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