the best working-limits for bromides: 1 part of the potassium bichromate in 1000 parts of water to 1 part of the bichromate in 500 parts of water. To make these solutions, add from 50 to 100 minims of the 10-percent bichromate stock-solution to 10 ounces of water.

The first thing to be done is to ascertain the exposure which will bring out the detail in the highest lights (neglecting all else) when developed in the usual manner. Then make a dilute solution of the bichromate as above, the actual strength required for any particular negative or grade of paper being quickly learned after a few trials, and thenceforth may be judged without trial. Make the full exposure as above indicated, and immerse for three minutes in the diluted bichromate bath, preliminary rinsing with clean water being necessary only in large sizes of paper to keep them flat. Wash for half a minute and then develop in the ordinary developer in the usual manner. It will now be found that, although development is somewhat slower than usual, the density is held back and the resultant print has a full range of tone-values. It is not recommended to use the same developer again and again, as with each sheet of paper a small portion of the bichromate bath is transferred thereto. It should be observed that it is important that an acid fixing-bath should be used, as there is then less liability to staining, as there is most assuredly when a strong bath of bichromate is used. Should such stains arise, they may be removed by soaking in a saturated solution of alum after thoroughly fixing and washing, and then again washing.

In the case of negatives that are too flat or thin to produce a good enlarged print on bromide paper, there is no really practicable remedy except to intensify the negative. This procedure is open to the following objections: In some cases it produces a harsh negative, which is just what we want to avoid. Secondly, when the negative is both flat and inclined to be dense, to intensify it makes it impossibly opaque, unless it is first reduced, and this is, in the hands of many, a risky business. Thirdly, intensification sometimes tends to enlarge the grain of the gelatine film, which is clearly a serious defect. This, in my experience, is notably the case with celluloid films.

Now, if we can produce a second negative, suitable for enlarging, from our original unsuitable one, we shall not only improve our results, but effect a great saving both of time and of large sheets of bromide paper.

I believe that this problem can be solved in almost every case by adopting the following plan. I have found it so useful myself on certain occasions, that I set it down for the benefit of others.

To start with, it is quite easy to make a thoroughly good contact-print from almost any kind of negative on some kinds of paper. Gaslight, P. O. P., self-toning, carbon, all give very-different renderings of the same negative.

Therefore I select the process that suits the negative from which I wish to make an enlargement, and make a really first-rate contact-print on glossy paper, avoiding a red or brown tone. Carbon is used if the negative is very plucky; gaslight is used if it is very weak, and other processes for "intermediate" processes. Any necessary dodging, such as shading the foreground in order to emphasize the sky and clouds, is done while making the contact-print, which in turn is photographed, thus producing a second negative, from which the enlargement is made. The character of this second negative is decided by the time it is allowed to remain in the developer, so that we can make it either stronger or weaker than the original negative.

Care in copying the print is essential, and the exposure must be absolutely correct. It is really worth while exposing several quarter-plates, giving each plate twice as long as the one before, and developing them all for the same time.

Nothing will be said here on how to copy the print, but it may be pointed out that to copy a photograph with its wealth of detail and delicate gradation requires more skill and care than to copy a line-engraving which has no halftones; hence the necessity of a perfectly correct exposure. Theoretically, perhaps, there should be a loss of quality in the second negative, but in practice this does not seem to be the case when ordinary care is taken and a slow plate used.

I have found this method invaluable at times when using negatives of subjects that cannot be easily taken again, such as many of one's holiday negatives, and I give my experience for what it is worth. But I need hardly add that in cases where the subject can be retaken without much trouble, then it is generally both simpler and better to go out and take it again.

The Amateur Photographer.

ADVERSE criticism of one who knows is more flattering than praise of one who is ignorant.

Alfred Stevens.

The Latitude of the Autochrome Plate

SYDNEY HERBERT CARR

LITTLE appears to have been written about the latitude of the Autochrome plate, principally, I imagine, because it has generally been accepted that it has very little. Now I suggest that the term "latitude" may be considered in two ways. One is the ordinary term by which we express the range of, or limit of, exposure that a plate will stand in order to render a perfect result, and is a term which is comprehended by all photographers. For example, taking a slow-ordinary plate which will render a perfect negative of a subject with the actinometer calculated exposure of 8 seconds, we know that an exposure of 2 seconds or 32 seconds (light and stop being the same) will produce a negative capable of giving a print as perfect as the first. Hence, we very often speak of the "great latitude" of the slow-ordinary plate in the matter of exposure. So much, then, for the ordinary acceptation of the term "latitude."

The other way in which we may regard the term is with respect to the amount of "personal interference" a plate will stand in the matter of exposure combined with development; and in this latter way the latitude of the Autochrome plate is infinitely greater than in the former.

Dealing with the first kind of latitude, I have found that all daylight-subjects will bear a variation in exposure amounting to double the given actinometer measure, taking the speed of the plate as 2 feet. I recently made two exposures of shipping, one with actinometer-time (which I will call normal) of 8 seconds, the other (same stop, etc.) of 16 seconds. Developed for same time and at same temperature, the results proved identical. This I repeated with garden-subjects and portrait-interiors, getting the same results. Thus double-normal exposure proved as good as normal.

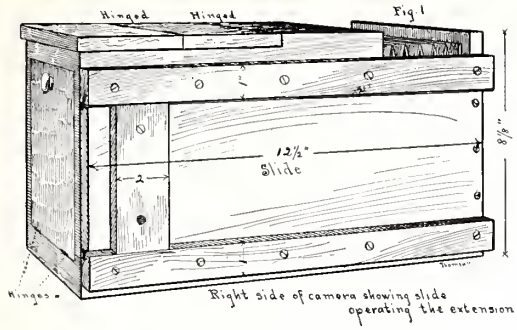
I then experimented with half-normal exposure and three and four times normal exposures, developing, according to temperature, for a correctly exposed plate, and proved in the first case underexposure and in the two other cases overexposure. Thus the latitude, in the general sense of the Autochrome plate, is limited to double-normal exposure.

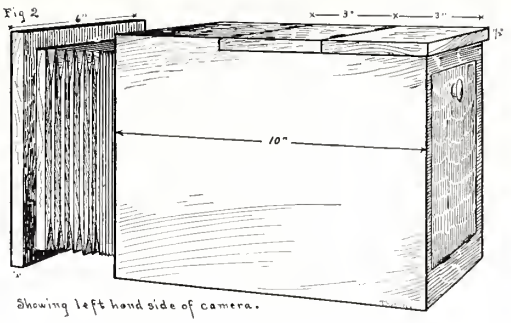
But by "personally interfering" both in the matter of exposure and development the latitude of the plate is really enormous. I will give one of many experiments. Shipping in harbor: This I first considered as a subject, requiring one-third of the exposure for ordinary subjects, being an open one of ships, sea and sky. So in this case I shall call it "X normal" exposure. The exposures were made with the same stop, lighting and plate-speed by Watkins colormeter judged at 2 feet. No. 1 plate at X normal gave, with normal development (Watkins thermometer-calculator for correctly exposed plate), a perfect result. No. 2 plate at one-third X normal exposure and normally developed proved underexposed (on reversal, and judging finished result). No. 3 plate at one-third X normal exposure but developed a quarter longer than normal time proved equal to No. 1. No. 4 plate had full normal exposure (not X normal, but normal exposure, as for an ordinary subject, and therefore three times X normal), with half-normal development, and proved equal to No. 1. No. 5 plate had double-normal (twice that of No. 4) exposure and a quarter-normal development, and also proved equal to No. 1.

I now tried the method of giving double-normal exposure, desensitizing the plate before development (with 5 per cent potassium metabisulphite for 30 seconds), and developing for half-normal time. The result was correct in the matter of density, but the colors were not rich; in fact, they appeared degraded and faded. Several like experiments with variations in exposure and development always resulted in the colors being degraded, and the plates had not that brightness that plates developed in the ordinary way, *without* desensitizing, possess. This result was not due to the use of a yellow or red light, for a "Virida" light was used in the oil-lamp for all the experiments. I think my experiments have proved that this method of "personal interference" in regard to exposure and development show the Autochrome plate to be possessed of very great latitude.

Intensification with mercury iodide and reduction with Farmer's reducer are both beneficial in certain cases, as is the use of the latter followed by the former in others; but personal attention in the matter of development is better, but requires practice and familiarity with the appearance of the plate in developing. N. B. — The plate should be kept in perfect darkness for the first half-minute of development, if possible; and for reversal I prefer the bichromate solution to the permanganate.

The British Journal of Photography.





A Home-Made Copying- and Enlarging-Camera

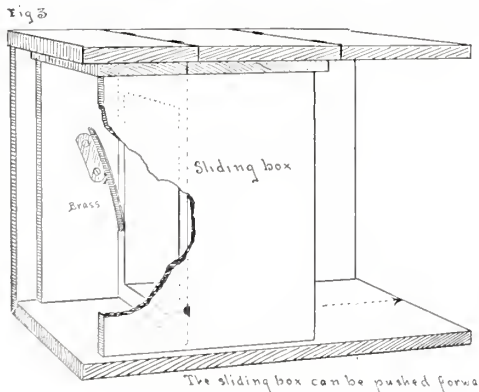
JAMES THOMSON

TO the serious worker whose sole outfit has never been other than a hand-camera the time not unlikely arrives when the desire to make pictures of larger image takes root. He may aspire to make negatives by copying with the camera, or perhaps would fain try his hand at flower- or still-life photography, in order to do which he must needs have an instrument of extended length of bellows. One may perhaps imagine that possession of a so-called portrait-attachment placed in front of the regular lens puts it within one's power to do such work, but this is an error. With such an attachment the image most assuredly would be greatly enlarged, but essentially different from that made by the instrument of long bellows. Such an attachment will serve in a sort of a way for portraiture, but to copy prints and the like would not answer the desired purpose.

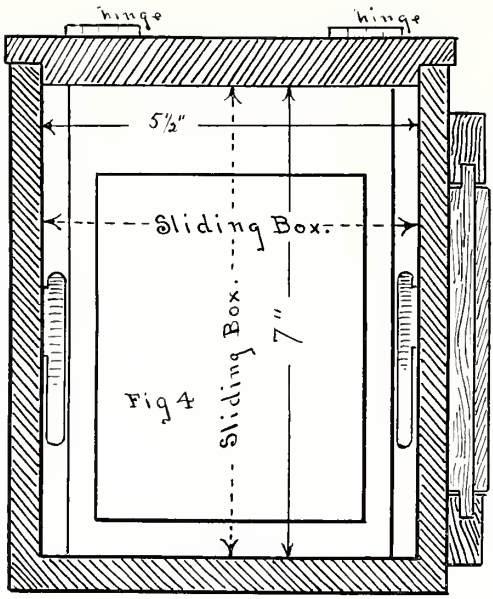
The table of distances upon the average hand-camera gives 6 feet as the nearest distance of approach to the object, else it will be out of focus. The resultant view, at best, though extensive as to range of vision, is diminutive as regards detail. The standing figure of a man, for example, when photographed at a distance of 12 feet, is disappointingly small in the negative and should one essay to take the household cat, the result would be an object very insignificant indeed. To obtain such subjects in large sizes requires the employment of an instrument of considerable bellows-capacity.

A member of my immediate family a decade ago was owner of an expensive photographic outfit, having the idea that with it alone he could easily excel us common fellows. He had just copied a picture of a lady friend with his latest anastigmat-toy and was bragging about it as a great achievement. "As good as the original," he declared. "And why not," queried I, "considering the costly outfit you have, what else could you expect? Now, I never did any copying, but I believe I can duplicate your performance with a reading-glass."

So I went to work and made a rough camera out of an empty box, took a piece of an old rubber coat for a draw, fitted the reading-glass to it and made a negative that bewildered him. I had no idea it would be so easy. To normal human vision the copy I made was equal to the original, but whether it was as good scientifically as the one made by my friend's anastigmat I know not.



If my friend was astonished at such a result with so common a lens, so was I, nor had I looked for anything so good. The visual and chemical focus of an uncorrected lens such as this lack coincidence, hence in order to get as good an image as I got,



End sectional elevation showing interior telescopic box.

a small stop is required, and F/64 is what I used. I should doubtless have done the same with a better lens. With a large opening the resultant image would have been poor.

As a result of the foregoing experiment I came to have the camera which I herewith take pleasure in picturing for the benefit of other aspirants. From the rude and extremely elementary original instrument, it was but a step to a better, which in the intervening years has been a source of immense pleasure photographically. I have in the interval copied photographs, steel and copper prints, paintings and the like, while flowers and fruit, even up to life size have many times engaged my attention. In one instance when opportunity offered to photograph the cat, and the only near instrument was this identical box, I grabbed that and got as fine a portrait of Thomas as one could wish. All this, too, with the reading-glass lens.

There was, however, one serious out about a single lens in copying and that was want of rectiliniarity. Straight lines should be straight lines in fact, and such is not the case where they come near the margin when a single lens is employed. In copying architectural subjects, music and pages from books use a double lens.

As regards focal capacity, five inches for a 4 x 5 plate is about right. To photograph flowers requires great depth of field and that is best obtainable with a lens of short focus. A long-focus lens gives better drawing, hence in copying pure and simple such is not to be despised, but a focal length of 5 inches upon a 4 x 5 plate is best for all-around work.

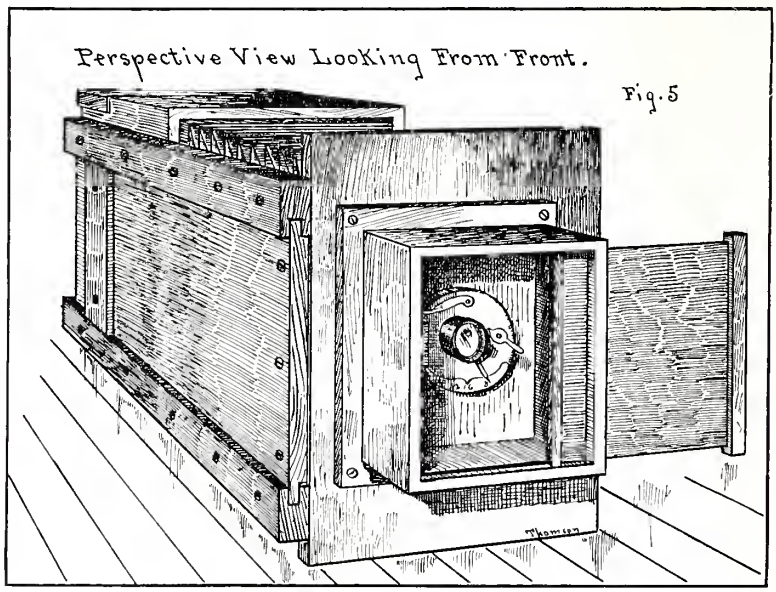
The camera here pictured may be made of pine or poplar. The measurements follow my own instrument, having an extension of 15 inches, so that life-size roses and chrysanthemums are possible.

Fig. 1 shows the right-hand side with the slide running in grooved strips that operate the bellows, while in Fig. 2 we have the left side of the instrument. In Fig. 3 the inside telescopic box, a most valuable feature that very greatly increases the capacity of the outfit, is delineated.

When large flowers are to be taken life size, the instrument is fully extended, and at that time the inside box is pushed to the rear, as it is shown in the drawing. When still-life subjects are to be photographed, the inside box is pushed forward. By still-life, arrangements of fruit and the like are meant.

Strips of black velvet should be tacked to the sliding box around the frame at the front to prevent the entrance of white light.

The brass springs (shown in Fig. 3) by



which the plateholder is pressed into contact with the frame were taken from an old box-camera. In lieu of these a couple of common wooden photo-clips may be arranged to serve the same purpose.

Fig. 4 has a view of the opening in the rear of the camera, whereas Fig. 5 is a perspective view taken from the front. The box around the shutter may be omitted.

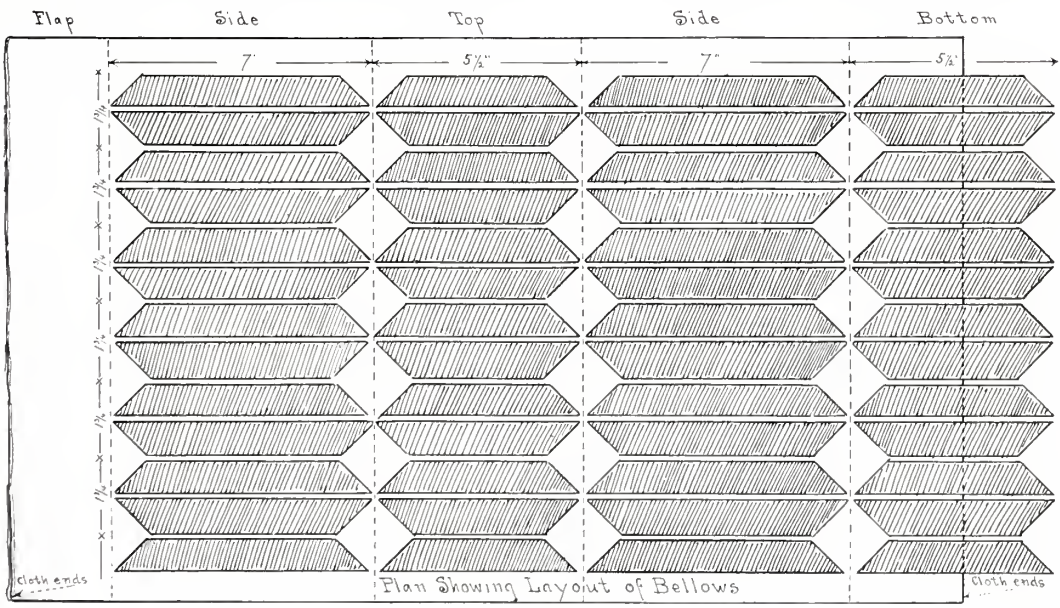
To make a bellows may seem a formidable undertaking, but the square form is not so difficult to master as the tapering. To facilitate matters a detailed drawing of such a bellows as the camera requires is furnished. And the mode of procedure in making it is added in the hope that the matter shall be plain.

Spread upon a flat surface, such as a table, enough black silesia to form a lining. Paste to it a sheet of thin, opaque, Norwegian manila wrapping-paper of a kind now so commonly used to do up parcels. Then draw carefully the plan of the folds on the paper, making careful measurements. Next, from heavy cover-paper or bristol-board, cut strips ¾ inch wide and shape them to an angle of 45 degrees at the ends. Paste or glue in position to accord with the darker portion of the plan. Over all but the flap on the left paste the outside covering, and leave under heavy pressure for at least twenty-four hours. The paper ends that project are then pasted in between the outside cover and the lining at the section marked "flap." There will thus be formed a tunnel or tube. Before this last operation is effected, however, it is well to make the creases so that folding may be less troublesome when the joint is made.

As the camera is to be used entirely for indoor-work, an outside covering of silesia *might* do for the draw. In a large camera used for enlarging-purposes, green shade-cloth has for two years served as a bellows-covering. Rubber cloth, thin leather or black alpaca, would be admirable, in which case no reinforcing with manila paper would be necessary.

Should the worker wish to be spared the task of making a regular folding bellows, a tube of an opaque material of any flexible kind would answer the purpose, as it did for me for years.

Interior-work should be stained black and if an unmounted lens be used, the arrangement shown in Fig. 6 is an excellent modification of the front-board. In Fig. 7 is shown an exposure-board. A pine board planed both sides to an even thickness and width is employed when photographs, prints, etc., are to be copied. This board may be 4 feet long, and should have nailed to it strips on the sides between which the camera is to run. These strips also serve as runners for the board upon which the photograph is pinned. As regards this exposure-board, the portion marked C slides along the board D, while the frame AA slips down into C, as is shown in the side section of the latter where it is marked in black. When a horizontal movement of the exposure-board is necessary, it can be effected by sliding the mortise A along the tenon C. When a vertical movement is desired, it can be had by sliding the board itself up or



Plan Showing Layout of Bellows

down in the channel shown in the sectional view.

In actual practice the photograph is pinned to the board and the camera moved backwards and forwards until the image is of the right size as well as sharp. If the image is not in the exact position desired, the exposure-board may be pushed up or down to one side or the other very easily and quickly.

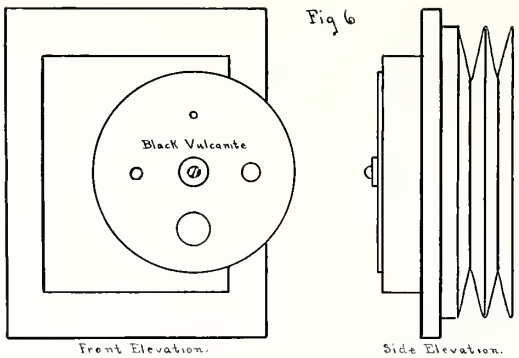


Fig 6
Arrangement of frontboard where a regular shutter is not used

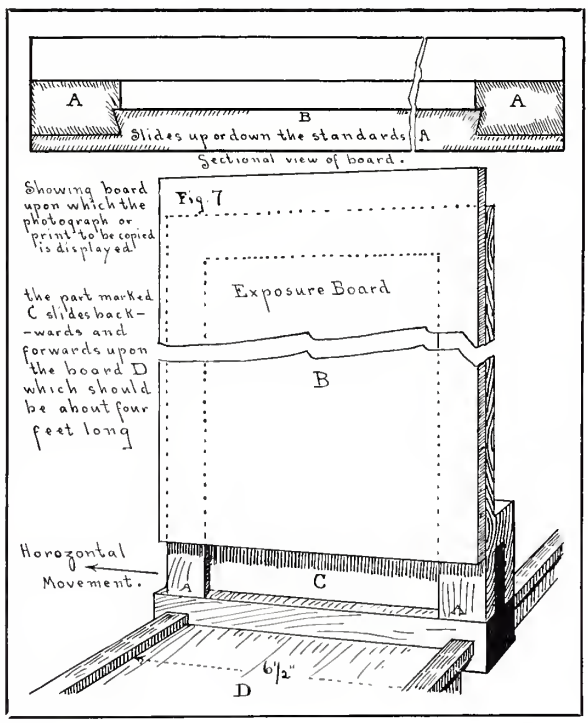
By such an arrangement as this the print or photograph cannot be otherwise than parallel with the plate. The board upon which the photograph is to be fastened should be made of good clear pine, which takes the pins readily and is not likely to warp. When the board is in the correct position, it may be kept so by push-pins placed under it.

The reason for the double hinging on the camera-top will be apparent. Small hooks may be used to keep the trap-doors in place or any other suitable means.

As sharpness is a desideratum in copying and in flower- and fruit-photography and the like, a small opening should be used. I generally employ F/64 except in cases where a long exposure might be detrimental to the flowers, when I use F/32. Where glossy prints are involved, care must be exercised in order to avoid reflections. There is always also the danger from the *grain* showing, to avoid which the light should fall on the photograph from a double source. When daylight is not available, recourse may be had to magnesium ribbon.

As regards a lens for the camera, one that is a fixture of necessity would be best; but if a suitable flange be fitted, the shutter and lens from a folding instrument might pay a double debt by being used for both. A single lens can be bought of a dealer of second-hand goods for a song. A rapid rectilinear for a dollar or two, while discarded box-cameras that may be bought of the pawn-broker for a dollar, may have a suitable lens-equipment. When all fails, there is still the 2-inch reading-glass, which, in focal capacity, is 5 inches, and can be purchased for half a dollar or less. A short time ago I saw a good 4 x 5 Seneca box-camera fitted with an R. R. lens (in a pawn-shop) selling for a dollar, while a dealer in second-hand instruments offered 4 x 5 R. R. lenses and Wollensak shutter for a couple of dollars. Lenses suitable for a copying-camera can often thus be picked up very cheaply.

As previously stated, when fully extended, the distance from lens to plate is 15 inches, which is ample for taking large flowers life size. If need be, an addition may be made to the length of the bellows.



When greater magnification is needed, it is a simple expedient to suspend from the top of the front-board a reading-glass of 3- or 4-inch diameter. The glass may be suspended thus by fitting the smallest part of the handle between two small nails driven into the woodwork. The glass can then be correctly placed in a moment and as quickly removed again.

The building of such a home-made camera will amply repay anybody who can spare the necessary time.

FRASERBURGH SANDS — WILLIAM NORRIE

Can the Camera Create?

WILLIAM FINDLAY

I WAS much interested in the article which appeared in the January number of PHOTO-ERA, entitled, "Is There a Place Left for Straight Photography?" by Sigismund Blumann. I incline to the opinion that there is, and any successful work I myself have accomplished has been from untouched negatives and without recourse to any "faking." I am free to admit, however, that there are not very many of my negatives that would make a successful picture were the entire surface made use of. But, then, I had always the idea of enlarging the essential elements. Mr. Norrie, to whom Mr. Blumann refers, probably had the idea of using the entire negative to make his pictures conform to stock-sizes, and worked accordingly. That he has been successful in this direction in many instances, goes without saying. The picture I have in my mind as a most successful effort, in this direction, is "Fraserburgh Sands," which has already been reproduced in these pages, but might with advantage be published again just to illustrate the point at issue. I wonder if this is the picture to which Mr. Blumann refers?

But although a disciple of the "straight cult," I will not go the length to say that after-work on the negative or print is to be barred, and an interesting conversation which I heard between an artist and one of our leading pictorialists may, with advantage, be chronicled, covering, as it does, some of the points raised in Mr. Blumann's article.

The artist had purchased one of the photographer's pictures representing a characteristic landscape of a country he had visited recently on an art-pilgrimage. He thought highly of it and gave it a place of honor in one of his rooms. On hearing that the photographer was to pay a visit to the city, he asked me to bring mine along. I did so, and after the formalities of introduction the artist showed us his treasures. Coming to the landscape in question, the following conversation took place:

Artist — "And this is your own picture? What part of —— was it taken in?"

Photographer — "To tell the truth, I have not yet had the pleasure to visit ——. The picture is a composite one — a work of imagination, if

you will. The foreground was taken one year when I was on a holiday, the building was copied from a sketch I made myself, and the sky was photographed at home. All but the necessary parts of the three negatives were obliterated, and by careful manipulation a contact-print was made, incorporating what was wanted from each of them. Some working-up was done on this print and from it a negative was made, and this picture is a straight print from it."

A. — "And a very fine one it is. But I can't get away from the idea that the purpose of the camera is to record, *not to create.*"

P. — "Yes, that is a stumbling-block that we find difficulty to get over. Photography is looked upon as a mere mechanical process."

A. — "The camera certainly requires one with some artistic sense behind it; but one does not need the same artistic training as for painting, sculpture, architecture or any branch of art that requires skilful handicraft. In fact, I know some very successful photographers who could not make a creditable effort at the simplest drawing."

P. — "And yet they show their artistic instinct through their photographs."

A. — "Yes, I admit that; but, then, it is simply a work of observation coupled with some technical skill. You, on the contrary, have had some artistic training before you could produce a work such as this."

P. — "I admit that I had a little, but very little. My best teacher was Nature herself."

A. — "But the camera can't record Nature truthfully. The colors are lacking."

P. — "Neither can the painter render Nature truthfully. He gives only what may be termed an impressionist sketch. Much of his work is composite also. There is a picture in your own art-gallery of a battle. It was fought two hundred years before the artist was born. Was he there in the spirit on that day? Did he not paint the scene on the actual field of battle or from imagination, and the soldiers from models?"

A. — "You forget about artistic license."

P. — "Is it to be denied to photography?"

A. — "The camera is not gifted with imagination."

P. — "Neither is the canvas, the paint, nor the painter's brush."

A. — "No, but he who uses them may be."

P. — "The possessor of the camera may be also so gifted."

A. — "But it is a mere recording-medium."

P. — "I have shown you that it is something more than that. I can use it to express my idea of, and what you admit is a good landscape."

A. — "But how about color?"

P. — "Get away from color altogether. Come to black-and-white drawings, etchings or wash-drawings. Here we are on more equal terms. In your drawings you do not get Nature's colors, but you render the relative distances and impart atmosphere by a varying touch, as it were. An orthochromatic plate, used with a ray-filter, can give tone-values in the same way, and they can be rendered more accurately, if necessary, in after-work."

A. — "Yet compared with drawing or etching, photography is mechanical."

P. — "But my method of working is more than that."

A. — "Certainly, and I told a friend the other day that the picture was more like a mezzotint than a photograph. Now that I know your methods of working, I shall have to judge your photographs by the best of them."

P. — "As you will. But you will quite admit that the camera *can create*, or, at least, be the medium of creation, and that one's individuality can be reflected through it?"

A. — "In your case I am bound to admit what you say. You have had artistic training and will not perpetrate slanders on Nature. But I must say that I now see clearly why so many anachronisms were apparent at a recent photographic exhibition I visited — wrongly lighted skies, misplaced highlights, untrue relative distances and other things. I may say that I have used the camera extensively myself to aid me in my studies; but I had no idea that I could utilize it as a creative medium. When I do, you will have to look to your laurels. Anyway, I am bound to say that I have received new light on photography's possibilities, of which I suppose you are one of the pioneers, and I wish you every success in your effort. But take a friend's warning — don't let your ambition soar to depicting battle-pictures. Stick to Nature."

THE sentiments which may be aroused by a landscape-photograph are numerous, joy, horror, sadness, calm, peace and others being expressible by pure landscape, while the introduction of figures or of some suggestion of life affords the possibility to express still more, such as sympathy or love, though here we begin to approach the realm of genre. It seems to be generally the case that the deeper emotions are the quieter ones, and the worker who wishes to produce the greatest possible effect will usually make a greater effort to arouse these than to appeal to the lighter ones, such as joy or amusement. — Paul Lewis Anderson in *Pictorial Landscape-Photography.*

A CHIP OF THE OLD BLOCK
JOHN GORDON, JR.

Side-Trips in Camera-Land on Foot

WILLIAM LUDLUM, JR.

IN PHOTO-ERA for September, 1914, I wrote, "If you can't motor, foot it," and when you get right down to bed-rock "footing it" is the real thing in camera-experience; not only "footing it" on foot, in springtime, or any other time, but "footing" the bills as well; in fact, everything must be on a proper "footing" to make a success in photography as well as in anything else. Having, contrary to correct composition, placed my "foot" notes at the beginning of this article, I will now proceed with the subject-matter and "foot" it again.

A good "understanding" is the first requisite of the amateur who would brave the excitement of the chase in pursuit of the elusive "beauty-spot"; understanding for the feet, and a proper mental understanding of the "tools in trade" and their use. The photographer, like the artist who "mixed his colors with brains," must use a generous amount of the same commodity if he ever expects to arrive on foot, or otherwise. In shooting with a gun it is possible to miss, more often than not to; but with a camera most shots make a record, quality depending on just ordinary hit-or-miss aiming, or shooting with a charge of brains as well as light-sensitive plate or film.

"Foot" power, when we come right down to it, is the "power behind the throne" of most achievements. Who ever got anywhere who was afraid to walk? Riding usually means waiting — waiting for some kind of a conveyance to come along and give a lift; "footing it" means "get out and git" the instant the desire strikes home, instead of waiting for a lift and losing precious moments. To pervert a well-known quotation, "As we walk, we reap," also, "The race is not always to the swift." A sixty-horse-power auto may "speed the passing scene," but leaves no after-impression. If we get a flashing glimpse of some spring-landscape worth recording, by the time clutches, levers and brakes are adjusted to a "stop-over privilege," we are miles past the spot and the chauffeur always balks on taking the back track. On the contrary, when we are on foot, we get a good, honest look at everything as we stroll along and can stop at will to examine budding twigs and smell of spring-blossoms without disturbing the "even tenor" of speed-mad machinery. By all this, one can see that I am either a faddist on foot or a footist on fad, whichever way you look at it.

But, to be serious in the matter, a good, old-fashioned tramp along the high-road or across country, through field and forest, through sunshine and shadow, early and late, at all seasons of the year, is the only real way to enjoy the possession of a camera. A camera, in the hands of a practised pedestrian, becomes more than a mere box of wood, metal and leather; it takes on a real and active personality, a friend with which to share the beauties of the road. My cameras are all good friends in the true sense of the word. They respond as truly to my many moods as to the moods of the day. When the "sun shines in my soul," as the hymn has it, my cameras will produce sunshiny work; but, on the other hand, if I am in the grip of the "blue devils," it somehow gets into the picture. Then, again, I find that if I take good care of my cameras, they take good care of me. If I keep them clean and free of dust, they give me clean work. All this, it may be said, has nothing to do with "footing it," but it really is the most essential part of the whole performance.

A REST BY THE WAYSIDE WM. LUDLUM, JR.

To realize the joys of a camera, on foot, you must get acquainted with three

things: yourself, your camera and your subject; and a complete understanding of the latter can come only from a full knowledge of the two former. An old joke says, "If wishes were autos, hobos would ride." This may be true, but, in your case, step out and step lively. Do the working and leave the wishing to the other fellow.

"LIKE FATHER, LIKE DAUGHTER" WM. LUDLUM

Spring, that season of the year when "the young man's fancy lightly turns to thoughts of love," also produces two other varieties of the genus "loco," namely, the spring-poet and the spring-photographer, and, to tell the truth, I have never been able to decide which is the worse. In my own case I have at various times been accused of both failings and must, indeed, be a sad example to the rising generation.

Spring is the season of sentiment; the sap is rising up through the trunks of the trees, out along each limb and branch and through every tiny twig to sprout into the budding green leaf; and the blood of man seems to go through very much the same process. It starts out from the tips of his toes, gathering heat and force as it travels upwards, until it reaches the brain in a flood of wild ideas, usually designated as "moonshine." In the light of this condition the "spring-fever" of genius arises and man becomes, for a season, what he is not. Everything is seen in a spotlight of splendor and assumes colors tinged by fancy's flight.

This ability to throw off the frosts of winter, for a season of spring-delight, for man, as well as nature, is a period of recuperation. Things begin to grow again and, growing, never seem the same. The browns and grays of yesterday in rainbow-colors fade away and, to the blessed sun of spring, we all a hearty welcome sing. This surely proves my case, as I have fallen unwittingly into the spring-madness of verse; it was there and had to come out.

The camera, too, comes in for its share of spring-vagaries. In the hands of its owner it sees things in roseate hue, and to this fact is due the overproduction of "spring-pastorals"—a sad case of misplaced enthusiasm. Spring is the "leap before you look" period, the time when enthusiasm should be tempered with discretion. "All is not gold that glitters," and all is not a picture that is merely pretty. Allowance must be made for color. The brilliant greens of the foliage, the enticing reds and pinks of the fruit-blossoms, must, of necessity, be lost in the negative. It becomes, then, at this season of the year a plain, simple matter of correct composition over everything else. Orthochromatic plates used in combination with "horse sense" will, to some extent, take care of the color-problem; but composition on the ground-glass in detail and mass, in light and shadow, produces the picture. Consider the subject in black and white; don't let the delights of color run away with it. Be enthusiastic over the joys of spring; browse on the manifold delights of Nature's breeding-time; drink deep the perfume of budding flowers; but temper the vision of delight to the limitations of a print shorn of the intoxication of perfume and color.

Developing a spring-picture is very much the same as with any other. Of course, use "spring-water," which is best during March, April and May; I have never experimented with any other at this time. The rest of the process is the same as at other seasons of the year. "Know thyself" and the tools with which you work. Study the pages of PHOTO-ERA, and read carefully the experience and instructions of those who know. Get in touch with the leaders of photographic expression and, when you feel sure of yourself, "spring" your spring-pictures. In conclusion, "life is as you make it," ergo, the picture as you take it. Get out in the open. Be a poet, be a photographer or whatever else you will; but take advantage of the spring of the year. Let its merry madness steep your veins to overflowing and rejoice again in a season of youth.

MISS JUSTINE JOHNSTONE
BY PHILIP CONKLIN
FIRST PRIZE
LOVELIEST WOMEN CONTEST

NASTURTIUM — FANNIE T. CASSIDY

Buying a Second-Hand Camera

E. L. C. MORSE

THERE are times and occasions when an amateur worker feels the need of another camera — and has not the price to buy another strictly new camera. This may happen for a variety of reasons. He may have a small camera and feel the need of a larger camera to enable him to make larger negatives, either to be worked up preparatory to reducing lantern-slides from a borrowed negative, for example, or for transfer-work in carbon or bromoil. Or he may need a small vest-pocket edition for snapshot-work where his larger instrument would be out of the question.

On the other hand, the amateur may wish still to keep his old familiar and well-tried "stand-by," and could use another camera of different size for special occasions, but does not feel that he can afford just now to buy a new camera for this special work. Another class would be the man who would not buy a new camera at all, but would consider a second-hand instrument if the price were satisfactory.

We thus have three distinct classes for consideration: the man with a camera of unsatisfactory size or equipment who is seeking a new camera provided he can dispose of his present camera; the man with a satisfactory size for general purposes who would buy another camera provided he could buy it cheaply enough; and the man of limited means with no camera.

Each of these three cases, looked at from the point of view of political economy, means release of unproductive capital, increase of business for manufacturers, and satisfaction for purchasers — if and provided the prospective purchasers know how to judge the merits and demerits of second-hand cameras. The following notes are intended to shed some light on that question:

Buying a second-hand camera is like buying a horse at the stock-yards or a fair. You may strike a bargain, and you may not. It all depends on how much you know about the article purchased. Not being an equine expert, I shall offer no advice regarding horses; but having not a little experience as a photographic worker, I make bold to offer some advice on the subject I have indicated.

There are several elementary principles about a camera which may be worth the amateur's while to know. By "amateur" is meant a person who knows something about a camera, and not a mere novice; the latter had better stick to the first-hand instruments at list-prices.

There are several places where you can get second-hand cameras: second-hand dealers, pawnshops and amateurs who have lost interest or are "hard up." An excellent rule, rarely to be departed from, is to insist on several days' trial before the sale is completed. If you have to deposit the purchase-price, either place it in a third party's hands (called escrow in law) or take a receipt combined with an agreement to return the money, if goods are unsatisfactory, within — days.

TWILIGHT, GLOUCESTER HARBOR — WILLIAM C. NOETZEL

Assuming that you have made such arrangements, you take the camera home and proceed to examine it. About the first thing you should do is to look over the bellows and shutter to see if they are light tight. The best way is to put an electric bulb into the camera while in a dark room, and note whether any light escapes. None coming out, obviously none can come in when exposed to sunlight. If you have no electricity, hold the camera to the sun, back removed, and your head enveloped in a cloth, as you watch for light-leakage. A faulty bellows can be patched, but it is easy to bungle the job. It is safe to refuse a camera that is not light tight.

Next, look at the lens-front — the upright standards that hold the lens and shutter. They must be absolutely firm, even when extended, and parallel with the plate and ground-glass. Many American cameras are deficient in this respect, even when new. If the front "wabbles," or is not parallel with the plate, or if the focusing-knob does not hold fast when set, reject the camera; it is beyond redemption.

The shutter is very important and, particularly in the cheaper grades, is generally untrustworthy. First, try to see if it responds at all for each speed marked. Does it stay open when it ought to close? Does the "Time" hold until the required second push? Does "Bulk" react at once when pressure is removed? A negative answer should negative the trade.

Now, as to the intervals, say, 1, ½, ⅕, ⅒, 1/25, 1/50 second, and so on. Offhand, you cannot test them accurately; but a string about 10 inches long, with a weight on it for a bulb, will show for every other swing about one second. With a little care you can make a fair guess at 1, ½, ⅕ second. At least, you can tell whether there is any difference at all between them. Then take the camera out into the sunlight, cover your head with a cloth while you look through the bellows to see if there is any perceptible difference in the amount of light admitted by the remaining indicated speeds. You will often find that 1 and ½ second are about the same; ⅕ and ⅒ second, *ditto*, and the re-

THE COTTAGE ON THE HILL — ALBERT G. SMITH

maining speeds more or less one and the same speed. What then? Shall you refuse to take the camera?

Well, perfection is rare in this world, and it is wise not to expect too much sometimes. You can do considerable with three speeds if you know how and "which is which." Your 1 and ½ second call manifestly for a tripod. Using the pendulum suggested above, you can learn to estimate 1 and ½ second pretty accurately with "Bulb." Now as to ⅕ and 1/10 second, take the slower speed; overexposure (double normal) is not bad, but underexposure is serious. Your remaining set of speeds (1/25, 1/50, 1/100) are really about 1/25, we will say. Your meter or light-tables call for 1/50 or 1/100 — what shall we do? Answer — stop down. Suppose you need 1/50 at F/8 (and you have no available 1/50). Utilize your old friend, 1/25, at F/11. If you need 1/100, use F/16 with 1/25. Of course your depth of field will change, being greater with the smaller stops; but your exposure is correct. Exposure is the main thing in photography.

As for the lens, do not condemn it for a bubble or a slight scratch. Strange as it may seem, such defects do not affect its working-power appreciably. Lenses are complicated affairs, and the best advice to the amateur is to try out the lens and see what kind of negative it gives. The proof of the pudding is the eating, and the proof of the lens is the negative.

Focusing-scales will sometimes play strange tricks, particularly when another than the original lens has been substituted. To correct this fault — and it is very necessary to do so unless you use the ground-glass always — measure off, say, 10, 15, 25, 50 feet from the camera. Take a sheet of bold type from a newspaper, preferably inverted, and attach it to a tree or other convenient place. Note on the scale where the picture is most distinct at these various distances; you then have a true scale for that lens.

The F-value of the lens is a matter of great consequence in determining exposure — the crux of photography. Thanks to the simplicity of the F-system, this is easily determined. A 5-inch lens at F/8, focused sharply at an object 25 feet away, shows clearly at 13 feet to infinity. At F/11, focused at 20 feet, everything from 10 feet to infinity is in focus. At F/16, focused at 13 feet, our field is from 7 feet to infinity, while at F/5.6, set for 36 feet, our field is from 18 feet to infinity. These figures, copied from the Wellcome Diary, *British Journal of Photography* and *Photo-Miniature* handbooks, will enable you to ascertain by comparison the exact facts about your F-value or focal distance at the expenditure of fifty cents and a half hour's time.

Assuming that you have now ascertained the true infinity-mark of your lens on the scale, remove the ground-glass and hold the lens to the light, adjusting the diaphragm so as to equal the greatest aperture of the lens. Cut from cardboard an acute, isosceles triangle and insert it in the diaphragm — very gently — and note

where it touches both sides of the shutter-leaves. Compute how many times this distance — the base of the triangle in the experiment — is contained in the distance from your infinity-mark to the place of the ground-glass. The answer is the F-value of your lens, and should tally approximately with your previous experiment, your quotient being probably 5, 6, 8, 11, 16 and so on. In case you are more familiar with the Uniform System (the U. S., so called), remember that the two schemes are as follows:

U.S. 1	U.S. 2	U.S. 4	U.S. 8	U.S. 16	U.S. 32	U.S. 64
F/4	F/5.6	F/8	F/11	F/16	F/22	F/32

What is the importance of all this? Well, suppose you look at the diaphragm-marks on a shutter that you are inspecting, and see that the numbers, as they increase, are each the double of the preceding. That means the Uniform System. If every second number is the double in ascending, you have the F-system. It is rather important when you see 8, for example, on a diaphragm-scale to know whether that means one system or the other. If it is a Uniform System number, and you think it is an F-system number, you ruin your picture by giving half the proper exposure. The Uniform System is an antiquated British invention long since discarded by its own originators, but is retained for some inscrutable reason on the cheaper cameras in this country.

Finally, look well to your plateholders. They must be light tight and the sides absolutely true with the back of the camera — otherwise they are useless. Load the holder and expose it on all sides to the sun; develop and watch for fog or light-streaks. Take a picture in bright light, observing no special precautions to shield the holder. Develop. Discard all faulty plateholders. It is a risky matter to buy holders that have been used.

Much that has been said above applies to roll-film cameras of the folding-type. Remove the back and fit in a piece of ground-glass where the film naturally comes, and make experiments described above. Try out a spool, particularly on foreign cameras built on the metric system which does not correspond to American and British inch-measurements. A spool must track true always when unwound in the camera; if not, reject the camera. For proof of light-tightness, turn on one unexposed emulsion-length and, without snapping the shutter, turn the camera about in the bright sunlight. If on development there is no evidence of fog or light-streaks, the camera is so far satisfactory.

The little dollar or two-dollar box-cameras are generally a safe investment, provided the shutter works at all, and the spools fit and track, as noted above. Of course, the only proof is the negative after a picture has been taken with the box exposed fairly to the bright sun.

No suggestions are offered regarding reflecting-cameras. This article is for beginners in photography. To a person starting out on the troubled field of picture-making for the first time, equipped with a reflex, all advice and suggestion would be superfluous.

As regards the size of pocket-camera, it may be said that the tendency, nowadays, is towards the smaller styles, say, 2½ x 3½ inches, or even smaller. The negatives from these Lilliputians, provided the shutter and lens are first class, can be made up into fine enlargements, the cost of materials is insignificant, they are easily carried about in the pocket, and are ready on all occasions. Up to the present time our American manufacturers have not equipped the small size cameras with really first-class lenses and shutters to the extent that the English and Germans have. But if a man really enjoys photography as an expression of his artistic nature, he will probably have in his equipment, as soon as opportunity affords, a first-class plate-camera with shutter and lens to match — say a 4 x 5 or quarter-plate lens about F/6, shutter actually speeded to about 1/100 second, rising and falling front, swing-back and direct view-finder.

The amateur is often tempted to pay a high price for a lens and shutter of great rapidity so as to "arrest motion," but it is hardly worth while unless for legal evidence, for instance, in a race or disputed athletic event at a critical juncture. A waterfall or wave represented as stationary is false art, and looks unnatural — frozen, in fact. The "Twentieth Century," running 60 miles an hour, represented as standing still with wisps of smoke rushing from the stack, parallel with the boiler, is an absurdity. In actual life that phenomenon is never seen. The picture of a galloping horse caught at 1/1000 second is grotesque and gives one a feeling of horror that the poor beast is about to fall and break its neck (and the rider's). Freak-photography is expensive and unsatisfactory, and to be avoided.

A postcard will bring a catalog which will inform you regarding prices of cameras, and your first care in buying cameras is, of course, to know roughly list-prices of new goods. The aim of this article is to enable the amateur to judge values of used goods in the camera-line. Price and value are not synonymous terms.

THERE are a thousand ways of seeing the same object. — *Jules Lemaître.*

A ROCK-BOUND COAST

From Surf to Summit with a Camera

LEHMAN WENDELL

Illustrations by the Author

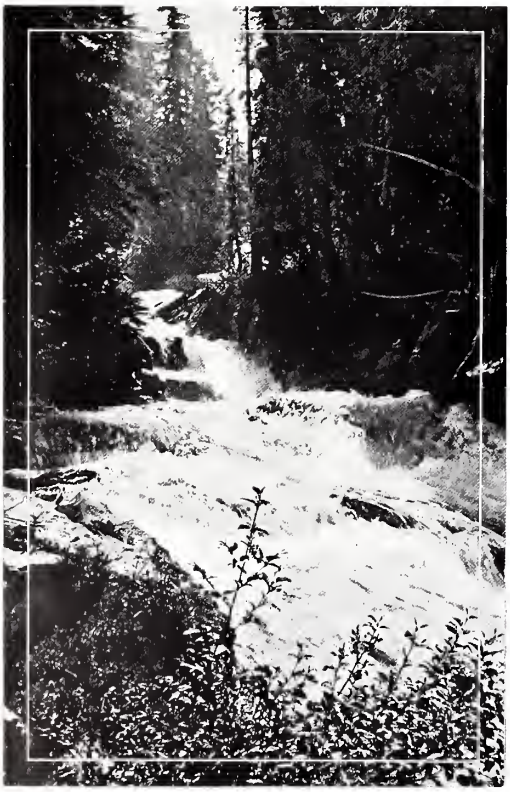
FROM sea-level to a region of perpetual snow and ice is a long way and the camerist who undertakes such a journey is destined to meet with the most varied photographic experiences. On such a trip he must eliminate all guess-work; he must understand the possibilities and short-comings of his instrument perfectly so that he may use it with intelligence and be reasonably certain of his results.

I had planned my vacation well. I knew just where I was going and what I was going to do. Two weeks of fun and frolic were in store for me — one at the ocean, the other on Mount Tacoma. Of course I was to do some camera-work — a great deal of it, in fact — and the question was what sort of an outfit should I choose. I favored the small camera, and yet I hesitated, for I knew full well that the serious worker is apt to look with contempt on anything smaller than a 5 x 7. Then I beheld in my mind's eye a fellow-photographer making a similar journey; I saw him staggering under a load of heavy plates and sprawling tripod and mammoth camera, trying to convince himself, meanwhile, that he was having the time of his life. And as the mental picture became more vivid my interest in the time-honored 5 x 7 waned and I said to myself: that is not pleasure; it is toil, and toil and pleasure do not mix. So I decided on a small instrument, and I chose my trusty No. 0 Graphic. This is a small high-grade speed-camera with an anastigmat lens and a focal-plane shutter. It takes pictures smaller than a calling-card, or, to be more exact, 1⅝ x 2½ inches; but so perfect are the negatives that enlargements can be made to almost any size. I had no tripod with me, for I did not want any excess-baggage.

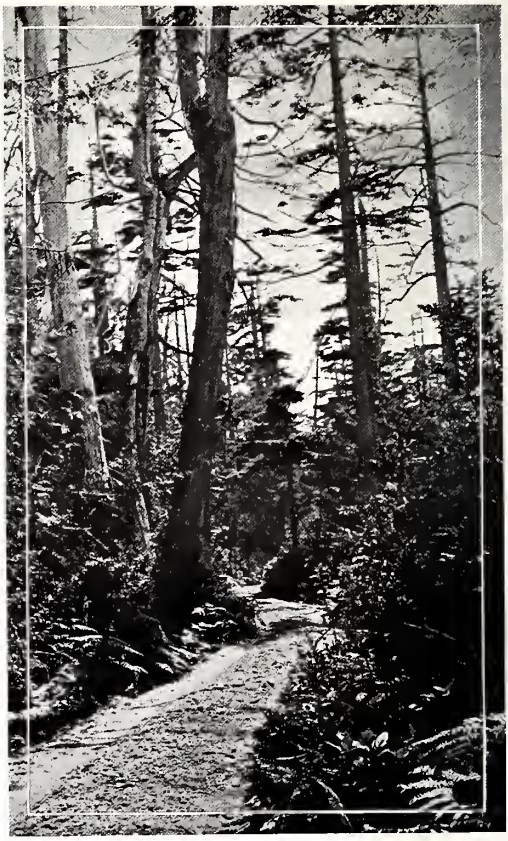
The train carried us due west until we reached the little town of Moclips. This is the terminus of the Northern Pacific Railway; it is also the end of the continent and you can go no farther without getting your feet wet. Here we found

a primitive-looking hotel operated by a veteran trapper, but the accommodations were surprisingly good and we remained with him an entire week, making daily excursions from there along the beach. We found much to interest us at the very outset. The beach was strewn with shells, seaweeds and bright-colored pebbles which were a source of constant delight to those of our party who were interested in the natural sciences.

My little rapid-fire No. 0 was speedily brought into action, for all about me were things to be photographed. I found the light-conditions quite different from what they were inland. The wide expanse of water serves as a more or less perfect reflecting-surface and increases the intensity of the light to a remarkable degree. Here overexposure, rather than underexposure, is the rule. I found that an exposure of $\frac{1}{140}$ second was about right on the beach, whereas pictures of the surf had to be given an exposure of $\frac{1}{290}$ second to $\frac{1}{365}$ second to avoid overexposure. I used a high speed purposely to test the power of the lens, but it is always advisable when photographing surf to use a slow speed, with a small stop, for in this way one can better convey the idea



"AND THE WILD CATARACT LEAPS IN GLORY"



A FOREST AISLE

of motion. Speed-cameras should at all times be used with the utmost care, for in the hands of the novice the resultant print invariably shows *arrested* motion, when the very opposite is what is wanted. Birds in flight, for instance, are often pictured as sharp as though they had been cut out with a pair of scissors, and the idea of motion is entirely lost.

At the ocean all pictures had better be taken in full sunlight. The intense white of the surf, the almost inky blackness of the water beyond, the somber color of the beach and the blue of the sky give a variety of tones that will produce a most pleasing negative. On a cloudy day, however, the entire scene is transformed as if by magic. The water, the beach, the sky, the forest, all take on a leaden hue, and a picture taken at such a time will result in a flat negative devoid of contrast and pictorial elements. Nowhere else does nature so completely change her moods.

Not far from the hotel we found a group of trees, dead, black naked trees that added a dis-

" WE WERE AGAIN BY THE OCEAN "

cordant note to the otherwise perfect landscape. We wondered why they had not been cut down. The next morning we chanced to pass the same way. A heavy mist was hanging over the country and everything had taken on a mysterious aspect. The little clump of trees had been transformed into a picture of exquisite beauty. All the irritating detail of yesterday had disappeared and the palpitating vaporous outlines were pregnant with suggestions. The untutored camerist, who still sees everything in detail, will ask if blurred edges mean quality. They certainly mean mystery, and mystery is ever charming. There should be in most pictures a place where the beholder can set free his imagination and interpret the picture according to his own temperament.

A rumor reached us one day that a harpooned whale had drifted in near Tahola — an Indian village ten miles to the north — and the natives were said to be feasting on the blubber. To miss such a sight was out of the question, and bright and early one morning we began our long walk northward. We carried a big basket of lunch with us and in my pockets was enough ammunition for a hundred pictures.

It was a tiring journey, but full of interest. The coast-scenery was quite as full of beauty as the open sea and was studied for possible pictures. I found many beautiful spots along the coast and it was a pleasure to try to interpret these with the camera. Far to the north of our hotel we came upon a mass of lofty rocks nestling close to the hillside, a little stream flowed silently by, while high above the forest sighed in peaceful slumber. It was a place that invited repose and, as the sun was already high in the heavens and fatigue and hunger were beginning to tell, we were glad to rest. To find a box among all the wreckage along the beach was not a difficult matter and soon our improvised table was set and coffee was boiling at a nearby campfire.

We continued northward, passing many fantastic cliffs and gleaming streams. Then the road led us into the primeval forest and as the booming of the breakers died away it seemed that we had entered a place of temple stillness.

" A LOUD AND WHITE-ROBED WATERFALL "

"ERE THE MIST HAD YIELDED TO THE SUN"

But as we became accustomed to our new surroundings we began to hear familiar little noises here and there and everywhere — the persistent calling of a robin, the garrulous chirrup of a squirrel, the noisy, boastful cawing of a crow. A mile or so of this and we were again by the ocean toiling onward over a gravelly beach that taxed our strength to the utmost.

As we proceeded a faint, persistent, unfamiliar odor reached our nostrils, and instinct told us that it was the whale. Half an hour later we were at Tahola and all along the beach men and women and children were eating blubber. Big chunks of fat were scattered everywhere on the ground, and dogs and children fought with each other over the dainty morsels. The whale itself was near at hand, a shapeless mountain of flesh, black with hungry flies, and after photographing him and picking some remarkably large barnacles from his back we were glad to beat a hasty retreat. It was an interesting sight, but hardly a proper place for a white man whose olfactory nerves were not attuned to such odors.

The journey back to the hotel was even more strenuous than the up journey. It was a fight with the incoming tide, and time and tide, as the old saying goes, wait for no man. We knew that certain big cliffs had to be passed before high tide or we would be caught like rats in a hole. But luck was with us and we reached the cliffs in time, and an hour later we were seated in the big hotel lobby nursing our aching limbs and boasting of our deeds.

Vacation-days pass rapidly. We had idled, walked, motored a little, had seen a thousand and one of the things to be seen, and a week had passed. We would have grieved that such golden, burdenless hours should ever go into the past had we not known that something even more wonderful — a trip to Mount Tacoma — was in store for us. As we packed our suitcases that night we took stock. I had bagged a hundred pictures, while the others had gathered enough specimens of various kinds to start a small-sized museum.

Mount Tacoma is one of the few widely advertised spots which one need not fear approaching with anticipations too exalted. The entire journey is a series of ascending climaxes, and one never ceases to marvel as the constantly changing panorama unfolds itself. For the camerist the mountain possesses attractions almost bewildering in their variety and magnificence.

The mountain is sixty miles from Tacoma and is easily accessible. A few hours' journey by rail brings one to Ashford, a small village well up in the foot-hills and the terminus of the railway. From here one continues by automobile to Longmire's, a convenient stopping-place, then by stage to Narada Falls, from which point one proceeds on foot to the Camp of the Clouds, distant a little over a mile. This is the final stopping-place for the tourist before making the ascent. It is a camp of some fifty tents situated on the snow-line. It has a large dining-hall which is in operation during the summer months.

We reached Ashford in due time, but instead of immediately continuing our upward journey we spent several delightful days here on a ranch owned by a successful Tacoma furrier. It was a beautiful little place, such as one reads about, but seldom finds in reality. Here were all the conveniences that one could wish for, from a private water-system to a concrete fish-pond stocked with mountain-trout, yet nothing unnecessary was to be found, nothing to boast of the owner's wealth. The housewife was a charm-

ing little woman who spends her summers here in the big out-of-doors, not because she needs to, but because she loves the simple life. From early morning until late at night she trips about her work, milking the cow and feeding the chickens and working in her garden, and she does not seem to lose in dignity or womanliness from the fact that she wears a pair of faded overalls and an old discarded shirt.

We had planned to spend an afternoon on the ranch, and yet a number of days had slipped by before we realized that if we were to see the mountain at all we would have to proceed. Thursday found us speeding upward and onward. What a wonderful ride it was! The landscape early began to give hint of the heroic. The forest was marvelous. So tall are the trees that they literally seem to pierce the clouds, and so close together do they grow that only with difficulty can the sunlight find entrance. A strange silence reigns everywhere and gives to the forest an element of the mysterious and the unreal. Through such a forest the road leads, and woe to the novice who leaves the beaten track, for he is apt to see neither sun nor sky again.

After a delightful ride we reached Longmire's, where we took the stage for the snow-line. The scenery grew more and more impressive at every mile. On either hand were to be had an endless series of mountain-views, massive cliffs with sheer walls, brawling rock-choked torrents, and breaks through which loomed snowy peaks and purple ranges. The road took us past many beautiful waterfalls, the most impressive one being Narada. We reached the latter late in the afternoon, and a final mile and a quarter on foot, over snow and ice and through dense clouds, brought us to the Camp of the Clouds. It was supper-time and for the first time in our lives we enjoyed a meal in the clouds.

The following morning the clouds were still hanging like a pall over the mountain and it began to look as though picture-taking would be out of the question. But a gentle wind began to blow, the clouds moved uneasily, then slowly lifted and the white peak appeared in bold relief against the blue sky, clear cut as a cameo.

It was amusing to watch the photographers. Before the clouds had yet had time to clear away they began to come from all directions, intent upon photographing the mountain. They had cameras of every conceivable shape and size and price, from the dollar Brownie to the two-hundred-dollar instrument *de luxe*. And the camerists were in all stages of proficiency. Here a young woman with her first Brownie was snapping right and left in sunlight too weak for a speed-camera; there an aged veteran photographer, with an equally aged camera, was taking a careful time-exposure as enthusiastically as though he were in the prime of life.

My own camera was as busy as any. I knew that it might be years before I could make a similar trip and the moment the light was suitable I began to expose roll after roll of film. I worked without a tripod, just as I had done at the ocean, because I wanted to test the possibilities of the No. 0 in every way possible. For all my snow-scenes I used an 8-time ray-filter. I deemed this necessary because I had learned by previous experience that white against blue — that is, snow against sky — is apt to show very little contrast, even when orthochromatic films are used. The filter, by the way, was a home-

"FAR FROM THE CROWD'S TUMULTUOUS DIN"

made affair, for the manufacturers have not yet seen fit to make one for the Graphic. It consists of a small, slightly-tapering brass ring which slips into the lens-barrel, where it is held in place by friction. The yellow glass is carefully fitted into this ring and held in place by means of strong glue. Now there are many who are of the opinion that a ray-filter cannot be used with the No. 0 because of the little door which protects the lens and opens only when the button is pressed. The trick is not as difficult as it may seem. The door begins to lift long before the curtain is released and it is therefore possible to grasp the door and open it up wide without releasing the curtain or in any way exposing the film. The filter can therefore be attached or detached at will. An 8-time filter will lessen the actinic qualities of the light considerably, and I therefore used the slowest instantaneous speed possible, which in this case was $\frac{1}{10}$ second.

One of the first things to be learned by the camerist is to be extremely careful from the time the film is inserted until the finished print has been produced. It is well to examine the camera before each new spool of film is inserted. Had I done this I would have saved a good many films which were ruined by one of the meanest little accidents that could befall a camerist. In attaching the strip of gummed paper to one of my very first exposed rolls a tiny bit of glue had been transferred to one of the rollers, and though it was almost invisible there was enough of it there to injure the delicate emulsion. As a result, some of my finest negatives were hopelessly ruined. In fact, the very pictures which bordered on the pictorial suffered most. And this happened to one who prides himself on being a most careful and painstaking worker, which goes to prove that eternal vigilance is the only guaranty of success.

One should spend at least a week or two in Paradise Valley in order to reach the chief points of interest. Our stay in the valley was limited to but a night and a part of the following morning and it was therefore impossible for me to roam around and seek out the best viewpoints. Consequently my pictures suffer. I think, however, that the pictures, as they are, will convince the skeptic that even a so-called vest-pocket camera can be utilized for serious work.

PHOTOGRAPHY — Never has there been presented a greater field for personal endeavor. Strive to think, feel and see artistically; and then patience, an ideal, and *work, work, work.*

A. F. Bradley.

"WASTES THAT SLUMBER IN ETERNAL SNOW"

EDITORIAL

The Unemployed and the Unemployable

THE question of the unemployed is a very serious one. While it appeals strongly to one's sympathies, it should not be the subject of misguided sentiment. America is quick to respond to calls of the needy, the suffering, and the large numbers of persons out of work have been made the recipients of generous assistance. But there are many instances — not exceptions — where unemployed have lost remunerative positions, not so much through business-depression as their inability to satisfy their employers. In a public address on this subject, a well-known captain of industry made the distinction between the unemployed and the unemployable. There are too many persons employed who have not taken the trouble to prepare themselves for a definite occupation and do not seem to fit in anywhere. They drift from one place to another and finally join the great army of the unemployed. During the past thirty-five years of business-activity the Editor has noted innumerable instances where employees have not taken their work seriously, making no effort to increase their meager stock of knowledge so that they might be indispensable fixtures in their place of employment. If, for reasons of economy, for instance, the employer finds it necessary to diminish his working-force, he is not likely to dismiss its most useful members, but rather those who have not given a good account of themselves and can quite easily be replaced.

The salesman in a photo-supply house should not only be thoroughly familiar with the materials carried by his firm, but with those of rival manufacture, provided, of course, the proprietor approves. This enables him to understand the points of superiority of the goods he is selling over those of a competitor. More, he should be practically familiar with the character of photographic materials, so that he can explain them readily and convincingly. Indeed, he should convey the impression to the customer that he is a practical expert.

But this is not to be a treatise on salesmanship. It is an attempt to point out the demand for greater efficiency and conscientious endeavor among employees in every department of business-activity. The individual who has been enjoying a remunerative position without ever having given a just equivalent in capable service cannot complain if, even without warning, he is deprived of his source of livelihood, whatever ostensible excuse may be advanced by the proprietor for this apparently heartless procedure. It is not enough for the clerk or worker, in whatever capacity he be employed, to fulfil the conditions of the implied contract, *i.e.*, that he give the employer the best that is in him. Prudence dictates that he make his position so secure — by constantly increasing his practical value to the firm — that it would be exceedingly difficult to replace him. If he have at heart the welfare of his employer's interests and can give absolutely satisfactory service, he need not fear the discriminating eye of the efficiency-expert. The vital importance of economic problems is associated with the historical and ever timely expression, "The survival of the fittest."

Prizes for Business-Suggestions

ONE of the largest and most prosperous manufacturing-firms in this country owes much of its success to the adoption of ideas and methods suggested by its traveling salesmen. Desiring to encourage similar efforts among all its employees, without distinction, this firm has prepared a blank form upon which any employee, who desires, may indicate any new idea calculated to improve the business in any way. He may suggest how any article or product, manufactured by his firm, may be improved; how the methods of handling, selling or even advertising it may be bettered. Any plan to create new business or to improve the service is heartily welcome. In order that every suggestion, from whatever employee, may receive absolutely fair consideration, each form has a coupon, which is detached and retained by the employee, and identifies him by the special committee appointed for the purpose to determine the value of the suggestions submitted. As a means to stimulate an interest in the subject, money-prizes are awarded in proportion to the value of the ideas submitted.

As this way to procure fresh and practical suggestions for the improvement of goods, service and business-methods is sure to produce satisfactory results, it commends itself to every manufacturer and merchant whose working-force is large enough to warrant its adoption.

THE VILLAGE-CHOIR

ALFRED W. CUTTING

FIRST PRIZE — GENERAL

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.

4. Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter, SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15 unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value. Persons interested to have one of these PHOTO-ERA prize-collections shown in their home-city will please communicate with the Editor of PHOTO-ERA.

Awards — General

Closed Feb. 28, 1915

First Prize: Alfred W. Cutting.
Second Prize: W. T. Starr.
Third Prize: Mrs. C. B. Fletcher.
Honorable Mention: James Allan, Floyd Nash Ackley, Samuel H. Avery, Beatrice B. Bell, Miss M. H. Bickle, Henry H. Blank, H. L. Bradley, R. A. Buchanan, Fannie T. Cassidy, Herbert Wheaton Congdon, H. R. Decker, James N. Doolittle, John Paul Edwards, S. H. Gottscho, R. H. Frazier, M. Frey, Will G. Helwig, Suisai Itow, A. B. Klugh, Mrs. Wilma B. McDevitt, Alexander Murray, Charles H. Partington, Richard Pertuch, Edwin A. Roberts, Eda Bowers-Robinson, H. F. Robinson, F. C. Schmelz, Harold H. Scudder, F. Rudolph Seavey, K. Skimojima, F. R. Smalley, Dr. F. F. Sornberger, S. A. Stallwagen, Belle M. Whitson, Alice Willis, William Wilson.

Special commendation is due the following workers for meritorious prints: Lester C. Anderson, Frank Blum, F. E. Bronson, Roy A. Breymeier, A. G. Campbell, Mrs. Antoinette A. Cornish, Arthur B. Cushing, Charles M. De Bevoise, Maude Lee Eldridge, Alice F. Foster, Alton Franklin, Wm. R. Geary, F. E. Gustafson, A. B. Hargett, Harold L. Harvey, Charles A. Hughes, M. de Leon Innis, Leon Jeanne, Hubert E. Johnson, Franklin I. Jordan, C. E. Kelsey, W. T. Kempin, T. W. Kilmer, Dwight D. Kine, W. W. Klenke, Alice H. Knight, August G. Koehler, Warren R. Laity, E. D. Leppert, A. B. Mears, Alfred J. Meyer, Clara J. Monroe, Robert P. Nute, W. P. Potter, Mrs. Matilda J. Purdon, John H. Seamans, Carl Sieweke, Dr. A. J. Treichler, Florence M. Uhl, R. A. Worstall.

Subjects for Competition

"Interiors with Figures." Closes April 30.

Photo-Era Prize-Cup

In deference to the wishes of prize-winners, the publisher will give them the choice of photographic supplies to the full amount of the prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Landscapes with Figures — Photo-Era Competition

Closes June 30, 1915

LANDSCAPE is about the first type of subject which the camerist attempts to depict; landscape with figures, in its highest sense, about the last. This is because the inherent difficulties of the latter are at least partly realized. True, the camerist photographs his friends in landscape-settings, but these are figure-compositions — portraits or genres, more often the former; for it is characteristic of the work of most beginners that his models are conscious of the camera, whereas such consciousness in a genre is objectionable.

As in the case of interiors with figures, it is sometimes rather difficult to draw the dividing-line. However, the distinction must depend upon whether the figure or figures, human or animal, dominate the picture, the landscape furnishing an appropriate background; or whether this touch of life be incidental to the landscape, and serving to emphasize the sentiment to be expressed by the picture. Thus, in a landscape with figures the figures must be subordinate to the landscape, else the picture becomes a figure-composition, a genre or an outdoor-portrait; also spontaneity demands that the figures show no consciousness of the presence of the camera — they must remain strictly accessories.

All this is explained interestingly and in detail, with illustrations from the works of famous painters and leading photographers, by Sadakichi Hartmann in "Landscape and Figure-Composition," a book which every camerist ought to add to his library. By special arrangement copies may be obtained of PHOTO-ERA at $1.50, reduced from $3.00.

As to the boundary-line between landscape and figure-composition, Mr. Hartmann writes:

"Size is the best regulator. Corot in most instances introduced figures merely as color-dots, very small in size and yet so clearly defined that they lend poetry to his paintings.

"There is a certain fundamental law of relative proportion in regard to this that every craftsman should know. Draw in your oblong or upright two diagonal lines from corner to corner. This will give you the center of the picture. Divide one-half of one of the diagonal lines into three equal parts; the length of one of these parts is the maximum length for any figure in that particular picture."

The foregoing paragraphs illustrate the practical character of the text. There are twelve chapters covering the entire range of the subject as follows: Introduction; Geometrical Forms of Composition; The Point of Interest; Line-Combinations; A Method of Spotting; The Placing of Figures; Different Principles of Representation; Background-Arrangements; Foreground, Middle-Distance and Distance; One-Figure Composition; Two-Figure Composition; Composition of Three or More Figures. It is a book of beauty and practical application for every camerist.

Pure landscape can arouse an abstract emotion, but because life in human or animal form appeals directly to the mind, it is a good vehicle of accentuation. Indeed, some suggestion of humanity is usually necessary to the fullest arousing of the emotions.

"The sentiments which may be aroused by a landscape-photograph," writes Paul Lewis Anderson in "Pictorial Landscape-Photography," "are numerous — joy, horror, sadness, calm, peace and others, whereas the introduction of figures or of some suggestion of life increases the number of emotions that may be expressed, adding fear, despair, sympathy, love and others; and at the same time facilitating the expression of those that can be conveyed by pure landscape; for if a figure expresses by its attitude any emotion, the influence upon the spectator may be considerable."

The introduction of appropriate figures frequently raises a record-photograph, a mere transcript of some landscape, for instance, to the realm of art, for it is one of the ways to create in the beholder the feeling or emotion of the camerist when the scene itself was before him. Children at play, in the springtime of life, seem to accentuate the joyous feeling of spring sunshine and foliage, and to create anew our inborn love of little folks; the bent figure of a man or woman plodding along a rutty roadway with garments whipped by the wind of a stormy autumn evening equally well expresses the sadness of advancing age, and it also arouses our sympathy; cattle, the plowman, the artist at his easel, and even the photographer under his focusing-cloth, when seen as incidental to a pastoral setting, emphasize its message of calm and peace.

These suggest but a few of many examples, easily quoted, which show the importance of an intimate and appropriate relation between the landscape and the figures

SPRINGTIME IN THE ARBORETUM — PHIL M. RILEY

A SOU'EAST STORM ON THE MAINE COAST — W. T. STARR

SECOND PRIZE — GENERAL

included; the chance passer-by will not always do, for the figure must harmonize with the landscape itself, the season of the year, the hour of the day, the existing weather-conditions, the idea to be expressed, and the technical treatment of the photographic medium.

This esthetic side of the work is so well treated in Mr. Anderson's book that another quotation seems to be desirable; in fact, a complete reading is recommended. The book is published by PHOTO-ERA, at $1.50. Its first part is devoted exclusively to the esthetic side, the second part to composition, and the third part to the technique of pictorial work as practised by one of our master artist-photographers.

But to return to the quotation; Mr. Anderson writes:

"The emotions which can be aroused by a landscape may be divided into two broad classes — the lively and the quiet. Of the former the chief is that of joy, whether rejoicing at some definite thing, such as light or warmth, or the simple joy of living. In the latter class we find calm, sadness, wonder and reverence as the principal ones.

"Joy is usually associated in our minds with two factors — light and expansiveness. We see the latter quality in the motions of a person who is happy, the chest being thrown forward, the head raised and the arms spread abroad, and a general air of buoyancy prevailing, in contradistinction to the contracted motions of one who is suffering, either mentally or physically, the latter state resulting in depression of the body, tenseness of the muscles, and lowering of the head, in sharp contrast to the manifestations of happiness. These facts suggest at once that joy is to be expressed in rounded forms, the swelling of hills, trees in full foliage, and cumulous clouds, whereas sadness is best indicated by lines of drooping, angular character, preferably converging towards the center of the picture. The mention of full-foliaged trees and cumulous clouds suggests that pictures expressive of joy usually are to be made in the spring or summer, whereas those which convey an emotion of sadness most often are to be found in the autumn or winter. Light is associated in our minds with happiness, darkness being a concomitant of sadness; whence it follows that a high-keyed picture filled with the feeling of sunlight will be more likely to be given an impression of joy than a low-keyed, gloomy one."

With appropriate materials at hand, composition becomes all important; but make certain that the materials are appropriate. The landscape must bear inspection for itself alone; it must have its unmistakable principal object and a message worth while for the beholder, irrespective of any figures that may be introduced subsequently. This principal object, of course, must be located at or near one of the four strong points of the picture-area, found at the intersection of four lines dividing the picture into vertical and horizontal thirds. As there is always danger that interest will center in the figures, they must usually be subordinated in position. Unless very dark or far distant, therefore, the other line-intersections are best avoided and the figures placed at the center of one of the nine rectangles, preferably opposite the principal object and serving as a foil for it.

Of course, there are exceptions to this general rule, such as the principal object and figure in conjunction, as a tired laborer resting in the shade of a great tree on a summer day, or a sunset or other cloud-effect, sufficiently striking to dominate the scene, with distant figures at or near one of the strong positions. PHIL M. RILEY.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

With Reviews of Foreign Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston

Combined Developers for Many Purposes

III—Ortol-Hydro

MANY "ols" have been brought out since ortol first appeared on the market. It is not extensively advertised at present, so that the younger generation does not know it as well as it deserves, but most of the leading supply-stores keep it in stock. It was among the first of the newer developers to find favor with the adherents of pyro, chiefly because of its similar action, warm-black silver image, absence of yellow staining and consequent wider range of usefulness. This range embraces plates, films, papers, lantern-slides and, indeed, every sort of development, including tank-work; it is, in fact, a universal developer suitable for use alone, but, like many other agents, well suited to use with hydroquinone.

Ortol is a coarse, grayish-white, crystalline powder, very soluble in water, and in its dry state, when guarded from light, it keeps unchanging. It is a moderately rapid developer free from fog, and sufficiently sensitive to bromide as a restrainer to render it easily variable within about the same limits as pyro. In solution, when kept in full, closed bottles, it does not deteriorate for a long time, and the used developer, kept in a similar manner, may be employed repeatedly until it becomes brown.

For gaslight paper the following formula is a favorite, to be used at a temperature of 70 degrees:

Warm water (soft or distilled)	1½ gallons
Ortol	1 ounce
Sodium sulphite, anhydrous	16 ounces
Hydroquinone	1½ ounces
Sodium carbonate, anhydrous	12 ounces
Potassium bromide	45 grains

With this as with other developers the amount of bromide greatly affects the tone of the print. Just enough to keep the whites clear gives to the blacks a bluish tinge; more bromide will gradually change the blacks from blue-black to pure black, and upon the addition of still more bromide to greenish- or brownish-black. Thus, for blue-black tones and platinum-effects avoid over-exposure and use a minimum quantity of bromide; reduce the amount of water if desirable. For olive and brownish tones, add more bromide and lengthen the exposure.

For plates, films, lantern-slides and bromide papers dilute one part of this developer with two parts water and use at a temperature of 65 degrees. The factor is 7. It is a vigorous developer, because both are hard-working agents. For that reason, ortol without hydroquinone is preferred by many for negative-work. The following is a standard formula:

A

Water	20 ounces
Potassium metabisulphite	70 grains
Ortol	140 grains

B

Water	20 ounces
Sodium carbonate, anhydrous	1¼ ounces
Sodium sulphite, anhydrous	1¾ ounces
Potassium bromide	10–20 grains

For use, take equal parts of A and B, or for increased softness and slower development, take one part of each and add one part of water.

For thirty-minute tank-development of roll-films or plates, or forty-minute development of film-packs, at a temperature of 65 degrees, the following is advised:

Water	48 ounces
Potassium metabisulphite	12 grains
Ortol	24 grains
Sodium sulphite, anhydrous	78 grains
Sodium carbonate, anhydrous	78 grains

Blue-Black and Brown Tones on Bromide Papers

FIRST determine the normal exposure of the paper used, in the usual way. Use preferably an actinometer, and note carefully the time. Wet the paper for about thirty seconds in clean, cold water. Next develop in:

Sodium sulphite	1 ounce
Potassium bromide	10 grains
Water	10 ounces

Put the sodium sulphite in the water first; let it dissolve completely by shaking the bottle frequently. It is a better plan to have the water warm. Then let it cool, then add the bromide, shake well and filter through two thicknesses of muslin. Pour into a narrow-mouthed bottle and label it "Sulphite-Solution." At the time of use take one ounce of this solution and add to it four grains of dry amidol. The amidol powder dissolves slowly, and care should be taken to see that it is completely dissolved before it is applied to the paper. This amount of solution will develop about a dozen quarter-plate prints. For easy manipulation, some water may be added to the solution. The fingers must be scrupulously clean, and the dishes free from any trace of hypo.

The image will appear in a short time. Do not over-develop. After the development is complete, wash in three or four changes of water, and drop into the fixing-bath without touching it. It is better to put the latter a couple of yards away from the developing-dish. Then proceed to develop the next print in the same way. The proportion of bromide in the solution should be correct, as a slightly larger quantity tends to impart a greenish tinge to the picture, while a lesser amount may produce engraver's black without the pleasing blue in it.

When the next print is ready for the fixing-bath treat it in the same way, but do not allow more than four prints to accumulate in it, as there is a chance of the

THIRD PRIZE

GENERAL

THE DÉBUTANTE — MRS. C. B. FLETCHER

lowest one getting yellowish. Take them away in fours and throw into a bucket full of clean water. Then, after an hour, wash in one or two changes and dry. Slightly harden the prints in a dilute solution of alum if there is any tendency to softness of the film. The tone obtained retains its brilliancy and purity for an indefinite period.

The brown tone obtained by the following method is really an excellent one, and is a very pleasing novelty. While giving the pure whites of the bromide paper, it gives the delicate tones in graded browns, the effect of which shall at once appeal to the senses.

First ascertain the normal exposure in the usual way. Then give six times the normal exposure to each print. Use a chronometer, if possible, in giving the exposures. Wet the paper thoroughly in clean water for about a minute. Use the following developer:

Edinol	45 grains
Acetone sulphite	200 grains
Sodium carbonate	170 grains
Water	10 ounces

Dissolve in the order given above. The carbonate should be in bright crystals, or substitute 85 grains of anhydrous sodium carbonate. No bromide is to be used. Do not attempt to develop more than half a dozen prints in each bath. At the time of use take one ounce of the solution for each six quarter-plate prints. In this case also wash the prints in four changes of water before transferring to the fixing-bath. The fixing-bath is improved by adding about one-thirtieth grain of potassium bichromate.

If it is desired to get a pure brown, which is also a very pleasing tone, give only normal exposure and develop in the following, which keeps well as a stock-solution ready for use when wanted:

Edinol	50 grains
Sodium sulphite	500 grains
Water	10 ounces

Increase of exposure and increase of sulphite give greater warmth of tone. — *The Journal of the Photographic Society of India.*

HONORABLE-MENTION PRINTS

Left to right: "Betty," Mrs. Wilma B. McDevitt; "Two Fair Ones of Urk," Eda Bowers-Robinson; "Tiana Beach," Floyd Nash Ackley; "The Sunset and the Sea-Gull," K. Shimojima; "Behind the Clouds the Sun Still Shines," S. A. Stellwagen; "Departing Day," A. B. Klugh; "In the Meadow," Will G. Helwig; "In the Country," Richard Pertuch; "Wayside-Blossoms," John Paul Edwards; "Sheep," William J. Wilson.

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value, $5.00; *Second Prize:* Value, $2.50; *Third Prize:* Value, $1.50; *Honorable Mention:* Those whose work is worthy will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is **"General"**; but only original prints are desired.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data. ***Criticism on request.***

4. Each print entered must bear the maker's name, address, Guild number, the title of the picture and the name and month of the competition, and should be accompanied by a letter SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer, and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express, very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed Feb. 28, 1915

First Prize: Maude Lee Eldridge.
Second Prize: Gerald Martin.
Third Prize: H. F. Porter.
Honorable Mention: James Allan, C. H. Judson, Warren R. Laity, William F. Lindstaedt, L. W. Lynch, Leslie W. Lyon, Howard J. Patton, Harlow L. Rockwell, Edgar Rutter, John H. Seamans, L. N. Searles, A. C. Sheldon, James Slater, A. C. Smith, G. S. Tagaya, A. J. Voorhees, Elliott Hughes Wendell, A. J. Wieland.

Special commendation is due the following workers for meritorious prints: B. Booth, Herman Gabriel, Paul N. Hartford, Louis R. Murray, Ford E. Samuel.

The execution of a work of art depends on the education which the artist has received and on the natural qualities which he possesses. — *C. Bayet.*

PORTRAIT — M. FREY
HONORABLE MENTION — GENERAL

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and all regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston.

Bird-Photography

THE photographing of wild birds is perhaps a trifle ambitions for the beginner, and yet if one has an unlimited supply of patience, a love for birds, and some slight knowledge of them and their habits, much may be accomplished.

Probably the easiest way is to establish a "lunch-counter" and invite one's feathered friends to frequent it. This should be a rather small narrow tray so that the visitors will surely be in focus when perched upon any part of it, and if possible it should be placed in natural surroundings so that it will be less obvious and artificial. Pieces of suet, breadcrumbs and seeds, particularly sunflower seeds, prove popular items on the menu and draw custom.

If the apparatus to be used is a hand-camera, it will be well to lengthen the focus and so increase the size of the image by using a portrait-attachment. With this and the focus set at 6 feet, the distance of the lens from the tray should be 32 inches. As this is altogether too near to think of approaching oneself, the best way is to arrange some cover for the camera that can remain in position constantly that the birds may become entirely familiar with it. This may take the form of a box fixed against a tree or put upon a pole. It should be very rigid and made preferably of weathered boards or covered by a branch or two. It should have a hole in the front through which the lens can look and some means of fastening the camera securely in place. The method of releasing the shutter must be determined by the individual circumstances. If a place of shelter and observation is near, a bulb with long rubber-tube is practical; but if the distance is greater, a cord fastened to the shutter-release and passed through a screw-eye beneath, so as to give a straight downward pull, can be carried to the required distance, and if camera and box are perfectly rigid will work very nicely.

Although this is perhaps the easiest way, it is also quite probably the least satisfactory. Only a few varieties of birds can be relied upon for frequenting these town-restaurants, and they are not at their best if lured into strange surroundings.

The real excitement and joy of photographing wild birds comes in going into the open for them. The nesting-time is the best for procuring pictures, and if one can locate a nest either on the ground or in low bushes, he has an interesting time before him. Great care must be taken not to alarm the birds and cause them to desert the nest. Birds vary so greatly in their susceptibility to changes that each one must be studied individually. Great patience is the one fundamental necessity in this work, almost as essential as the camera itself.

If the nest is so sheltered by branches that the light does not reach it well, these may be drawn to one side and tied. They should not be cut, as the young birds would suffer from exposure to the sun and rain. If the birds seem very wild, leave them for a day or so to become accustomed to these changes, then go again, and if there is no natural shelter of bushes where the camera may be placed, stick up some branches or small trees where they will cover your position. It may be necessary to waste another day before the birds will seem at home after this encroachment on their domain; but after a little one may take one's place, with camera on tripod and ready for use. The birds may be startled away, but get your focus on the nest, have your plate in position and shutter set ready for instant use, and when the mother returns get your exposure.

After the young are hatched there is added interest in watching their development. At first they are all mouth, and indeed that seems a large proportion of their anatomy for some time. They may seem to be asleep in an indistinguishable little ball, but when all is in readiness, a slight touch on the branch will bring all the little heads up with enormous mouths open to be fed.

If one has sufficient patience, he may even obtain pictures of the mother-bird feeding her young, and even, if luck is with one, *pater-familias* himself may be caught bringing home supplies to the hungry brood.

When the fledglings get a little larger and have grown their pretty coats of down, they are far more attractive; and if they can be caught on the rim of the nest, or on the branch beside it, they are most attractive.

Some birds are quite easily tamed and Professor Job tells wonderful stories of wild birds induced to perch on his hands and to allow him to stroke them on the nest, but not every one has such mesmeric powers.

Of course better lighting can be had if the nest, branch and all is removed to more open and less complicated surroundings, but the results to the birds are very apt to be fatal.

If it is possible, a piece of light gray or white cheesecloth may be introduced as a background at a little distance from the nest, and a reflector of white muslin will also be a help if the birds do not object too much. However it is attempted, one must expect many failures in this work, but the successes will abundantly recompense one for the long vigils and wasted plates.

Sunrise- and Sunset-Effects

UNQUESTIONABLY the charm of sunrise- and sunset-effects is due to the wide range of beautiful colors, sometimes indescribably gorgeous and at other times most delicate and subdued. A correctly exposed and properly developed screen-plate transparency of such an effect is a delightful possession; every color-worker aspires to add a few transparencies of such studies to his collection. The difficulties of securing such effects are considerable. The light, although visually brilliant, is more or less non-actinic, and an exposure that is ample for the sky itself is far from sufficient for the rest of the subject. The discrepancy is not so great in the case of a seascape as in the case, say, of a wooded landscape, or where there are dark foreground-objects. Hence nearly all the most

FIRST PRIZE

BEGINNERS' CONTEST

THE TOP — MAUDE LEE ELDRIDGE

successful results are those showing the sun setting over water, sea, river or marsh. In conversation with my friend, Mr. Ellis Kelsey, of Eastbourne, who is recognized as one of our most skilled sky-workers, I learned his method of procedure, and since he is not opposed to the publication of his methods, I embody them in this article, in the hope that they may prove of service to other color-workers. A day and time should be chosen when clouds are traveling between the horizon and the camera, and when the sun is a few degrees above the horizon — these conditions are to obviate as far as possible blur from movement of the clouds and to secure a good working-light. The moment of exposure should be when the best cloud-formation coincides with the sun being hidden behind clouds; otherwise a flare-spot would result. An actinometer is of little use at sunset on account of the loss of time in a rapidly diminishing light. The duration of exposure must be calculated by allowing for the sun's altitude. For preference choose a point of view presenting a level horizon and with water in the foreground — this evens up the exposure for sky and foreground. A strong foreground introduces, in addition to prolonged exposure, on account of having to use a small lens aperture, say, F/8 in place of F/4, another disadvantage — it deprives the foreground of that subdued luminosity which plays a prominent part in the charm of such effects. The only way of securing this foreground-luminosity is to shield the top part of the lens with a card covered with black velvet while exposing for the foreground, such card being moved slightly up and down to produce a vignetted effect. An open foreground enables the full aperture of the lens to be used. The exposure may be from 4 to 8 seconds for the sky, and from 5 to 20 times the sky-exposure for the foreground — the length of time depends entirely on the character of the foreground. As in other classes of color-work, under-exposure produces strong color-contrasts in the sky and a dense bluish-black foreground. The fullest exposure should be given. A developer capable of producing an abundance of middle-tones is necessary — Rodinal of a strength of 1 in 20 to 30 is quite satisfactory. — Arthur E. Morton, F.R.P.S., in *The British Journal of Photography.*

Success belongs oftenest to mediocrity.—*Alfred Stevens.*

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

I. C. S. — Mr. B. Morrison has treated the subject of **gum-prints** very practically and intelligently in PHOTO-ERA for September, 1911. The August, 1911, number contains a superb reproduction of one of his best achievements. For this reason the copies have been in great demand and out of print. You might be able to consult these issues in your Public Library.

B. C. A. — As regards **trimming prints,** I am afraid that you are a little unreasonable, for the simple reason that the professional printer has no conception of your aim in making this particular subject. In many cases pictures have been ruined by injudicious trimming. In an uphill-effect, it is quite necessary to retain all of the photograph, otherwise the effect is entirely lost. The same is true of a picture with the downhill-effect, in which case you need as much space as is possible at the top. Unless you indicate beforehand, in pencil, how much you wish to have trimmed off, you cannot possibly blame the printer for not trimming it. I think that the latter should be commended for not cutting off *any* part of the print, unless he has definite instructions to do so. Your picture is satisfactory as it stands. Trimmed, it would lose, unless the ground on which the building stands and the surrounding territory are *absolutely* level.

A. T. E. — **The term "paper-negative"** is accurately descriptive. It is usually an enlargement on bromide paper, made from a contact-transparency and rendered translucent for printing by means of a suitable preparation. It provides a cheap, easy and unbreakable means of printing enlargements of small negatives by contact, and is particularly desirable for platinum, carbon, kallitype and other similar sun-printing papers, although equally applicable to gaslight papers. As the texture of the paper-negative will print through to a certain extent, this method of printing is suitable only for final prints on rough paper and of large size which will not be examined closely.

Fix the negative-print in an acid-alum bath, wash thoroughly and immerse for five minutes in water 15 ounces, glycerine 2 ounces. This prevents the paper from curling or becoming brittle and cracking. Remove the surplus moisture and hang up to dry. Pinholes and retouching may now be attended to and considerable working-up may be effected with a soft pencil or charcoal, if that is desirable, to obliterate objectionable features or alter values.

When all modifications have been made the negative is made translucent by rubbing on the paper side with a swab, a mixture of castor oil 8 ounces, ether 2 ounces. After saturating the paper thoroughly and evaporating the surplus somewhat, place the negative between lintless blotting-paper, apply a hot flatiron, and move it gently to and fro until all the surplus solution has been absorbed. The operation may be repeated if enough transparency has not been obtained. The negative is then ready to print, like an ordinary film, in contact with a clear glass.

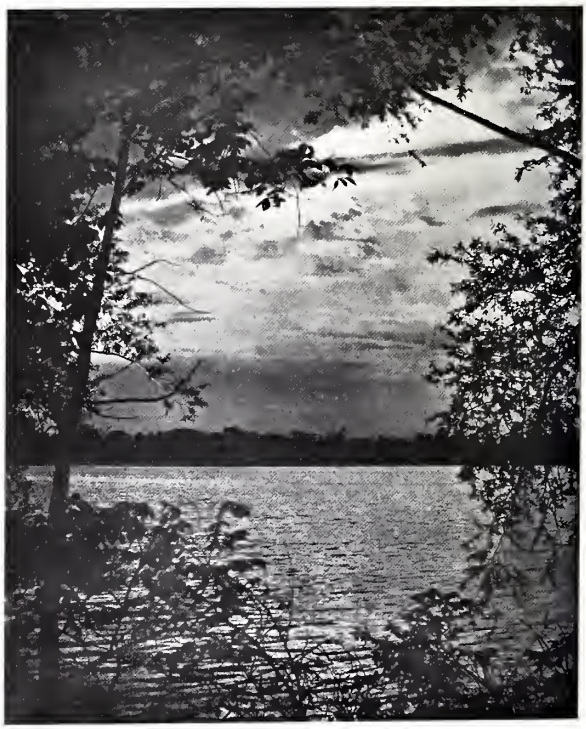
E. D. J. — **Lettering on tombstones** should not be attempted on a cloudy day. To get the best results, this work should be done on days when the sun is shining brightly and obliquely across the surface of the stone which bears the lettering.

H. N. D. — As to **judging the negative,** a correctly exposed and developed negative might be described as having ample detail with transparent shadows and splendid gradation; a correctly exposed and underdeveloped negative as full of detail but lacking in density; a correctly exposed and overdeveloped negative as full of detail but too contrasty with dense high lights; an underexposed and correctly developed negative as lacking in shadow-detail; an underexposed and underdeveloped negative as still more lacking in detail and also lacking in density; an underexposed and overdeveloped negative as lacking in shadow-detail, but too dense in the highlights; an overexposed and correctly developed negative as full of detail but foggy and flat; an overexposed and underdeveloped negative as full of detail but foggy and thin; an overexposed and overdeveloped negative as full of detail but very dense and foggy.

H. S. — **The best tank-formula for glycin,** particularly for short exposures, is the following:

Hot water (200 degrees)	50	ounces
Sodium carbonate, anhydrous	2	ounces
Glycin	½	ounce
Sodium sulphite, anhydrous	½	ounce

Dissolve in the order stated. For 10-minute development, use 5 ounces of stock-solution to 30 ounces water. For 25-minute development, use 2 ounces of stock-solution to 32 ounces water. Temperature 65 degrees.



CLOUDY EVENING — GERALD MARTIN
SECOND PRIZE — BEGINNERS' CONTEST

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

P. C. — Both of your subjects are exceedingly attractive and well framed. Of the two, "Peak's Island" is preferable, because of its human interest, simplicity of subject, well-spaced composition, correct values and pleasing color. Slight defects in the carbon-tissue are, of course, to be seen at the left. The other print is of much interest, but seems to lose too much through the rough support which would be more appropriate to a large print. The tree-masses at the left are too dark and without detail, either in themselves or the shore below.

W. F. L. — Your choice of a soft-working paper for "In a January Drizzle" was certainly a wise one, as it brings out to the full the dismal foggy effect of rain. A matt paper is also better than a smooth, but, of course, the surface depends chiefly upon the size, rough being appropriate for a bromide enlargement.

J. P. C. — Your enlarged prints are very interesting and, although you have not mentioned it, convey the impression of having had skies printed into them. The dark line along the horizon of "A Winter Sunrise" and "The Passing of Winter" seems to prove it. These skies are too deeply printed and of too forceful character. When printing in clouds from a second negative it is safer to be content with inconspicuous effects unless the technical work can be virtually perfection.

"Christmas-Morning" is a far better effort, and if double-printed scarcely shows it. All of the compositions are good and the subjects interesting.

J. N. W. — "Dick" is a good portrait of a cat, well posed and lighted. Double the exposure would have lightened up the shadows with benefit; otherwise the technical side of the work could hardly be better. Trimming the print so that the vertical lines of the background would be plumb would improve the effect.

S. H. G. — "In the Pennsylvania Station" is a decided success, well composed architecturally and happy in its arrangement of figures. A semi-matte paper having a smooth, dull surface, perhaps even a velours surface, would better suggest the character of the stone-work.

"The Longshoreman," we believe, fails through lack of definition, it being desirable to show something of the character of the man as seen in his face.

M. H. B. — Your portraits convey the impression of being splendid likenesses, although the lighting is rather strong. Probably the negatives are a trifle too vigorous. Collars, white clothing and magazines must usually be toned down in the negative or print to ensure harmonious results.

"The Little Coquette" would be excellent but for the distorted, spotty background. It is in just such work as this that the soft-focus lens yields better results. Also, when the light is good; there is an old trick, which you doubtless know, to focus an anastigmat on a point slightly beyond the figure and depend upon diaphragming down somewhat to bring the figure into a sharp focus. This dodge improves the definition in several planes.

M. de L. I. — "Going Home" is well composed and contains material for an excellent subject, but underexposure and overdevelopment have thwarted your purpose. Had the exposure been for the shadows with development for the highlights, the result would have been a splendid effect of sunshine with transparent shadows full of detail.

J. H. S. — As a pictorial effect, your photograph of a rose-garden is a failure. There should be detail in the rose-bushes; also the persons in the background play no part in the picture, particularly when they are looking at the camera. In such a picture it is desirable to remove or avoid ugly stakes at the corners of the beds; also to have the sharpest focus in the foreground rather than in the background or middle-distance.

H. H. B. — A white background never seems appropriate for an Indian's head, and "Ready for his Prey" suffers greatly for this reason; it lacks spontaneity.

On the other hand, the window-portrait has a background of altogether too decided a character, the leaded glass attracts attention from the figure, and the whole thing does not ring true because the girl feigns to look through glass which it is obviously impossible to look through. Also the lighting is too concentrated and the negative too strongly developed.

"Study" we do not care for at all. The print is much lighter at the bottom than at the top, and the halation about the figure is of a decided character. Also the camera was placed much too low, making the figure seem much larger and decidedly taller than it probably is.

A COUNTRY-ROAD — H. F. PORTER

THIRD PRIZE — BEGINNERS' CONTEST

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.
For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1½; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

HOUR	MONTH AND WEATHER																			
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1*/12	1*/6	1*/3	2*/3	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1*/5	1*/2	1*	1 1*/2	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1*/15	1/8	1*/2	3*/4	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1*/10	1*/5	1*/3	2*/3	1 1*/2

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.			For other stops multiply by the number in the third column
	U. S. 1	F/4	× 1/4
	U. S. 2	F/5.6	× 1/2
	U. S. 2.4	F/6.3	× 5/8
	U. S. 3	F/7	× 3/4
	U. S. 8	F/11	× 2
	U. S. 16	F/16	× 4
	U. S. 32	F/22	× 8
	U. S. 64	F/32	× 16

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply $1/16 \times 4 = 1/4$. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. $1/16 \times 1/2 = 1/32$. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3. P. E. 156. Wy. 350. Wa.
Ilford Monarch
Lumière Sigma
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2. P. E. 128. Wy. 250. Wa.
Anseo Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington Xtra Speedy

Class 3/4. P. E. 120. Wy. 200. Wa.
Anseo Film, N. C.
Atlas Roll-Film
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid
Seed Color-Value

Class 1. P. E. 111. Wy. 180. Wa.
American
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4. P. E. 90. Wy. 180. Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2. P. E. 84. Wy. 160. Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2. P. E. 78. Wy. 120. Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3. P. E. 64. Wy. 90. Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5. P. E. 56. Wy. 60. Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8. P. E. 39. Wy. 30. Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100. P. E. 11. Wy. 3. Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

According to the current front-cover decoration, repeated on page 223, the full-throated song-bird, even the boy at the bat, has been obliged to yield his place as the traditional harbinger of spring in favor of the budding camerist. Let the ebullient spring-poet take notice of the change and suit his sonnet to the new herald of the vernal season. In the present instance the lyric artist may draw inspiration in plenty from the paternal feeling which sanctioned the temporary risk of a costly equipment; or he may speculate as to whether the results will resemble "pictures like father used to make," or ponder on the likely waste of dryplates at a time when prices of imported glass are soaring. In any event, the poet will not need to invoke the aid of his muse for lack of material. The theme is a happy one, and the treatment shows clarity and force. Data: subject — John Gordon, age 3½, with his daddy's 6.5 x 9 cm. "Baby Mentor"; spring of 1914, fair sunlight; Ica Minimal, 9 x 12 cm. (3¼ x 4½ inches); IIB Tessar 5.4-inch focus; stop, F/6.3; 1/50 second; Wellington Anti-Screen; "Gordon" pyro, tank; 4¼ x 8 enlargement from part of 3¼ x 4¼ plate on P. M. C. Bromide No. 2; hydro-duratol.

On the conversion of John W. Gillies, I expressed my approval in the previous issue. Nevertheless, I am glad to note the sane application of the pictorial lens, which in the hands of a sound technician like Mr. Gillies will give a good account of itself. The view through one of the twin-sets of three columns, at the base of the towering Municipal Building, of New York City, is strikingly impressive. The technical part of the work, too, is noteworthy. There is not the slightest discrepancy in any of the architectural lines. Data: Colonnade, February, 1915; 12 M.; 8 x 10 Century View; 8¼-inch Dagor; stop, F/6.8; ½ second; Wellington Anti-Screen; pyro; 8 x 10 kallitype print.

Were the landscape (page 214) to hang on the wall and adjacent to the "Colonnade," it would form an admirable foil. As nature's architecture, it has graceful, yielding lines, placid masses of light and shadow, and the element of idyllic suggestion. Its contemplation, of course, invokes different emotions — not those that are caused by the stern reflection of gigantic masses reared by human skill and brawn. Data: landscape; August, 1913; 10 A.M.; 4 x 5 Graphic; 9-inch Verito; stop, F/5.6; 1/5 second; Wellington Anti-Screen; pyro; enlarged print on Kallitype.

As a friend and admirer of the famous nature-photographer, William Norrie, of Fraserburgh, Scotland, William Findlay pays a well-merited tribute to the artistry that produced "Fraserburgh Sands," page 221. Our own profound admiration of Mr. Norrie's beauty of pictorial interpretation has been expressed so frequently in these pages that it requires no repetition here. No data.

The illustrations to the article by William Ludlum, Jr., pages 224-225, are by the author, and suit the purpose admirably, although they suggest but little the scope and superiority of his marked technical ability. Data for both subjects: February, 1915; about 10 A.M.; hazy light; 5 x 7 Premo; 8¼-inch R. R. lens; stop, F/16; 1/5 second; Orthonon; pyro; 5 x 7 prints on Noko Soft Glossy; Duratol.

Philip Conklin, the winner of the first prize in the Ansco Company's famous "Loveliest Women" competition, which closed several months ago, has cultivated his sense of the beautiful to such an extent that he seems to have no disposition to seek in unobtrusive material the seriously beautiful — the kind of lasting permanence, because of depth of character. He takes the easiest way to obtain an attractive result, whether the object be a pretty landscape, flower or maiden. He does not appear to have the temperament, the incentive or the patience to look beneath the surface. And is not this the way of most men and women who covert a thing that wins their admiration at first glance? The beautiful flower, the tempting peach, the glorious autumn-foliage, the gorgeous sunset — all are created for our enjoyment. And yet, in the eyes of most men, none of them rivals the spell exerted by a beautiful woman. So, for the moment, thought Mr. Conklin; and so thought the jury. What further need of an argument? See page 226. Data: Verito lens; 11 x 14 print on Professional Buff Cyko.

The decorative floral design (page 227) is by Mrs. Fannie T. Cassidy, the winner of the first prize in the Photo-Era "Growing Flowers" competition, and which picture, reproduced in the August, 1914, issue, provoked expressions of admiration from a number of our readers. Her flower-studies please on account of their artistic arrangement and the *netteté* of technique. Data: September, 11.30 A.M.; 5 x 7 Auto Graflex; Goerz Dagor; 8¼-inch focus; smallest stop; sun outside; Seed L. Ortho; 5 x 7 P. M. C. Bromide print.

William Noetzel, like many of his fellow (professional) portraitists, finds much diversion in occasional outings with his field-camera. From a well-filled portfolio of outdoor-prints he sent us an attractive view of the old Massachusetts fishing-town, Gloucester. The original print is beautiful in tone, which can only be suggested in the reproduction. Had the view-point been a few feet higher, the pictorial arrangement would have been happier in that the schooner would be separated from the background, and not merge with it. This is the only improvement I can suggest in connection with this admirable achievement. Data: August, 6 P.M.; partly cloudy, after rain; 8 x 10 Korona camera; "Smith" Soft-Focus Semi-Achromat; 16-inch focus; ¼ second; Standard Orthonon; pyro; 8 x 10 E. B. B. Smooth Platinum.

The unpretentious landscape, dominated by a cozy-looking bungalow, is by a pictorialist who has not been active of late years. His endeavor in the realm of landscape has always been marked by beauty and simplicity of composition and fidelity of color-values. Data: Aug. 20, 1905, 6 P.M.; not bright; B. & L. 9-inch R. R.; stop F/8; 8 seconds; 1 second for sky; Cramer Iso; pyro; Angelo Platinum print.

The Photo-Era Monthly Competition

A glance at the list of awards (see page 239) will suffice to show that the last competition, "General," was unusually productive. This particular contest, in which prints of all classes of subjects were eligible, proved a welcome opportunity to an uncommonly large number of workers. Many a participant had produced during the past twelve-month some particularly successful picture, which did not appear to fit any of the Photo-Era competitions during that period, or was produced after the opportunity to enter it had passed. For these and other possible reasons the variety of the subjects entered was remarkably large and the quality quite superior.

No doubt, all will join in complimenting Mr. Cutting on

the exceedingly clever composition, "The Village Choir," page 238. In arrangement and lighting, costuming and expression, this well-ordered group merits high praise. To manage a single sitter, or even a group of three, is one thing; to arrange and control a party of fourteen, is quite another, particularly when the technical difficulties have been increased. The conditions in which Mr. Cutting worked and consummated this very original group will prove of practical value to those who are eager to attempt a similar line of work. Data: occasion of the centenary of the erection of the First Parish Church, Wayland, Mass., Feb. 25, 1915; 12.30 P.M.; cloudy; interior of church; light from two large side-windows; 8 x 10 Century camera; Voigtländer & Sohn Euryscope, series IV, No. 2; 10-inch focus; stop F/16; 3 seconds; Stanley; hydrochinone, 7 x 10 Willis & Clements Platinotype K. K. smooth.

A fitting associate in this set of prize-pictures is Mr. Starr's marine, page 241. The sense of action, the tonal values, the pictorial proportions and the general character of the theme have been expressed with remarkable success. The moment of seizing the breaking wave was most propitious; indeed, everything favorable to a large and impressive interpretation of a thrilling motive leaped into one concerted effort. And, although innumerable surf-views of a similar character have been taken with the camera, Mr. Starr's picture has a particularly noble and independent design. The workmanship deserves all praise. Data: Camera, Popular Pressman; stop, F/5.6; time, $\frac{1}{60}$ second; W. & W. K2 Ray-Filter; Standard Orthonon; 6 x 9 enlargement on Cyko.

Mrs. C. B. Fletcher has essayed landscape, flowers and genre and with varying success. In all her work there are evidences of the cultivated mind, the close student and an intelligent appreciation of pictorial beauty. These qualities mark her portrait, page 243, in an eminent degree. There is an avoidance of convention in the pose of the sitter and the disposition of the lines. The result is decidedly pleasing. Much artistic judgment is shown in the management of the light, so that nothing detracts from the face where the interest should center. The treatment throughout shows artistic feeling. Data: June, 3 P.M.; dull; Century 5 x 7; Ceutar; $8\frac{1}{4}$-inch focus; stop, F/8; 6 seconds; Defender Ortho; pyro; $6\frac{1}{2}$ x $9\frac{1}{2}$ Cyko enlargement.

Mr. Frey displays praiseworthy skill in managing the light and accessories so that the expressive face of his model may not be troubled by any distracting details. The portrait is executed in a low tone. There is not a harsh note in evidence despite opportunities to create many. Page 245. Data: February, 1915; 2.30 P.M.; light, north; 8 x 10 Century camera; Dallmeyer lens; stop, F/8; 2 seconds; Hammer plate; pyro; cabinet-size E. S. Plat.

Despite the reduction of a number of honorable-mention prints to form a group, page 244, each picture is effective and preserves its individual character. Regarding the two animal-subjects, "In the Meadow" is noteworthy on account of its artistic composition. It equals the best skill of a professional animal-painter, who, if chivalrous, would surely compliment Mr. Helwig on his unusually happy arrangement of the cows. Sheep are generally less manageable, and, although its production seems to have called forth some effort, Mr. Wilson's picture falls short, for the sheep are headed in the wrong direction — they are about to walk out of the picture. Yet how felicitously the picture lends itself as a part of this group! The criticism just made does not apply to "Wayside-Blossoms," because here the direction of the figures — from left to right — is compensated by adequate free space, in accordance with a well-known rule of composition.

In contemplating "Behind the Clouds," one can easily imagine the overwhelming magnificence of the scene when Mr. Stellwagen photographed it. Although the cloud-burst is the dominating pictorial factor here, one cannot resist the temptation to suggest a separate and complete picture without it — formed by covering, let us say, one inch of the sky.

Data: "Betty," made in Capital Camera Club's studio, Washington, D. C.; April, 11.30 A.M.; very dull light; 8 x 10 studio-camera; 14-inch Voigtländer & Sohn portrait-lens; stop, F/6.3; 3 seconds; 5 x 7 Seed, G. E., 30; Eastman tank-powders; $6\frac{1}{2}$ x $8\frac{1}{2}$ enlargement from part of 5 x 7 negative on Linen Enlarging Cyko.

"Two Fair Ones," July, 1914; 2 P.M.; hazy; Vest-Pocket Kodak 3-inch Zeiss Tessar; stop, F/16; $\frac{1}{25}$ second; Eastman film; M. Q.; print, Cyko Linen finish.

"Tiana Beach," August, 1913; bright; about 2 P.M.; Eastman N. C. film; Eastman powders in tank; 1A Kodak; R. R. lens; 4-times color-screen; stop, U. S. 4; $\frac{1}{25}$ second; enlargement on Cyko.

"Behind the Clouds the Sun Still Shines"; taken at Colorado Springs, Colo.; September, 1914; 11 A.M.; sun near edge of cloud; $4\frac{1}{16}$-inch Bausch & Lomb-Zeiss Tessar on postcard-size Premo; film-pack, speed film; hydrometol; stop, F/16; $\frac{1}{10}$ second; no ray filter, $6\frac{1}{2}$ x $9\frac{1}{2}$ enlargement with B. & L. Ic Tessar, stopped to F/16 in home-made, fixed-focus, enlarging-box, outdoors, in bright sun, with four-minute exposure on Platinum finish Normal Cyko, developed with Ansco M. Q.

"Departing Day"; June, 8 P.M.; Korona R. R. lens; 5-inch focus; stop, U. S. 64; 10 seconds; 8-times ray-screen; $3\frac{1}{4}$ x $4\frac{1}{4}$ plate Imperial Non-Filter; pyro; Enlarging-Cyko print.

"In the Meadow"; July, 11 A.M; Planatic lens; stop, F/16; Century camera; 1 second; Seed 26x; pyro; Artura rough print $4\frac{1}{4}$ x $5\frac{3}{4}$.

"In the Country"; Sept. 20, 1914; bright; 6-inch focus; Voigtländer & Sohn Collinear; stop, F/8; 4 x 5 Cramer Inst. Iso.; pyro; enlarged on Artura Carbon Black, $5\frac{1}{2}$ x 7, with 10-inch Verito lens.

"Wayside-Blossoms"; Aug. 18, 1914; cloudy, bright light; 7-inch Verito soft-focus lens; stop, F/4; $\frac{1}{105}$ second; focal-plane shutter; Wellington Anti-Screen; Rodinal; 7 x 9 enlargement on Wellington white chamois bromide.

"Sheep"; August, 1914; 9 A.M.; drizzling, misty rain; 4 x 5 old Premo; Stanley; pyro; 7 x 9 Roch. Photo-Works Velours Black Semi-Matte; Amidol; enlargement from small portion of 4 x 5 plate.

The Beginners' Competition

To obtain a pleasingly arranged scene of children at play and one in which there shall be no evidence of preparation, is a difficult task. The Editor remembers, with not a little trepidation, the many, many times when he has tried to discover at least one single redeeming artistic feature in a print depicting a scene that made the fond parent's heart leap for joy; and then the sad letter of explanation — declination. This does not include the papers on the photography of children sent him by well-meaning workers, who had had a small degree of success in this branch of photographic practice. In most instances the paper itself was passable; but the accompanying prints — they were simply impossible! Bless their dear hearts! The mother was pleased beyond expression at, to her, a simply adorable picture, and, carried away by the enthusiasm of the moment, the camerist was similarly affected. All at once he sees visions of great pecuniary reward from — a photographic publisher. The semi-professional, having made a number of parents undoubtedly

(*Continued on page 258*)

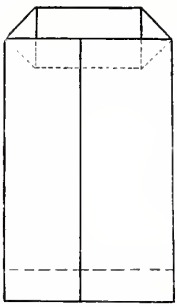
ON THE GROUND-GLASS

WILFRED A. FRENCH

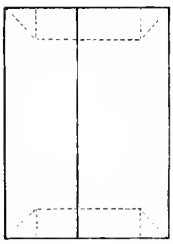
A Stringless Package

At the request of a number of new subscribers we give herewith the method of doing up a flat package without the aid of string or an adhesive of any kind, which was described in Photo-Era five years ago.

The object, which must be flat and not exceed one-fourth of an inch in thickness, say, a photograph or a magazine, is enclosed in a sheet of strong wrapping-paper. The ends which project over the contents, say, from one to two inches, are folded or tucked in as follows: while the package is held firmly between the body and the edge of the counter or table, one side of the end uppermost is evenly tucked inside. The dotted lines of diagram No. 1 indicate its position inside the package.



No. 1.



No. 2.

The other projecting end is folded over towards the body and the edge sharply creased. It is then tucked inside and thus brought flat and close to its fellow. The thumb and forefinger are then passed firmly along the outside edge to ensure close contact of both edges. The package is now reversed and the other end treated in exactly the same way. The dotted lines of diagram No. 2 indicate the appearance of the package with the position of the ends as they are tucked out of sight. The package is now virtually open at both ends and permits inspection by the post-office officials, in case it is sent by mail.

A Photographic Trap

The trap-camera which has been used with success in photographing birds and wild animals has also proved its usefulness in connection with the human species. That snapshots may be made of unsuspecting offenders, such as thieves, burglars and incendiaries, caught in the very act, has been demonstrated repeatedly. In certain parts of Europe the game-laws are very strict, and offenders, when caught, are dealt with very severely. Poachers, however, are sometimes very cunning and generally succeed in evading the vigilant game-wardens.

A certain estate in England not long ago was suffering severely at the hands of an artful poacher, and all attempts to apprehend him proved futile. The son of the owner, Lord ——, an experienced camerist, reading one day how successfully the trap-camera was being used to photograph wild animals, constructed such a device and set it up near the spot where, a few minutes before, a hare had been snared and strangled, evidently the work of the crafty poacher. The young camerist at once proceeded to fasten a strong, black thread to a shrub, close to the dead quarry, and to tie the other end to the shutter of the camera, which was concealed carefully in a near-by bush, everything so arranged that, in bending over to pick up his prize, the poacher would jar the string and release the shutter without suspecting the trick. The camerist went back to the castle, and was so pleased with his brilliant idea, that he imparted it to a visiting friend, also an amateur camerist. Towards evening the two repaired to the scene of their experiment, found the quarry gone and the shutter released. Great was their joy. Replacing the slide in the plateholder and folding up the outfit, the two friends returned home in triumph. In vain did the butler remind his master that dinner was about to be served. The darkroom was of more consequence. A few minutes, and the plate was developed. The exposure had been perfect, lighting, definition and color-values, a superb picture of — the well-patched seat of a pair of breeches!

A Question of Accent

An invitation to purchase a certain time-saving device did not appeal to me one morning, although I told the affable salesman to call again some other time. I met him, an hour afterwards, in a music-store, which is managed by a native German, patriotic but very deaf.

"This style is the limit of perfection. We call it 'The Imperator,'" explained the solicitor, pronouncing the word with a strong accent on the first syllable.

"Indicator, did you say?" queried the manager.

"No, Im'perator," corrected the agent.

"Oh, Ink-eraser," credulously quoth the deaf man.

"No, no; Imp, Imp, *Imp*erator!" vigorously insisted the salesman.

"Oh, yes; Incubator," came the acquiescent reply.

Without losing his patience, the solicitor wrote the troublesome word on a slip of paper and placed it before the interested one.

"Why, of course; Imp*erah'*tor!" triumphantly exclaimed the German, throwing the accent on the penult.

A Needless Cause of Failure

It is a common occurrence for a careless camera-user occasionally to receive from his photo-finisher a batch of films containing a certain proportion of failures. Some of these are ordinary blanks, due to non-exposure or to extreme underexposure. Others represent either totally darkened films or superimposed images (more or less blurred), indicating double or triple exposure. I recall a case where the photo-finisher was unable to explain the cause of these failures to his customer and came to me for advice; but I was unable to solve the apparent mystery. I finally requested the camerist himself to demonstrate exactly how he manipulated his equipment — a folding-camera fitted with an automatic shutter. I then discovered that, using the shutter on "T," he pressed the bulb several times after having made the exposure intended, to make certain that the shutter was closed. Result — several successive exposures, or, when the shutter was not closed, abnormal overexposure.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

The Dealers' Exposition and Convention

THERE is no question that the long-heralded International Exposition of Photographic Arts and Industries, held in the Grand Central Palace, New York City, March 27 to April 3, was an event of unusual significance. Just as the war has interfered with adequate representation at the Panama-Pacific Exposition, so here the great European industries were not in evidence officially; but in most cases the American agencies made admirable display.

The most important camera and optical firms of Germany and England were thus represented, and the energy manifested by expert demonstrators made one forget the present calamitous war, or that the supply to meet continued demands would be likely to cease. Everywhere motion-picture machines, for production and projection, were being demonstrated, and already the security of the photograph, as a fixture feature in the home, is seriously threatened by the increasing popularity of the kinematograph (motion-picture projection-machine) of which there are a number of reliable makes on the market.

The visual attractiveness of the show, as a whole, was the hall, the spacious and architecturally beautiful interior of the Grand Central Palace, with its 22,000 square feet of floor-space and the systematically arranged enclosure for each individual exhibit. The large space extending across the rear of the hall was occupied by the Ansco Company, the decorative design, with many novel features, such as huge illuminated imitations of Ansco folding cameras, being the work of Mr. Rockwood of the Ansco Company.

Exhibits and Displays

Allison & Hadaway, New York. Dealers, importers, manufacturers and manufacturers' agents. Marion Record, high-speed plate; the cream of English folding and reflecting-cameras — Pocket Carbine, Baby Sibyl, Dainty Soho and Popular Pressman; also their own Special Reflex; the wonderful A. & H. Twin-Arc Lamp, a sensation of the Exposition — simple, compact, 10,000 candle-power, rich actinic light and low current-consumption and equally valuable for still and motion-picture work; full line of selected motion-picture apparatus of English, German and French makes. Panchromatic flashpowder and screens and numerous other choice specialties.

American Photo-Chemical Co., Inc., Rochester, N. Y. Display of Photograin dryplate transparencies.

Ansco Company, Binghamton, N. Y. Complete line of Ansco folding cameras, including Vest-Pocket and Buster Brown styles; Professional New York Studio-Outfits; entire collection of prize-winning prints in "Loveliest Women" Competition, printed on Enlarging-Cyko (39 prizes awarded, 11 yet to be selected); new Ansco Film-Pack, with only one tab in sight to be pulled; Professional and Amateur Printing-Machines, electric light; illuminated frames showing Ansco film. The entire display was designed and carried out by the company's Mr. W. A. Rockwood. Two daily demonstrations of Cyko Enlarging-Paper in large booth adjoining the Herbert & Huesgen enclosure.

Bausch & Lomb Optical Co., Rochester, N. Y. Balopticons in various sizes and adjustments for theaters, halls and the home. Combined Balopticons in several models, for both opaque projection and lantern-slides, for large halls or the home. Model C for lantern-slides only. Lenses — Bausch & Lomb-Zeiss Tessars, series Ic F/3.5 and F/4.5 and series IIb, Protar series VIIa F/6.3; Convertible Protar; Medium Wide Angle; Extreme Wide Angle; telephoto-attachments; ray-filters; prism-binoculars in different powers and sizes; B. & L. microscopes; lens-shutters of different styles. Fine display of B. & L. lens-quality pictures.

Berlin Aniline Works, New York City. Agfa products — standard photo-chemicals, developers, reducers and intensifiers; Blitzlicht flashlamp, flashpowder, etc. The European war has not stopped supplies. The Berlin factory can furnish goods in any desired quantity.

Farron S. Betts, New York City. Complete line of photo-albums, in various styles, for the professional and the amateur.

George W. Brady, Chicago. Sole distributor of Paragon X-Ray plates.

Burke & James, Inc., Chicago. Mfrs., dealers and mfrs'. agents. Standard photo-goods. Folding Ingento cameras, improved models; full line of Ingento specialties, including the unrivaled Enlarging-Camera, Nitrogen Portrait-Lamp and the Rapid Printer; Voigtländer famous Alpine and Bergheil Tourist equipments; Voigtländer lenses — Portrait-Heliar, Collinear (in two series), Dynar (medium-priced, but high-grade); Porro Prism-Binoculars; B. & J. Rexo paper in three grades; B. & J. new Atlas Film, special brand made by the Eastman Kodak Co.; standard models of motion-picture projectors for the home; Trimming-Boards; Ingento Tablets and other photo-chemical specialties.

E. S. Caywood, Philadelphia. Automatic Flashlamp, a standard device of high efficiency.

Central Dry-Plate Co., St. Louis. Excelled in beauty and harmonious arrangement of prints and negatives any previous display made by this enterprising firm. Mr. Floyd M. Whipple, as usual, was present as the trusty custodian of his firm's interests.

A. M. Collins Mfg. Co., Philadelphia. Photo-mounts. Beautiful designs of Bromide Art-Mounts for enlarged prints for amateurs, double and triple mountings adapted to all regular-sized prints.

Columbia Portrait & Photo-Enameling Co., Inc., New York City. Display of enlarged prints, plain and colored, for the trade.

Cooper-Hewitt Electric Co., Hoboken, N. J. Electric Lamps for all photo-processes. Direct-current and alternating-current outfits adapted to the studio. Also enlarging and direct-printing equipments, including the Portable Home-Portrait Outfit.

Defender Photo-Supply Company, Rochester. Argo paper, Vulcan Dryplates and films, chemical preparations; Dealers' Display-Box; Watson Rotary Print-Dryer (prints are laid on outside of 30-inch hollow cylinder, heated electrically); dries prints uniformly and flat in a few minutes; Interval Timer, an automatic clock for use in developing; new Defender Film-Clip, and other important novelties.

Ernemann Photo-Kino Works (recently reorganized), New York City. Removed to 163 West 48th Street. Cameras, the well-known Heag series; the Bob Stereo; Kinematograph (motion-picture) cameras — model A,

$135; model B, $300, and model C, $65, these prices being increased by five per cent on account of the war. Also the Ernemann Kinematograph Printing-Machine. "Imperatrix," the most advanced apparatus for printing positive film for projection, price $500.

Expo Camera Co., New York City. Specialty, Expo Police-Camera for detective work and similar uses.

Dr. Arnold Genthe, New York City. Mural display of photo-mechanical reproductions, of Autochromes made by him, for use in leading American periodicals.

C. P. Goerz American Optical Co., New York City. Lenses, cameras and binoculars. New Dogmar high-speed and convertible anastigmat F/4.5, Celor F/4.5, Dogmar F/6.3, Dagor F/6.8, Syntor F/6.8, Portrait-Hypar F/3.5 and F/4.5, and lenses in cells for color- and process-work. Vest-Pocket Tenax, Stereo Tenax and other models, also Stereo and Tropical Ango cameras; shutters, prisms, color-filters, binoculars in five styles, gun-telescope and other optical accessories. New revised lens price-list, *i.e.*, ten-percent increase on their regular retail-prices. Fine display of photographs showing Goerz lens-quality.

Goldberg Display-Fixtures, New York City. Large hinged display-frames for pictures, mounts, etc.

Gundlach Manhattan Optical Co., Rochester, N. Y. Korona cameras (including Pixie Roll-Film, Korona and Criterion view-cameras, and panoramic and banquet-cameras); Turner-Reich Anastigmats in several series; Pancratic Telephoto-lens, low-priced, but excellent; Gundlach Microscope, model E. H.; Prism-Binoculars; the popular Home-Portrait outfits, light, compact and efficient, including the well-known Korona Folding Studio-Stand, in sizes 5 x 7, 6½ x 8½ and 8 x 10, and costing, complete, from $38 to $109, according to size and to choice of lens. They appeal, particularly, to the semi-professional portrait-photographer.

Ralph Harris & Co., Boston and New York. Sole American agents for Euryplan Lenses, F/3.5, F/4.5, F/6.8; Wellington plates, Anti-Screen, Lantern-Slide, etc.; Wellington Bromide papers, all grades; Johnson's Scaloids (compressed tablets for every class of photo-practice); Negafake, for reducing highlights; large displays of Wellington Bromoil and Bromide prints, and Wellington X-Ray plates (display of radiographs made by Dr. A. W. George, of Boston).

Herbert & Hnesgen Co., New York. Mfrs., importers and mfrs'. agents. Paget Process of color-photography, exemplified by beautiful display of color-plates and lantern-slides; Hyde Exposure-meter; Artatone paper, now made for enlarging-purposes, as shown by print-exhibit; models of the principal motion-picture apparatus, cameras and projectors, including the Spencer Delineascope (a high-class machine for projecting opaque objects and lantern-slides, and installed in several New York hospitals); the Powers Cameragraph Projector; Paget Self-Toning Paper. Beautiful display of Paget color-transparencies, 24 views of Forest Hills Gardens, Long Island, showing the practical application of the process as a sales-proposition for real-estate agencies.

Hess-Ives Corporation, Philadelphia. Color-photography — direct process of reproduction on paper. Result produced by three plates requiring one print for each negative, which prints are superimposed. Outfit consists of camera, plates, dyes, etc. Interesting demonstrations afternoon and evening.

Hex Optical Co., Rochester, N. Y. High-class photographic (inter-lens) shutters — the Marvel, Ioco, Acme, General and Universal; and lenses — Hex Anastigmat F/6.3, Rapid Convertible, F/8, wide-angle, F/16. Workmanship and efficiency guaranteed.

Imperial Brass Mfg. Co., Chicago, Ill. Imp. Flashgun, pronounced even by competitors the best device of its kind on the market; highest degree of efficiency, safety and compactness. Sensational novelty — instantaneous focusing-finder, demonstrated with working models, a 3¼ x 4¼ and a 5 x 7 camera, by the inventor, A. W. Straight. Patents pending.

International Photo-Sales Corporation, New York City. Ipsco cameras, plates and papers — famous Ica (German-made) cameras, the firm's great specialty. Full line, including the much-desired Icarette C. Despite the war, large shipment received recently. Popularity attested by large display of prints by well-known pictorialists. Demonstrations of the Kinograph motion-picture camera.

Kiograph Paper Co., New York City. Photographic Specialties.

J. L. Lewis, New York City. Photographic materials. Sole agent for Seltona Papers and Barnet Plates, motion-picture outfits, Victor Stereopticons and Mentor Folding Reflex Cameras.

M. S. Lovell, Oswego, N. Y. The Mezzo-Printer, for making soft prints from harsh, unretouched negatives — Mezzographs.

Japanese Water-Color Co., Rochester. Transparent watercolors for coloring or tinting photographic prints. Inexpensive, durable and simple to use.

John Lewisohn, New York City. New patent method of coloring photographs.

Menger & Ring, New York City. Mfrs. of picture-frames, wood-moldings and gold.

Metropolitan Section of the Professional Photographers' Society of New York. Attractive enclosure with artistic pictorial display by prominent members, including a forceful portrait by Pirie MacDonald; large head by B. J. Falk; profile of lady by E. L. Mix; portrait by Dudley Hoyt, in his best vein; superb landscape by Wurts Brothers, and an attractive genre by Hallen.

Meyer Camera & Instrument Co., New York City. Line of Polygon Cameras with Rietzschel Double Anastigmat; Planbel's Photo-Meter, $6.50; Benko Portable Darkroom and other practical novelties.

Motion-Picture Apparatus Co., Inc., New York City. Motion-picture machines of standard types, for taking and projecting. The Moy Professional outfit; Pathé Professional, model No. 1 and No. 2; Prestwich Kine Kamera, models 4 and 5; Ernemann Professional, model B; the Precision tripod with panoramic top.

George Murphy, Inc., New York City, American agents for Autotype Carbon-Tissue, in every desirable shade; illustrated by superb display of prints; exhibit of oil-prints made with No. 76 Double Transfer; Ross Lenses, the best-known series — Telecentric, Homocentric, "Xpres" and Combinable. The F/5.5 Ross Combinable, with one exception, the fastest convertible anastigmat on the market; convincing print-display of Ross lens-quality; Wynne Hunter Exposure-Meter; Royal Foreground Ray-Screen (graduated) and other important specialties.

William Nesbit, Springfield, N. J. Nesbit High-Speed Photographs made by flashlight. Large Illuminated display of large colored transparencies.

Newark Photo-Supply Co., Newark, N. J. Condor Daylight Paper; Thornton-Pickard Special Ruby Reflex Camera; Pocket Speed-Shutter, for Nos. 3 and 3A Kodaks, new Soldak Enlarging-Camera.

New York Camera Exchange, New York City. Cameras, lenses and photo-supplies, wholesale and retail.

New York Edison Co., Photographic Bureau, New York City. Application of electricity to photography, as shown by an illustrated booklet.

New York Institute of Photography, New York City, Emile Brunel, director. Exhibition of work done by students. Conveniently arranged studios and work-rooms at institute, 1269 Broadway, personally inspected and approved by the publisher of PHOTO-ERA.

Northern Photo-Supply Co., Minneapolis, Minn. Photographic materials. Specialty, the Perfection Developing-Tank System.

David S. Osborn, New York City. Photo-expert in forged or questionable documents, signatures, etc. Mural display of photographs as proofs of expert ability.

Parex Mfg. Co., New York City. Photo-chemical preparations for the trade.

Pathéscope Company of America, New York. Pathéscope motion-picture projection-machine for home-use. Continuous demonstrations. Synchronous phonograph musical accompaniment with dance-films.

Photographers' Association of America, headquarters. In charge of John I. Hoffman, secretary.

Photographers' Association of New England, headquarters. In charge of President John P. Haley. Enclosure tastefully arranged and embellished with portraits by Mr. Haley and Vice-President Orrin Champlain. The exhibit included a number of excellent red-chalk drawings from portrait-negatives by Duane Haley, President Haley's son.

Photographic Press, separate enclosures with special attendants, fitted up and personally conducted by the proprietors. *American Photography* and *Popular Photography; The Photographic Journal of America; The Camera* and *The Bulletin of Photography; The Photographic Times* (proprietor was represented); *The Photo-Miniature; Abel's Photographic Weekly* and *The Amateur Photographer's Weekly*, and *The Photographic News.*

Presto Mfg. Co., Pittsburgh, Pa. Infallible Tinting-Mask. Special amateur sizes.

Prosch Mfg. Co., New York City. Flashlight-apparatus and flashpowder. New style of magnesium blow-lamps; studio-flashbag operated by its own dry-battery.

Roover Brothers, Brooklyn, N. Y. Embossing of lettering on stationery and cards for everybody.

Seneca Camera Mfg. Co., Rochester, N. Y. Full line of Seneca cameras for roll-film, plates and film-packs. Also full line of tripod view-cameras and Seneca anastigmat lenses. Other Seneca specialties, including handsome light wood canes given to friends and prospective purchasers with the firm's compliments — on condition that they be carried in the hall by the owners. It was an effective and popular advertising-scheme.

Simplex Photo-Products Co., Morris Park, Long Island, N. Y. Multiflex Enlarging-Lamp, in several sizes; Simplex Multi-Exposure Camera; Baby Simplex Projector; Alamo Motion-Picture Camera, and other Simplex specialties.

Sterling Mfg. Co., Beaver Falls, Pa. Developing-tanks for professionals' use.

Karl Struss, New York City. The Struss Pictorial Lens, designed to meet the needs of the pictorial photographer. Can be fitted to almost any camera having sufficient bellows-extension, the single-lens type being made in five, and the doublet in six focal lengths. The lens-quality exemplified by a large pictorial display. Beautifully illustrated catalog, 25 cents.

John Wanamaker, New York. Fashion and commercial photo-section, using motion-picture apparatus and appliances. Conducted by W. Russell Lewis.

Arthur A. Waterman & Co., New York City. Fountain pens; novelty in self-fillers.

Clarence H. White School of Modern Photography, Brooklyn and New York City. Summer course, July 5 to August 14, at Seguinland, Me. Endorsed by prominent professional and amateur workers. Address Clarence H. White, 230 East 11th Street, New York, N. Y.

H. C. White Co., North Bennington, Vt. Radion Enlargers for professional and amateur; Radioptican opaque projectors for home-use; Radion Stereopticon (new).

Chas. G. Willoughby, New York City. "Square Deal" photographic supplies; reliable second-hand material a specialty. Equipments and lenses of all American and European manufacture. Motion-picture apparatus of best makes. Photo-bargains in abundance.

Wollensak Optical Co., Rochester, N. Y. Complete line of the well-known Wollensak lenses and shutters. Special feature for amateurs, F/8 anastigmat lens-cells for 3¼ x 5½, in plush-lined case, for $10.

MANUFACTURERS NOT REPRESENTED

For one reason or another, a number of prominent manufacturers were conspicuous by their absence, viz.: Eastman Kodak Company, Cramer Dry-Plate Co., Hammer Dry-Plate Co., G. Gennert, Sprague-Hathaway Co., Charles L. Mitchell, Schering & Glatz, Conley Camera Co., J. H. Smith & Sons Co., Lumière-Jougla Co., Willis & Clements, Rochester Photo-Works, Pinkham & Smith Co., Spencer Lens Co., Photo-Products Co., American Paper Goods Co., Eduard Blum, Carl Ernst & Co., Fiberloid Co., Ernst Osser & Co., Haloid Co., Newcomb-Macklin Co., Quaker City Card Co., Watson Mfg. Co., Southern Photo-Materials Co., Rough & Caldwell, C. B. Robinson & Son, Taylor-Hobson Co., W. J. Lafbury Co., Housh Co., Robert D. Gray, Victor Animatograph Co., W. O. Wood Mfg. Co., R. S. Peck & Co., Bridges Mfg. Co., Seavey Co.

OFFICIAL PRINT-EXHIBIT

Along the south wall was arranged a competitive picture-exhibit, the entrants being professional and amateur workers from various parts of the country, indiscriminately, yet containing a number of prominent portraitists and pictorialists. The standard was not particularly high, although a number of prizes (gold and silver plaques) were offered. According to the printed catalog, about 700 prints were hung. The following prizes were awarded:

Class I, Professional Photography

Gold plaque, R. C. Nelson, Hastings, Neb.; silver plaque, Carl Klincheck, Philadelphia; bronze plaque, Dudley Hoyt, Gerhard Sisters, R. M. Williams, Evansville, Ind.; J. H. Field, Fayetteville, Ark.

Class II, Amateur Photography

Gold plaque, L. S. Kirkland, New York; silver plaque, T. W. Kilmer, New York; bronze plaques, Sparks Freeman, A. E. Schaaf, Poughkeepsie, R. B. Whitman, Flushing, L. I., E. S. Jaffray, Ardsley-on-Hudson, N. Y., Alexander Murray, Roslindale, Mass., Dr. A. R. Benedict, Montclair, N. J., Edith H. Tracy, New York City, W. T. Knox, New York City.

Class III, Commercial Photography

Gold plaque, for press-photography, G. Cook, of the *Morning Telegraph.*

Class IV, Scientific Photography

Gold plaque, for spectrum analysis, Oscar G. Mason, New York City; silver plaque, Hobart V. Roberts, Utica, N. Y., bronze plaque, G. O. Shields, New York City.

There were given, in addition, eighteen diplomas distributed among the four classes. The jury consisted of the members of the photographic press.

THE CONVENTION

The attendance was comparatively meager, owing to counter-attractions and the absence of not a few members living at a great distance. Nevertheless, the questions brought up for discussion were disposed of, including the election of officers for 1915–1916. The next place of meeting will be Cleveland, in response to an invitation from the Cleveland dealers.

THE NEW BOARD

President, H. M. Fowler (Fowler & Slater), Cleveland, Ohio.

First vice-pres't, Wm. F. Pinkham (Pinkham & Smith Co.), Boston, Mass.

Second vice-pres't, F. E. Gatchel (W. D. Gatchel & Sons), Louisville, Ky.

Treasurer, Geo. L. Kolme, Toledo, Ohio.

Secretary, C. C. Chilcote, Cleveland, Ohio.

Copyright-Dangers

Apropos of the prospective law-suit between the official photographer of a young women's college and a prominent New York photographic syndicate, owing to an alleged abuse of a copyrighted photograph, which is reported to have resulted in injuring the feelings of the young ladies whose portraits appeared in the photograph, we believe that photographers should exercise the utmost care with regard to photographs which they desire to copyright. The defense that has been set up in several cases of this character is, that the infringing party availed itself of a print which did not bear the legal copyright notice.

However properly the photograph may be copyrighted, it avails nothing unless the owner sees to it that each print bears the legal copyright notice, which may be in the regular form, or, to save space, in the emblematic form — the letter c within a small circle. If the photographer neglect this precaution, he creates an opportunity of which any unscrupulous party may avail himself.

A Newspaper Beauty-Contest

Emulating the example of the Ansco Company, *The Boston Traveler* is running a beauty-contest of its own, but each of the five successful competitors — the sitter, not the photographer — will be awarded a free transcontinental tour *de luxe* to the two Pacific Coast expositions, including the principal scenic beauties in the West and all expenses paid, starting from Boston and return.

Without commenting on the actual merit of the results obtained — as the verdict will be based upon photographs received from professional photographers all over New England — we are glad for one thing, *i.e.*, the pleasing and effective publicity which accrues to the photographer of each picture published in *The Traveler;* he is given full credit in each case.

The Temple of Childhood

Both of the professional photographic weeklies vie with each other in recent issues in publishing obituary notices of the International Child-Life Exhibit Company, a corporation which was adjudicated a bankrupt by the United States District Court of Northern California on January 13, 1915. As this firm has ceased to do business, those parents who, in good faith, paid for photographs of their children to be exhibited in the much-talked-of Palace of Childhood, at the Panama-Pacific Exposition, may look in vain for these portraits when they visit California this summer. One of the weeklies mentioned expresses the opinion that legal action would probably result in the duped public and deluded photographers recovering damages for misrepresentation.

Our Illustrations

(*Continued from page 253*)

very happy with his extremely mediocre pictures of "the first baby," grasps the pen with feverish haste to tell the world how the thing is done. Then follows the disillusionment, which leaves three unhappy mortals in its path — the camerist, the parent and the Editor. How different when a really capable worker comes along! His efforts find speedy recognition and, as a consequence, thousands of Photo-Era readers are gladdened and enlightened. Among such practitioners may be mentioned Katherine Stanley, the professional, and Albert Niess, the amateur.

In the picture by Mrs. Eldridge, page 247, we admire the absence of confusing details, the directness and simplicity of the *ensemble*, the technical success, and the attractiveness of the little models. Although made directly from a 5 x 7 negative, the print does not include the entire form of the toy. The reason for this pictorial abridgment remains to be explained, although it is not a very serious matter. Data: February, 1915; bright sun; morning; near large window; 8 x 10 Century camera; Bausch & Lomb-Zeiss Tessar; at F/4.5; bulb-exposure; 5 x 7 Seed; hydro-metol; Azo print.

Although but little removed from the conventional, the pictorial design of "Cloudy Evening," page 248, is well worth the effort. It is difficult to avoid oft-repeated symmetry in an enclosure of this sort; but with technical success at every stage, the result should be pleasing. The spacing and pictorial emphasis are quite praiseworthy. Data: June, 5.30 p.m.; cloudy, but bright; 4 x 5 Century camera; lens at F/8; inst. exposure; 4 x 5 Imperial Special Sensitive; pyro; 6½ x 8½ Cyko Normal Plat. enlarged.

"A Country-Road," page 249, shows commendable appreciation of the picturesque, even if the motive be a hackneyed one. Every successful activity has its beginnings attended by varying success. Mr. Porter's picture is well proportioned; but the blurred effect at the top — the only serious shortcoming — seems to be due to uneven contact of paper with negative, or to carelessness in the enlarging. The color-values are excellent. Data: September, 3.30 p.m.; light intense; 6½ x 8½ Conley; 7-inch Verito; stop, F/5.6; Burke & James, series A, color-screen; 1/50 second; 4 x 5 Wellington Anti-Screen; pyro-soda; enlarged on Enlarging-Cyko, Plat. Surface, 7 x 9.

A Rare Feat of Arms

Some men dressed in civilian clothes gathered together in the smoking-room of the hotel, discussing the joys and sorrows of life at the front.

"Well, I've been with the army and had a very interesting time," said one.

"Ever get really alone with the enemy?" asked another.

"Rather! I once took two of their officers."

"Unaided?"

"Of course! And the very next day I took eight men!"

"All wounded, I expect," sneered a listener. "You didn't get hurt, did you?"

"Just a slight scratch, that's all. And two days after I took a transport wagon, and followed up that by taking a big gun."

"Sir," said a disagreeable auditor, "I have seen some of the finest specimens of anything you can call to mind; but I wish to state that you are the biggest romancer that ever trod this earth."

"Oh, no, I am not that," replied the hero; "but I am a photographer!" — *Tit-Bits.*

Gustav Cramer Memorial Fund

FROM the treasurer of the committee, Mr. E. B. Core, we have received a list of those who have already pledged themselves to give to this fund a sum equal to the day's business on May 20 — the anniversary of Gustav Cramer's birthday. Photographers of all kinds and conditions have interested themselves in this unique plan, and the success it so well deserves seems assured. There is still ample time for others who have the desire to do their share towards keeping alive the memory of one of the big hearted men of the photographic profession. The Memorial will be of a nature to be of constant benefit to the profession; for in this way it is felt by the committee that "Papa" Cramer's own charitable work may best be perpetuated. Here is the list. Fill out the pledge below and send to-day to E. B. Core, so that your own name may appear in the next published list.

F. E. Abbott, Little Falls, N. Y.
Abel's Photographic Weekly, Cleveland, Ohio.
Amateur Photographer's Weekly, Cleveland, Ohio.
American Photography, Boston, Mass.
C. A. Anderson, Witbee, Wis.
H. M. Anschutz, Keokuk, Ia.
Aveldson Studio, Jerome, Ariz.
Joseph Bain, Kentwood, La.
C. S. Bateham, Norwalk, Ohio.
Howard D. Beach, Buffalo, N. Y.
Beiersdorfer, Vincennes, Ind.
Biddle & Porter, London, Ohio.
T. Henry Black, Jamestown, N. Y.
Mrs. E. A. Bowler, Wyandotte, Mich.
M. J. Bowler, Conway, N. H.
A. F. Bradley, New York, N. Y.
Cochrane Studio, Charleston, W. Va.
M. C. Cole, Brighton, Ia.
E. B. Core, Yonkers, N. Y.
F. A. W. Dean, Alliance, Ohio.
Deimel Studio, Eureka, Cal.
L. A. Dozer, Bucyrus, Ohio.
H. B. Du Bois, Live Oak, Fla.
Durst Bros., Deer Park, Wash.
Geo. Edmondson, Cleveland, Ohio.
Exley Studio, Newberne, N. C.
B. J. Falk, New York, N. Y.
Feldman Studio, El Paso, Tex.
Fletcher & Maury, Lynchburg, Va.
Carl K. Frey, Utica, N. Y.
H. Fritsch, Owatonna, Minn.
Victor George, Chicago, Ill.
R. Goebel, St. Charles, Mo.
Graybill Studio, Fayetteville, Ark.
J. P. Haley, Bridgeport, Conn.
A. F. Hamley, Maquoketa, Ia.
Harris & Ewing, Wash.
Harvey, Boise, Ida.
E. H. Harwood, Appleton, Wis.
O. H. Henderson, Quincy, Wash.
A. N. Hopland, Clarkfield, Minn.
Hubner Studio, Milwaukee, Wis.
Lewis E. Imes, Lansing, Mich.
Katherine Jamieson, Pittsburgh, Pa.
A. R. John, Paris, Ky.
Belle Johnson, Monroe City, Mo.
Miss Sara Kuhn, Boston, Mass.
Miss Rene Leavitt, Chalco, Neb.
C. G. Lewis, Toledo, Ohio.
F. C. Lutes, Fort Scott, Kan.
Arthur L. Macbeth, Baltimore, Md.
Pirie MacDonald, New York, N. Y.
E. Marks, Clinton, Mo.
E. M. Martin, Logan, Ohio.
Joseph M. Maurer, Galveston, Tex.
McCollum's Studio, Columbus, Ohio.
Frank Medlar, Spencer, Ia.
Emmett Miller, Chappaqua, N. Y.
Ernst F. Miller, Cole Camp, Mo.
J. E. Mock, Rochester, N. Y.
Will R. Murphy, Newton, Kan.
Ryland W. Phillips, Philadelphia, Pa.
Photo-Era, Boston, Mass.
The Photographic Journal of America, New York, N. Y.
Frederick Pohle, Buffalo, N. Y.
E. J. Poisson, Biddeford, Me.
Popular Photography, Boston, Mass.
F. E. Post, Denver, Col.
Luke Power, Rochester, N. Y.
W. H. Rau, Philadelphia, Pa.
Miss Reineke, Kansas City, Mo.
Dona Robinson, Havener, Okla.
J. Ed. Rosch, St. Louis, Mo.
Geo. D. Smith, Oak Harbor, Ohio.
Otto Spieth, Jacksonville, Fla.
S. L. Stein, Milwaukee, Wis.
J. C. Strauss, St. Louis, Mo.
Strauss-Peyton, Kansas City, Mo.
Mary Sunderlin, Flemington, N. J.
E. Q. Thayer, Noblesville.
Tobias Studio, Lancaster, Ohio.
C. Tondorf, Milwaukee, Wis.
S. Trad, Parker, S. D.
Mrs. Otto Turk, Jamestown, N. D.
Manly W. Tyree, Raleigh, N. C.
Nathan S. Warner, Plainfield, N. J.
Lucia Weeks, Mansfield, Ohio.
C. H. Wiebner, St. Paul, Minn.
Geo. A. Wonfor, Camden, N. J.
Yachmett Studio, St. Mary's, Ohio.

A Pledge

E. B. CORE,
Sec.-Treas. Gustav Cramer Memorial Fund,
76 Landscape Avenue, Yonkers, N. Y.

I agree to send at the close of business on May 20, 1915, a cheque equal to the gross amount of the orders received in my establishment during that day as my contribution to the Gustav Cramer Memorial Fund.

Date.....

Signed .....

$25,000 for War-Photographs

THREE London newspapers have offered a sum equal to an English Cabinet Minister's salary for war-photographs of exceptional merit. The *Daily Mirror* was first in the field, offering $5,000 for the best subject received and published before July 31, also large sums for second and third best. Soon afterwards the *Daily Mail* made a similar offer of $5,000 for the best subject, and ten prizes of $500 each for other subjects of merit. Simultaneously the *Daily Sketch* announced varying amounts totaling $10,000 for similar photographs. These sums are really worth while and should stimulate war-correspondents and officers in the British forces to endeavor to record vividly some of the stupendous happenings of the war — not only their more appalling aspects, but their heart-interest as well.

The Sins of Photography

Antony Guest

Extracts from a Lecture Given at the Camera Club, London, March 8, 1915

THERE are some who believe in violent combinations, astonishing arrangements, subjects that do not charm, but surprise. They are suspected of holding that if only the work is staggering enough, it need not be beautiful. If they aim at beauty at all, it is through skilful technique. The beauty that arises naturally as the unformed expression of a sensitive temperament influenced by nature is, from this point of view, too ingenuously simple. The suggestive tones of a quiet landscape are insipid by comparison with masterful and overwhelming masses. Still I am not inclined to condemn all such weird compositions as necessarily sinful. In so far as they are truthful, they have merit, though it cannot be of the highest pictorial quality when they are deficient in beauty of design.

There is assuredly a tendency in some directions to produce originality without beauty, which is the soul of design. This is like constructing a wonderful clock that will play tunes, set processions of figures moving, introduce crowing cocks, swinging birds, running water and all sorts of marvels — do everything, in fact, except keep time. But if the main purpose of a clock — that of telling the hours correctly — is severed, the throwing in of original effects may be to some extent palliated, though there is always the danger that they may be objectionable from the point of view of clean and artistic construction, through diverting attention from the main object. This should be accentuated, not obscured, and to do the reverse is to be guilty of artistic misdemeanor. The measure of the offense is in the extent and incongruity of the superfluities, and particularly in the degree to which they interfere with the leading purpose.

Let us consider a simple instance. Take a simple scene, such as a boat with a white sail on somewhat placid water in a soft gray atmosphere — I do not mean mist. Now, what is the main artistic purpose in representing such a scene? It must necessarily be in the comparative tone-value of the sky, the sail and the water. If these are correct, the vital significance of the scene, depending on its light and atmosphere, is realized. You have an actuality as the basis, an elemental truth on which to build the graceful curve of the sail, the sense of gentle movement in the boat, the flat plane of the water, and the hint of distant landscape. If this is carried out with simplicity and truth, it cannot fail to charm. But now let us suppose that the scene is represented with a deliberate intention of originality, a conscious, not a natural, effort, and see what happens. A striking arrangement of line and mass becomes the dominant purpose. The hull becomes black and the sail absolutely white to make an arresting contrast. Spars are accentuated, the distant strip of landscape is fortified, fantastic forms are given to the reflection, and the sky is improved to give an original decorative quality to the composition; and when all is elaborated, a dead and artificial thing results. Why is this? Because the fundamental truth has been destroyed. The basic tones are no longer in their due relationship. The violence of the reflection destroys the horizontal plane. The boat jumps forward, refusing to take its place in aerial perspective, and the background clings to the boat instead of retiring far behind it.

But if the critic ventures to call attention to these matters, the original worker has a very effective retort. "That is my conception of the part," he says. "It expresses my individuality — you have your ideas and I have mine. You must excuse me if I prefer my own." What are you to say to that?

Photographers are not all artists, but they may all strive to become so, and with every step in this direction perceptive powers augment, crudities are shed, and the individuality becomes more refined and worth expressing, until the time comes when elemental truths are recognized as of primary importance to which the ego may accommodate itself but not attempt to dominate.

Individuality and originality, which are very much the same thing, express themselves subconsciously. If actively and consciously sought, they are very liable to lose the force of natural conviction and to become lifeless and mechanical. I was speaking just now of the importance of emphasizing the main theme of a design by the elimination of needless accessories. Neglect of this may be classed among the sins of some photographers. But the inclusion and arrangement of *helpful* accessories is an important matter no less demanding their attention. The echoing of the main incident, its repetition or suggestion in slightly different form, is one of the chief resources of decorative art, and is a pervading principle of nature. It is what gives interest and enrichment to scenes including reflections in water, but it must be remembered that in nature reflections are everywhere. They are by no means confined to water, but are found in the influence of sky on earth, in the modifying-effect of surroundings on color, of reflected lights on shadows; and also in relationships of form, as in the resemblance of the general shape of some trees to their foliage. Often the decorative masses of a landscape give a motif that recurs faintly in changed guise in the sky as well as in water. Such matters give decorative satisfaction without being insistent, leading up to the main purpose, and strengthen it instead of weakening it, as they would if not harmonious.

To proceed with the criminality of photographers, I must say that the most shocking examples are not the offenses against accepted conventions, but the perversion of facts. Not that photographers are guilty of wilful untruth, but they are often, I am afraid, accessories after the fact. This is one of the sins that result from timidity. It seems that they distrust their own observation and throw their whole reliance on the observation of the camera. Thus the instrument becomes their master instead of their servant. It falsifies tones and ignores aerial perspective. It never heard of *values*, and it indulges in such sharp definition as the human eye could never see, rendering the delicate clusters of twigs and branches in early spring-scenery as if they were made of wires, and depicting the restless movement of the sea as if all its forms were eternally fixed and made of tin. The camera cannot think or feel, and these are functions that fall to the duty of the photographer. They are the main part of the work; they are the factors that give vitality and engage sympathy. They provide the flesh and blood, the instrument giving only the dry bones. If the photographer neglects the duty that is the only means of imparting art to camera-work, and is content with a mechanical rendering of facts, how can he hope to be an artist? But they are not facts. They are untrue to comprehending and sympathetic human vision, to nature whose facts are not isolated things, but are made up of a system of interdependence in which everything influences and helps to determine the form and tone of every other thing, and not true to art, which is essentially synthetic, and is based on human selection — emphasis that denotes interest, and simplification that eliminates the needless. Pure photography — significant word — the unadulterated message of the camera — the raw material that awaits the refining and animating application of artistic perception and power. This is the influence that eliminates the mistakes of mechanical unintelligence and gives expression to ideality and feeling; and if this is not done, the achievement amounts to nothing.

But faults arising from misguided allegiance to the instrument, instead of the masterful domination that regards the mechanical record only as a means to an end, are of the passive kind — sins of neglect or omission. There are also sins of commission. Chief among these I regard the falsification of tone. Why, some may ask, do I attach such extraordinary importance to tone? There are, perhaps, some who think that the main purpose of photography is the exact representation of the material aspect of scenes, objects and people. If they can record the mere shapes of things, they are content. But I believe I am talking to those who see opportunities of artistic expression in camera-work, and they will agree that something more than superficial appearances is wanted; that there is subjective as well as objective truth; that what is implied by sentiment, emotion and suggestion is the real purpose of the guest. Now the only means of giving expression to these qualities is tone. Tone is the medium for the spirit of the scene. It is tone that makes an atmosphere — I do not mean only in the actual or literal sense, but the state of psychological relationship between the human observer and the natural scene. This is sometimes called the *mood*. In portraiture tone suggests a mental atmosphere. There is no reason why, as is commonly done, the vivacity of childhood, the gaiety of a bright and pretty girl, or even "Contemplation," which is often a very happy process, should be represented in an atmosphere of gloom. The tone should accord with the spirit of the theme, and if appropriate, is a most valuable and effective means of conveying a mood. Tone, also, is a special direction in which photography has a peculiar power of excelling, if only it is guided aright. Evidently, therefore, in the higher photography, tone has a preëminent part. The artistic photographer is under a primary and urgent duty to give effect to tone. It is the justification of his own artistic claim, and it is the justification of photography as an art — not that he can afford to neglect the charms of design in line and mass — but tone is what gives distinction, life, poetry and mystery. First is needful the sympathetic perception of tone. This has to be cultivated before it can be rendered.

It is difficult to excuse such drastic and thoughtless procedure as the sacrifice of significant shades and variations of tone-values to substitute for them rich, juicy blacks that represent nothing in nature and cannot possibly take their place in aerial perspective. In doing this the soul of the subject is lost and what is gained? Texture! What a superficial quality to take the place of all the poetry that dwells in tone! Black is not tone. What is it? Just fine rich black, no doubt rivaling the best production of Day and Martin; only this and nothing more. And the blackness of this black is accentuated by the whiteness of highlights, the white intensifying the black, and the black returning the compliment to the white. I am not exaggerating the picture; it is frequently seen — a revel of blackness and whiteness, such as is never seen in nature, even in a coal-yard in snowy weather. But it makes a strong contrast, and some, I believe, regard this as the expression of a vigorous personality.

All smashing blows are similarly expressive. There would be less to complain about if the scale of values were considered and the black and white really stood for the one darkest shadow and the one highest light that should be present in every picture, and require to be placed in just the right position to give point to the decorative scheme. Even experienced photographers seldom trouble about this. They often throw away their trumpcards as they would never think of doing if they were playing for penny-points. Yet surely they must know that the highest light and darkest shadow are the trumpcards that give point and piquancy to the decorative scheme.

Dr. Richard Neuhauss

Professor Dr. Richard Neuhauss died February 9, aged sixty, of blood-poisoning. Although in his earlier years he practised medicine, his great love of photography exceeded his love of medicine, and gradually he devoted himself exclusively to photographic research and writing, particularly the field of photomicrography. He wrote several works on this subject, also a text-book on projection; later he became very active in color-photography research. During his later years he resumed his medical practice, located in Lichterfelde, near Berlin.

After the outbreak of the present war he reported as a volunteer and assumed the management of newly erected barracks, also of the diphtheria ward. In consequence of his unsparing devotion to the work, he contracted a fatal infection.

Cameras at the San Francisco Fair

Those of our readers who contemplate a visit to the San Francisco Fair will be interested to know that the largest size camera that may be carried in the Exposition Grounds is 4 x 5. No tripod is allowed. The fee is twenty-five cents a day. No doubt postcard size cameras, 3¼ x 5½, will also be admitted, as the area of the picture is less than 4 x 5.

Business-Talks at the National Convention

The business-side of photography will be a prominent feature of the Indianapolis Convention, July 19 to 24. Mr. Charles Weir, chief correspondent of the Larkin Soap Company, Buffalo, N. Y., has been engaged to give a lecture based on his experience in dealing with people through the mail, and Mr. J. C. Abel has prepared a new lecture on "Studio-Bookkeeping Systematized and Simplified." Supplementing these lectures, an entire afternoon will be given to an experience-meeting in which every photographer will be given an opportunity to tell his own way of promoting the success of his business.

Country Life Permanent Exposition

This important institution at the Grand Central Terminal, New York City, announces the prize-winners in a second photographic contest recently closed. They were as follows: first prize, Paul Andros Brooks, Minneapolis; second prize, Alexander Murray, Roslindale, Mass.; third prize, Sylvester B. Phillips, Portland, Me.; honorable mention, Leslie H. Cushman, Bronxville, N. Y., and Alexander Murray, Roslindale, Mass.

Academy of Science and Art of Pittsburgh

The Second Annual Pittsburgh Salon of National Photographic Art closed March 31, and the Photographic Section of the Academy of Science and Art, under whose auspices it was held, feel that they have been fully repaid for the hard work in presenting the 317 prints, by 100 contributors from all parts of the United States.

The Salon, held in the Carnegie Art Galleries, by an actual count, had an attendance of over 8,000, and the opinion of those who know is that this exhibition was of a higher standard of pictorial quality than any previously held in this city. Plans are now being made for next year's Salon, which will be in advance of the one just closed.

In good times, advertising is desirable; in dull times it is imperative. — *Milton Waldo.*

America's Loveliest Women Contest

THE result of this extensive competition is that the jury appointed by the proprietors, the Ansco Company, while performing its duty conscientiously and ably, did not seem to meet entirely the expectations of the projectors. The chief aim, undoubtedly, was to create favorable publicity and a more extended demand for the Ansco papers, and to be able to obtain a large number of high-class and attractive portraits for advertising-purposes. That this project has been crowned with success, there is no donbt, as the pictures acquired through the awards and by purchase represent, to an eminent degree, the refined beauty of American womanhood.

The jndges, whose report was published in our preceding issne, awarded 39 out of the 50 prizes. The Ansco Company will now appoint a supplementary jury, which is to determine upon eleven pictures worthy of the eleven remaining prizes, out of a large number of prints selected from the several thousand prints rejected by the first board of judges. These eleven prize-pictures will represent technical and chemical qualities not taken into account by the original jury; they will also be of greater commercial value to the Ansco Company than some of the pictures honored in the first instance.

It must also be remembered that the Ansco Company, in addition to the 39 prize-pictures, has purchased a large number of negatives, not considered by the jury, at $100 and $150 each.

Besides, it is interesting to note that each of a number of contestants in the sixth- and seventh-prize classes has received several prizes, viz.: Charles R. Albin, the Gerhard Sisters, J. G. Tomlinson, E. O. Hoppé, R. C. Nelson, Wayne Albee, J. P. Haley, R. W. Scott and E. R. Trabold, which circumstance, from a pecuniary view-point, at least, must have particularly delighted these several contestants.

The picture that won the first prize in this competition, a portrait of Miss Justine Johnstone, by Philip Conklin, is published in this issue.

LIST OF AWARDS

First Prize — $500, Philip Conklin, Troy, N. Y., "Miss Justine Johnstone," New York City; Second Prize — $450, Wayne Albee, Tacoma, Wash., "Mrs. Charles Gill," Edmonton, B. C.; Third Prize — $350, W. Burden Stage, New York City, "Miss E. Coyne," New York City; Fourth Prize — $250, Florenz H. Ziegfeld, Baltimore, Md., "Miss Kay Laurell," New York City; Fifth Prize — $200, J. P. Haley, Bridgeport, Conn., "Miss Dorothy Clinton Lyon," Bridgeport, Conn.

18 SIXTH PRIZES OF $100 EACH

Wayne Albee, Tacoma, Washington, "Mrs. Charles Gill," Edmonton, B. C.; Kenneth A. Arthur, Detroit, Mich., "Miss Florence Palmer," Cleveland, Ohio; Leo J. Buckley, Binghamton, N. Y., "Mrs. Frank Paull Mitchell," Binghamton, N. Y.; Miss Juliette Courtot, Weekawken Heights, N. Y., "Miss Marguerite Courtot," Kalen Co., 235 W. 23d St., New York City; The Evans Studios, Philadelphia, Pa., "Mrs. Walter A. Carl," Boston, Mass.; Gerhard Sisters, St. Louis, Mo., "Miss Lydia Schilling," St. Louis, Mo.; J. Ellsworth Gross, Chicago, Ill., "Miss Marjorie Hamilton Kerting," Chicago, Ill.; J. P. Haley, Bridgeport, Conn., "Miss Esther Burns," Bridgeport, Conn.; E. O. Hoppé, London, S. W., "Mrs. Malvina Carter," Baltimore, Md.; Keedy Studio, Chicago, Ill., "Mrs. J. A. O'Dea," Chicago, Ill.; Knafft & Bro., Knoxville, Tenn., "Miss Josephine Knafft," Knoxville, Tenn.; R. C. Nelson, Hastings, Neb., "Mrs. R. P. Ross," Sioux City, Ia.; A. O. Titus, Buffalo, N. Y., "Miss Hazel Dawn," New York City; J. G. Tomlinson, Trenton, N. J., "Miss Ebba Kallstrom," Trenton, N. J.; J. G. Tomlinson, Trenton, N. J., "Miss Gertrude Hamilton," Philadelphia, Pa.; E. R. Trabold, Adams, Mass., "Miss Marion R. Whittaker," Adams, Mass.

16 SEVENTH PRIZES OF $50 EACH

Charles R. Albin, New York City, "Mrs. Paul M. Kempf," New York City; Charles R. Albin, New York City, "Mrs. N. S. Hanief," New York City; Gerhard Sisters, St. Louis, Mo., "Miss Lydia Schilling," St. Louis, Mo.; Gerhard Sisters, St. Louis, Mo., "Miss Fern Leonhardt," St. Louis, Mo.; E. O. Hoppé, London, S. W., "Mrs. Malvina Carter," Baltimore, Md.; E. O. Hoppé, London, S. W., "Mrs. Malvina Carter," Baltimore, Md.; C. A. Myers, San Francisco, Cal., "Miss Marguerite Clayton," San Francisco, Cal.; R. C. Nelson, Hastings, Neb., "Mrs. R. P. Ross," Sioux City, Ia.; R. C. Nelson, Hastings, Neb., "Mrs. R. P. Ross," Sioux City, Ia.; J. I. Saad, Pikeville, Ky., "Mrs. J. I. Saad," Pikeville, Ky.; Robert W. Scott, Philadelphia, Pa., "Miss Edith Pierce," Philadelphia, Pa.; Robert W. Scott, Philadelphia, Pa., "Miss Margaret Lindsay Feidler Urben," Philadelphia, Pa.; A. M. Smelser, Rockford, Ill., "Miss Agnes Osborne," Rockford, Ill.; Melvin H. Sykes, Chicago, Ill., "Miss Nina Ward," Chicago, Ill.; E. R. Trabold, Adams, Mass., "Miss Marion R. Whittaker," Adams, Mass.; Harry D. Williar, Baltimore, Md., "Miss Margaret R. Rice," Baltimore, Md.

Pictorial Landscape-Photography

EXPRESSION of emotion by line and spot elevates photography from a mechanical trade to one of the fine arts, perhaps as simple and sensible a statement as has ever been made of the principles of design as applied to photography (and incidentally to the art of painting), is found in "Pictorial Landscape-Photography," by Paul Lewis Anderson, published by PHOTO-ERA, Boston. The author's illustrations from his own practice prove, presumably, that he knows enough of photographic technique for all practical purposes. His text is filled with pronouncements concerning design about which some of our artists have been doing a good deal of thinking ever since the Barbizon men more than half a century ago hit upon a few Japanese prints. Mr. Anderson is familiar with the books on composition written by Denman Ross, Arthur W. Dow, Henry Rankin Poore and others. He makes important contributions of his own by stating very explicitly certain laws of the emotional effect of various combinations and arrangements on the ordinarily sensitive mind. This is believed by many critics to be the next line of development in the fine arts — an extension of the artist's power of consciously motivating the facts of nature so as to produce desired mental states in the beholder. Painters of the traditional type, addicted to one manner, pursued almost mechanically through a lifetime of production, might profit from careful reading of Mr. Anderson's book — though most of them will not do it. — *The Boston Herald.*

Change of Address

MANY of our subscribers wish to have their addresses changed on our mailing-list during the vacation-months of summer. In order to avoid delay in the receipt of PHOTO-ERA, and possible loss in forwarding, we urgently suggest that all requests for changes of address be sent to us before the 5th of the preceding month, as the envelopes must be addressed and classified for mailing on the 20th.

WITH THE TRADE

Novel Focusing-Device

A HIGHLY ingenious and practical focusing-device was demonstrated at the Imp Flashlite Gun booth at the Dealers' Exposition, held in the Grand Central Palace, New York, recently, and is referred to in our account of that event, printed in this issue.

It is in the form of a mirror-arrangement attached at the left side of the camera. Viewing the object to be photographed through a small aperture, the camerist focuses it until a prominent line of the image coincides exactly with the corresponding line in the object, when the latter will then be in perfect focus. At the same time the exact distance between the object and the camera will be found indicated on the focusing-scale. The device can be attached to any folding camera. It is the invention of Mr. Straight, of the Imperial Brass Mfg. Co., Chicago.

Ilex Was the Only One

To answer several inquiries, Ilex were the only shutters on the American market neither operated nor controlled by air-cylinders or valves, shown at the National Dealers' Exposition held in New York recently. The Ilex is a strictly between-the-lens shutter and is as nearly perfect a piece of mechanism as it is possible to produce. Send for a catalog describing its unique and scientifically accurate construction.

A New Voigtländer Catalog

A NEW catalog of Voigtländer lenses, cameras and binoculars is now ready for mailing, and a beautiful little book it will be found by all who procure a copy. Many superb reproductions of Collinear, Heliar, Dynar, Radiar and Euryscope lens-work embellish its pages, and the text-matter will prove highly informative to any lens-purchaser, particularly that section devoted to "the judicious selection of photographic lenses." Several pages are given to the Alpine and Bergheil Tourist cameras, both notable examples of the compact high-grade quarter-plate and post-card instruments now so popular.

The New "Xpres" Lens

READERS of English photo-journals have, undoubtedly, noticed the advertisement of the Ross "Xpres" lens, a new fast and perfectly corrected F/4.5 anastigmat. The singular mystery which surrounds this new trade-name is its origin. Many persons — including the Editor — with thoughts of the recent sanguinary battles around the city of Ypres, in Belgium, hastily misread the name of the new lens as "Ypres," believing that it had some patriotic or sentimental connection with that famous battle-ground. On re-reading the name, "Ypres," these excited people found that it spelled "Xpres" and pondered anew. None of them, however, including the Editor, has decided definitely whether the term "Xpres" is an intentional corruption of the word "Express" — a most expressive designation of a high-speed lens — or the French equivalent of the English word "Express."

All who are interested in the matter may be able to explain it to their own personal satisfaction by consulting the new Ross lens-catalog, to be had of George Murphy, Inc., 57 East 9th St., New York.

The Ensign Anastigmat

G. GENNERT, 24 East 13th St., New York City, announces that the well-known Ensign Folding Cameras are now supplied with Ensign Anastigmats, fully corrected lenses giving brilliant, evenly illuminated negatives and working at F/7.5. These superb camera-equipments sell for only $22.50 in the 3¼ x 4¼ size and $25.00 in the post-card size. The 1915 catalog is on the press and will be ready for mailing to all who apply after the publication of this issue of PHOTO-ERA.

It is also announced that G. Gennert is the distributing-agent for the Record plate; liberal discounts to dealers.

The Goerz Staff Augmented

THE C. P. Goerz American Optical Company announces that henceforth Mr. A. F. France and Mr. A. H. Beardsley will be identified with the staff.

Mr. France, who will call upon the photographic trade in the eastern territory, has had several years of successful selling-experience and is well informed regarding every detail of high-grade photographic equipments.

Mr. Beardsley, besides calling on the trade in Greater New York, will have charge of the advertising and sales-promotion department. He, likewise, has had several years of selling-experience behind the counter and stands ready to give competent advice and suggestions to all who call upon him.

War-conditions abroad have not yet affected the Goerz source of supply very seriously. A sufficient stock of standard photographic articles is available to take care of every reasonable demand, for the embargo on the exportation of optical parts from Germany affects only binoculars. Photographic lenses are manufactured in the New York factory from a sufficient supply of imported crude glass to last for some time to come.

Watch for These Stolen Goods

THE following lenses, cameras and optical goods have been stolen from Burke & James, Inc., 225 Fifth Avenue, New York City:

One pair of 6-power 36 m/m Voigtländer & Sohn prism Binoculars, No. 24090, 50/v No. 5556.

One Voigtländer & Sohn Model A, Bergheil Tourist Camera, 3¼ x 4¼ size, fitted with No. 2 Heliar lens, No. 124646 in Compound shutter.

One Voigtländer & Sohn Model C, Bergheil Tourist Camera, fitted with Radiar lens No. 130778 fitted in Compound shutter. Size of camera 3¼ x 5½.

One Voigtländer & Sohn Alpine Camera, fitted with Series III, No. 2 Collinear Lens, No. 124600 in Compound shutters. Size of camera 3¼ x 4¼.

One Voigtländer & Sohn Vida Reflex Camera, fitted with No. 3 Heliar lens, No. 114432. Size of camera 3¼ x 4¼.

One Voigtländer & Sohn Metal Folding Camera, fitted with Series III, No. 2 Collinear lens, No. 84060. Size of camera 3¼ x 4¼.

One Voigtländer & Sohn Metal Folding Camera, fitted with Series III, No. 2 Collinear lens, No. 76453. Size of camera 3¼ x 4¼.

Any one able to discover a clue to any or all of the above-named equipments will find it to his interest to communicate *without delay* to Burke & James, Inc.

New Quarters of Ralph Harris & Co., New York City

This firm announces the removal of its New York salesroom to 176 Fulton Street, to occupy the entire second floor. It is conveniently located, only a few steps from Broadway, the Hudson Tube and the Subway Express Station. The capacity of their salesroom is about three times larger than the old one, accommodating a much larger stock to supply the trade of New York and vicinity. Mr. E. F. Keller, so well known to the photographic trade in New York, will continue as manager.

Visitors to New York will be interested in the exhibit which attracted so much attention at the recent International Photographic Exposition in Grand Central Palace, New York, and which will be shown in the new office.

More Bargains

At this spring outfitting-season bargain-lists are of interest to most camera-users. The latest to reach us has just been issued by Herbert & Huesgen Company, 311 Madison Ave., New York. It contains announcements of shop-worn and second-hand cameras of every sort and many lenses of standard make. All goods listed are in exactly the condition described and are sold with a money-back guaranty if not satisfactory.

Photo-Era Halftones

For many years past most of the halftones in Photo-Era have been made by the Hub Engraving Company, Boston, and they have been a source of pride to maker and publisher alike. In order to avail itself of larger facilities and better mechanical equipment for increased business, and the obvious advantage of an electrotyping department, this concern has been merged with the Suffolk Engraving and Electrotyping Company, 394 Atlantic Avenue, Boston, probably the largest firm of its kind in New England. It is our belief that this move will result in an even higher quality of reproduction-work than it has been our pleasure to offer Photo-Era readers in the past.

Rexo Paper

The hasty need of a lot of prints from a miscellaneous collection of negatives, old and new, a few days ago proved once more the claim of great latitude for Rexo paper, which is made by the manufacturers, Burke & James, Inc., Chicago. The developer-supply was low, and the remains of three lots were used, not one of them the manufacturer's formula, thus showing its readily adaptable character in an important particular. At the last the solution was considerably exhausted and slow in action, yet the paper withstood this extreme development without stain or fog. It was found that, by selecting the right grade — normal, hard or soft — any printable negative would yield an harmonious print, whereas a variety of effect could be obtained on the three surfaces — matte, semi-matte and glossy. Rexo is not as rapid as some developing-papers, and this fact readily yielded brilliant, well-gradated prints despite some very careless timing, purposely done to test the latitude of the paper.

Why Celeritas Is Popular

Many amateur camerists are coming to see the folly of darkroom-shelves loaded down with many bottles of stock-solutions for the several processes they employ. They occupy much space, collect a great deal of dust, make the work complicated and cause considerable waste, for they oxidize and spoil unless used in large quantities. These facts have led to the wide adoption of so-called universal developers which may be used for all purposes. Of these, Celeritas makes a strong appeal for its clear-working, detail-giving properties and the clever package in which it is put up. A glass tube contains the sodas, and a capsule, used as a cork, with a paraffin seal, contains the reducer; the price is only 5 cents. For negatives, tray-development, dissolve in 8 to 12 ounces of water, developing-factor, 10; or for tank-development, 30 minutes at 65 degrees, use 24 ounces of water. For prints, hard-working papers, use 4 ounces of water; soft-working and bromide papers, 8 to 12 ounces of water.

A New Agent for Lumière Jougla

Mr. R. J. Fitzsimons announces that he has purchased the entire stock of the Lumière Jougla Company and also the sole United States agency for their Autochrome plates for direct color-photography, also their dryplates, papers and chemicals for several years to come. Mr. Fitzsimons is to be congratulated upon representing this well-known firm and it is to be hoped that the supply of these sterling goods will meet the constantly increasing demand.

Willoughby at the Dealers' Convention

Just before going to press we received from Chas. G. Willoughby an 8 x 10 flashlight-photograph of his lens-and camera-exhibit at the American Dealers' Exposition, held in the Grand Central Palace, New York City, recently. The picture is technically a fine piece of work, and gives a comprehensive view of the entire Willoughby exhibit, including the only all-glass show-case in the hall, at the time, and numerous specialties for which Willoughby is the agent.

We have no doubt that specimen-prints will be furnished, gratis, to those who are interested in this attractive souvenir of a memorable event, application to be made to Chas. G. Willoughby, 810 Broadway, New York City.

The New Ingento Junior Cameras

Like the successful military commander, who quickly follows up his pressure upon the enemy after a signal victory, Burke & James, Inc., the well-known and enterprising photo-manufacturing firm, of Chicago, is alive to the well-merited popularity of its Ingento cameras, introduced about a year ago.

Burke & James, Inc., is now introducing a line of Ingento Junior cameras that are now ready for the market; see advertisement for full particulars. We are informed that several thousand of these new cameras have been sold from the models in the hands of the firm's salesmen during the month of March, and that the production-capacity of their camera-factory will be put to the test during the present camera-season, which bids fair to be a highly successful one, despite the tendency in some quarters to decry present-day prosperity in America.

Announcement

To Whom It May Concern: Why should you lose the pleasure of having perfect photographs of all subjects connected with your travels and vacation-trips in their natural colors, a permanent and true souvenir of your life's sunny hours?

Why not learn to take color-photographs?

Towards that aim I can help you to master all the fine points that will make you successful with this fascinating pastime in a few practical demonstrations.

If you are interested in discussing such a proposition, please notify me and I shall be pleased to give you my personal attention.

Yours very truly,
Paul G. Guillumette,
75 Fifth Avenue, New York.

Formerly Official Demonstrator for the Lumière Autochrome Color-Photography.

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ARTICLES

To Contributors: Contributions relating to photography in any and all of its branches are solicited and will receive our most careful consideration. While not accepting responsibility for unrequested manuscripts, we will endeavor to return them, if not available, provided return-postage is enclosed. Authors are recommended to retain copies.

To Subscribers: A reminder of expiration will be sent separately at the time the last magazine of every subscription is mailed. Prompt renewal will ensure the uninterrupted receipt of the magazine for the following year. Send both old and new addresses when requesting a change.

To Advertisers: Advertising-rates on application. Forms close on the 5th of the preceding month.

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THE CALIFORNIA BUILDING
PANAMA-CALIFORNIA EXPOSITION
HAROLD A. TAYLOR

PHOTO-ERA

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EXPOSITION-GROUNDS FROM THE CALIFORNIA BUILDING HAROLD A. TAYLOR

Camera-Work at the Panama-California Exposition

HAROLD A. TAYLOR

THE Panama-California Exposition, now open at San Diego, in the southernmost part of California, is essentially a photographable fair. In a climate where hardly a day passes without a few hours of sunshine, the ordinary snap-shooter cannot fail to take home with him exposures almost one hundred per cent perfect; whereas the more serious amateur who enjoys working with color-filter and tripod will obtain beautiful bits that will be a joy to him for many, many months, and the autochromist, or color-plate worker, will find it a feast that will keep him busy many days.

Situated on the hills just back of the business portion of the city, in the center of a fourteen-hundred-acre park and overlooking the Harbor of the Sun, it has probably the most wonderful outlook that any exposition ever had. As one crosses the Puente de Cabrillo, it is as if one had journeyed to a foreign land, for its architecture is entirely different from what one usually sees at great expositions; immense palaces, covering blocks, are here conspicuously absent and in their places are quaint buildings of Old Spanish, Spanish-Colonial and Mission architecture; even the attendants and guards are all dressed in the picturesque garb of Old Spain and one can get bits that have decidedly foreign atmosphere.

Perhaps the feature of greatest charm, particularly to the color-plate worker, is the riot of color of the beautiful shrubbery and flowers that are in bloom from January to December. The

THE BOTANICAL BUILDING AND LAGOON
PUENTE DE CABRILLO
HAROLD A. TAYLOR

white buildings against a deep blue sky, a foreground of grass, shrubbery and thousands of poinsettias and many other flowers present a color-picture difficult to equal. This condition really requires a color-screen for the best results in ordinary photography, although the present orthochromatic qualities of photographic films give wonderfully pleasing results.

The one dominant note is the California Building — a permanent structure of reinforced concrete, given to the City by the State of California. It is the Cathedral of the Great White City, with its tower that rises two hundred feet from the ground — a pure type of Spanish-Colonial architecture. The façade contains carved figures representing the early history of California, from Vizcaino, who first sailed into the Harbor of the Sun, down to the end of Spanish rule in California.

In front of this noble structure is a court, on the south side of which stands the Ethnology Building of pure Mission architecture. From this court, through the arches of the corridors on each side of the main Prado, or street, many pretty views can be made. These corridors lead towards the Plaza de Panama, the big square in the center of the principal exhibit buildings. Here the tame pigeons that eat out of your hands the corn you purchase from the gaily dressed Mexicano, remind one of the pigeons of St. Mark's, at Venice, and give endless amusement, photographic and otherwise.

TOWER, CALIFORNIA BUILDING H. A. TAYLOR

VISTA OF THE PIPE-ORGAN H. A. ERICKSON

The open-air pipe-organ and its beautiful peristyle afford a great opportunity for composition, to say nothing of the hundreds of little vistas one gets of these buildings through the trees and arches.

Perhaps the most popular place for picture-making is around the small lagoon, or Mission Lake, as it should be called, for here the reflections are always of interest to the photographer.

The camerist must not forget to save a few films for the big exhibit of the Santa Fé Railroad, a replica of an old Indian Pueblo, where studies of the Indians at their various vocations, all out of doors, will surely be needed, and the Indians themselves are a very accommodating lot, anxious to help you get good results, particularly if a small silver-piece be tendered them for their trouble. In fact, the whole Exposition is a joy to every photographic enthusiast, and realizing its possibilities in this line the directors have permitted visitors to take cameras and tripods into the grounds for a fee of 25 cents a day, there being no limitation in regard to size.

Edison says "Genius is two per cent inspiration and ninety-eight per cent perspiration." This applies to photography the same as to any of the other arts and sciences.

POCKET-CAMERA GLIMPSES ABOUT THE EXPOSITION-GROUNDS

HAROLD A. TAYLOR AND H. A. ERICKSON

Sacramento Building
The Prado Looking North

Covered Walk Along the Prado
The Open-Air Pipe-Organ
The Peristyle

Pigeons on the Plaza de Panama
The Prado Looking West

The Wild Flowers of Pike's Peak

KENNETH HARTLEY

ONE of the most fascinating lines of work for the amateur photographer who has the skill and patience to attempt it is the photographing of wild flowers. I do not mean photographing a vase of picked flowers, but going out into the wilderness and taking them where they grow. These "home-portraits" of the wild plants are immensely more interesting than the "gallery-photographs" one often sees, or than the pressed specimens of the botanical collector, and particularly so when they can be found in such picturesque surroundings as in the mountains.

It is interesting to know that Colorado contains a greater variety of wild plants than any equal area in the United States, ranging from the semi-tropical desert-plants of the southeastern plains to the arctic plants of the very high altitudes, and is therefore a particularly favorable locality for the "photo-botanist." The Pike's Peak region, having the greatest range of altitude in the shortest distance, together with greater conveniences for getting about than most parts of the state, offers some peculiar advantages for this work, and my experiences last summer have made me quite enthusiastic about it.

Early last spring I noticed in the store-windows beautifully colored photographs of what we here call the anemone, but they were photographed in a vase: and I thought how much better if they could be taken where they grow. Accordingly, the next afternoon I set out to find a plant which should have particularly fine flowers, gracefully arranged and with a picturesque background. I went where anemones were plentiful, and there seemed to be millions of them: but I searched all the afternoon without finding a single clump that would satisfy my requirements. I went again the next afternoon and hunted until nearly dark before finding any that would do. Even then I had to shift some of the "accessories" a little to get the picture that I wanted.

It may be objected by the botanist that this is not a typical specimen of *Pulsatilla hirsutissima*, for it grows mainly in the open meadow; but I will only reply that I am not primarily a botanical student, but rather a lover of the beautiful, and my object is to obtain records of these choice bits of natural beauty.

The anemone picture was so successful that I resolved to utilize every opportunity to get photographs of wild flowers, and as a result of last summer's work I have negatives of thirty species. I hope to get at least as many more in 1915.

The wild flowers in the immediate vicinity of Colorado Springs begin in April and are found in greatest profusion in May, although there is a continuous succession until October. In the foothills, from 7,000 to 10,000 feet altitude, there are not many flowers until June, but they continue abundantly until mid-September. The real alpine flowers of the high altitudes, from 12,000 to 14,000 feet, are found only in July and August.

Many visitors to the Pike's Peak region get the impression that there are very few flowers there, but that is chiefly because they stay on the main traveled roads. The most destructive animals found in Colorado are of the genus tourist, and they infest the Pike's Peak region in large numbers, but fortunately few of them stray far from their familiar haunts, and the lover of nature need only go a little to one side from the frequented roads and trails to find natural conditions practically undisturbed.

The most beautiful flower of the lower altitudes is the yellow columbine, *Aquilegia chrysantha*. The flowers are almost as large as the well-known blue columbine, which grows higher up, and are of the same delicate texture, but light yellow. Photographing a columbine out of doors is as difficult as taking a laughing baby in the house. The large, heavy flowers on very slender stems are in almost constant motion; even when no breeze can be felt there will be enough movement of the air to make them sway slightly. I waited half an hour before all four of these flowers were still at the same time. I had drawn the slide and stood, bulb in hand, watching every moment for them to come to rest. A long exposure was necessary — about twenty seconds — and I may count myself lucky to have obtained a perfectly sharp negative so soon. With the blue columbine I was not quite so successful; I made three negatives, but even in the best of them there was one flower that did not stand perfectly still.

I think, however, that the most interesting of our wild plants are the alpine species that grow above timberline, and it is easier to get them on Pike's Peak than anywhere else in the state, for the Manitou and Pike's Peak Railway, commonly called the "Cog-Road," will stop its trains to let you off at any desired altitude, and

THE SUMMIT OF PIKE'S PEAK KENNETH HARTLEY

the search for flowers can be commenced without any tiring preliminary climb. If you cannot get through in time to catch the afternoon train down, it is comparatively easy to walk back down hill to Maniton.

From the picture of the summit of the peak one might think it entirely destitute of vegetation; but by looking closely some little plants with white flowers may be seen between the rocks in the foreground, and the fact is that every little ledge and crevasse, even in the most precipitous face of the mountain, is filled with alpine plants.

The brilliant yellow *Sieversia turbinata* was photographed in the little notch just to the right of the cloud-shadow, almost at the summit; the alpine primrose just a little below and to the left; the alpine forget-me-not about a hundred yards from where this view was taken, at an altitude of 12,500 feet.

The aristocrat of the alpine plants is the crimson primrose, *Primula Parryi*, which is found between 11,000 and 13,000 feet altitude. It grows only in sheltered places, and it is not satisfied with ordinary shelter, such as may be had at one side of a big rock; but it must have a sort of shrine built for it, as in this picture, providing a roof as well as side-walls. The opening in this case was towards the north so the plant got no sunlight to speak of, but it seems to grow just as luxuriantly in the shade. The flower-stalks are from 10 to 15 inches tall, and the brilliant color of the flowers, contrasting with the rich green, glossy leaves, makes it exceedingly showy.

Even the reddest of these mountain-flowers have enough purple in them to photograph satisfactorily on orthochromatic plates. A panchromatic would have given a more truthful rendering of the dark red *Lilium montanum*, but by giving a long exposure I got the flower very well, the only fault being that the surrounding foliage is rendered somewhat too light.

I never photograph a flower in sunlight, because the sharply-defined shadows on the leaves make a lot of unintelligible lines. The flower itself may be satisfactory, but the rest of the plant is spoiled. I therefore try to select a cloudy day for flower-pictures, but this policy sometimes leads to some discomfort, for I often get more than mere cloudiness. The snowball saxifrage and the Arctic gentian were photographed in a snow-storm. This sounds quite appropriate to the names of the plants, but it

SNOWBALL SAXIFRAGE

CRIMSON PRIMROSE

TIGER-LILY

SMALL-LEAVED SAXIFRAGE

Copyright, 1914, Kenneth Hartley

YELLOW COLUMBINE

is not at all appropriate to the work of the photographer. It seems strange to go out after wild-flower studies dressed in winter-clothes with a heavy sweater and gloves on; but at this altitude, 13,000 to 14,000 feet, the temperature is never much above 40 degrees, and it is likely to drop to the freezing-point at any time if a cloud comes over the sun. Another trouble is that the cloud is likely to descend on to the mountain at any moment and envelop the photographer in semi-darkness. I was just ready to make an exposure on the *Sieversia turbinata*, at an altitude of 14,000 feet, when a heavy cloud dropped over me; I waited a few minutes, hoping that it would lift, but it seemed to be getting darker, so I made the exposure, giving it three times as long as I had intended, and then I packed up my outfit as quickly as possible, but my fingers were numb with the cold before I was ready to start on. Fortunately it was only a short climb to the top and the shelter and warmth of the Summit-House, where I arrived just in time for supper.

Supper is early at the Summit-House, for every one gets up at four o'clock in the morning to see the sunrise. Sometimes this is a glorious sight; but even if there is no particular interest in the east, it is always fascinating to me to watch the growing light on the mountains and valleys to the westward. This might be a wonderful subject for a big painting, but it cannot be adequately represented by a photograph.

For wild-flower portraits, like the accompanying illustrations, it is necessary to have a camera with a bellows-extension equal to twice the focal length of the lens. This permits making pictures of the small plants life size. Any sort of lens will do, as it will have to be stopped down very small to obtain the necessary depth of focus. Orthochromatic plates are essential and usually a ray-filter should be used, particularly for blue or purple flowers with yellow centers.

My equipment was a 5 x 7 Century camera with R. R. lens and Ideal, three-time ray-filter. I carried a tripod to use when working among the cliffs; but for most subjects I had to get

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COLORADO COLUMBINE

much closer to the ground, so I generally laid the camera-case down, leveling it up with stones, then set the camera on it, extended to the full length, and moved the whole camera back and forth until the principal flower was in focus, then reduced the aperture until sufficient depth of focus was obtained. Most of my pictures were taken with the diaphragm set at F/64 (U.S. 256), and even that did not always give as much depth as I wanted. These are the numbers on the scale, but it must be remembered when computing exposures that if the lens is twice as far from the plate as the normal distance, the F-numbers become twice as great and the exposure must be four times as long. Such long exposures are not always possible, however, on account of the movement of the plants, so it is often necessary to be satisfied with a little indistinctness in the background for the sake of greater speed.

The attractiveness of the flower-studies may be very greatly increased by coloring them and this is very easy to do with the various transparent colors on the market; but, unfortunately, they are not at all permanent. It is worth while to use colors that will last, although it takes a great deal more skill, and only the more expensive of the standard water-colors are sufficiently transparent; but the results obtained will justify the effort. This work will recall pleasant memories on long winter evenings.

ANEMONE KENNETH HARTLEY

CACTUS KENNETH HARTLEY

FRENCHMAN'S BAY AT BAR HARBOR, MAINE — GEORGE R. KING

A National Menace

SQUARE DEAL

IN speaking of an important national menace I shall confine myself to pawnshops and saloons, for these are surely among the principal trouble-makers which the nation is obliged at present to contend. I propose to say very little here about the saloon, except as a rendezvous of thieves, since this question is being fought at present throughout the country, and in many places successfully so; but the pawnshop — that insidious, subtle element of society — will receive the greater part of my attention.

It may seem strange that a subject of this kind should be first approached through a photographic magazine; but one will have to agree with me that it must be started somewhere, for agitation along these lines has been most sadly neglected in the past. I fancy that, after reading this article, many will say — Why, it's strange that I've not thought of this matter.

But one may ask why I should attack the pawnshop or the saloon. What have they done to me? I might answer this by putting the question — What have they done to others? The saloon has never harmed me in the least, directly; but it pains me to see the misery it has brought to others. The pawnshop has made trouble for nearly all of us, either directly or indirectly. During my eighteen years' experience in managing a photographic supply-business I have been in a better position than many others to witness the harm that results from their methods. Hundreds of cases have come to my notice where cameras and lenses of every description have been stolen from photographers, amateur and professional. Personally, I have been a victim many times. Appeals without number have come to me for assistance to locate stolen cameras and lenses, and in a few instances I have been able to offer suggestions that led to the recovery of the stolen goods. In several cases my efforts have been rewarded by watching the thieves take a much-needed vacation at Sing Sing; but such vacations were comparatively short, for these pirates, like the Mulligans, are soon out and at it again. And why is this so? Simply because stealing and turning the goods over to the pawnbrokers offers them a money-making opportunity without much work or effort and, apparently, with little risk of being detected. It is no secret that the average pawnbroker welcomes with outstretched hands, and no questions asked, the man or woman who has something of value to turn into money.

If all those who make a business of pawning would redeem the goods at the end of the stated time, it might be reasonable to assume that the articles pawned were not stolen; but such is not always the case. According to law, the pawnbroker must hold the goods in pawn for one year, at the end of which time he may dispose of them through the pawnbroker's auction-sale. I am not prepared to say as to the percentage of unredeemed pledges that do find their way to these sales: but it is large. If any one doubt my word, let him attend one of these auctions and he will be convinced. There he will find goods, of every description, being turned into cash, and at profits that would astound those who are not familiar with this kind of thing. Here is an illustration.

Some time ago a lens that belonged to me was stolen from one of my customers to whom I had lent it. The pawnshops were searched; but nothing was found. A little over a year afterwards another customer of mine came in to show me what he had bought in the way of a bargain at one of the pawnshops. He had paid $75 to a pawnbroker who, in turn, had bought it at the pawnbroker's auction-sale. It had been brought there by another pawnbroker who had bought it from the thief for $6. You may draw your own conclusions. This transaction netted the two pawnbrokers over 1,200 per cent profit.

Now you will ask me what will become of the poor man who needs a loan, if the pawnbroker is put out of business. My contention is that the pawnbroker's proposition, as it stands to-day, is a thorn in the poor man's flesh. He is asked to pay 24 per cent interest per year, when, in fact, he ought to pay no more than the legal rate of 6 per cent, if the municipalities throughout the country took charge of this business. If this plan is not feasible, let the government take charge of the matter, as some of the European countries are doing. For instance, if New York would establish a dozen places where money could be borrowed at 6 per cent by deserving applicants, and in each and every instance the application would be investigated before the loan were made, is it not clear that the honest borrower would be benefited; whereas it would be impossible for the thief to raid a house and turn over his nefarious pillage into gold as soon as he can visit the licensed pawnshop after the theft and possible murder has been committed.

I fail to see where the public gets a square deal under our present system. I, alone, cannot hope to put an end to the activities of these parasitical Molochs; but if we all pull together and place the matter squarely before the public, it will not be long before the subject is discussed in legislative halls and elsewhere. Let every one put his shoulder to the wheel and help this just cause along. Every time we remove an evil from society, we get just that much nearer to the long-looked-for millennium. If the dawn of the much-talked-of new civilization is about to be with us, let us enter into the new order of things with only a recollection of the saloon and pawnshop as evils which had to be tolerated during the unfolding of our consciousness.

PEAK'S ISLAND, MAINE — PHILIP CONKLIN

NORWAY-PINES — CHARLES O. DEXTER

Why I Use a Soft-Focus Lens

CHARLES O. DEXTER

THE lens with which to obtain the most satisfactory results depends upon the particular line of work one intends to pursue. My interest has been particularly in landscape and a little in portraiture. For this work I have tried different types of lenses, such as the single achromatic, the rapid rectilinear and some of the best anastigmats. None of these, however, would give entire satisfaction. But on trying the soft-focus lens, I found it possible to obtain a latitude of quality that I had never been able to acquire before.

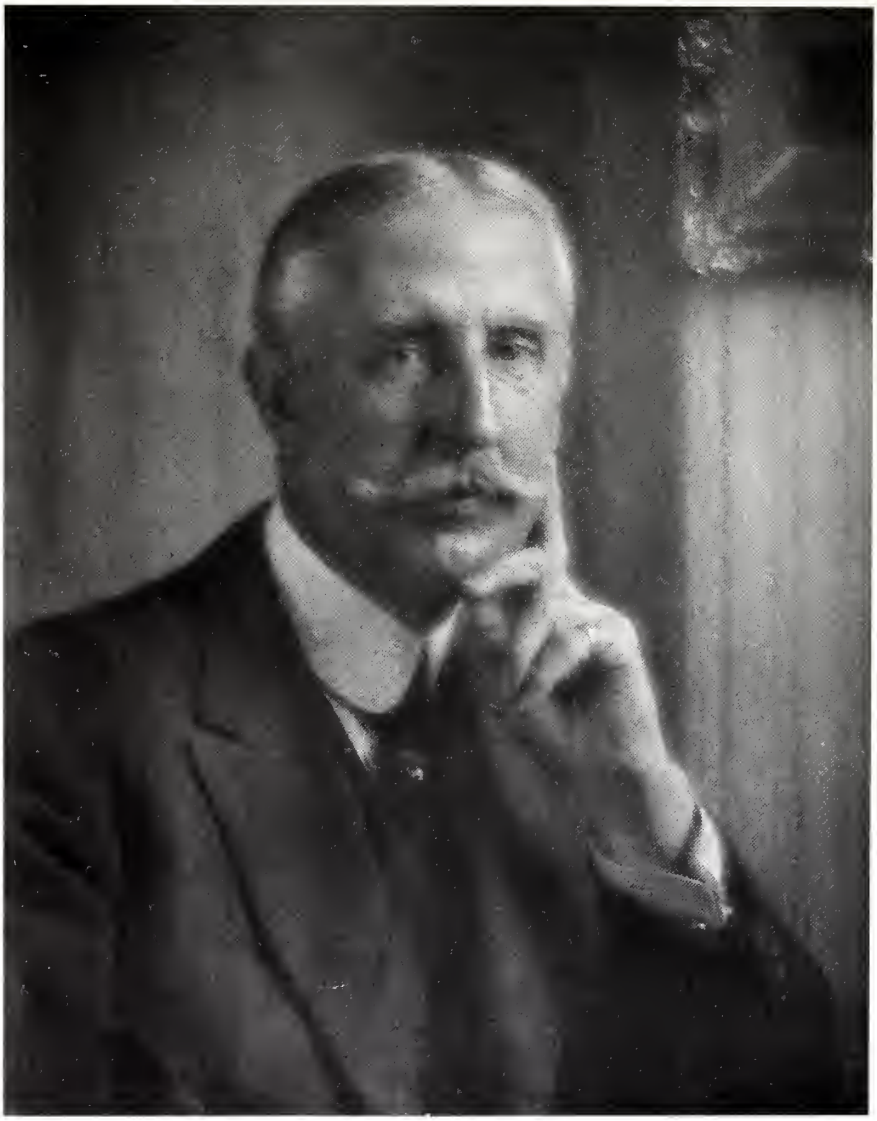
With the anastigmat lens, for instance, diffusion could be obtained only by throwing the lens somewhat out of focus, and usually some part of the picture was very sharply focused; whereas other parts were more or less diffused, giving a very disagreeable effect. Such faults, of course, could be somewhat modified in the printing.

With the soft-focus lens, by proper focusing and by varying the size of the aperture, almost any quality desired could be obtained, and, at the same time, it was possible to obtain a better atmosphere, a more stereoscopic effect, a better separation of planes, and a pleasing quality throughout. By proper control of the aperture, the quality of the sunshine could be better obtained than with a highly corrected lens. With the latter when the sun is shining brightly on foliage, where any portion of the view is out of focus, every leaf or object in the sunshine appears as a diffused white ball of light; whereas with a soft-focus lens, by controlling the aperture and on account of the apparent depth of focus of the lens, every portion of the view seems to be in equally good focus, and the light is softly diffused.

In portraiture, except possibly in the case of children, whose features are round and skin is smooth, it seems to me that the soft-focus lens

EARLY SPRING

CHARLES O. DEXTER



SELF-PORTRAIT CHARLES O. DEXTER

has some advantages over even a portrait-lens. The amount of diffusion is easily controlled and all parts are apparently well focused. For instance, if the camera is focused sharply on the eye, as is the usual practice, the ear or hair or any other part of the person appearing in the picture also appears in focus and perfectly natural; whereas, with a highly corrected lens, if focused on the eye, all the detail at that point is sharply delineated. Besides, other portions of the features, such as the ear, for instance, which is beyond the plane of the sharp focus, frequently appears only as a ball of diffusion having little resemblance to an ear and does not accord with human vision.

As the soft-focus lens is only partly corrected for certain colors, considerable care must be used to get satisfactory results. Under certain conditions of coloring, it will be noticed that with certain colors in the view the diffusion will be much more extreme at a certain aperture than under other conditions with other colors.

There are, of course, some subjects to which a soft-focus lens is not well adapted under any circumstances, such as marine-views with breaking surf, where all detail would be lost.

BY THE OLD MILL-STREAM — CHARLES O. DEXTER

Supplementary Lens-Sets and Their Uses

A. E. SWOYER

IT is well known that many different results may be obtained in photographing any object from a fixed point simply by changing the focus of the lens used: commercial photographers, pictorialists and others who are forced either by the nature of their work to produce views of varying angle or who desire to interpret properly that which they see before them usually meet this need with a "battery" of lenses — that is, a number of lenses of varying foci which will fit interchangeably into the camera-shutter and may be substituted one for another as the occasion arises. Such a battery is not only rather expensive, but is bulky and awkward to carry: fortunately, the supplementary lens-sets — consisting of a number of glasses of varying foci not usable separately, but intended to slip over the lens already on the camera and to be used in connection therewith — are obtainable at slight expense and will meet the needs of the average worker satisfactorily.

Such sets consist usually of six glasses; these are known respectively as portrait, copying and enlarging, wide-angle, telephoto, ray-filter and duplicator. The first four named are those with which we have to do, since the purpose of the others is served without affecting the focus of the combination: that of the ray-filter is simply the more or less proper rendition of color-values when it is used in connection with orthochromatic plates, whereas the duplicator has the unique, but almost useless, property of allowing two photographs to be made on opposite ends of the same plate.

The purpose of the others, which are so-called positive- or negative-lenses, as the case may be, is to change the focus of the combination when slipped over the lens already on the

camera; it is in reality the focal length of each combination and not any inherent quality in the supplementary lens itself which produces the desired result. To understand the effect of such lenses, therefore, it is necessary first to go a little into the results which changes in the focal length of a lens-combination will produce.

Changing the focal length, of course, affects the angle of view covered, the depth of field, and the speed of the combination. Thus we know that the question of whether a lens is classed as a normal or wide-angle depends almost entirely upon the size of the plate with which it is used; that is, if the focal length is equal to the diagonal of the plate, the lens is usually classed as normal; if much greater than the diagonal, as long-focus or even as telephoto and if much less, we call it a wide-angle. A single 5-inch lens, therefore, might be normal for a 3¼ x 4¼ plate, long-focus on a 2½ x 3½, and wide-angle on a 4 x 5. A 5-inch lens would be an extreme wide-angle on a 5 x 7 plate, but would have to be stopped down considerably in order to cover it properly. Inasmuch as the lens with which your camera regularly is equipped is presumably "normal" for the size of plate or film used, if you fit a supplementary lens marked "wide-angle," you produce a combination of shorter focus than the original lens, but which will not cover the entire plate unless it is stopped down. The angle covered by lenses or combinations of any focal length may be determined readily from the table opposite, which is published by the Eastman Kodak Company.

Table of View-Angles

As compiled by CLARENCE B. WOODMAN, PH.D.
Courtesy of Eastman Kodak Company

Divide long side of the plate by Equivalent Focus

If the Quotient is	The Angle is	If the Quotient is	The Angle is	If the Quotient is	The Angle is
	Degrees		Degrees		Degrees
0.282	16	0.748	41	1.3	66
0.3	17	0.768	42	1.32	67
0.317	18	0.788	43	1.36	68
0.335	19	0.808	44	1.375	69
0.353	20	0.828	45	1.4	70
0.37	21	0.849	46	1.427	71
0.389	22	0.875	47	1.45	72
0.407	23	0.89	48	1.48	73
0.425	24	0.911	49	1.5	74
0.443	25	0.933	50	1.53	75
0.462	26	0.954	51	1.56	76
0.48	27	0.975	52	1.59	77
0.5	28	1.0	53	1.62	78
0.517	29	1.02	54	1.649	79
0.536	30	1.041	55	1.678	80
0.555	31	1.063	56	1.7	81
0.573	32	1.086	57	1.739	82
0.592	33	1.108	58	1.769	83
0.611	34	1.132	59	1.8	84
0.631	35	1.155	60	1.833	85
0.65	36	1.178	61	1.865	86
0.67	37	1.2	62	1.898	87
0.689	38	1.225	63	1.931	88
0.708	39	1.25	64	1.965	89
0.728	40	1.274	65	2.0	90

More accurately, the diagonals of the plates should be taken. Diagonals of common sizes are as follows: 3¼ x 4¼, 5.3; 3¼ x 5½, 6.5; 4 x 5, 6.4; 5 x 7, 8.6; 6½ x 8½, 10.7; 8 x 10, 12.8 inches.

Table of Hyperfocal Points

Equivalent Focus of Lens	At Stop F/4.5	At Stop F/5	At Stop F/6.3	At Stop F/8	At Stop F/11	At Stop F/16
	On Scale	On Scale	On Scale	On Scale	On Scale	On Scale
5″	117′	106′	84′	66′	48′	33′
6″	169′	152′	121′	96′	69′	48′
7″	231′	207′	165′	130′	94′	65′
8″	300′	271′	215′	170′	123′	85′
10″	470′	423′	336′	265′	192′	132′

Example: A 5″ lens with stop F/16 would show everything sharp from 16′ to infinity if the pointer were set to 33′ on the scale. At F/4.5 the same lens set at 117′ would give sharp images of objects only from about 58′ to infinity.

Depth of field, also, is much affected by the focal length of the lens or the combination used; the shorter this focal length becomes, the greater is the depth of field, as may be seen in the table above, adapted from one published by the above-named firm. This point becomes of value when it is desired to use a camera rapidly or secretly, as in street-photography, for, of course, the greater the depth of field the less will be the need of accurate focusing. Although a supplementary lens is rarely used to shorten the focus for this purpose, there is no reason why it might not be done, provided its corrections were such as not to necessitate too great stopping down in order to obtain a sharp image. Such stopping down also increases the depth of field and becomes important when a negative-lens is used in connection with that already on the camera to form a telephoto-combination in order that any depth may result.

The speed gained by shortening the focus of the combination is often overlooked, yet that greater speed is obtained thus may be determined by a moment's consideration. We know, of course, that the F-value of a lens at any opening is found by dividing the focal length by the diameter of the actual aperture, both being in inches; a 6-inch lens, then, with an actual diaphragm-opening of 6 inches, would work at

PENNSYLVANIA STATION, NEW YORK KARL STRUSS

F/6. But suppose that we slip a supplementary lens over the glass already on the camera and thereby reduce the focal length of the combination to 3 inches; the actual opening of 1 inch would remain unchanged and the working-speed of the combination would be reduced to F/3, allowing an exposure to be made in one-fourth the time required for the regular lens alone. In practice, of course, this increase in speed could not be carried to any such extent; the optical corrections of such a combination would not be sufficiently good to permit of its working at such a large relative aperture, and it would be necessary to stop down in order to secure critical definition, while the covering-power would be insufficient without the application of the same remedy. Thus, in either case, much of the gain in speed shown by the figures would be sacrificed.

So much for a short summary of the factors introduced by the laws of optics which affect the results obtainable by altering more or less the focal lengths of the camera-lens; to apply these facts directly to the use of supplementary lenses, as such are listed in the sets commonly sold, let us consider separately each of the types previously mentioned and determine not only what sorts of work each makes possible, but the reason for the results obtained.

First mentioned of such lenses was the portrait-attachment; this shortens the focus and, when properly made, introduces a very slight diffusion and produces the roundness of image so much desired and found rarely except in the complete lenses designed for studio-work in portraiture. This supplementary lens should not be confused with the Kodak Portrait-Attachment, which is designed solely to permit large bust-portraits or good-sized images of objects at close range to be made even with the

short bellows-draw of Kodaks and other pocket-cameras; it gives better definition than the attachment sold with the sets and is suitable for a wider range of work, but it does not give the diffusion nor roundness of image noticeable with the former. Thus the portrait "slip-over" lens is suitable not only for portrait-work, but for landscapes and other work where increased speed and a pictorial effect is desired as well. The Kodak Portrait-Attachment, while giving good results in portraiture within the limits above set forth, may also be used to produce any sort of large-sized image with a camera of short bellows-draw; it is particularly adapted to all cameras in which focusing is done by scale, since each lens is accompanied by a scale giving the points at which the pointer should be set to bring the attachment into focus for any distance. If the supplementary lenses as usually sold are used, these points should be determined by focusing the empty camera with the back removed and a sheet of ground-glass in its place and the results marked on the focusing-scale; this, of course, is necessary only with those cameras which ordinarily do not provide for ground-glass focusing.

Next in the list comes the copying and magnifying "slip-over"; this is so like the Kodak Portrait-Attachment in its possibilities that the ground was pretty well covered in the preceding paragraph. As implied by its name, its particular function is to copy photographs, drawings and similar objects, as well as to photograph small objects in natural size with a comparatively short bellows-draw. This magnification may be increased by interposing a reading-glass between the object and the lens, as explained in an earlier article of mine in PHOTO-ERA. The copying- and enlarging-lens is not strictly interchangeable with the portrait-type, for the reason that it is corrected to give a more or less flat field and also a sharp image rather than one slightly diffused.

The wide-angle attachment is another positive-glass which shortens the focus of the combination; while this glass is so ground that it tends to increase the angle of view covered and also to obstruct as little of the light-rays entering at an obtuse angle as possible, still it requires considerable stopping down in order to cover the plate properly, and hence offers no increase in speed. Its field is that of the ordinary wide-angle, although it is not so satisfactory in use as a properly corrected complete lens of that type: it should be used in confined situations, and although it may be employed in a small room to make good-sized portraits which would be impossible with a lens of longer focus, its proper field is in architectural photography and in interior-work. If you do a great deal in these special lines, it will pay you to invest in a wide-angle anastigmat; but if you follow the general practice of amateur-photography, the supplementary lens will enable you to meet the few occasions for wide-angle work which will arise. In using any type of wide-angle lens it is to be remembered that apparent distortion will be the result, although this distortion will vanish if the print is inspected at a distance equal to the focal length of the lens used; yet such inspection is usually made at a greater distance and the wide-angle should never be used unless it is otherwise impossible to include the desired portion of an object from the available viewpoint.

Last of the supplementary lenses with which we have to do is the telephoto-attachment; this is the only negative-glass of the series here referred to and, therefore, while unable of itself to form an image, in connection with the positive-lens already on the camera, it forms a long-focus combination valuable in photographing distant views or in obtaining large-size images of nearer objects. Its use also is suggested in ensuring better perspective and in obtaining large-size images upon the original negative instead of relying upon subsequent enlarging, although in the latter case it is necessary sometimes to enlarge, even when with the aid of the telephoto an image of fair size has been obtained in the first place; this is particularly true in natural-history work. But, as we have seen, as the focal length of a lens is increased its depth of field decreases; therefore it is necessary to stop down the telephoto-combination, not only for this cause but in order to compensate for errors in its corrections. In spite of all this, the supplementary telephoto-lens finds a multitude of uses in even the ordinary work of photography.

Of the four lenses here mentioned it is somewhat difficult to choose, in so far as general utility is concerned. Each and all of them have their uses and are worth having in one's equipment. They may be used not only each for its special purpose and thus greatly enlarge the field of the camera already equipped with a general-purpose lens, but within limits they may be used each in ways other than that for which they were designed particularly, and thus give an assortment of focal lengths permitting even of serious pictorial work, and without the expense and bulk attached to batteries of complete lenses. In this connection, however, it is well to sound a warning as to the extremely cheap sets of supplementary lenses sold by the department-stores and others; the best sets are far from expensive — many standard makers supply complete

sets of the six pieces for $9.00, or single glasses at $1.50 each — and will ensure a quality of work at least sufficient to warrant their use.

As has been stated previously, the use of such lenses is based upon the fact that, when employed in connection with the regular camera-lens, they form a combination with a focal length different than that of the lens alone. Since the working-aperture is found by dividing the focal length by the actual aperture, and since in such combinations the actual aperture remains the same, it is plain that as the focal lengths are altered the diaphragm-markings on the shutter become inaccurate. In order, then, to determine the proper exposure for each of the various combinations, it is necessary to calculate the F-value of the opening for each; it may then be marked upon the mounting of the supplementary lens where it is always convenient for reference.

Finding this relative aperture may best be done by means of the formula, $\frac{ab}{c} = x$, where x is the F-value of the fixed aperture for the new focal length, a is its F-value for the regular camera-lens alone, b the old focal length, and c the new focal length. As an example, suppose that a lens of 8-inch focus is capped with a supplementary lens reducing this focal length to 6 inches, and it is desired to find the F-value for the new combination of F/8 as marked on the original shutter. Substituting in the formula, we have $\frac{1\frac{1}{3} \times 8}{6} = x$, or $x = 1\frac{1}{9}$, which is the equivalent of F/6. Since we do not always have the focal length of the new combination, it is well to remember that it may be found with sufficient accuracy for our purpose by focusing upon some distant point and then measuring the distance between the center of the lens-system and the ground-glass — this is not invariably correct, but we may treat this distance as the required focal length without introducing errors serious enough to interfere with our calculating the necessary exposures.

Thus endeth the summary of the powers and uses of the supplementary lenses — and dry and uninteresting enough it sounds. Nevertheless, if one experiments with these glasses, paying some attention to the limitations of their use as here set forth, and using care to see that the exposures are correctly made for the actual working-aperture of the lens-system, instead of for the stops marked on the shutter, the results obtained will soon prove the utility of the cheap and sometimes despised slip-overs.

In my intercourse with people I find that quite often the person who knows the least about what constitutes a good picture is the one who most often is very decided in what he believes to be good or bad. — *Claude L. Powers.*

STILL-LIFE — H. R. DECKER

HONORABLE MENTION — STILL-LIFE

CASTLE KATZ AND ST. GOARSHAUSEN
H. A. LATIMER

A LAKE WINNISQUAM SHORE, NEW HAMPSHIRE — PHIL M. RILEY

Side-Trips in Camera-Land by Motor-Boat

WILLIAM LUDLUM, JR.

MY friend Charlie resides in one of the little towns on the mosquito shore of Long Island, within sound of the sad sea waves and in sight of the Fire Island light. He is the proud possessor of a motor-boat, one of the go-as-you-don't-please kind, and "once upon a time," as the fairy-story says, he invited me to take a trip on the heaving bosom of Great South Bay. When pressing the invitation he said, "Be sure to bring your camera along;" but if he knew me as well as some others, he would have realized that I wear my little "black box," so to speak, as I do my hat or shoes. I don't always make use of it, but I bear in mind "the things that happen when you haven't got a gun" and carry a supply of photographic ammunition for such emergencies.

To tell the truth, I don't know, without a lot of hard study, which end of a motor-boat is which. I bow to the stern and am sometimes stern to the bow, without being aware of the fact. Whether Charlie's boat is a hydroplane or a displacement model, I don't profess to know. All I really comprehend is that it is a boat, propelled by some kind of a "gas" motor, with the aid of much "hot air" supplied by the skipper and supposed to be provided with all patent devices for the safety and convenience of passengers, including both water- and fire-escapes. At any rate, Charlie says it is a "bird," and I cheerfully take his word for it.

To fortify myself with a proper number of technical terms before taking the trip I looked through the current motor-boat magazines, but in the face of so many new and strange names for parts and appliances I felt very much "at sea." I noticed in all specifications a certain number of H. P. I understand what C. P. refers to in reference to photographic chemicals; but where H. P. comes in on motor-boating I can't figure out, unless it means "hard put." I know that some motor-boats are very much H. P. on the speed-limit, and I can also see its application to certain photographers whom I know to be very much H. P. on the cash-limit. However, to return to our little excursion.

We, that is, Charlie, myself and a party of young ladies, "walked the plank" to board his

little craft early one July morning and, after only fifteen or twenty minutes of cranking and motor-adjustment, started off on our cruise. Charlie owns a neat little boat-house on the side of a narrow inlet where he "garages" his boat, and he was so intent on the "kicking" of his motor that he forgot the narrow limit of sea-room, knowing not that he was headed for the opposite bank until one of the ladies screamed, "Oh, Charlie! You're running into the shore!" Charlie jumped up and made a desperate jab at the bank with a boat-hook, but just then the bow struck and the shock landed him in a heap beside the motor. As a photographer I didn't know what I wanted most — a focal-plane shutter or a motion-picture outfit.

A nice experience for a land-lubber, to see the skipper of the expedition make such a blunder at the start, wasn't it? Well, after we picked Charlie up and set him on his "sea-legs" again, he pushed the boat around into the channel and we soon scooted out into the broad, open expanse of the bay. For possibly half an hour we sped along enjoying the invigorating effect of the salt air, when the motor suddenly gave a choking gasp and went "dead." Charlie stripped off his coat and went to it like an old hand on the job; but experienced as he was he fussed and fumed, and said unkind things about motors in general, and this one in particular, without seemingly making any headway. One of the young ladies at this moment commenced to sing "Drifting," and we all caught the "drift" of her meaning at once. It was a case of "drift" without the "draft," caused by a speeding boat; the sun was hot and we knew it. Happily the motor presently made up its mind to behave again; as it had "died," it emitted a second gasp of "gas-trick" import and then settled into a steady "purr" of self-started satisfaction. With the resumption of motion the breeze returned and we began to realize the possibilities of motor-boating again.

Making port at Oak Island about noon we proceeded to do justice to the contents of a generous lunch-basket. Never was feminine persuasion in the form of sandwiches more welcome, and I forthwith made a group-photograph, entitled, "Too many cooks is a lie."

After loafing around for an hour or so, during which time I took advantage of several good camera-opportunities, both landward and seaward, we continued our cruise and spent the afternoon in sailing around the bay, visiting Fire Island and other points of interest and returning to the inlet in good time for supper.

It may well be asked right here, "What has all this got to do with photography?" The answer is that motor-boating is only a means to an end like every other form of travel; in this particular instance the end in view is picture-making, and there can certainly be nothing more fascinating in photography than good "waterscapes." Also their variety is endless.

After this first experience in Charlie's motor-boat we made many more trips during summer and early autumn without a hitch of any kind, just gliding along as though motor-troubles were a thing unknown to navigation. Charlie explained the "kick-up" on the first trip as the motor's company manners, due to taking out a "land-lubber" for a first excursion on the deep — a sort of a "sea-hazing" process of initiation. If you want pictures, you must go where they are, and as the walking is sloppy at sea, I always welcome Charlie's invitations to increase my marine-collection. He provides the pictures and I get away with many of *him besides* that he knows nothing of. A motor-boat puts you on intimate terms with ships and many other things of importance that look tiny from shore, fills your lungs with ozone, gives you a good appetite — or none at all, either being beneficial — and tells you beyond question who has the prize disposition of the party. A motor-boat is as obliging as a horse trained to a milk-route. It will float along at quarter-speed so that you may "drink in" the passing waterscape, or will stop altogether at any time or place to ensure a negative free of fuzziness due to vibration, recalling the early pictorialist and his "dodge" of kicking the tripod-leg during exposure. Sometimes, too, it will stop of its own volition when no stop was intended; but even if Charlie borrows from another than Webster the words to express himself, the incident gives you an added opportunity for genre-pictures in the cock-pit as well as a stirring view of the always-at-this-time-approaching excursion-steamer that promises to pass within four boat-lengths and put your frail craft on its "beam-ends" with the wake.

However, all these incidents, the bitter as well as the sweet, are items in the scenario of many an interesting little drama that you will enjoy living over again the following winter and elaborating into a hair-breadth-escape yarn to your most readily gullible friend. Such is human nature, the enthusiasm of youth, artistic license, or what you will.

If you are lucky enough to own a motor-boat, or to have a friend kind enough to invite you for a cruise in one, take your camera and use it early and often; it will pay you pleasant memories, perhaps in dollars and cents. Steer by compass, expose by meter, and you can't go very far wrong.

Photographing Dogs

ARTHUR G. ELDREDGE

BEFORE going very far in dog-photography you will find that there are two classes of customers. There is the dog-crank who wants his dog portrayed in perfect position, broadside-view: and the other who prefers a characteristic self-posed picture, the latter being much in the minority. There is difficulty in pleasing the first-named, for he insists on adjusting the dog's anatomy by hand, the results of which are not always satisfactory. The animal will in most cases appear strained or frightened. He may have been a winner and his points well known, but that is not sufficient.

"The dog is a little heavy now, please make him look thin. He is a little thin now, don't make him look skinny. Can you shorten up his back a little and still take him broadside? His chops are two hollow now, don't exaggerate them with shadows," etc., *ad infinitum*. Alas! the poor photographer! He must perform magic with the powers of light and darkness. Motion-pictures are the only adequate means of displaying such a performance.

Perfect broadside-views become tiresome to me as a picture and make all dogs appear much alike in that they lack the individual and spontaneous expression characteristic of the subject. The self-posed picture may require longer to make, but leads to variety of results with individuality and is more interesting to the non-critic. Dogs that have been to a few shows know what is expected of them in the ring, but are frequently like disorder let loose when at home. The kennel-man or owner will confidently assert that he can pose the dog at once. After an hour or more of fruitless attempt to make ears stand up that are kept down, to keep down a back that stays up, and enough pulling up by the tail to loosen the roots — every one loses patience but the photographer. The dog is left to himself and frequently takes a good position as soon as your back is turned.

A dog is as conscious as a child as soon as you attempt to command him and bring the camera too close. You must in some way draw his attention to something which will cause him to forget your presence. Sympathy and understanding of animal-nature and, above all, endless patience, are as necessary as a camera. You may make a circus of yourself while the dog pays no attention to your antics. You may shout, sing or whistle, throw your hat into the air, clap your hands, jingle keys and throw your pocketbook away; it is of no use, he is as sober as a judge. But with my face hidden over the camera-hood a squeaky noise appears to come from within the mysterious black box; up go ears and tail and the face sparkles with curiosity. Get him quick before the expression fades.

Unless your patience is longer than infinity, you will not try to photograph dogs with anything but a reflecting-type of camera. The plate is always ready for exposure. The focus may be changed instantly, and it requires neither tripod nor focusing-cloth. My own equipment for this work has been a 5 x 7 long-focus or a 4 x 5 long-focus reflecting-camera having focal capacity of at least 20 inches and fitted with lenses of 11 and 18 inches focus.

EXERCISING A BORZOI — ARTHUR G. ELDREDGE

The nearer you are to the subject, the

more do you attract his attention and so increase your difficulties. With an 11-inch lens and a 4 x 5 plate you are able to get so far from the subject that he forgets you are about. It gives a more truthful idea of the animal's proportion and a sharp negative that will enlarge well. A 4 x 5 print of a St. Bernard is not very convincing, but if you enlarge it to 6½ x 8½ or 8 x 10, you will have a result that starts the dollars rolling.

ENGLISH SETTER — ARTHUR G. ELDREDGE

I have found that an entire day is not too long to spend at one kennel and on one occasion two days did not yield satisfactory results. I like to have the animals free in a good-sized enclosure. This allows them to feel natural and they soon lose interest in me. They require constant watching, or the pose you have been waiting for with proper lighting and background may last but a second or two. The difference between a day's success or failure may often depend upon whether you keep a constant watch or not.

A view taken from a level above the animal's back shows him to a disadvantage by foreshortening the legs and destroying all sense of the body's elevation. With a lens of long focus, held slightly below the middle of the body, proper relation of parts is ensured and a picture more commanding in appearance. It is well to have the light at an angle of 25 to 75 degrees with the dog's side to give an appearance of roundness; but do not fail to give a full exposure and soft development, or the shadows will look like caves. It has always been my preference to avoid photographing a dog held by leash. He is likely to appear strained in position, the hair and position of neck are usually much disturbed, and considerable labor is necessary

FRENCH BULLDOG — ARTHUR G. ELDREDGE

to remove the leash entirely from the negative.

It is hopeless to attempt any work in warm weather. Months are always open and the animals are decidedly inattentive. Even in cold weather, short-nosed varieties, such as bulldogs, spaniels and pekingese, will pant easily.

I have never tried to do any work of this kind indoors; it is quite difficult enough in the clear sunlight. Under a large studio-light it might be easy to get results with a very quiet subject. If it were necessary to work in the dwelling, I would select the largest window and strongest light, using a light background and a white reflector — a sheet will do, a reflecting-camera to allow quick focusing, the fastest plates, and a flash if necessary. A light-colored dog might be taken in one-tenth second if the light is very good.

Photographing any kind of animals requires a good deal of time. In spite of your care there will be many negatives to throw away because the position or lighting is not quite right. If from two dozen exposures I can select twelve, or even six negatives that suit me, it is a better investment of my time than if I had made twelve half-rate negatives in an hour.

One can learn a lot about dogs through the use of a camera, and, incidentally, a little of human nature.

A FRENCH BULLDOG PROFILE — ARTHUR G. ELDREDGE

THE writer feels it to be a mistake for an artist to specialize, as an occasional excursion into portraiture by a landscape-worker, or into genre by a portraitist will result in a fresher viewpoint when the artist returns to his own field. It may be mentioned that the greatest artists have never confined themselves to their specialties, some of Rembrandt's finest work having been in landscape or still-life, while Velasquez did genre as well as portraiture, and the same is true of others. It may also be well to note that under-production is to be preferred to over-production, for, while the former means only less technical facility than would otherwise be possessed, the latter means that the worker is putting out pictures that have not been carefully considered, and this results, not only in immediate inferiority, but in lowering the worker's standard. A man may be a great artist without being a great technician, provided he has something to express; but the finest technique will leave us cold if it expresses no spiritual quality. — Paul Lewis Anderson in *Pictorial Landscape-Photography*.

WEST HIGHLANDS SCOTCH TERRIER

SAMOYEDES FROM SIBERIA

ARTHUR G. ELDREDGE

EDITORIAL

The Secret of Perfect Prints

COMPLAINTS are often heard that the quality of prints exhibited at conventions by the manufacturers of printing-papers is so high that the consumer, however experienced and skilled he may be, is unable to equal it. Discriminating amateurs, not content with their efforts to obtain satisfactory prints, turn their negatives over to a professional photo-finisher, and, although willing to pay almost any price for prints of the highest quality, they are greatly disappointed with the results, and wonder thereat. So does the photo-finisher, although he professes to follow faithfully the directions of the manufacturer. Of course, these are isolated cases; yet they merit analysis and correction.

Without attempting to go into every detail of the operations that constitute the printing-process, it is sufficient to point out in what particulars the operator fails to do himself justice. In the case of the professional worker, all operations should be conducted amid the most favorable conditions. There should be a plentiful supply of good water (for chemical solutions, rain or distilled); good ventilation and pure air; spacious trays for every purpose; the best of chemicals, and every facility to produce uniformly good work. But the printing-medium? This is frequently the cause of all the trouble; for, if it be procured of a dealer who has no suitable place to store sensitized and sensitive material, it is likely to be spoiled and cannot be expected to yield perfect prints. Never suspecting that his dealer might be responsible for the poor quality of the paper, many a consumer has condemned a product that was in perfect condition when it reached the dealer. Dampness, heat or the fumes of chemicals imperil the keeping-quality of any sensitized material, whether paper, plates or films.

The foregoing applies equally to the amateur worker, but with additional advice. As has been previously pointed out by the Editor, the amateur practitioner quite naturally adopts what he considers the easiest methods of manipulation — trays for developing and toning, only a little larger than the size of his print and which hold the minimum quantity of solution. The result is that the solution does not act upon a single print as uniformly as when the professional handles a batch of prints, *i.e.*, in a tray of liberal dimensions. Then, too, where the amateur slowly and deliberately develops one plate at a time — plate and tray agreeing in size — the professional manages four or more, simultaneously, in one large tray or in a developing-tank. Here, also, uniform chemical action and economy of time will be found in the balance of gain. Furthermore, users of standard papers may rest assured that the manufacturers have no special or secret method of practice, in order that they may produce prints of superior, and to the general practitioner unattainable, excellence. To be sure, the makers use only superior negatives and exhaust their technical skill in preparing prints for exhibitions to exemplify the particular qualities of their papers, and which it should be every consumer's ambition to equal.

Licensing the Itinerant Photographer

THE subject of licensing the itinerant photographer has been the subject of spirited discussion at conventions and in the photographic press for many years. It is not the purpose of the Editor to enlarge upon this topic at this time, except to state that, in his opinion, the traveling photographer is not a necessary evil — as he has been sometimes referred to — but a positive benefit to the photographic business.

A worthy member of this nomadic division of the craft, Mr. Arthur Wendel, after reading our February editorial, "Obtaining Business on False Pretenses," chides us for our unfriendly attitude towards his fellow-workers and sincerely hopes that we will discontinue our hostile policy. His characteristic missive is printed elsewhere in this issue. He has evidently misinterpreted the intent of the article in question, for the criticism was directed not towards the traveling photographers as a body, but rather towards a discreditable class of itinerant workers. Mr. Wendel seemingly justifies the existence of his brother-hustlers, and presents a very strong argument in their behalf, which makes the small, local craftsman look somewhat ridiculous.

In a certain large city, in the state of New York, the municipality has instituted a tax of fifty dollars on itinerant photographers. The high cost of the license acts as a deterrent for the interesting ceremony of presenting the keys of the city to an "errant knight of the camera" is yet to be recorded.

HELEN
HOMER LEWIS STEWART
FIRST PRIZE — FLASHLIGHTS

PHOTO-ERA MONTHLY COMPETITION

For Advanced Photographers

Closing the last day of every month. Address all prints to PHOTO-ERA, Monthly Competition, 383 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.
Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Rules

1. This competition is free and open to any camerist desiring to enter.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data.

4. Each print entered must bear the maker's name, address, the title of the picture and the name and month of the competition, and should be accompanied by a letter, SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. If suitable, they will be published in PHOTO-ERA, full credit in each case being given to the maker.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15 unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express very cheaply and with indemnity against loss.

7. The prints winning prizes or Honorable Mention in the twelve successive competitions of every year constitute a circulating collection which will be sent for public exhibition to camera-clubs, art-clubs and educational institutions throughout the country. The only charge is prepayment of expressage to the next destination on the route-list. This collection is every year of rare beauty and exceptional educational value. Persons interested to have one of these PHOTO-ERA prize-collections shown in their home-city will please communicate with the Editor of PHOTO-ERA.

Awards — Flashlights

Closed March 31, 1915

First Prize: Homer Lewis Stewart.
Second Prize: Bradley Studio.
Third Prize: Harry H. Hess.
Honorable Mention: Dr. David Bevan, Mabel Heist Bickle, Alton Franklin, C. E. Kelsey, R. D. Noyes, William H. Spiller.

Special commendation is due the following workers for meritorious prints: Edna Blackwood, W. R. Bradford, Anthony Cambanes, Fred Clemow, Dan Dorcey, Alice F. Foster, J. P. Jones, C. M. Kenzie, Alice H. Knight, E. D. Leppert, R. C. McReynolds, Neil Wane Northey, Charles B. Piper, W. R. Potter, Edwin A. Robert, Ford E. Samuel, John H. Seamans, A. C. Smith, Harold E. Tolman, Van Rensselaer Townsend, Florence M. Uhl, Alice Willis, Mrs. R. C. Worsdell.

Subjects for Competition

"Landscapes with Figures." Closes June 30.
"Outdoor-Sports." Closes July 31.
"Public Buildings." Closes August 31.
"Clouds in Landscape." Closes September 30.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the publisher will give them the choice of photographic supplies to the full amount of the prize ($10.00), or a solid silver cup of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Change of Address

MANY of our subscribers wish to have their addresses changed on our mailing-list during the vacation-months of summer. In order to avoid delay in the receipt of PHOTO-ERA, and possible loss in forwarding, we urgently suggest that all requests for changes of address be sent to us before the 5th of the preceding month, as the envelopes must be addressed and classified for mailing on the 20th.

June

A NOISE like of a hidden brook,
In the leafy month of June,
That to the sleeping woods all night
Singeth a quiet tune. — *Coleridge.*

Outdoor-Sports — Photo-Era Competition

Closes July 31, 1915

IT is a common fallacy that a reflex, with focal-plane shutter working at great speed, is an essential for making pictures of sporting-subjects. Of course, it depends on the sort of results one is working for, and the advocate of wiry sharpness can get it only in that way; but if a pictorial quality is sought for, it will seldom be found by that road. By very rapid shutter-work all motion is arrested and the swiftly-moving object is represented as if turned to stone in the midst of some great effort, reminding one grotesquely at times of the ossified figures exhumed at Pompeii.

If motion is to be represented, some slight blur or indistinctness should be present. One does not see all the spokes in a rapidly revolving wheel; and if they can be counted in the picture, no feeling of motion can possibly be presented to the mind. High-speed shutter-work then, although very interesting as a mechanical accomplishment, is seldom counted in the ranks of pictorial photographs.

A reflex, or some camera of the reflecting-type, is, however, very convenient for taking objects in motion, and a focal-plane shutter need not be used at top speed, but can be adjusted to give almost any desired result. For races, athletic meets, and that sort of sport it is undoubtedly the best form of hand-camera available; but in the larger sizes it is rather heavy to hold and operate, and the man with a tripod-equipment can usually find a spot where a good view of the finish of a race or the crucial moment may be photographed successfully with less trouble and anxiety than if he were dodging about in the crowd with a hand-camera. Each style of equipment has its advantages and its loyal adherents who would scorn any other method, so no attempt will be made to dictate.

The sports of summer are legion and they are omnipresent. For the baseball-fan and the football-enthusiast there are limitless opportunities for exposures — from the improvised "scratch team" on the village-common to the big league-games in the stadium. The thing to be sought for in such pictures is *life and action.* The figures should be large enough to dominate the composition and if partly obscured by a cloud of dust, raised by their rapid motion, none the worse, for that is one additional way to indicate that motion.

A moment should be chosen when the action is pronounced and vigorous, such as a slide for base, or when the catcher jumps for a high one. If a focal-plane shutter is used at medium speed, the results should be good. If a before-the-lens shutter is used, it should be set at a high speed, and very slow development utilized to compensate for any underexposure.

A very picturesque sport, but one too seldom seen in this country, is polo. The well-trained polo-pony is one of the wisest and cleverest of animals and one that it should be a joy to photograph in action. Another sport little seen here, though possibly the most picturesque of all, is the riding to hounds. Here you have the advantage of the country-setting, and the picture made by the running dogs with horses and riders following, possibly rising to a fence or hedge, is one never to be forgotten, and if successfully caught by the camera should surely prove a prize-winner.

Not all of us, however, have a chance at such subjects as these, and must be content with more common and less picturesque material. A familiar subject, and one easily photographed, is found on the tennis-courts. Here, as in other sporting-subjects, however, the chief desideratum is action. A figure standing squarely on both feet and holding racket and ball hardly represents the game, even though there is a net in the background. The graceful, backward sweep of the racket and figure, when a high ball is to be returned, is more picturesque even if a little blur is present.

Another game that has the advantage of a background of fields and hills is golf. Usually there is some place on the links where an attractive setting may be found; and a group of players and caddies, with bag and sticks, make good material for attractive compositions. There is a chance for best action at the tees, though the putting-green has its good points also. Rather more difficult to obtain are pictures of hunting- and fishing-exploits. Great are the possibilities, however, of such sports as big-game hunting in the Maine woods. It would be good fortune, indeed, to obtain a picture of a hunter just bringing down his quarry. But a picture taken after the successful shot, when the deer or bear is being skinned or taken into camp, would be of interest to more than the hunter if the background is well chosen and the composition well thought out.

The fisherman in rubber boots, with rod, reel and basket, working his way along a trout-brook, or skimming the pool at the foot of a waterfall with some well-chosen fly, is a picturesque figure; and if caught with rod bent to a graceful curve by a lusty trout, so much the better — both for him and your picture.

For those who live near the water, there is another set of sports ready to be portrayed. What is more picturesque than the white-sailed yachts leaning to the wind and looking so much like huge white-winged birds skimming over the water! When gathered at such centers as Marblehead or Long Island Sound, where yacht-races are of almost daily occurrence during the season, there should be opportunity for almost any combination of pictorial material on which the photographer has set his heart.

On streams and lakes there is to be found the always picturesque canoe, with its graceful curves and the dipping paddle, breaking the mirror of the smooth water into dancing ripples and slowly widening circles. Then there are swimming- and bathing-subjects, with the ever present difficulties of crowded bathing-beaches and overstrong light. If a group of bathers can be isolated in some sheltered cove, much of interest can be obtained, particularly if divers can be caught successfully in the act or some center of interest of that sort introduced. Children in the edge of the water are usually picturesque, and I'm not sure but this building of castles in the wet sand might be legitimately classed as "sport."

Many children's games are very pictorial and might well receive our attention. Such old-fashioned games as London-Bridge, Ring Around the Roses, and Hop Scotch could be made into most attractive pictures; and running-games, like Drop the Handkerchief, might tax one's ingenuity to catch the runner at just the right moment when the position will show the body leaning inward to help keep the equilibrium while moving swiftly in a circle.

Many other subjects will doubtless suggest themselves; but the same general rules are applicable to all sorts of pictures where motion is to be represented. The exposure should not be so short as to arrest all motion; but, on the other hand, not so long as to lose the form of the moving object. The figures should be of adequate size to dominate the composition, and where possible, movement should be towards or from the camera rather than at right angles to it. When short exposures have been made, care must be taken in developing. The developer should be

SECOND PRIZE
FLASHLIGHTS

"GOOD MORNING" BRADLEY STUDIO

greatly reduced in strength and the plate given a prolonged soaking therein, care being taken to have it thoroughly protected from any chance of fog from too strong a light. When the detail is well out, the plate may be finished in normal developer to obtain proper density.

One must be alert and ready to catch the right pose; but *too* great haste may result in disaster, so here, as in most things, the right course lies midway between the extremes.

KATHERINE BINGHAM.

Seashore-Photography

MANY a new camera-enthusiast looks forward with anticipation to the wonderful pictures he will take at the shore when vacation-time comes. He has been getting fine results at home, and gleefully exposes many films only to meet bitter disappointment when the developer has done its best.

One large cause of failure in seashore-work is the overstrong light. The exposure that gives good results inland is too long for the shore and, if it is not considerably reduced, the results show the flat, stale and unprofitable effects of overexposure. The sky looks gray and mottled; there is no contrast, hardly a perceptible division between sea and sky and between sea and shore; one common grayness pervades the whole film.

When one has been giving $\frac{1}{25}$ second with the diaphragm at U. S. 8, it will be well to cut that in half and give it $\frac{1}{50}$ second. If the camera is of the type that has only one speed for instantaneous exposures, the remedy for overexposure is to be found in the diaphragm. For ordinary work, the largest opening is probably in use. If it is a box-camera, a little slide at the top can be pulled up to bring smaller stops into register, and the smallest will be best for this use unless the light be clouded. When the iris diaphragm is present, the numbers of the stops are marked, and U. S. 16 or 32 will be advisable in most instances.

Another prolific cause of trouble is the dampness and saltness of the air. All films or plates should be kept carefully wrapped both before and after exposure. The tin-foil in which films are wrapped should be carefully removed and kept to be used again after exposure. If

POST-NUPTIAL GROUP — HARRY H. HESS

development is to be deferred, it is wise to pack the films in tin boxes and seal with adhesive tape. Films may be had each sealed in a tin tube for just this purpose. All metal parts of the camera should be closely looked after, as the salt air sometimes works mischief with shutters, and if you get an exposure of $\frac{1}{5}$ second when you want $\frac{1}{50}$, it is rather disastrous. The lens must also be carefully protected from flying spray and sand, if you would have it yield a clear image. A lens-cap or before-the-lens shutter is useful.

The sea, in its varying moods, is an always inspiring subject; and if one has enthusiasm enough to go out before sunrise, it will be amply worth while, for the soft light and shimmering water have an almost unreal beauty at that hour, and the sunrise is a daily miracle. The boats of the early fisherman add picturesqueness, although now that the too useful motor-boat has so largely superseded the sail, he is less desirable than formerly. If something of the charm of the sea and the morning can be caught on the film, the early rising will not have been in vain.

KATHERINE BINGHAM.

Care of the Hands

ONE of the objections to photography in winter-time, writes Mr. J. Statham in *Photography and Focus*, is that dabbling about in solutions is a particularly bad thing for the hands in cold weather. It is not only that the hands are kept constantly wet; but that some of the solutions are particularly prone to leave the skin susceptible to cracking and chaps. This is the case particularly with developers which contain caustic alkalies or sodium carbonate, and those whose skin is at all delicate, as is the case with the writer, will be well advised to take a few simple precautions. One of these, of course, is to keep the hands out of the solutions as much as possible, and another is to rinse them in clean water and wipe them dry at once after getting them wet with solution. A little lanoline rubbed well into the fingers and backs of the hands before starting work is also useful. The merest trace is sufficient, and, after rubbing in well, the hands should be wiped as clean as possible. I find that this is also useful not only as a preventive of chapping from wet hands, but to keep them free of stains.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

With Reviews of Foreign Progress and Investigation

Edited by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to The Crucible, PHOTO-ERA, 383 Boylston Street, Boston

Combined Developers for Many Purposes

IV. — Eikonogen-Hydroquinone

SINCE its introduction in 1889 eikonogen has been the chief competitor of metol as a soft-working, detail-giving agent. Although, strangely enough, regarded by most workers as a developer primarily for negative-work only, when combined with hydroquinone it becomes a remarkably useful developer for general purposes, and one capable of almost as much modification as pyro. With eikonogen alone it is difficult to obtain density and snap, but a combined developer with hydroquinone unites the softness and detail of eikonogen with the density-giving power of hydroquinone, adapting it to the development of plates, films, transparencies, lantern-slides, bromide and gaslight papers.

As negatives developed with this combined developer incline towards softness with abundant detail, even in the case of forced development of underexposures it is particularly valuable for portraiture, flashlights and very rapid exposures, such as focal-plane work, or anything tending towards underexposure; also for subjects involving great contrasts in lighting.

Eikonogen appears as a yellowish-white powder, or yellowish crystals when fresh, but rapidly changes to a brownish tinge upon exposure to the air. It is sparingly soluble in water, but readily so in the presence of alkalis, particularly when heated. It is non-poisonous and does not stain the fingers. In its reducing-action eikonogen is rather more energetic than pyro or hydroquinone, being similar to ferrous oxalate and giving a clear negative of blue-black color.

Solutions may be used several times, and although they gradually darken, their strength reduces very slowly. If used too old or too much diluted, they may cause uneven action and produce peculiar streaks and blotches like finger- and brush marks or insensitive spots, appearing as though the plate had been scrubbed with a dirty or greasy brush, or had not been properly dusted off. For this reason eikonogen-hydroquinone is not suitable for slow tank-development. If the supply fails and a very old developer must be used, soak the plate, film or paper in water for a few minutes before immersing in the developer. This often obviates the trouble.

A standard formula is as follows:

A

Water	48 ounces
Sodium sulphite, anhydrous	2 ounces
Eikonogen	240 grains
Hydroquinone	60 grains

B

Water	16 ounces
Sodium carbonate, anhydrous	2 ounces

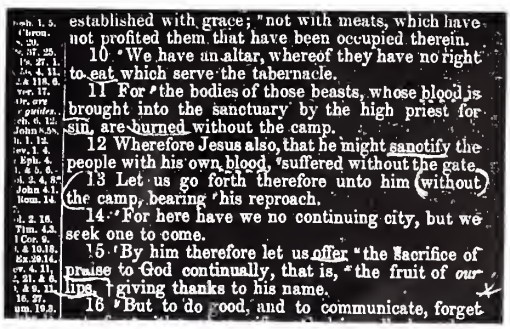
For plates, films, transparencies, lantern-slides, take 3 ounces of A and 1 ounce of B. The factor is 12.

For bromide and gaslight paper add one drop of a saturated solution of potassium bromide to each 4 ounces of the above working-solution.

For double-coated plates, use 3 ounces of A, 1 ounce of B and 4 ounces of water.

In hot weather more water may well be used in all working-solutions, as it gives less contrast and density. Cold solutions give less density than those used at correct temperature, 65 degrees. At warmer temperatures the density is very much intensified, particularly with slow and contrast plates.

In making the stock-solutions, use boiling water, and in winter a little glycerine may be added to prevent precipitation. If a more concentrated developer is desired in order to obtain more contrast, the water in solution A may be reduced to 32 ounces. Potassium carbonate in place of sodium will also yield a more energetic developer. If


established with grace; "not with meats, which have
not profited them that have been occupied therein.
10 "We have an altar, whereof they have no right
to eat which serve the tabernacle.
11 For "the bodies of those beasts, whose blood is
brought into the sanctuary by the high priest for
sin, are burned without the camp.
12 Wherefore Jesus also, that he might sanctify the
people with his own blood, "suffered without the gate.
13 Let us go forth therefore unto him (without)
the camp, bearing "his reproach.
14 "For here have we no continuing city, but we
seek one to come.
15 "By him therefore let us offer "the sacrifice of
praise to God continually, that is, "the fruit of our
lips, "giving thanks to his name.
16 "But to do good, and to communicate, forget

A BIBLE-REPRODUCTION — IRA A. SISSON

the sulphite is of good quality and the solutions kept in small full bottles tightly corked, it will keep in good condition for an indefinite time.

When overexposure is known, old, used developer is preferred by most workers, strengthened as development proceeds with fresh solution and a drop or two of bromide solution. Bromide acts very powerfully with eikonogen, increasing contrast, particularly in the print. When there is a suspicion of underexposure or when soft portrait-negatives are desired, bromide should be omitted. The quantity stated for papers will usually be enough to keep the whites clear. More will increase the olive tone of the print as well as its vigor.

White Printing on a Black Ground

IN photographing printed matter for commercial purposes it is sometimes desirable to have the blacks and whites reversed, as shown by the accompanying repro-

SUNSET AFTER A STORM — ELLIOTT HUGHES WENDELL

FIRST PRIZE — BEGINNERS' CONTEST

duction from the Bible. My method is to turn the ground side of the focusing-screen away from the lens before focusing the printed page, and then to place the dryplate in the plateholder, glass side outwards. This is necessary because a contact transparency on glass is to be made later and it is essential to avoid having the printed matter read backwards. This transparency is in reality a positive and by using it to print from, a negative effect — that is, a reversal of lights and darks — is had in the final paper print.

In making the negative I underexpose slightly and then overdevelop considerably; about double or until the plate is black on the back and very dense. Then I put the fixed, washed and dried negative into a printing-frame with another dryplate in contact with it, film to film, and expose as I would a lantern-plate, only somewhat longer, and develop strongly. Slow plates, such as Cramer Contrast, are desirable with a contrast developer containing potassium bromide. The ideal negative has spaces clear or nearly so with very dark letters.

IRA A. SISSON, Leonard, Mich.

Photography at the Theater

POSSESSORS of pocket-cameras with lenses which work at F/4.5 or thereabouts should try the effect of making an exposure with them at the theater. With panchromatic plates of great sensitiveness, such as are now available, it is perfectly possible to get quite satisfactory results with an exposure of no longer than one second. There is usually an excellent opportunity to do this at the moment when the group on the stage forms a tableau — in fact, at such a time three or four seconds might well be given very often, and still no sign of movement be visible. There are often other occasions when exposures of this duration might be made.

The most favorable position from which to work is the center of the front row in the dress circle, which not only provides the best view-point, but also furnishes a steady support for the camera. From such a position the infinity-mark will be that to which to set the indicator on the scale; while the general arrangement of the subject, at a convenient distance, with very little depth, and more or less in a straight line, is very favorable to a modern lens working with a flat field at a very large aperture. It ought to be possible to make the exposures without any one, except the immediate neighbors of the photographer, knowing anything at all about it.

The powerful forms of illumination used in the theater make such work perfectly feasible. Strong as they are, however, the dominant color is yellow or red, and so it becomes necessary to use a color-sensitive plate, and, for choice, a panchromatic. There is generally no need to trouble about front light falling on the lens, as such lights in a theater are almost invariably well screened.

At a strange play one would have to be fairly alert to realize the right moment, and make the exposure before the opportunity had gone by; but with an old favorite the opportunities will be known and can be prepared for. At this time, when so much is being written about photography at night, it seems to me that the stage should not be neglected.

J. G. W. in *Photography and Focus.*

THE ROUND ROBIN GUILD

An Association of Beginners in Photography

Conducted by KATHERINE BINGHAM

This association, conducted under the auspices of PHOTO-ERA, and of which PHOTO-ERA is the official organ, is intended primarily for the benefit of beginners in photography. The aim of the association is to assist photographers by giving them information, advice and criticism in the Guild pages of PHOTO-ERA and by personal correspondence. Membership is free to subscribers and all regular purchasers of the magazine sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston.

Development in Hot Weather and in the Tropics

THE best so-called "tropical" developer which will enable work to be done at high temperatures without frilling or fogging is generally considered to be amidol, which requires no alkali to accelerate it. The most satisfactory way to use it is to keep a sulphite stock-solution on hand and add dry amidol to it as needed for use, since amidol in solution does not keep well. With potassium metabisulphite a sulphite solution will keep well for a very long period.

STOCK-SOLUTION

Sodium sulphite, anhydrous	2 ounces
Potassium metabisulphite	½ ounce
Water	20 ounces

For use, take amidol, 40 to 60 grains; stock-solution, 4 ounces; water, to make 20 ounces.

If you prefer a developer that can be made up in stock-solutions ready for use, and which may be used repeatedly, try metol-hydroquinone according to the formula on page 89 of PHOTO-ERA for August, 1914.

Tank-development in summer, when the coolest water obtainable is not below 70 to 75 degrees, is made more certain in its results by the addition of potassium iodide to the working-solution to prevent yellow stain and veiling. Prepare a stock-solution containing 30 grains of potassium iodide in 30 ounces of water. Two ounces of this should be contained in every 64 ounces of tank-developer, and the quantity of water may be reduced 2 ounces in compensation.

Photographing the Sunset

THERE is a charm and fascination to most people in the closing hours of the day. The long shadows, the mellow orange-light and all the mystery and poetry of the hour make it particularly attractive to the photographer; but it is not always easy to interpret successfully the impressions received by the eye.

Much of the beauty of the average sunset is in its color, and possibly that is one great reason why so many are disappointed in their photographs of such scenes. Some very beautiful effects are entirely beyond the powers of photography to reproduce, and one must learn to discriminate between the view whose sole beauty is in its color and the one whose beautiful cloud-forms and an attractive sky-line bring it within the compass of successful reproduction in monochrome. If the clouds look promising, the first thing to do is to select some spot where the horizon forms a pleasing silhouette. A straight, level horizon is seldom pleasing, unless it be over the ocean, where it gives a certain feeling of rest and quiet; but even then a sail-boat breaking the line at the right point is an improvement.

If the country be one of hills, and a point can be found where the sunset will be framed in the valley between two near hills, it makes an admirable setting. A clump of tall pines or other trees, a little less than a third of the way from one side, breaks the line pleasingly, or a building on classic lines, with the light shining between the pillars and casting long shadows towards one.

But the setting may be never so good, yet the picture be a failure if the clouds do not take proper shape and add interest to the sky. The proper moment should be waited and watched for, and if it fails to come it is useless to expose a perfectly good plate.

The moment when the sun itself is behind a cloud is usually the best, for then the direct rays do not strike the lens, and the cloud is very likely to show its beautiful silver lining most attractively. Rays of light are often thrown upward or downward at such a moment and add much to the picture.

The moment after the sun dips below the horizon is also a good time to make an exposure. The rays are then vertical rather than horizontal and do not strike the lens. If the view is over water, however, an earlier moment is better because of the path that disappears with the sun.

> For note — when evening shuts,
> A certain moment cuts
> The deed off; calls the glory from the grey,
> A whisper from the nest;
> Shouts, "Add this to the rest,
> Take it and try its worth: here dies another day."

The exposure for such subjects depends on the effect one desires to produce, also on the character of the foreground and the color of the light. If the glow is very much tinged with orange or yellow, the exposure must be lengthened; also a very dark or near foreground calls for more time, unless one wishes to give the effect of moonlight, when a very short exposure will produce a silhouette of near trees or buildings and give a very realistic night-impression. In fact, this is the way in which most "moon" pictures are made, either at sunrise or sunset, for of course sunrise is an equally interesting subject and the same principles apply to it. Where there is water in the foreground to reflect the light of the sky, the exposure may be much shortened.

Development should not be carried too far, as detail in the sky must be retained and the foreground is of no importance. The line between the sky and earth is the important thing in such compositions. The aim should be for a thin but crisp negative, and in printing a medium should be chosen that will retain all detail in the highlights without giving too much of a Stygian blackness to the foreground.

THE TOOL-WORKER — MYRA D. SCALES

SECOND PRIZE — BEGINNERS' CONTEST

Very realistic effects may be produced by staining or toning a print to a warm yellow or orange tint, and this is the sort of subject that stands enlargement well. A brown enlargement of good size stained to give golden lights is worthy of a place in the best-appointed living-room.

Window-Portraits

Now that home-portraits are so popular, one is often desirous to make use of a pretty window as a background. Not infrequently the prettiest setting in the home is provided by an attractively arranged window, but the novice is a little afraid to attempt the rather difficult lighting.

The easiest effect to obtain in such circumstances is a modified silhouette, with the face seen in profile against the light background of the window-area. If the window is latticed, it is prettiest if seen through a thin curtain which hangs in folds, thus breaking the regularity of the lines. If a window of one large pane, either a soft-falling curtain or a piece of cheese-cloth stretched tightly over the glass helps the effect, as the view from the window would doubtless be out of focus and spotty, detracting from the figure. No lace-curtain having a pattern or figure should be allowed, for the same reason.

It is a safeguard, though not really necessary, to use backed plates, thus minimizing the danger of halation. The effect is usually better if the model is dressed in light colors, as then the dress helps to reflect light back into the shadows and a more luminous result is obtained.

The stronger your initial light, the stronger must be your reflected light to keep a proper balance, and particularly when the shadow side of the face is towards the camera the reflector must be placed rather near and be of good area.

If a soft-falling curtain is used, it is often possible to pose the model so that the profile cuts against a double fold of the material and shows light against the deeper shade of this extra thickness. If a front view is to be made, the difficulties are rather greater. When possible, another nearby source of light should be resorted to for brightening the shadows; but if this is unavailable, a large white reflector brought quite near may be used. The stronger light, however, should always be from the background-window. A point of view looking at an acute angle with the window, rather than at right angles to it, gives more of the lighted side and is preferable.

Sometimes in a bay-window the subject can be posed at one side and the camera placed near the wall at the other side and a very full light obtained. If there are dark curtains also at the window, a pretty result can be obtained by seating the model in such a way that the back-lighted profile is thrown into almost cameo-like relief against the dark drapery. Care must be taken to give full exposure; for although the impression is one of brightness, still there is much shadow and a harsh result is to be avoided.

A diluted developer is a help in obtaining detail in the highlights; but if even with its use detail in the window is lacking, a little local reduction with Farmer's reducer will probably make it all right.

THE ROUND ROBIN GUILD MONTHLY COMPETITION

For Beginners Only

Closing the last day of every month. Address all prints to PHOTO-ERA, Round Robin Guild Competition, 383 Boylston Street, Boston, U. S. A.

Restrictions

All Guild members are eligible in these competitions provided they never have received a prize from Photo-Era other than in the Beginners' Class. Any one who has received only Honorable Mention in the Photo-Era Monthly Competition for advanced workers still remains eligible in the Round Robin Guild Monthly Competition for beginners; but upon winning a prize in the Advanced Class, one cannot again participate in the Beginners' Class. Of course, beginners are at liberty to enter the Advanced Class whenever they so desire.

Prizes

First Prize: Value, $5.00; *Second Prize:* Value, $2.50; *Third Prize:* Value, $1.50; *Honorable Mention:* Those whose work is worthy will be given Honorable Mention.

A certificate of award, printed on parchment paper, will be sent on request.

Subject for each contest is **"General"**; but only original prints are desired.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in Photo-Era, or in books.

Rules

1. These competitions are free and open to all members of the Round Robin Guild. Membership is free to all subscribers; also to regular purchasers of Photo-Era on receipt of their name and address, for registration, and that of their dealer.

2. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be artistically mounted. Sepia-prints on rough paper are not suitable for reproduction, and such should be accompanied by smooth prints on P. O. P. or black-and-white paper having the same gradations and detail.

3. Unsuccessful prints will not be returned unless return-postage at the rate of one cent for each two ounces or fraction is sent with the data. ***Criticism on request.***

4. Each print entered must bear the maker's name, address, Guild-number, the title of the picture and the name and month of the competition, and should be accompanied by a letter SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer, and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what contest it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of Photo-Era, unless otherwise requested by the contestant. If suitable, they will be published in Photo-Era, full credit being given.

6. Competitors are requested not to send enlargements greater in size than 8 x 10 or mounts larger than 12 x 15, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express, very cheaply and with indemnity against loss.

Awards — Beginners' Contest

Closed March 31, 1915

First Prize: Elliott Hughes Wendell.
Second Prize: Myra D. Scales.
Third Prize: M. Edna Stauffer.
Honorable Mention: Mrs. Wilma B. McDevitt, Charles D. Meservey, A. C. Sheldon, Mary Wood Wiltse.

Special commendation is due the following workers for meritorious prints: A. E. Aldrich, F. B. Burt, Alfred Cohn, Herman Gabriel, G. S. Gagaya, J. N. Jeffers, Magnus Jonsson, Wilford E. Jost, C. H. Judson, Gerald Martin, Richard D. McCue, N. W. Northey, H. P. Porter, William A. Ray, C. Howard Schotofer, F. B. Schrader, John H. Seamans, L. N. Searles, Florence Sharman, A. C. Smith, J. Douglas Smith, Alvin H. Stallman, C. S. Trevitt, A. J. Voorhees, A. J. Weis, Joseph N. White, Mortimer Edward Wein.

Why Every Beginner Should Compete

The trouble with most competitions is that they place the beginner at a disadvantage. If advanced workers be allowed to compete, beginners have little chance to win prizes and so quickly lose interest after a few trials.

There are two monthly competitions in which prints may be entered with prizes commensurate with the value of the subjects likely to be entered. They are: The Round Robin Guild Competition and the Photo-Era Competition. The former is the better one for a beginner to enter first, though he may, whenever it pleases him, participate in the latter. After having won a few prizes in the Beginners' Class it is time to enter prints in the Photo-Era Competition for advanced workers. In this class the standard is much higher and the camerist will find himself competing with some of the best pictorialists.

As soon as one has been awarded a prize in the Photo-Era Competition, he may consider himself an advanced worker, so far as Photo-Era records are concerned, and after that time, naturally, he will not care to be announced as the winner of a prize in the Beginners' Class, but will prefer always to compete in the Photo-Era Competition for advanced workers. In accordance with this natural impulse, it has been made a rule by the publisher that prize-winners in the Advanced Class may not compete in the Beginners' Class.

To measure skill with other beginners tends to maintain interest in the competition every month. Competent judges select the prize-winning prints, and if one does not find his among them there is a good reason. Sending a print which failed, to the Guild Editor for criticism, will disclose what it was, and if the error be technical rather than artistic, a request to the Guild Editor for suggestions how to avoid the trouble will bring forth expert information. The Round Robin Guild Departments form an endless chain of advice and assistance; it remains only for its members to connect the links by frequent use.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.*

T. L. — **Lenses of whatever make are taken care of in the Photo-Era Exposure-Guide** by the table of stops. The chief advantage of anastigmat lenses over rapid rectilinears and meniscus types, aside from their linear and color-corrections, etc., is that they may be used satisfactorily at large working-apertures, and it is through this characteristic that they are more rapid. Thus in computing exposures the stop in use rather than the make of the lens is the guide.

E. A. H. — **In selling a camera-equipment that is virtually new** about twenty-five per cent of the list-price must usually be sacrificed, unless the outfit can be sold to a friend who knows its real value and is willing to take it off your hands. In a recent list of second-hand goods issued by a reputable dealer an outfit like yours is listed at $140, the cost being correctly stated at $182.

S. U. V. L. — Most **bellows** are made of Russia leather lined with gossamer cloth, although several other thin leathers are often employed. If your time is valuable, it will be cheaper to buy a bellows of a camera-manufacturer for your 3¼ x 5½ instrument — in fact, to send it to the manufacturer to be repaired.

Directions for making bellows have been published in several places, no doubt, but we do not happen at the moment to recall any in a book of reference that you would be likely to find. However, in the issue of PHOTO-ERA for May an article appeared showing the lay-out of a square bellows, with special attention to the corner-folds. This could readily be adapted to a pyramidal bellows.

S. J. — **To prevent negative-films from cracking** after a period of years, and letting light through, maintain the temperature of developer, fixing-bath and wash-water as near the standard 65 degrees as possible, for very cold water causes brittleness of the film, as does alum, formalin and similar hardeners often used in the fixing-bath. A plain hypo-bath at 65 degrees is unexcelled despite all arguments to the contrary. A still further precaution is found in the glycerine-treatment employed to prevent curling during the early days of roll-film. After washing, immerse the film in water 20 ounces, glycerine ½ ounce for five minutes, wipe with a soft, damp cloth and dry. Thorough fixing and washing are essential to avoid stains and yellowing with age. This bath leaves the negatives slightly damp and limp, yet not in a way to damage printing-paper.

E. B. C. — **To fireproof fabric,** immerse it in a solution containing thirty-five grains of ammonium phosphate and seventy-five grains ammonium chloride to the pint of water and then hang up to dry.

X. Y. Z. — **The stops on a Brownie No. 3** camera, marked 1, 2, 3, are in the order named: F/14, U. S. 12.2; F/22.6, U. S. 32; F/32, U. S. 64. Approximately double the exposure will be required for each successive stop in the series.

H. C. R. — **To use stale plates,** give a long exposure and use considerable bromide in the developer; double the normal exposure will not be too great. A good scheme of development is to prepare a restrainer containing two grains each of potassium bromide and potassium bichromate to the ounce of water. Take enough water to cover the plate and add thirty drops of the restrainer. Flow the mixture over the plate and rock for a minute or two. Have the ordinary developer ready in a graduate, pour the restrainer into it, and then flow the combined restrainer and developer over the plate. Development will proceed very slowly. Add more restrainer if fog appears, and if the plates are unusually bad, one drop of sulphuric acid. The resulting negative will be somewhat contrasty.

To use stale bromide and gaslight paper, immerse the defective sheets of paper in the following solution for one minute:

Potassium permanganate	1 grain
Sulphuric acid	6 minims
Water	10 ounces

Transfer the paper direct from this bath to one consisting of twenty grains of sodium sulphite to each ounce of water. Allow it to remain in this for another minute, rinse and use wet on the enlarging-easel or hang up to dry in the darkroom for future use. About double the usual exposure will be necessary.

W. A. R. — **A vigorous negative is characteristic of the Wellington Anti-Screen plate,** for it is rich in silver. A soft-working developer in rather dilute proportions is desirable. Rodinal is excellent for tank-use, as it contains caustic alkali and in a short time gives full shadow-detail, a long scale of gradation, and a negative of general softness, yet sufficiently snappy. The usual proportion is 1 part Rodinal to 40 parts water, but you can with benefit reduce the developer to ½ part for Wellington plates. Time, 20 minutes at 65 degrees. Should the results be too thin for your purpose, it is an easy matter to increase the developer to ¾ part.

F. J. H. — The 5⅝-inch Planatograph R. R. lens that you have is much better than the meniscus lenses ordinarily furnished in fixed-focus enlargers of 3¼ x 5½ capacity. The focal length is a trifle short; 6½ inches would be better, but at F/11 or F/16 should give satisfaction.

S. A. W. — **Eastman Speed-Film is twice as fast as ordinary film,** as shown by the PHOTO-ERA speed-tables on another page, but is not made in the form of film-packs as small as 1¾ x 2⅜. Very rapid plates of several brands may be had as small as this, however. For high-speed work with a miniature camera a plate-type should be chosen, but very rapid plates tend towards a coarser grain in the image and so do not enlarge satisfactorily to such an extent as slower emulsions.

H. F. S. — The best way **to obtain a realistic fire-light-scene** in monochrome is to stain or tone the print to a reddish hue. This may be done to the finished print with an aniline dye, such as new coccine (bright red), Poncean 5R (red with violet tinge) or erythrosine (bluish red). Copper-toning will, perhaps, be more satisfactory for gaslight and bromide papers. Immerse the finished black print in:

Ammonium carbonate, saturated solution	1 ounce
Copper sulphate	10 grains
Potassium ferricyanide	25 grains

As toning proceeds, the print will pass through warm black, reddish sepia, brown, purple-brown, purple-crimson, reddish purple and through many shades of red to the so-called red chalk. Washing for ten minutes in water will stop toning at any desired stage.

H. M. B. — **Detail in shadows** depends upon lighting, exposure, development and the printing-medium, and has little to do with the quality of the lens, although the latter should be some form of a good anastigmat where fine detail is desired.

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to Guild Editor, PHOTO-ERA, *383 Boylston Street, Boston. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop used, exposure, developer and printing-process.*

F. D. L. — All of your pictures entered in this last month's competition appear to have been underexposed and overdeveloped. The prints are contrasty with rather solid blacks and whites without detail.

True values and good gradations would have made an excellent subject out of "The Kodak Girl."

The heavy black shadow, apparently of a telephone-pole, mars "In Blossom Time." Perhaps equally good lighting of the house might be obtained at a different hour of the day to avoid this obtrusive object in the foreground.

F. A. G. — "Reflecting-Pool" is an interesting subject and well composed. However, the distant houses with their implied human interest serve as a sufficient balance for the strong trees at the left, so that the large tree at the right is superfluous. Try trimming this away, with a slight trimming from both the top and bottom in order to preserve the rectangular shape, and see how you like the result.

A. B. K. — The black-and-white prints are decidedly preferable to the brown, some of which have been considerably bleached in re-development and lack richness of tone.

The absence of definition in "Pacific Snowball" suggests movement of the flowers as a result of the wind. The same appears to be true of the boat in "Low Sinks the Sun." Such a study as "Dwarf Cornel" demands the utmost of detail in the texture of the flowers to avoid an almost ludicrous spotty appearance.

H. R. D. — As usual, your flower-studies are excellent, particularly in composition and lighting. "Golden Glow," however, would have been improved by a slightly more vigorous negative with somewhat sharper definition to convey a better impression of the texture of the flower-petals and leaves.

The landscape, "Afternoon-Shadows," seems to lack a center of interest. Perhaps this is because the treatment is rather too broad for the size of the print. With sharper definition, the interest would be more surely concentrated upon what appears to be a path leading back into the distance.

R. W. S. — As a whole, your photographs are very interesting. The composition in every instance is good. Our chief criticism is, that the subjects are underexposed so that the tree-trunks are black in the prints and without detail.

M. J. P. — Your subjects portray strong contrasts of light and shade, and are all underexposed and overdeveloped, the result being black tree-trunks and foliage and masses of white without detail. In such subjects it is necessary to expose for the darkest portions in which detail is wanted, and then to develop for the highlights.

M. H. B. — Your several flashlight-portraits are of a generally high order of excellence, but each could be improved in minor particulars. For instance, the reflection of light on the rail of the sofa above the head in "The Baby" ought to be worked out on the negative. It could be reduced locally or rubbed down with alcohol. Similar treatment of the robe of "The Choir-Master," or else the use of a much softer-working paper, would give texture and more detail, at the same time subordinating it somewhat to the face. The same is true of the picture on the wall in "A Cup of Tea." In this latter instance it is a distinct detraction from the subject itself. The posters pinned to the shelves in "The Cobbler" are unfortunate indeed. The picture would have been much improved had they been moved before the picture was exposed.

L. N. S. — You have an excellent sky in "Moonlight," but nothing to go with it. The silhouette of trees below forms an uninteresting and meaningless shape, almost rivaling the large dark cloud in its hold upon the eye.

H. P. P. — The general quality of the snow is good, although the water of the stream seems too black, indicating slight underexposure. The picture seems to lack a center of interest and the line of the stream extends too far across the picture before turning back; indeed, the stream almost passes out of the picture-area.

M. J. — "Winter on the Road" is not a particularly attractive subject; telephone-poles in a picture rarely beautify it. As to the composition, it would have been improved had the camera been swung somewhat to the right so that the house would have been a little farther within the picture-space.

IN THE SEWING-BASKET — M. EDNA STAUFFER

THIRD PRIZE — BEGINNERS' CONTEST

Photo-Era Exposure-Guide

Calculated to give Full Shadow-Detail, at Sea-Level, 42° N. Lat.
For altitudes up to 5000 feet no change need be made. From 5000 to 8000 feet take ¾ of the time in the table. From 8000 to 12000 feet use ½ of the exposure in the table.

Exposure for average landscapes with light foreground, river-scenes, light-colored buildings, monuments, snow-scenes with trees in foreground. For use with Class 1 plates, stop F/8, or U. S. 4. For other plates, or stops, see the tables on the opposite page.

*These figures must be increased up to five times if the light is inclined to be yellow or red.
†Latitude 60° N. multiply by 3; 55° × 2; 52° × 2; 30° × ¾.
‡Latitude 60° N. multiply by 2; 55° × 2; 52° × 1½; 30° × ¾.
¶Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.
§Latitude 60° N. multiply by 1¼; 55° × 1; 52° × 1; 30° × ½.

HOUR	MONTH AND WEATHER																				
	JAN., NOV., DEC. †					FEB., OCT. ‡					MAR., APR., AUG., SEPT. ¶					MAY, JUNE, JULY §				
	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull	Bright Sun	Hazy Sun	Diffused Light	Dull	Very Dull
11 A.M. to 1 P.M.	1/32	1/16	1/8	1/4	1/2	1/32	1/16	1/8	1/4	1/2	1/50	1/25	1/12	1/6	1/3	1/60	1/30	1/15	1/8	1/4
10–11 A.M. and 1–2 P.M.	1/25	1/12	1/6	1/3	2/3	1/25	1/12	1/6	1/3	2/3	1/40	1/20	1/10	1/5	1/2	1/60	1/30	1/15	1/8	1/4
9–10 A.M. and 2–3 P.M.	1*/12	1*/6	1*/3	2*/3	1*	1/16	1/8	1/4	1/2	1*	1/40	1/20	1/10	1/5	1/2	1/50	1/25	1/12	1/6	1/3
8–9 A.M. and 3–4 P.M.						1*/5	1*/2	1*	1 1*/2	3*	1/30	1/15	1/8	1/3	2/3	1/30	1/15	1/8	1/4	1/2
7–8 A.M. and 4–5 P.M.											1/20	1/10	1/5	1/2	3/4	1/20	1/10	1/5	1/3	2/3
6–7 A.M. and 5–7 P.M.											1*/15	1/8	1*/2	3*/4	1*	1/15	1/8	1/4	1/2	3/4
5–6 A.M. and 6–7 P.M.																1*/10	1*/5	1*/3	2*/3	1 1*/2

The exposures given are approximately correct, provided the shutter-speeds are accurately marked. In case the results are not just what you want, use the tables merely as a basis and increase or decrease the exposure to fit the conditions. Whenever possible keep the shutter-speed uniform and vary the amount of light when necessary by changing the stop. **Focal-plane shutters require only one-third of the exposures stated above.**

SUBJECTS. For other subjects, multiply the exposure for an average landscape by the number given for the class of subject.

1/8 Studies of sky and white clouds.

1/4 Open views of sea and sky; very distant landscapes; studies of rather heavy clouds; sunset- and sunrise-studies.

1/2 Open landscapes without foreground; open beach, harbor- and shipping-scenes; yachts under sail; very light-colored objects; studies of dark clouds; snow-scenes with no dark objects; most telephoto-subjects outdoors; wooded hills not far distant from lens.

2 Landscapes with medium foreground; landscapes in fog or mist; buildings showing both sunny and shady sides; well-lighted street-scenes; persons, animals and moving objects at least thirty feet away from the camera.

4 Landscapes with heavy foreground; buildings or trees occupying most of the picture; brook-scenes with heavy foliage; shipping about the docks; red-brick buildings and other dark objects; groups outdoors in the shade.

8 Portraits outdoors in the shade; very dark near objects, particularly when the image of the object nearly fills the plate and full shadow-detail is required.

16 to 48 Badly-lighted river-banks, ravines, glades and under the trees. **Wood-interiors** not open to the sky. **Average indoor-portraits** in a well-lighted room, light surroundings.

PLATES. When plates other than those in Class I are used, the exposure indicated above must be multiplied by the number given at the head of the class of plates.

For Perpetual Reference

For other stops multiply by the number in the third column

As all the figures in the table opposite are based upon the use of stop F/8, or U. S. 4, it does not appear here among the ratios for other stops.

U. S. 1	F/4	× 1/4
U. S. 2	F/5.6	× 1/2
U. S. 2.4	F/6.3	× 5/8
U. S. 3	F/7	× 3/4
U. S. 8	F/11	× 2
U. S. 16	F/16	× 4
U. S. 32	F/22	× 8
U. S. 64	F/32	× 16

Example

The factors that determine correct exposure are, first, the strength of light; second, the amount of light and dark in the subject; third, speed of plate or film; fourth, the size of diaphragm used.

To photograph an average landscape with light foreground, in Feb., 2 to 3 P.M., bright sunshine, with plate from Class 1, R. R. Lens, stop F/8 (or U. S. 4). In the table look for "Hour," and under the column headed "Bright Sunshine," note time of exposure, 1/16 second. If a smaller stop is used, for instance, F/16, then to calculate time of exposure multiply the average time given for the F/8 stop by the number in the third column of the table for other stops, opposite the diaphragm chosen. The number opposite F/16 is 4. Multiply $1/16 \times 4 = 1/4$. Hence, the exposure will be 1/4 second.

For other plates consult the table of plate-speeds. If a plate from Class 1/2 be used, multiply the time given for average exposure, F/8 Class 1, by the number of the class. $1/16 \times 1/2 = 1/32$. Hence, the exposure will be 1/32 second.

Speeds of Plates on the American Market

Class-Numbers. No. 1, Photo-Era. No. 2, Wynne. No. 3, Watkins

Class 1/3, P. E. 156, Wy. 350, Wa.
Ilford Monarch
Lumière Signa
Marion Record
Seed Graflex
Wellington Extreme

Class 1/2, P. E. 128, Wy. 250, Wa.
Ansco Speedex Film
Barnet Super-Speed Ortho.
Central Special
Cramer Crown
Eastman Speed-Film
Hammer Special Ex. Fast
Imperial Flashlight
Seed Gilt Edge 30
Wellington 'Xtra Speedy

Class 3/4, P. E. 120, Wy. 200, Wa.
Ansco Film, N. C.
Atlas Roll-Film
Barnet Red Seal
Cramer Instantaneous Iso.
Defender Vulcan
Ensign Film
Hammer Extra Fast, B. L.
Ilford Zenith
Imperial Special Sensitive
Paget Extra Special Rapid
Paget Ortho. Extra Special Rapid
Seed Color-Value

Class 1, P. E. 111, Wy. 180, Wa.
American
Barnet Extra Rapid
Barnet Ortho. Extra Rapid
Central Comet
Imperial Non-Filter
Imperial Ortho. Special Sensitive
Kodak N. C. Film
Kodoid
Lumière Film and Blue Label
Marion P. S.
Premo Film-Pack
Seed Gilt Edge 27
Standard Imperial Portrait
Standard Polychrome
Stanley Regular
Vulcan Film
Wellington Anti-Screen
Wellington Film
Wellington Speedy
Wellington Iso. Speedy

Class 1 1/4, P. E. 90, Wy. 180, Wa.
Cramer Banner X
Cramer Isonon
Cramer Spectrum
Defender Ortho.
Defender Ortho., N.-H.
Eastman Extra Rapid
Hammer Extra Fast Ortho.
Hammer Non-Halation
Hammer Non-Halation Ortho.
Seed 26x
Seed C. Ortho.
Seed L. Ortho.
Seed Non-Halation
Seed Non-Halation Ortho.
Standard Extra
Standard Orthonon

Class 1 1/2, P. E. 84, Wy. 160, Wa.
Cramer Anchor
Lumière Ortho. A
Lumière Ortho. B

Class 2, P. E. 78, Wy. 120, Wa.
Cramer Medium Iso.
Ilford Rapid Chromatic
Ilford Special Rapid
Imperial Special Rapid
Lumière Panchro. C

Class 3, P. E. 64, Wy. 90, Wa.
Barnet Medium
Barnet Ortho. Medium
Cramer Trichromatic
Hammer Fast
Ilford Chromatic
Ilford Empress
Seed 23
Stanley Commercial
Wellington Landscape

Class 5, P. E. 56, Wy. 60, Wa.
Cramer Commercial
Hammer Slow
Hammer Slow Ortho.
Wellington Ortho. Process

Class 8, P. E. 39, Wy. 30, Wa.
Cramer Contrast
Cramer Slow Iso.
Cramer Slow Iso. Non-Halation
Ilford Halftone
Ilford Ordinary
Seed Process

Class 100, P. E. 11, Wy. 3, Wa.
Lumière Autochrome

OUR ILLUSTRATIONS

WILFRED A. FRENCH

"The Snowball-Bush," by Alice Foster, lends itself admirably to the requirements of a bleed cover-design, as employed in the present issue. The round, blossoming clusters of the bush form strong accents in the floral landscape and are managed more successfully at close range. Mrs. Foster's picture gains in attractiveness by the two juvenile figures and, incidentally, exemplifies the motive, "Landscapes with Figures," which is the subject of the June PHOTO-ERA competition for advanced workers. Data: May, 7.45 A.M.; bright sun; 5 x 7 Seed Polychrome plate; Rytol; 5 x 7 Century camera; 8¼-inch Goerz Dagor; stop, F/16; 11 x 14 enlargement on P. M. C. Bromide.

The illustrations, by Harold A. Taylor and H. A. Erickson, to Mr. Taylor's article, pages 266 to 270, are highly meritorious and give a satisfactory survey of the architectural attractions of the San Diego Exposition and of the pictorial possibilities which await the visiting camerists from all parts of the two American continents.

"The California Building" (frontispiece) is a beautiful example of architectural photography — a difficult subject, well managed. The author of the picture, Harold A. Taylor, is counted among the most successful all-around professional photographers on the Pacific Coast.

The view of the "Puente de Cabrillo," whether by design or otherwise, recalls vividly a similar picture, the Roman Aqueduct at Segovia, Spain, and the stately Alcazar at the opposite end. Data: "The California Building," October, 1914; 10.30 A.M.; sunshine; color-screen; 6½ x 8½ view-camera; 5½-inch wide-angle lens; stop, F/64; 6½ x 8½ Standard Orthonon; pyro, metol and hydro; glossy print.

"Exposition-Grounds," January, 1915; sunshine; 3A Kodak; Cooke-Kodak lens; Eastman N. C.; same developer; 1/25 second.

"The Botanical Building," 6½ x 8½ camera and plate; 8½-inch Cooke; same developer.

"Puente de Cabrillo," October; rest same as preceding.

"Tower, California Building," November, 4.30 P.M.; 8 x 10 camera and plate; 13½-inch Cooke; rest same as preceding.

"Vista of the Pipe-Organ," 9 x 12 cent. Ernemann camera; Ernon Anastigmat; Orthonon; same developer.

Rarely has a PHOTO-ERA article been illustrated so beautifully as the one by Kenneth Hartley. The technical qualities of the various flower-pictures, pages 273 to 275, are superb. Each group is displayed advantageously in Nature's own artistic setting.

The portrayal of Pike's Peak, the highest mountain in Colorado, is bold and realistic. In contemplating this picture of the rugged and weather-beaten peak, the reader will be reminded of the famous slogan of General Frémont, the "Pathfinder of the Rocky Mountains," and which was used afterwards by Mark Twain in one of his books, "Pike's Peak or Bust!" No data.

The general view of Bar Harbor and Frenchman's Bay, by George R. King, page 276, represents that celebrated locality at its best. The camerist chose his time and view-point with artistic judgment. The dense woods in the foreground are lighted favorably, balancing well a picture which, when made by a less experienced photographer, presents the woodland as a virtually solid black mass. Here the picture starts with a halftone and extends easily towards the town of Bar Harbor, the bay which encloses Bar Island, Hancock, Iron Bound and other islands, the distant shore of Hancock County, followed by the fairy sky, forming a harmonious combination of masses and objects. Data: July, 1914; 2 P.M.; 8 x 10 Century View-Camera; 13-inch Collinear lens; stop, F/32; 3-times Ingento ray-filter; 10 seconds; 8 x 10 Cyko print, trimmed.

Philip Conklin, another successful all-around craftsman, who leaped into prominence as the winner of the first prize in the Loveliest Women Competition — see preceding number of PHOTO-ERA — justifies his reputation as a maker of dainty pictures. His smooth technique is exemplified by a pleasing marine — "Peak's Island, Maine." Like the preceding picture by a brother craftsman, Mr. Conklin's performance owes much of its interest to the artistic treatment of the foreground. Here, however, it becomes the principal feature of the composition which, as a halftone reproduction, seems to have gained in virility over the carbon print. Data: July, 1914; 1 P.M.; fair light; ½ second; 5 x 7 R. O. C. Universal camera; 8-inch rear-combination of a 4 x 5 Morrison wide-angle lens; stop, F/64; 5 x 7 Standard Orthonon; pyro-soda; 5 x 7 gaslight print for reproduction; original print; greenish-blue carbon on celluloid.

The opposite to Mr. Conklin's style is the free, but none the less sensitive, manner of Charles O. Dexter, as shown by four delightful impressions — pages 278 to 281. In the design of the three landscapes, Mr. Dexter manifests a true sense of proportion — the art of spacing — a pictorial quality that many an artist would do well to cultivate. The self-portrait, page 280, I know to be characteristically true to life. It will repay careful study. The workmanship contains a wealth of knowledge of value to the student in portraiture, the management of light and shade, in particular, being worthy of attention.

In examining Mr. Dexter's pictures the student will discover other artistic secrets — the separation of planes, subtlety of expression, and refined sentiment. But much of this may be found in the artist's explanation, why he uses a soft-focus lens. Notice the left hand, as it rests against the chin and receives its full share of the light. Ordinarily, the hand in such a position becomes a strong highlight that upsets the entire pictorial arrangement and is, therefore, discreetly avoided by cautious and unskilled workers. The collar, generally regarded as an insuperable obstacle on account of its glaring whiteness, is here shown as a docile, yielding accessory. The same is true of the cuff, and so on. Not the least important item — considered by some critics as the most important one in a portrait — is the background. Notice how "dexterously" it has been managed. Data: "Norway Pines" — August, 1913; 8 A.M.; hazy sun; ½ second; 4 x 5 Century View-Camera; 8¾-inch Smith Semi-Achromatic lens; stop, F/9; 3-times color-screen; Seed Non-Hal. L. Ortho; Ortol; enlarged on platinum, hand-coated on Japanese Vellum; toned with mercury.

"Early Spring" — May, 1912; 11.30 A.M.; hazy sun; 5/8 second; rest of data like preceding.

"The Old Mill-Stream" — August, 1913; 4 P.M.; sun, good light; ½ second; rest of data like preceding.

"Self-Portrait" — April, 1913; 2 P.M.; stop, F/8; north window; dull, rainy; 12 seconds; Seed 30; no color-screen; rest of data like preceding.

The subject, by Karl Struss, page 283, would seem to present uncommon technical difficulties. The artist contrived to get the figures as they moved naturally, yet in

perfect accord with his design. It does not seem to be a fragment of a vast interior with people hurrying in almost every direction, nor a random snapshot; but a complete, harmonious picture, as if planned with deliberation and care. The unity of this superb composition, with its masterful handling of the light and the human element, merits unstinted praise. Let the minitiated, for instance, imagine the couple at the left, walking in the opposite direction — they would be leaving the picture and the sense of unity would be imperiled, even by apparently so trifling an incident. Or, more important still, imagine the picture to have been made without the huge candelabrum in the foreground! In that case, the impressiveness of the present pictorial design — the motive, in fact — would be gone.

It is a maxim in art, that power and breadth in an artistic performance — in music, painting, sculpture, architecture or poetry — are obtained at the expense of other qualities, such as perfection or refinement of technique, and *vice versa*. One does not feel that this applies to Mr. Struss's picture, in which the technique — excellent, but not obtrusive — is wedded to power and freedom of expression. Data: August, 1914; 9 A.M.; bright sunlight; 4 x 5 Graflex; 10½-inch Struss Pictorial lens; stop, F/5; 1/10 second; 4 x 5 Standard Orthonon; Rodinal; 4 x 5 glossy print.

"The Still-Life," by H. R. Decker, page 285, is exceptionally well done. One of the chief merits of this picture is the avoidance of symmetry of design; rather balance by light and, above all, simplicity of material. The nature of this motive would seem to prohibit a too strongly accented object outside of the basket; hence, though finely rendered, the apple at the left appears a little obtrusive. The eye returns to it, and rests there, despite the alluring beauty of its lighter-skinned fellows. The technical difficulties of the problem have been met brilliantly and the picture will continue to give pleasure. Data: 5 x 7 Korona View-Camera; 8-inch R. R. lens, at U. S. 4; 12 minutes; 5 x 7 Cramer Isonon; 5-times Isos filter; A. B. C. pyro formula, one-half strength; direct print on Normal Smooth Argo.

The typical view of the Rhine, at its most interesting section — from Cologne to Mainz — is one of several hundred subjects of this character taken from the bulging portfolio of the indefatigable camerist and globe-trotter, Horace A. Latimer, of Boston, U. S. A. Not so many years ago Castle Katz — identified with the notorious Count Katzenellenbogen — was a deserted ruin. It has been restored and made into a comfortable residence. The picture is filled with pictorial interest, although the vociferous commercial craft — a marked feature of the large Rhine traffic — does not seem to accord with the legendary lore of the historic river. But the spirit of the age is commercial progress and rivalry — for the betterment and satisfaction of the human race. Data: September, 1913; about 5.30 P.M.; Gaumont Stereo Panoramique, 8 x 16 cm.; Krauss-Zeiss Protar; focus, 107 mm.; stop, F/8; light, poor; 1/5 second; Chromo Isolar plate; hydrometol; 10 x 10 Eastman bromide enlargement.

"A Lake Winnisquam Shore," page 287, forms an appropriate and artistic illustration of the picture-yielding possibilities of trips in a motor-boat. The craft with its occupants contrasts pleasingly with the picturesque surroundings. Despite the white color of the boat, there is no feeling of unrest in the picture; adequate detail appears in the wooded background, and the scene is filled with sunshine. Data: August, 11 A.M.; bright sun; 1/50 second; 4 x 5 Eastman plate-camera; 6½-inch R. R. lens; stop, F/8; 4 x 5 Seed Non-Hal. Ortho; pyro; 4 x 5 print on Artura, Grade C; developed with Celeritas.

The photography of animals, like that of children, requires a peculiar kind of ability in which the personality of the photographer counts for much. As an inexperienced reader may be called upon to furnish a number of original canine subjects, a familiarity with the methods of a specialist, such as Arthur G. Eldredge, and the manner of work he can do, will prove of value. The data of Mr. Eldredge's pictures, pages 289 to 292, are as follows: "Exercising a Borzoi" — 5 x 7 Reflex; 11-inch Cooke; focal-plane shutter, 1/500 second. "English Setter" — 6½ x 8½ twin-lens camera, own design; 10-inch Ross-Zeiss Tessar, F/6.3; 1/25 second; Standard Orthonon; Ortol. "French Bulldog" — 4 x 5 Reflex; 11-inch Cooke; Cramer Crown; Ortol. "A French Bulldog" (profile) — conditions same as in preceding "West Highlands Scotch Terrier" — 5 x 7 Reflex; Standard Orthonon; Ortol. "Samoyedes from Siberia" — same as preceding.

Photo-Era Monthly Competition

ALTHOUGH the "Flashlight" competition was without restriction as to choice of subject, most of the entries were devoted to portraits and figures, despite the obvious technical difficulties to be encountered. Consequently, the percentage of really satisfactory work was small, though no apologies are asked on behalf of the successful pictures.

The pose of Mr. Stewart's comely model, page 294, may be open to criticism, on account of the arrangement of the left arm. There are many professional practitioners who undoubtedly would avoid such a position of the arm, because of the somewhat sharp angle it produces. In this case there may also be a suggestion of dismemberment, the forearm entering the picture with startling suddenness. Yet it requires no stress of the imagination to understand the logical connection beneath the black drapery. The tone-values of the flesh-tints are excellent, and the shadows desirably transparent. The skilful use of a retouching-pencil would improve the seemingly false shadow at the left side of the nose. Data: March 20, 1915; 16-inch Suter R. R. lens, at F/8; Stanley; pyrometol; 1.5 grams Prosch Sunlight Flashpowder, XF grade; Cyko linen white print (6 x 8 oval), hypo-alum toned.

Mr. Stewart writes: "The picture was made in a room about 10 x 12 feet, with the camera in the next room close to the door. I used the flashpowder in a Spread-light lamp and flashed it behind the cheesecloth stretcher that I use for drying prints. The sheet was used as a reflector. In order to prevent excessive dilation of the eyes, I had a 60-watt lamp burning at one side of the model and a 40-watt lamp directly in front, some distance away — back of the camera, in fact. A trial showed that this light was the one that kept the pupils from becoming too large. The room has neutral green walls. The accessories used were chiffon silk (once were bluish-white), some black velvet and velours stuff and imitation pearl-beads."

The life-like expression of the baby (page 297) and the superb technique command admiration. It is hard to believe that the mere use of flashlight could produce so perfect a result. The plastic or stereoscopic effect — as if one could easily place his arm around the little form — is present to a remarkable degree, and is the result of skilful illumination. Data: Professional studio; 8 x 10 Seneca View-Camera; 12-inch Velostigmat, Series II; stop, F/8; Portable Skylight; 10 grains flashpowder; Seed 30; Eastman's A. B. C. pyro formula; 8 x 10 Azo II. print.

Superior workmanship is the dominating note of the "Post-Nuptial Group," page 298. Although the sharpest contrast exists in the costumes, they show an adequate

(*Continued on page 313*)

ON THE GROUND-GLASS

WILFRED A. FRENCH

A Feat in Kinematography

THROUGH the courtesy of an English correspondent I have come into possession of some startling facts with regard to the exploit of the official photographer of a German submarine captured by the British last April. This rather clever feat consists in a complete cycloramic motion-picture film of an English harbor-scene made from this daring undersea-boat. Although a standard kinematograph camera can be operated so as to revolve on its axis and yield a motion-picture of a complete cyclorama, 360 degrees, it is rarely made to describe an arc of over 100 degrees, simply because no more is needed. It appears — from the information supplied by my English friend — that the successful cycloramic film in question was produced as follows: The motion-picture camera carrying the standard size of film (⅞ x 1 inch) was placed in position on top of the periscope of the submarine and safely protected by a waterproof covering. When the periscope with its camera-attachment had risen well above the water, the operator in the hold of the submarine, guided by the information transmitted by the lower end of the periscope, released the protecting disc of the lens and directed the rotating motion of the camera — all accomplished by means of electrical connections. Having the camera under complete control, the photographer — from his place of vantage and security — could retard or accelerate its course at will. When the circle had been completed, the protecting hood was closed, the periscope lowered, the camera detached, and the film developed.

One can easily imagine the officers eagerly studying the projected motion-picture film shortly afterwards, selecting, if necessary, certain single pictures for special examination, and familiarizing themselves thoroughly with conditions as they existed above. What the camera had procured in a few minutes at great risk, was soon projected on the screen for study with deliberation and safety.

Persuading the Itinerant Photographer

REGARDING the question of licensing the itinerant photographer, or controlling him, so that he shall not embarrass the local photographer by encroaching upon his preserves, the following instance shows how this contingency may be met:

Mr. Jacob Alstrom, a capable and enterprising itinerant photographer, visited a college town in Maine last winter — as he does every two or three years — for the purpose of photographing the rooms of the Greek-letter societies. The members are always glad to see him, for they like his work, which excels that of the local photographer. Moreover, he knows how to please the students. The local photographer, hearing of his rival's activity, approached him on the second day after his arrival and asked him if he would leave the town for $50. Mr. Alstrom declined and kept right on with the work in hand. The following day the local man — fearful lest he lose business and prestige — interviewed the intruder again and inquired how long he intended to remain. "It will take me about two weeks to close up my work here." At this business-like reply, the local man grew pale. "What do you say to $75?" he inquired, at the same time tendering a roll of bills. Mr. Alstrom, accepting the money quietly, said, "It's a bargain." True to his word, he left the town the same day.

A Distorted Pinhole-Photograph

DR. P., who amuses himself with photography occasionally, but not seriously, described to me a primitive photographic experience he had one day last fall. He was busy filling a plateholder in his improvised darkroom — a large closet on the third story facing the street — when he was conscious of a large luminous something very near him. Quickly covering his box of plates and looking around, he perceived a bright apparition high up on the wall opposite the street. On examining it closely he was amazed to find that it was a reversed image of a group of cottages right across the street. He was greatly puzzled as to its origin, and, tracing the picture to its source, he discovered that it was due to a pinhole in the opaque paper-screen which he had fastened over the window to exclude the light.

Not being familiar with the principles of pinhole-photography, Dr. P. experimented by holding a sheet of white paper so as to intercept the image, and found that, at a distance of about six inches from the tiny aperture,

AN APPARITION IN THE DARKROOM

he could obtain a bright, distinct picture, but upside down. The idea then came to him to make a negative of it. With the aid of an old-fashioned easel, which happened to be at hand, and a narrow strip of board he formed a convenient shelf on which he placed the loaded plateholder, about six inches from the pinhole. He quickly drew the slide and, after an exposure of about ten seconds, he speedily replaced it. He developed the plate in the usual way and was gratified to obtain a fairly good negative.

As one of the characteristics of a pinhole picture is freedom of distortion, even when the object reaches the pinhole at a sharp angle — provided the plane of the object and of the image-receiving surface are parallel — the striking deformity of the present picture seems puzzling to the uninitiated.

Dr. P. remembers that as the plateholder reposed safely on the improvised rest, it tilted backwards considerably; but that its position should have been absolutely plumb, in order to obviate distortion, was an optical principle he did not appreciate at the time.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

The Panama-California Exposition

Already many camerists have seen the two Pacific-Coast Expositions and returned to tell their friends about them. All seem to agree that the Panama-California Exposition at San Diego, referred to in his article on another page by Mr. Harold A. Taylor, compares very favorably with the larger Panama-Pacific Exposition at San Francisco. More, they express unreserved admiration for the manner in which a relatively small city has carried out its original project, despite the appropriation of the idea on a larger scale in sight of the Golden Gate. With exemplary pluck, the city raised a million dollars by a special bond-issue and another million by private subscription. This, without state, national or other outside aid, has enabled the building of a group of buildings at once beautiful, characteristic and appropriate — one long to be remembered for its harmony of conception and treatment, the latter being of far easier accomplishment, thanks to the work of nature, which has made this locality one of the fairest of the earth's garden-spots. Instead of being outdone by its larger imitator, the San Diego Exposition is profiting from the nation-wide advertising of the former; for visitors from a long distance — and distances are long even in California — usually take in both, their round-trip excursion-tickets providing for this at no extra expense. Thus far the attendance has been excellent, the gate-receipts meeting all expenses — plucky San Diego!

Back Numbers

In response to our several advertisements for special back numbers of Photo-Era, more copies have been received than we could take care of conveniently; but in every case we have allowed three months' subscription for each copy received in good order and suitable for binding. Among the copies received there remain many which still await instructions from the senders, for without these we are unable to give due credit. Therefore if those who have not heard from us will please let us know immediately the date and year of the issues they sent us, we will adjust the matter without delay.

New Folios of Aurora Life-Studies

Perhaps no series of artistic photographs from the nude and semi-draped artist's models have given so high a degree of genuine satisfaction as the folios of Aurora Life-Studies. There are two folios, each consisting of twenty 5 x 7 original prints, and five, each consisting of twelve 8 x 10 original prints. To these have been recently added sets "H" and "I," and, like the other sets, are noted for the refined beauty of pose, the physical attractiveness of the models, and the excellence of photographic technique.

These Aurora Life-Studies are intended for the use of painters, designers, art-students, physicians, photographers in high-standing — whether professional or amateur — and any one seriously interested in art. These complete sets are described in an advertisement printed elsewhere in this issue. It should be noticed that these portfolios may be clubbed with a Photo-Era subscription.

Kodak Advertising-Contest, 1914

From several thousand prints submitted, a board of judges has announced the choice of fifteen subjects which, in their opinion, will make the best Kodak advertising. In addition to these, many other subjects were bought because of their good selling-arguments, forcefulness and technical excellence.

PRIZE-WINNERS

Grand-Prize Class

1st. H. E. Lawson, New York City.
2d. Geo. J. Botto, New York City.

Class A

1st. Jos. A. Powell, Philadelphia.
2d. W. B. Stage, New York City.
3d. Mrs. Nancy Ford Cones, Loveland, Ohio.
4th. L. D. Sherman, Andover, Mass.
5th. E. G. Dunning, New York City.
6th. C. H. Wiebmer, St. Paul, Minn.
7th. Chas. S. Price, Denver, Colo.
8th. J. H. Field, Fayetteville, Ark.

Class B

1st. Albert L. Snyder, Utica, N. Y.
2d. G. H. Seip, Philadelphia.
3d. H. V. Roberts, Utica, N. Y.
4th. John S. Neary, Trenton, N. J.
5th. Marjorie Cockroft, Alameda, Cal.

THE JUDGES

Will H. Towles, President, Photographers' Association of America, Washington, D. C.; Pirie MacDonald, Photographer, New York City; W. A. Patterson, Curtis Publishing Company, New York City; A. C. Reiley, Advertising Manager, Remington Typewriter Company, New York City; W. R. Hine, Vice-President and General Manager, Frank Seaman, Inc., New York City.

The Use of Exposure-Meters

For those who wish to use a standard meter that is accurate in all conditions, we can recommend both the Wynne and Watkins. Both depend on the tinting of a sensitive paper to a standard shade, thus giving the exact actinic value of the light. Full directions for use are given with each outfit and the manipulation is very simple. The only thing to remember is that, being sensitive to atmospheric conditions, the test-papers do not always change to the exact color of the shade-guide. For this reason the depth of color and not merely the shade itself should be judged. An actinometer or exposure-meter is a very useful adjunct to one's camera-outfit, for it is so constructed that it measures the correct time of exposure under different conditions of light, speed of plate, and size of stop used.

We are sure that the reader cannot do better than to familiarize himself with the practical and lucidly-written article on the use of exposure-meters, expressly written for this magazine. It was printed in full in the January, 1912, issue. A few copies left at 25 cents each.

The Mystery of 291

Desiring to explain to a newly-arrived pictorialist, Alexieff Kazanovitch, of Kieff, the mysterious significance of 291, a well-known member of the New York Camera Club took the Russian visitor to the famous headquarters on Fifth Avenue. As it happened, the redoubtable High Priest was in, holding silent vigil over a collection of *chefs-d'œuvres*, regarded by the common herd as "freaks," and gladly welcomed the two supposed seekers after truth and mental refreshment. Surveying with evident satisfaction the formidable cranium of the Muscovite, the great leader, after a few preliminaries, proceeded to expound his doctrine of *ars et veritas*. In eloquent rhetoric, punctuated by hypnotic glances from beneath his bushy eyebrows, the prophet recounted his early struggles, mixed with bitter disappointments and the eventual triumph of the Great Cause. Nods of approval from the magnetized listener encouraged the necromancer, who, quite regardless of the fleeting intervals of time, vigorously pushed his efforts of conversion. Captivated by the magic of his words and the earnestness of his manner, the Muscovite uttered not a word. By and by his companion, having finished his inspection of the pictorial mysteries, read the daily paper and enjoyed a refreshing nap, hastily consulted his watch and, astonished at the rapid flight of time, advanced towards the speaker with this apology: "It's too bad, my dear fellow, for you to try so hard to entertain Mr. Kazanovitch; but, you see, he doesn't understand one word of English!"

For Your Photographic Library

This is the heading of an advertisement on another page that lists the leading photographic and art-books which every camerist ought to have for reference during the summer. Consult this and send your order at once.

An Exemplary Custom

Amateurs of discriminating taste for artistic photography, and favored with the necessary home-facilities, will do well to emulate the example of Spencer Kellogg, Jr., of Buffalo, N. Y. This gentleman, himself an enthusiastic amateur photographer, gives up his home to admirable "one-man" shows during the season. During the past winter he has shown the work of F. H. Day, followed, later, by an exhibition devoted to the artistry of C. H. White. These exhibitions were open to all who are interested in pictorial photography, and who thus receive an opportunity conveniently to see photographic work of a high, artistic standard. Thus, Mr. Kellogg is doing important missionary work in a pleasant and effective way.

As a Traveling Photographer Sees It

Sacramento, March 5, 1915.

Photo-Era Magazine.

Gentlemen: I saw an article in the February issue of Photo-Era entitled, "Obtaining Business Under False Pretenses." As I am a so-called traveling photographer, having traveled over a greater part of the United States, and at present located in sunny California, allow me to say a word in favor of the class I belong to.

You spoke of us fellows taking business away from the *tax-paying* photographers, or "home-guards," as we term them. Let me explain a few points. In the first place, most of us travelers work small towns where the majority of home-guards have had an ordinance passed through the city council in their particular city, charging outside button-pushers $2 to $5 a day for a license.

Now these *tax-paying* photographers usually have a little dingy "studio" over some corner grocery, fitted up with an old-style outfit, where they chew tobacco and sit around until somebody has a new baby and brings it to have its "mug" copied. Or some leading *tax-payer* gets married and brings his blushing bride and stands with her in front of the old Wollensak, the two holding each other's hands.

He snaps a couple of plates that probably have been loaded a month. I've talked with many of these *tax-paying* photographers, and I can safely say two-thirds of them don't own a view-camera. But, oh, my! Let them go down the street and see a stranger with a view-box on his back and what a howl goes up!

I carry a 5 x 7 box with focal-plane shutter, a No. 3 Celor, a wide-angle and a flashbag, so that I'm prepared to grab anything that comes up. I have even told some of the leading citizens if they would allow me to take their picture amid home-surroundings, I would enlarge it and have it hung in the art-building at the Panama-Pacific Fair. And I may do it.

One thing sure, we travelers don't force any one to take a print unless they want it. I shoot up ten to thirty dozen plates in every town I hit. I don't ask any deposit. I make a print from each negative and show them a proof. If they buy, all right; if not, all right. Some days I make $10, and on others I lose. I stir up business in the whole town for my friend, the *tax-payer*-photographer. I put the notion in the heads of lots of people to have their pictures taken, and they go to the *tax-payer*-photographer, because they can stand him off or else trade him butter and eggs. I don't hurt any local man's business, but can prove I help him. I use twenty-four dozen plates where he uses one dozen. I patronize your advertisers and read Photo-Era every month. I love my work and the good fresh air.

Now, I don't want to read any more knocks in Photo-Era about us travelers. We are the life of the business; we are the fellows that wake up these little sleepy towns. We are the boys that use lots of supplies, and always pay as we go, because we have to. Wake up these old home-guards. Tell them to get a view-camera and rustle the business in their old home-town; *then* we fellows would starve. I'm getting too old to hit the trail much longer, so I'll not worry.

I have not written this article to ridicule anybody in the picture-game, because I love the game too well for that; but what I have said is an actual fact. Of late years there seems to be a jealous hatred among local photographers against us fellows that travel from place to place; but bless your hearts, brothers, we don't do you any harm. On the contrary, we often stimulate business in a dull town.

Very respectfully,

Arthur Wendel.

P.S. — If this little article is acceptable to you, you have my full permission to publish it. I'm not trying to write a prize-story, and don't expect any pay for my trouble. But if you desire, later on, I'll write you an article entitled, "The Troubles of a Traveling Photographer."

I leave here Monday, working south; but I always manage to find a news-stand selling Photo-Era, and I assure you I greatly enjoy reading it. — A. W.

[Mr. Wendel seems to have misinterpreted the spirit of the editorial in question, which appeared in the February issue. Although not knowing him personally, we are quite sure that he is a man of business-integrity and, least of all, he would never resort to questionable methods to get business. — Editor.]

Our Illustrations

(*Continued from page 309*)

degree of detail. One feels, however, that the camera was used at too high an elevation. Data: At night; flashlight — 15 grains Victor powder exploded in muslin bag behind cheesecloth screen; 5 x 7 Seneca folding camera; 7-inch Velostigmat lens, F/6.8; full opening; standard Orthonon; pyro-soda, diluted with water. 5 x 7 Special Portrait Velox print.

The Beginners' Competition

The representation of the spectacular sunset, page 300, speaks well for the pictorial ability of the artist. All the same, it is possible that the trees would possess detail and appear not quite so black had the exposure been less brief. The water reflects sufficient light, even at sunset, to obviate opaque shadows. Of course, the use of a diluted developer, care in stopping the development at the right moment, or skill in making the print will do much to produce the result suggested. Data: August, 6 P.M.; sun through light clouds; 3¼ x 4¼ Voigtländer Alpine camera; 4¾-inch Collinear, Series III; stop, F/6.8; 3-times color-screen; 1/10 second; Hammer Non-Hal. Ortho; pyro; 6 x 7½ enlargement on Wellington Cream Crayon Smooth; redeveloped.

The young man at work, page 302, is doubtless but an amateur, otherwise his surroundings would have the characteristics of a professional workshop. The latter usually presents serious difficulties, for it is not always easy to subordinate the numerous accessories, or to arrange them — without ruining the typical atmosphere of the place — so as to improve the generally prevailing chaotic condition. A picture, entitled "The Watchmaker," was also entered in this contest; but was found to be "impossible," because the numerous watches on the wall and other light objects about formed very objectionable highlights. So we prefer the amateur, in a simple setting, actually at work and portrayed with fidelity by Mrs. Scales. Data: February 10, 2 P.M.; bright light; 6½ x 8½ Century View-Camera; 9-inch Verito lens; stop, F/8; Compound shutter; quick bulb-exposure; Seed 30; pyro; print, 6½ x 8½ Iris, Grade D.

Though photographed, probably, more times than any other species of animal, puss has yielded relatively few quite satisfactory pictures. Among these is Miss Edna Stauffer's, page 305; and it is the Maltese variety to which the camera is most partial. Yet this happy result is due to a high degree of technical skill, and the creature was not subjected to persistent coaxing and subterfuges to gain its attention. Data: Made by flashlight; Seed 30; pyro; Goerz Celor, F/5; stop, F/8; Artura E print.

B. Y. M. C. U. Camera Club

At the annual meeting of the B. Y. M. C. U. Camera Club, held at their rooms, 48 Boylston Street, May 2, the following officers were elected: Pres., Howard I. Saunders; Vice-Pres., Henry C. Shaw; Treas., H. C. Channen; Sec., Louis Astrella.

The club has closed the most prosperous season of its existence and during the past year has completely equipped its artificial-light studio, having added a 12-inch Velostigmat lens and other accessories, which features have added not a little to the success of the club, now numbering sixty-three active members.

To the retiring president, Dr. Harvey D. Hutchins, by far the most popular officer in its history, is largely due the present flourishing condition of the club.

The Dangers of Night-Photography in London

Photographers have their troubles these days, in the opinion of many of their number. But in addition to the high prices and scarcity of work, with which American camerists must contend, their brothers in England find it necessary to observe many war-restrictions, particularly regarding flashlight- and studio-work at night. London, never a brightly-illuminated city, as the great cities of the world go, has been in virtual darkness for many weeks past; no longer do the lights of the Strand and the Thames Embankment furnish excellent targets for Zeppelin raiders, and when, contrary to the Secretary of State's order the operator of a Chiswick studio recently worked with two powerful arc-lamps, the light from which streamed upwards through the unscreened skylight, he was summoned to court and fined $50 for endangering the neighborhood. The magistrate further expressed the wish that the employer had been brought instead, as the penalty was $500, or six months' detention.

A Model Copyright-Release

Through the courtesy of Mr. Edmund L. Wolven, professional photographer at Poughkeepsie, N. Y., we publish, herewith, the form of release he uses, when he grants permission — for a pecuniary consideration — to publish or use one of his copyrighted photographs. In a letter to the publisher, Mr. Wolven states that he has no objection if photographers desire to use this form as a model in making out copyright-agreements of their own.

Edmund L. Wolven, Photographer

Poughkeepsie, N. Y.

License No ..... granting permission for the use of a copyrighted photograph.

On payment of the sum of ..... dollars you are authorized to reproduce by the ..... process, my copyrighted photograph of..... in any size not exceeding ....., the line, Copyright, 19....., by E. L. Wolven, Poughkeepsie, N. Y., to be printed under each impression. It is agreed that a copy of the issue, showing cut and copyright-notice, is to be sent to me on the day of publication. This permission and fee is for reproduction in .... and for *one issue only*, and the subject may not be reproduced or sold, as an independent illustration, separate from the above publication and its accompanying letter-press. If any other use is desired, a fresh permission and payment will be required.

NOTICE — Any one copying my copyrighted photographs for the purpose of reproduction or illustration either in newspaper, magazine, book or other form, without my permission, will render himself liable to an action for infringement of copyright.

Honor and Profit

While most pictorialists consider it an honor to have their prints appear in Photo-Era, according to letters which they write us to this effect, it also proves a source of profit. We are frequently called upon to forward letters to pictorialists whose pictures have attracted the attention of publishers of calendars, illustrated books, art-specialties, etc., resulting in a profitable business to those Photo-Era contributors. In no case, however, does the publisher give the names of his contributors, indiscriminately, particularly to art-publishers, without their permission.

BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices.

In the Land of the Head-Hunters. By Edward S. Curtis. Numerous illustrations. Octavo. Price, boards, postpaid, $1.20. Yonkers-on-Hudson, N. Y.: World Book Company.

Four centuries of contact with the American Indian have given the white man but little conception of the inner spirit and emotions of his red brother. Prominent among the few intimate interpreters of the Indian is Edward S. Curtis, known internationally for his wonderful photographs of Indian life.

Mr. Curtis' latest book "In the Land of the Head-Hunters," is based on a legend of the Indian tribes whose original habitat was the Vancouver region, where the action takes place. The story is told in the style of the tribal bards and has the swiftness of movement, the elemental directness, and the stark simplicity of the true epic. The thirty halftone illustrations have been taken from Mr. Curtis' motion-picture film based on the same story, now being shown throughout the country, and are beautiful examples of the photographic art.

Indian Days of the Long Ago. By Edward S. Curtis. Numerous illustrations. Octavo. Price, boards, postpaid, $1.20. Yonkers-on-Hudson, N. Y.: World Book Company.

Mr. Curtis' twenty-five years' acquaintance with Indian tribes, among whom he has lived for months at a time, have given him the intimate knowledge of Indian life upon which he has based this story of an Indian lad's boyhood. Kuknsim is of the Salish, a Rocky Mountain tribe, and grows from boyhood to adolescence in the days when the first rumors of the coming of the white man were reaching the western tribes.

It is an adventure-book for boys and girls, and at the same time a book of absorbing interest for older readers because of the picture of Indian life and ways of thought which it presents. The illustrations, which number 200, are either reproductions of Mr. Curtis' own photographs or drawings made from the Curtis photographs by F. N. Wilson.

Photographers' Association of New England

Let no photographer forget that the seventeenth annual convention of the P. A. of N. E. will be held in Copley Hall, Boston, Mass., August 10, 11, 12, 1915.

The Executive Board at this time cannot give a detailed program of the good things in preparation, but it is working on plans to make it notable in the history of the Association. The renewed interest and enthusiasm shown at last year's convention is a prophecy of the year 1915, and the technical and practical sides of the profession will be treated by men qualified by actual experience with every detail of the subject.

With the change in Constitution and By-laws made last year, it is now necessary only that the proprietor of a studio in New England or the Maritime Provinces shall send one dollar to the secretary, Geo. H. Hastings, Newtonville, Mass., to receive in return a Certificate of Membership (suitable to frame for display), showing that he is a member of the P. A. of N. E. for 1915. Prior to the convention another dollar sent will bring the 1915 button, which will give the member admittance to the hall during the convention; the two dollars can be sent at one time if preferred. The sending of the second dollar relieves one of the tedious waiting at the treasurer's office for the button which admits him to the hall.

The manufacturers and dealers are alert to show the newest and best of devices by which the photographers can improve and make more attractive the output of the studio, as well as to reduce the incidental labor.

The Executive Board cannot put on a good convention without the loyalty of the craft in supporting it by becoming members and then by showing an enthusiastic interest in the proceedings of the convention. Five hundred members, at the least, ought to attend in order to carry out a good program properly; employees are required to pay only one dollar to become members, which gives them the same privileges accorded proprietors. We need your support — send in the dollar.

The sooner you receive your Certificate of Membership, the greater the value of the advertisement will be. Its display will also add to the prestige of the studio.

$3,000 in Cash-Prizes for Pictures Illustrating Kodak Advertising-Slogans

For the best photograph illustrating any one of the five following slogans, $300 will be paid by the Eastman Kodak Company, Rochester, N. Y.

For the second best photograph illustrating any one of the five following slogans, $200 will be paid.

THE FIVE SLOGANS

Class No. 1. Take a Kodak with you.

Class No. 2. All outdoors invites your Kodak.

Class No. 3. There are no game-laws for those who hunt with a Kodak.

Class No. 4. Let the children Kodak.

Class No. 5. Write it on the film — at the time.

(For Autographic Kodak Advertisement.)

A NEW SLOGAN

Class No. 6. For the best new slogan, together with a picture illustrating same, we will pay $500.

HERE IS OPPORTUNITY

The first five classes in the 1915 Kodak advertising-competition suggest definite lines along which the illustrative work is to be done. The sixth class gives opportunity for you to exercise *both* your illustrative genius and your advertising-ability.

The successful pictures are always the bold ones that bring out forcefully the Kodak advantages or are convincingly suggestive of the delights of picture-making by the Kodak system. Pictures that are merely good landscapes or views or portraits, are not wanted. Pictures that denote action with the Kodak are the ones that will capture the prizes.

The work is interesting. Moreover, photographs are being more and more used in advertising. It is a line of photographic endeavor worth entering — and the cash-prizes are worth while.

Full particulars, including terms and suggestions, will be sent on request by the Eastman Kodak Company.

At the Front

Friend — "You have a photographer in Europe taking pictures of the war, I suppose?"

Friend (absentmindedly) — "No, in New Jersey."

Exchange.

The Indianapolis Convention

Secretary Hoffman, of the National Association, makes the following significant announcement: "The National Convention in Indianapolis will be the largest gathering of professional photographers ever held. Will you be the member in attendance?" As this is Mr. Hoffman's first offense in the realm of prophecy, we have no comment to make. However, Indianapolis, where the annual event will take place — July 19 to 24 — is very conveniently situated, and for this reason an unusually large attendance may safely be predicted.

It is the duty of every photographer — indeed, of every studio-proprietor — to attend this yearly event. It broadens his vision; he renews old acquaintances, cements friendships and sees things as they actually are. Things that he has seen in print, about persons and goods — exaggerated, minimized or distorted — he may see for himself. He can verify them and form his own estimate. No amount of argument, from an unfriendly source, can shake his conviction in the integrity of a man when he has learned really to know him. He can examine a product or a piece of apparatus; he can observe the manipulation of a plate or a printing-medium, and, so far as possible, form a definite opinion; he can put pointed, significant questions to the manufacturer or his representative and discuss many a topic omitted from his correspondence, and, what will appeal to his personal pride, he can help run the Convention — suggest, agitate, criticize, support the best man, and profit by wise counsel. More than likely the tables may be turned — but, then, what is the use of borrowing trouble. This yearly meeting begets good fellowship and merriment, and, with no commission of abnormalities, forms an ideal vacation.

The exhibition of photographic products by manufacturers and dealers will naturally be a good one; of this there is no doubt. Among the principal firms to be represented are: Eastman Kodak Company, Ansco Company, H. Lieber Co., Hammer Dry-Plate Co., Cramer Dry-Plate Co., Central Dry-Plate Co., Sprague-Hathaway Co., H. C. White Co., Cooper-Hewitt Electric Co., J. H. Smith & Sons Co., Gundlach-Manhattan Optical Co., Bausch & Lomb Optical Co., Wollensak Optical Co., A. M. Collins Mfg. Co., C. B. Robinson & Sons and Willis & Clements.

Yes, there will be entertainment for the delegates, also special diversions for members of the Women's Federation. The program is planned, but there may be changes and additions at the last moment.

The picture-exhibit is expected to be large and interesting. Any one who desires to participate is required to send two pictures any size or style, framed or not, but carefully packed and prepaid, and to reach Indianapolis before July 13. They should be addressed to Mr. L. A. Dozer, Vice-President of the Photographers' Association of America, care German House, Indianapolis, Ind.

If in need of any special information, members of the Association, or prospective ones, need but write to the paid secretary, John I. Hoffman, 12th and F Streets, N. W., Washington, D. C., and they should receive a prompt and satisfactory reply.

The Call of the Woods

In the summer-time, when nature is in her most engaging mood, the artist-camerist will not search in vain for attractive pictorial themes. They beckon to him at every hand — from land and sea. In many cases, however, the camerist turns a deaf ear to the call from his own picturesque locality, because its natural beauty does not appeal to him, as he has been accustomed to see it constantly. If the sea, he would seek the blandishments of the woods, and *vice versa*. Of late — to judge in a general way — the mysterious charms of the woods have not attracted the amateur camerist as often as in former years. Is it because the mental attitude of the amateur has undergone a change? Perhaps the natural beauty of the forest is still a sealed book to him. Indeed, in certain parts of this country it may be hard to find a piece of woods or a forest such as invoked the muse of Moore, Longfellow and Hugo.

In any case, if the student of photography is seriously interested to visit the woods, and to interpret their magic spell, he can do no better than to read the inspiring treatise on "The Forest and the Camera," by Theodore Eitel, printed, together with a number of exquisite illustrations, in September, 1910, Photo-Era. This delightful revelation of the pictorial charm of the forest and how to interpret it, is looked upon as a classic in photographic literature and will repay the reading at any time of the year.

Drying Films by Electricity

Photograph-films can be dried by electricity in one-quarter of the time required by other methods, according to the claims of a large motion-picture house in New York state. This progressive company has installed an electrical drying-equipment which is accomplishing their film-drying work in a manner highly satisfactory and superior to any other method.

The films are placed on drums which are 27 feet in diameter. Each drum is revolved rapidly by a one-horse-power electric motor, subjecting the films to air which has been heated electrically by a 3000-watt air-heater placed back of the drum.

With the methods used prior to the installation of the electrical equipment, the time required to dry a reel of film was usually from seven to ten hours. The work can now be accomplished adequately in from one to two hours. Furthermore, the films are turned out in excellent condition.

The Kansas City Camera Club

At the annual meeting of the Kansas City Camera Club, held May 4, officers for the year were elected as follows: Pres., N. J. Simonds; Vice-Pres., Val B. Mintun; Sec'y-Treas., Dr. Maclay Lyon. The headquarters are at Suite 501 Bryant Building, Kansas City, Mo. The annual exhibition of the Club will be held in the early fall at the Fine Arts Institute.

A Birdman's Daring Skill

The story of skill and daring of the German submarine photographer — told elsewhere in this issue — appears to have been matched by a French aviator early last May. According to report, the birdman located the heavy German battery, which was bombarding Dunkirk, and, flying over the spot at a height of 450 feet, took photographs which showed the exact position of the hostile guns. Soon after he had returned to the Allied lines, 2,000 shells were fired which silenced the German battery.

His Taking Way

Judge — "Officer, what is this man charged with?"

Officer — "He's a camera-fiend of the worst kind, yer worship."

Judge — "But this man shouldn't have been arrested simply because he has a mania for taking pictures."

Officer — "It isn't that, yer worship, he takes the cameras." — *Exchange.*

WITH THE TRADE

Record Plates and Colona Papers

That a correctly-timed Record-plate negative printed on Colona paper is at once a thing of beauty and a source of technical satisfaction, we have had the pleasure to prove for ourselves with samples such as the trade-agent, G. Gennert, 24 East 13th Street, New York City, will gladly send to Photo-Era readers on request. The plate is a medium-speed emulsion well suited to general purposes in amateur or professional photography; whereas the paper, in three grades and three surfaces, is notable for its long scale of gradation, sparkle and shadow-detail.

Velostigmat Lenses

These objectives, most important of the several Wollensak Optical Company's products, are described in a new booklet just issued, and which will be mailed to readers of Photo-Era upon request. This superb piece of printing, the work of the Roycroft Shop, East Aurora, N. Y., embraces, in addition to a review of the Series I, II and III lenses, splendid examples of work done with them by well-known camerists in a great variety of subjects. In fact, the Velostigmat series, varying in speed from F/9.5 to F/4.5, covers virtually the whole field of photography.

Enlarging-Rexo

This latest addition to the Burke & James line of developing-papers, now growing rapidly in popular esteem, supplies the logical demand for an emulsion for enlargement- as well as contact-work. Thus it supplements not only the line of Rexo papers, but of Ingento Enlarging-Lanterns as well. Enlarging-Rexo has a speed thirty-five times greater than Rexo Normal and gives to enlargements all those qualities characteristic of the best gaslight papers and which are difficult to obtain in bromide enlarging. It is supplied in two grades and four surfaces and weights, as described in an advertisement on another page.

Kodak 1915

As usual, the latest catalog of the Eastman Kodak Company is attractive to the eye and of the utmost interest in respect to its contents. Autographic photography is its chief feature, for the practical utility of this latest Kodak feature has made a strong, popular appeal since it was introduced only a few months ago. The entire Kodak line, with the exception of the Panoram and Brownie cameras, is now of the Autographic type and at prices ranging from $2.50 to $4.50 Autographic backs may be had for Kodaks now in use, thus clothing them with all the advantages of the latest model. Your dealer will gladly give you a copy of this catalog for reference.

Useful Tables for the Photographer

This is the title of a pocket-size booklet issued by the Bausch & Lomb Optical Company, 622 St. Paul Street, Rochester, N. Y., and which will gladly be sent to readers of Photo-Era upon request. It tells about the care of lenses, explains the principal lens-terms, and gives a wealth of tabular matter of value in the field, the studio, the home and the enlarging-room.

The View-Angle of Struss Lenses

It has been said that the Struss lens has individuality; that the character of its image differs somewhat from that of other soft-focus lenses. This is undoubtedly true, yet no little of the pleasing quality of Struss prints is due to the view-angle of 30 degrees advocated by the maker, which means a 12-inch lens for 4 x 5, 15-inch lens for 5 x 7, 18-inch lens for 6½ x 8½, and 21-inch lens for 8 x 10, this despite the fact that these lenses will cover much larger plates. These focal lengths seem abnormally long in comparison with most anastigmats now in use, but they do much to ensure normal visual and aerial perspective. Indeed it is to be regretted that anastigmat-manufacturers recommend the use of lenses shorter than the diagonal of the plate, because high corrections ensure ample covering-power. The average lens now in use is of too wide angle.

Don't Overlook Instanto

In its advertisement on another page the Photo-Products Company, 6100 La Salle St., Chicago, Ill., is offering three dozen Instanto postcards, or 4 x 6 paper, for 25 cents. If you overlook Instanto, you will miss something good, and the manufacturer is certainly meeting you more than halfway. You will find this trial-offer a quarter well spent; the mere fact that an "only once" limitation has been placed upon it shows that you are very likely to want more of this splendid paper.

Ross Lenses and Cameras

A new catalog of British-made Ross lenses is now ready for mailing by the American agents, George Murphy, Inc., 57 East Ninth Street, New York City. This includes the several series of the well-known Homocentric and Telecentric lenses, Wide-Angle, "Cabinet" and Portrait lenses, Special "Cinematograph" lenses, Special Process and Projector lenses, Tele-photographic lenses, Reversing-Prisms, Color-Filters and the New Ross Combinable and "Xpres" lenses already mentioned at length in previous issues. Several pages are also devoted to the Ross cameras, including the New "Keros," Focal-Plane "Reflex," New Folding "Reflex," "Panros" Focal-Plane Camera and the Twin-Lens "Reflex."

Ansco 1915-1916

A new Ansco catalog has just been published, and it surpasses all which have gone before, both in appearance and the well-known line of goods it describes. The cover consists of a beautiful example of offset-printing, representing a girl holding an Ansco camera as seen reflected in a lens. As one turns the pages, it is noticed that the Buster Brown boxes and folding cameras are continued, and considerable space is given to the justly popular Ansco film, Cyko paper and Enlarging Cyko. Conspicuous among the new features may be mentioned the Ansco Folding and Speedex Cameras and Ansco Vest-Pocket Cameras, all with round ends. Prospective purchasers of hand-cameras will do well to investigate the merits of this improved line. The Nos. 3 and 3A sizes may be equipped with a combination-back for use with glass plates or the new Ansco Film-Pack. With this in view, these cameras are also fitted with an automatic, adjustable focusing-scale for both plates and films.

PHOTO-ERA

The American Journal of Photography

JANUARY 1915 15 CENTS

BOSTON · U.S.A.

Be a Photographic Wizard

You can surprise and please
your friends if you use

Enlarging Cyko

They remember the little 2¼ x 3¼ Ansco Vest Pocket Camera with which you snapped them while camping out, and lo and behold, a few days later they are confronted with an almost life size professional picture. This is done by enlarging the small film on ENLARGING CYKO.

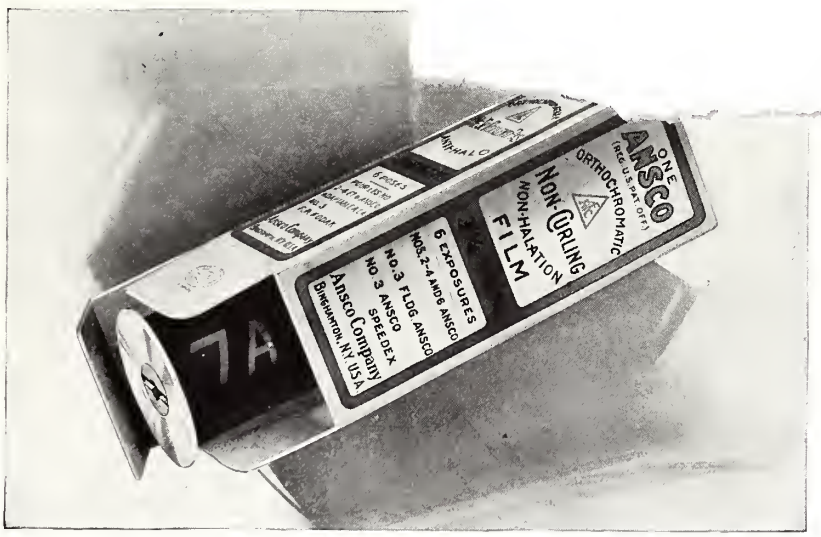
This paper enables you to print large pictures from your small films, as sharp, clear and artistic as if made with a large professional camera.

Do not confound bromide enlargements with Cyko enlargements—they are two different things.

Ansco Company
Binghamton, N. Y.

Ansco Film

The article and invention for which many millions were paid as a result of the decision handed down by Judge Hazel in the United States Dis
which decision was a
States Circuit Court

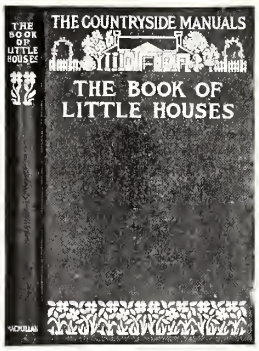


The Ansco non-curling color value film costs no more than ordinary film.

Be sure to load your camera with the original, genuine and perfect film.

Ansco Company

Binghamton, N. Y.



Tenth Anniversary Offer To You

WITH its tenth anniversary, ***Suburban Life*** becomes THE COUNTRYSIDE MAGAZINE—a magazine with all of the former good things, but with a little broader outlook and the active co-operation of Liberty H. Bailey, Contributing Editor.

The price of THE COUNTRYSIDE MAGAZINE remains the same—$3.00 a year; 25 cents a copy.

FOUR MONTHS' TRIAL

Send us 50 cents for a four months' trial-subscription, and we will include, without extra cost, a copy of "The Book of Little Houses," containing plans and descriptions of moderate priced houses—just published for us by The Macmillan Co.

THE SUBURBAN PRESS,
334 Fourth Avenue, New York,

Gentlemen: For the enclosed 50 cents send me THE COUNTRYSIDE MAGAZINE for four months' trial, also "The Book of Little Houses."

Name _____

Street _____

Jan. M " *Town* _____ *State* _____

THE OFFER OF THE YEAR

Photo-Era, one year	**$1.50**	**BOTH FOR**
Pictorial Landscape-Photography . .	**1.50**	**$2.25**
By **Paul Lewis Anderson**	**$3.00**	

Pictorial Landscape-Photography, now nearing completion serially in Photo-Era Magazine, without doubt constitutes the most important of recent contributions to the literature of the camera. There is no clearer or more readable statement of the subjective side, subjective technique and technical methods of this modern trend in outdoor-photography. The manuscript has been done into the permanent form of a book which every camera-user should possess.

Large octavo, 7 x 9½ inches, cloth-bound, printed on heavy antique paper with fourteen superb full-page plates, price $1.50. It provides a splendid Christmas-gift.

SEND ALL ORDERS, WITH REMITTANCE, DIRECT TO

PHOTO-ERA MAGAZINE, 383 Boylston St., Boston, U.S.A.

Cheques require 10 cents additional for exchange

Leading Magazines in Special Clubs

PHOTO-ERA .	$1.50	**All For $3.20**
Everybody's . .	1.50	
Delineator . . .	1.50	
	$4.50	

PHOTO-ERA .	$1.50	**All For $5.15**
Scribner's . . .	3.00	
Everybody's . . .	1.50	
Delineator . . .	1.50	
	$7.50	

PHOTO-ERA . .	$1.50	**All For $7.20**
Scribner's . . .	3.00	
World's Work . .	3.00	
Outlook	3.00	
	$10.50	

PHOTO-ERA . .	$1.50	**All For $3.20**
American Magazine	1.50	
Woman's Home Companion . . .	1.50	
	$4.50	

PHOTO-ERA . .	$1.50	**Both For $5.55**
Life, *with print,* "*Where Love Is*"	5.00	
	$6.50	

PHOTO-ERA . .	$1.50	**All For $6.20**
Scientific American .	3.00	
American Homes and Gardens. . . .	3.00	
	$7.50	

SEND ALL ORDERS, WITH REMITTANCE, DIRECT TO

PHOTO-ERA MAGAZINE, 383 Boylston St., Boston, U.S.A.

Cheques require 10 cents additional for exchange

Save Money on Your Magazines

BY ORDERING ALL AT ONE TIME IN A CLUB

Class No.		Publisher's Price
25	Abel's Photo. Weekly	$1.50
20	All Outdoors	1.00
73	Amateur Photographer (w'kly) London (postpaid)	3.65
15	Amateur Photographer's Weekly	1.00
17	American Boy	1.00
17	American Cookery	1.00
55	American Homes and Gardens	3.00
25	American Magazine	1.50
24	American Photography	1.50
15	Amer. Poultry Journal	1.00
55	Arts and Decoration	3.00
80	Atlantic Monthly	4.00
60	Automobile (weekly)	3.00
25	Baseball Magazine	1.50
47	Bookman	2.50
17	Boys' Life	1.00
17	Boy's Magazine	1.00
64	British Journal of Photography (weekly) London (postpaid)	3.17
30	Bulletin of Photography (weekly)	1.75
23	Camera	1.50
17	Camera Craft (new)	1.00
20	Camera Craft (renewal)	1.00
160	Camera Work (quarterly)	8.50
70	Century Magazine	4.00
23	Christian Herald (w'kly)	1.50
35	Collier's Weekly	2.50
70	Country Life in America	4.00
40	Craftsman	3.00
50	Current Opinion	3.00
23	Delineator	$1.50
12	Designer	.75
25	Etude (for music-lovers)	1.50
25	Everybody's Magazine	1.50
23	Field and Stream	1.50
47	Forest and Stream (w)	3.00
23	Garden Magazine	1.50
16	Gas Engine	1.00
70	Harper's Magazine	4.00
80	Harper's Weekly	5.00
12	Home Needlework	.75
50	House and Garden	3.00
30	House Beautiful	2.00
8	Housewife	.50
55	Independent (weekly)	3.00
90	International Studio	5.00
40	Journal of Education (w)	2.50
100	Judge (weekly)	5.00
15	Ladies' World	1.00
60	L'Art de la Mode	3.50
100	Leslie's Weekly	5.00
40	Lippincott's Magazine	3.00
60	Literary Digest (weekly)	3.00
17	Little Folks (new)	1.00
20	Little Folks (renewal)	1.00
10	McCall's Magazine	.50
23	McClure's Magazine	1.50
23	Metropolitan	1.50
17	Modern Priscilla	1.00
23	Mother's Magazine	1.50
35	Motor Boat (s-m)	2.00
90	Musical Courier (w'kly)	5.00
23	Musician	1.50
17	National Sportsman	1.00
70	North American Review	4.00
24	Outdoor Life	$1.50
50	Outing	3.00
60	Outlook (weekly)	3.00
20	Pearson's Magazine	1.50
24	**PHOTO-ERA**	**1.50**
20	Photographic News	1.00
80	Photographische Rundschau (semi-monthly) Halle a. S. (postpaid)	4.00
53	Photography and Focus (w'kly) London (postpaid)	2.65
50	Photo-Miniature	2.50
23	Physical Culture	1.50
20	Pictorial Review	1.00
25	Popular Electricity and Modern Mechanics	1.50
15	Popular Photography	1.00
30	Recreation	1.50
35	Review of Reviews	3.00
40	St. Nicholas	3.00
55	Scientific American (w)	3.00
50	Scribner's Magazine	3.00
23	Short Stories	1.50
45	Smart Set	3.00
50	Suburban Life	3.00
35	Sunset Magazine	2.50
23	Technical World	1.50
65	Theatre Magazine	3.50
50	Travel	3.00
25	Woman's Home Companion	1.50
12	Woman's Magazine	.75
40	World's Work	3.00
35	Yachting	2.00
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The following magazines are sold only at the regular subscription-price:

Adventure	$1.50	
Ainslee's Magazine	1.50	
All-Story Cavalier (weekly)	4.00	
Argosy	1.50	
Cosmopolitan	1.50	
Country Gentleman (weekly)	1.50	
Fra	2.00	
Good Housekeeping	1.50	
Harper's Bazar	1.50	
Hearst's Magazine	1.50	
Ladies' Home Journal	1.50	
Life (weekly)	5.00	
Motor	$3.00	
Motor Age (weekly)	3.00	
Motor Boating	1.00	
Munsey's Magazine	1.50	
Musical America (weekly)	2.00	
National Geographic Magazine	2.50	
New Story Magazine	1.50	
Pathfinder (weekly)	1.00	
People's Magazine	1.50	
Philistine	1.00	
Photographic Times	1.50	
Popular Magazine (s-m)	$3.00	
Popular Mechanics	1.50	
Railroad Men's Magazine	1.50	
Saturday Evening Post (weekly)	1.50	
Smith's Magazine	1.50	
System	2.00	
Top Notch Magazine (tri-m)	3.00	
Vanity Fair	3.00	
Vogue (semi-monthly)	4.00	
Wilson's Photo. Magazine	3.00	
Women's Stories	1.50	

HOW TO MAKE UP CLUBS

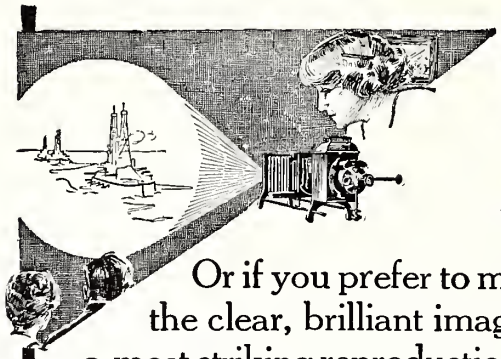
To obtain the club-price of any combination of periodicals from the list given above, find the class-number of each of the magazines in the left-hand column, add them together and multiply the sum by five cents. The result is the club-price in the United States. Canadian or foreign postage is extra, and must be added to the price of each magazine. We shall be very glad to furnish quotations of either Canadian or foreign postage, and to fill orders for any magazines, whether listed here or not. These prices, in effect after Nov. 10, 1914, are equal to the lowest.

Send all orders, with remittance, direct to

PHOTO-ERA MAGAZINE, 383 Boylston Street, Boston, U. S. A.

Cheques require 10 cents additional for exchange

The most satisfactory way to show photo prints—the way every one is sure to enjoy—is with the



Bausch and Lomb Balopticon

THE PERFECT STEREOPTICON

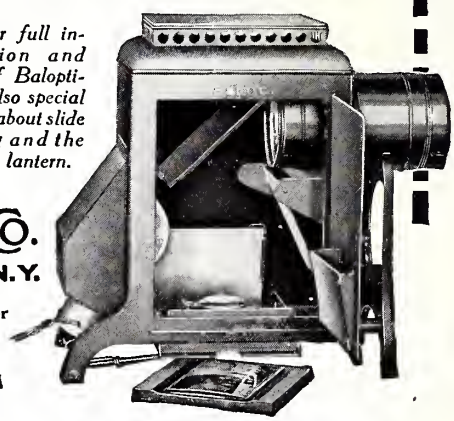
Or if you prefer to make lantern slides you will find the clear, brilliant image projected by the Balopticon a most striking reproduction of your pictures. Its mechanical durability, its ease of operation and its exceptional optical efficiency mark it as the most satisfactory of lanterns.

Read the details of these two models from the wide Balopticon line.

The Home Balopticon (shown below) for the projection of photo prints and other opaque objects is the most efficient and dependable lantern ever offered at a moderate price for this form of projection. Its special *nitrogen-filled Mazda lamp* gives a brilliant illumination heretofore unequalled in instruments of its type—and its simplicity of operation throughout makes it particularly attractive to the amateur. The achromatic lens is of high quality, giving images of the Balopticon standard—clear, crisp, sharply defined over the entire field. Price complete $35.00.

The Combination Model at $45.00 provides for both opaque and lantern slide work—with instant interchange from one to the other.

Send for full information and prices of Baloptikons—also special circular about slide making and the use of a lantern.



Bausch & Lomb Optical Co.

558 ST. PAUL STREET ROCHESTER, N.Y.

Makers of the celebrated Tessar and Protar Lenses and other high-grade optical goods.

A&H.

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A. & H. Brand Record Plates
(Fastest Plate on Earth)

For a year we have said that the A. & H. brand of Record Plate is the fastest on earth. For indoor- or outdoor-work, ultra-speed snapshots, street-scenes, groups under artificial light, and for the fag end of the day in professional studios it has no equal.

Instantaneous exposures with small stops giving fully exposed negatives have been the rule throughout the summer and early autumn. In the winter Record Plates give a latitude far greater than any plate you have ever used.

And it is free from fog, of fine grain and will stand unlimited forcing in development. There is no other plate like it. Send for pamphlet.

HYPONO A Marion & Co. product which we have handled for several years used by amateur, trade and professional photographers with the utmost confidence. It expels hypo in three minutes from negatives or prints — a wash of five minutes being all that is required to complete the process and ensure absolute permanence. When time enters into the equation, or where water is scarce, this product is preëminently a trouble saver. Send for a four-ounce vial and convince yourself of its absolute value. 35 cts. postage prepaid.

PANCHROMA FLASH-POWDER This powder, of our own invention, used according to our directions, gives automatic results upon Autochrom plates. There need be no worry as far as movement is concerned, and perfect balance in color-values is a certainty in every exposure. Send for booklets and a splendid reproduction of an Autochrom made with Panchroma.

ALLISON & HADAWAY

Photographic Manufacturers and Importers

233 FIFTH AVENUE, NEW YORK

Arrange for Sittings in the Home Amidst Familiar Surroundings.

Cooper Hewitt Portable Outfits

make it easy to accomplish. The novelty of having photographs taken right in their own familiar rooms appeals to every one. The subject feels more natural and at ease and the photographer gets better results. It's a new and profitable field. Be the pioneer in your locality.

The direct-current portable outfit weighs only 30 lbs.; the alternating-current 50 lbs. They are operated from any lighting plug.

Send for Bulletin 3449B and get full particulars.

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PORTFOLIO OF 63 HALFTONES OF AURORA LIFE-STUDIES ($7.50), both draped and in the nude, and print-set No. 300, consisting of twelve 6 x 10 original nude photographs (statuary-poses), $3.75—**total value $11.25 for $7.50 net** sent, express paid on receipt of price, by PHOTO-ERA Magazine, 383 Boylston Street, Boston, U. S. A.

BIND PHOTO-ERA YOURSELF with a Big Ben Binder, the simplest binder made. If you bind your magazines every month upon receiving them, they will not be lost or mutilated. You can always find what you want quickly. Price $1.00 net, postpaid.

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8 x 10 **TESSAR LENS, SERIES IIB** (F/6.3), in Compound shutter. Used, but lens without slightest defect and shutter in perfect order. List $124.00, immediate sale $70.00, or Feb. 1 for best offer received. F. M. STEADMAN, Concord, N. H.

PHOTO-ERA ARTIST-MOUNTS in various colors and textures, 24 sheets in a portfolio 10 x 12½ inches sent for 35 cents postpaid; larger quantities pro rata. Make your own selection from the following list: Carbon Black Antique, Orange-Brown Antique Filter-Texture, Heavy Brownish Black Camel-Hair, Heavy Greenish Black Camel-Hair, Heavy Sultan Buff, Heavy Sultan Green, Heavy Sultan Light Green. PHOTO-ERA MAGAZINE, 383 Boylston Street, Boston, U. S. A.

INSTRUCTION

DADDY LIVELY'S SOUTHERN SCHOOL OF PHOTOGRAPHY opens March 1. Special post-graduate course during August. Write for new catalog. SOUTHERN SCHOOL OF PHOTOGRAPHY, McMinnville, Tenn.

POSITIONS WANTED

REQUESTS for Positions as Salesmen, Operators, etc.; also studios, photographic apparatus, etc., for sale or exchange, *cannot be advertised in* PHOTO-ERA, *unless accompanied by convincing proofs of the ability, character and business-integrity of advertisers unknown to the publisher.*

WANTED

PHOTOGRAPHS—50 cents each paid for original photos of young ladies' heads suitable for commercial illustrations. Rejected ones returned if postage is enclosed. C. M. SHEDD, 193 Farmington Avenue, Hartford, Conn.

COPIES OF PHOTO-ERA in good condition, both text and advertising, to complete volumes for binding. May, June, July, Sept., 1905; March, April, 1906; Jan., March, June, 1907; June, 1909; Jan., Feb., July and Sept., 1910; Dec., 1911; Jan., Oct., 1912. In exchange for any one of these the publisher will send PHOTO-ERA for three months free.

PHOTO-ERA GUARANTY

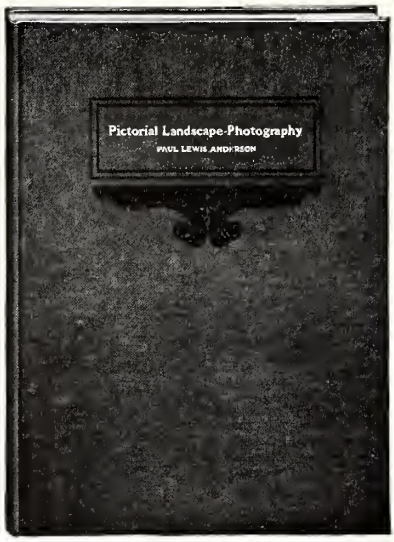
PHOTO-ERA guarantees the trustworthiness of every advertisement which appears in its pages. Our object is to secure only such advertisers who will accord honorable treatment to every subscriber. We exercise the greatest care in accepting advertisements, and publish none which has not been proved desirable by the most searching investigation. Thus, in patronizing such advertisers, our subscribers protect themselves.

If, despite our precautions, the improbable should occur and a subscriber be subjected to unfair or dishonest treatment, we will do our utmost to effect a satisfactory adjustment, provided that, in answering the advertisement, PHOTO-ERA was mentioned in writing as the medium in which it was seen. The complaint, however, must be made to us within the month for which the issue containing the advertisement was dated.

WILFRED A. FRENCH, Editor and Publisher.

THE PHOTO-ERA "BLUE-LIST"

Reliable Dealers in Your City



A BOOK YOU OUGHT TO HAVE

Pictorial Landscape-Photography

By Paul Lewis Anderson

This constitutes the most important of recent contributions to the literature of the camera. There is no clearer or more readable statement of the subjective side, subjective technique and technical methods of this modern trend in outdoor-photography. The manuscript complete, as it appeared serially in Photo-Era, has been done into the permanent form of a book which every camera-user should possess.

Large octavo, 7 x 9½ inches, cloth-bound, printed on heavy antique paper with fourteen superb full-page plates.

THE OFFER OF THE YEAR

Photo-Era, one year	$1.50	BOTH FOR
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"APOLLO AND THE MUSES," by Thorwaldsen. Bas-relief, ivory finish, 10" x 5"

IF you signify that you are a lover of beautiful things, by accepting the coupon offer below, you will receive absolutely FREE, all charges prepaid, the beautiful bas-relief shown above, ready to hang on your wall.

The mere fact that you want this exquisite plaque will be a sign to us that you are the kind of reader we want for THE CRAFTSMAN. For only if you yearn for beautiful things for your home, beauty in your surroundings, beauty everywhere, will you enjoy THE CRAFTSMAN. Not only because it is in itself a thing of beauty — acclaimed in Europe as the most beautiful magazine published — but because it will help you to bring beauty into your home, your life, and the lives of others — so that you too will call it "the most worth-while magazine in America."

Each issue of THE CRAFTSMAN (monthly) is a treasury of unique, sumptuously illustrated articles on art, homebuilding and decoration, gardening, homemaking, the training of youth, the making of beautiful things, the making of beautiful cities,— indeed, everything that makes for a better, happier, more beautiful America.

One of the distinctions of THE CRAFTSMAN is its high appreciation of the art of the camera, and the many remarkable articles it has published on progress in photography, with superbly beautiful reproductions of photographic work.

The Coupon offer below is your opportunity to discover for yourself the potency and beauty of THE CRAFTSMAN. If it fails to come up to your expectations, your remittance will be returned, and you will not be asked to return the magazines sent to you.

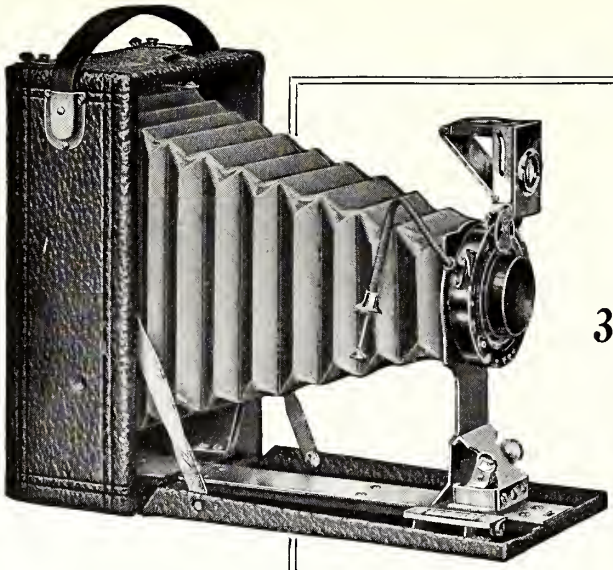
This beautiful building, on 39th Street, just off Fifth Ave., becomes *your* Clubhouse when you become a *Craftsman* subscriber.

THE CRAFTSMAN, Craftsman Building, 6 East 39th St., New York.

Please record me as a trial subscriber to THE CRAFTSMAN for four months, beginning with the December issue. Send me in addition one previous number FREE, and the bas-relief, "Apollo and the Muses," all charges prepaid, in accordance with your special offer. I enclose $1.00, on the understanding that I may cancel my subscription before receiving the January issue, and you will return the $1.00 promptly, and not require me to return the magazines sent to me.

(Signed) .....

PE 1 Address .....



An ideal vacation camera, making 3¼ x 5½ (post card size) pictures, for $10.50

Loads in daylight

Weighs only 29 ounces

Dimensions 2⅜ x 4⅝ x 7⅛ inches

Covered with genuine grain leather

Film Premo No. 1

A remarkably light, compact camera for pictures of the artistic 3A proportion.

Can be carried and used anywhere, and is so easy to operate that anyone who can read the simple instructions that come with the camera, can make first-class pictures from the very start.

To load, merely open back, drop in Premo Film Pack, close back and all is ready. To change films for successive exposures just pull out successive film pack tabs.

This model is fitted with a tested meniscus achromatic lens of the highest quality obtainable. The shutter is the new Kodak Ball Bearing with cable release, and the camera is fitted with two tripod sockets, reversible brilliant finder, and is made throughout of the best of materials, by men who have spent their lives in camera making.

Get the new Premo catalogue—a book that no one interested in photography should be without. It describes the many Premo advantages fully—the daylight loading Film Premos, the Premos that take films or plates with equal facility, the Premo Film Pack and tank developing system. It's free at the dealer's, or will be gladly mailed to any address on request.

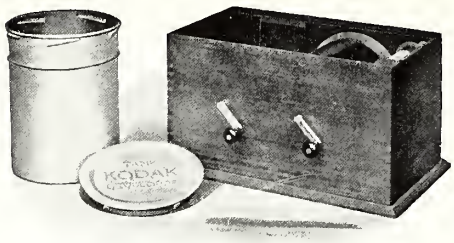
Rochester Optical Division

Eastman Kodak Company **Rochester, N. Y.**

Eastman Kodak Company

ROCHESTER, N. Y., *The Kodak City.*

THE KODAK FILM TANK.



Kodak and simplicity have become such fast friends now-a-days that where you find the one you find the other. It is a friendship which began a quarter of a century ago and has ripened into real comradeship through the years. To cement this tie, to bind the two so irrevocably that whenever you thought of Kodak you thought of simplicity, a little device called the Kodak Film Tank came into existence—and with it the expression—"daylight all the way."

It used to be true that only the experienced photographer could develop films properly—and even *he* was apt to make costly mistakes now and then. The Kodak Film Tank has changed all this. Now anybody can develop his films—and anybody can get results better than those obtained by the veteran photographer who still sticks to the tray. There is over twenty-five years of practical experience tucked away in each one of these little tanks—a valuable heritage for even the advanced amateur and a godsend to the novice.

The exact time necessary for development, the correct use of the chemicals, has all been worked out by experts—the amateur cannot go wrong if he only follows the simple instructions. Without a dark room, in broad daylight, the amateur will get results not comparable with those secured by the skilled photographer with his tray—*but uniformly better.*

The Kodak Film Tank consists of a winding box, a light-proof apron and a heavily nickeled brass solution cup with cover. By simply turning the crank of the winding box, the film, duplex paper and light-proof apron are wound together on a metal reel, the apron being on the outside and serving as protection against light. The metal reel containing the film, duplex paper and apron may now be removed in broad daylight without any danger of the film becoming fogged. It is then placed in the solution cup previously filled with the developing solution mixed from powders according to definite and simple directions, where it is left for twenty minutes. At the expiration of that time, the film is separated from the duplex paper and apron—a very simple operation—and plunged into the fixing bath.

As the tank is light-proof and air-proof, the films cannot be fogged during development and are consequently more brilliant and of better printing quality than those obtained by any other method. There is always a chance of fogging the films in the dark room, for few dark rooms are absolutely perfect, and there is always a chance that light may be leaking in. Sometimes when the fog is not strikingly apparent, comparison between a negative developed in the tank and one developed by the dark room method will reveal its presence. The first will be crisp and brilliant, while the second will be lifeless and dull. This is the one fact that clinches the argument. Putting aside the convenience of the Kodak Film Tank in which you can do your developing in daylight, wherever you please, as compared with the inconvenience and bother of the stuffy dark room, the fact that tank development yields you the best possible negatives, is the one point that drives the story home.

THE PRICE.

Brownie Kodak Film Tank, for use with No. 1, No. 2 and No. 2 Folding Pocket Brownie cartridges, complete, . . .	$2.50
Vest Pocket Kodak Film Tank, for Vest Pocket cartridges, complete, . . .	2.50
2½-inch Kodak Film Tank, for use with all Kodak or Brownie cartridges having a film width of 2½ inches or less, complete, ...	3.50
3½-inch Kodak Film Tank, for use with all Kodak and Brownie cartridges having a film width of 3½ inches or less, complete, ...	5.00
5-inch Kodak Film Tank, for use with all Kodak and Brownie cartridges having a film width of 5 inches or less, complete, ...	6.00
7-inch Kodak Film Tank, for use with No. 5 Cartridge Kodak or shorter film cartridges, complete, . . .	7.50

A UNIVERSAL DEVELOPER WITH THE STAIN LEFT OUT.

A young photographic friend of ours spent the holidays at the home of his grandmother and was surprised and a little hurt at the coolness of his reception. "Why, what's the matter, grandma?" he asked. "Only to think, John, that *you* should become a cigarette fiend," she said sadly. "Your fingers tell the whole pitiful story."

Now, of course, John wasn't a cigarette fiend and the telltale stains were caused by developing solutions, but it took a lot of argument before grandma was finally convinced.

When John came home, about the first thing he did was to go to his Kodak dealer's to inquire whether or not there was such a thing as a developer that would not stain the fingers. "There certainly is," was the dealer's reply, "Eastman Special Developer will not stain the fingers and, in addition, is a most convenient agent for it's a universal developer—it may be used successfully for both prints and films."

Some developers do stain the fingers, but there are plenty of methods for removing the stain when it does appear. However, many amateurs refuse to be careful—all of us dislike precautionary measures, anyway, and consequently the tips of our fingers *do* turn yellow and often place us in awkward positions in consequence. Eastman Special Developer makes it possible for the most enthusiastic photographic amateur to attend a dinner party without wishing he could wear his white gloves right through the function.

And the fact that Eastman Special Developer is a universal developer makes a strong appeal because of its obvious convenience. The standard developer for negatives is Pyro, but Pyro is not a successful agent for developing prints: the standard developer for prints is Elon-Hydro, but Elon-Hydro does not produce the best negatives. Eastman Special Developer is a satisfactory developing agent for films and, as a developer for prints, is as good as the standard, Elon-Hydro.

It must be borne in mind, however, that no developer capable of making prints is recommended for use in the tank development of films, because the success of tank development is based on the action of Pyro, of which Eastman Tank Powders are composed.

Any agent developing films or plates (tray development), lantern slides, Velox, Bromide and other papers with excellent results—and all this the Eastman Special Developer does—has fairly earned its right to be termed a real universal developer.

Your Kodak dealer carries it in cartons of five powders in glass tubes, or cartons of six powders, paraffine wrapped, either carton costing twenty-five cents.

All In-Doors invites your Kodak when it's fitted with

The Kodak Portrait Attachment

Made with Brownie and Kodak Portrait Attachment.

Simply another lens which, when slipped on over the regular lens equipment, enables you to work so close to your subject that it may be made to occupy a good part of the area of the picture.

In other words, subjects that with the regular lens equipment appear too small in the picture to be completely satisfying, will now assume the required proportions.

Impromptu portraits, pictures of household pets, favorite articles of furniture, flowers, family heirlooms—every nook and cranny of your home holds its picture story—it's the stories in smaller type that are often the most interesting.

And it costs but fifty cents.

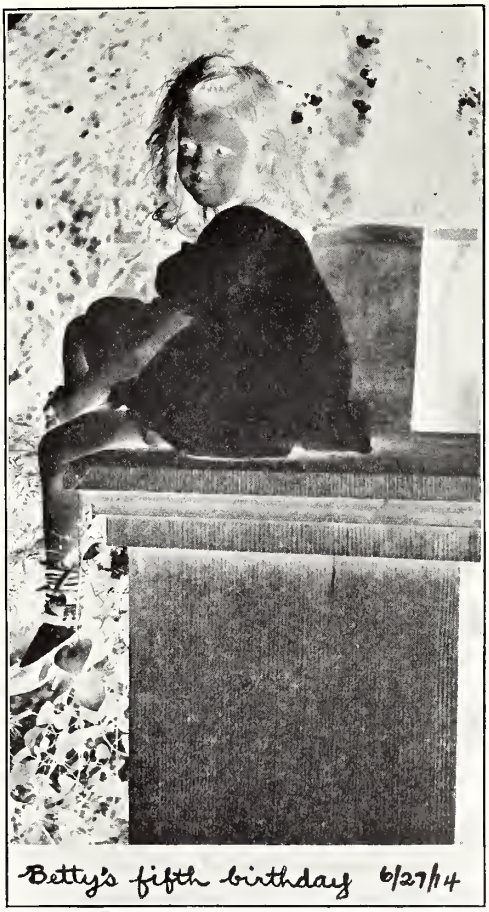
EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

At your dealer's.

Any negative worth the making is worth a date and title.

The Autographic Kodak

gives you permanent and positive identification of each negative. The occasion or place, interesting facts about the children, the stop, exposure and date, a friend's autograph under his portrait—this is the sort of data that makes the autographic record so valuable for the future.



Negative with Autographic Record.

The biggest photographic advance in twenty years—yet the device, itself, is very simple. Open the little door at the back of the Kodak, write your notation, expose to the light of the sky and, upon development, you will find this data photographically imprinted in the otherwise wasted space between the negatives.

THE PRICE.

No. 3A Autographic Kodak, pictures 3¼ x 5½ in.,	$22.50
No. 3 Do., 3¼ x 4¼ in.,	20.00
No. 1A Do., 2¼ x 4¼ in.,	17.50

EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

At your dealer's.

The big link in the Kodak chain of daylight all the way.

THE KODAK FILM TANK

makes fog during development an impossibility because it is absolutely air tight and light tight.

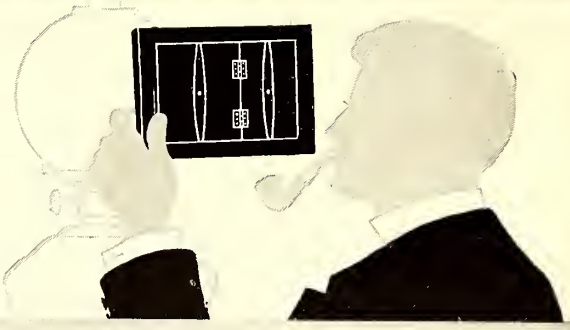
And tank development is the only method of development that can be absolutely safe against fog—the resulting negatives are crisper and more brilliant than those obtained in any other way.

Develop your films anywhere—all by daylight in the Kodak Film Tank.

The experience is in the Tank.

EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

At your dealer's.



Whatever promise the negative holds forth is amply fulfilled in the print on

VELOX

the photographic paper that *fits*.

NEPERA DIVISION,
EASTMAN KODAK COMPANY,
ROCHESTER, N. Y., *The Kodak City.*

At your dealer's.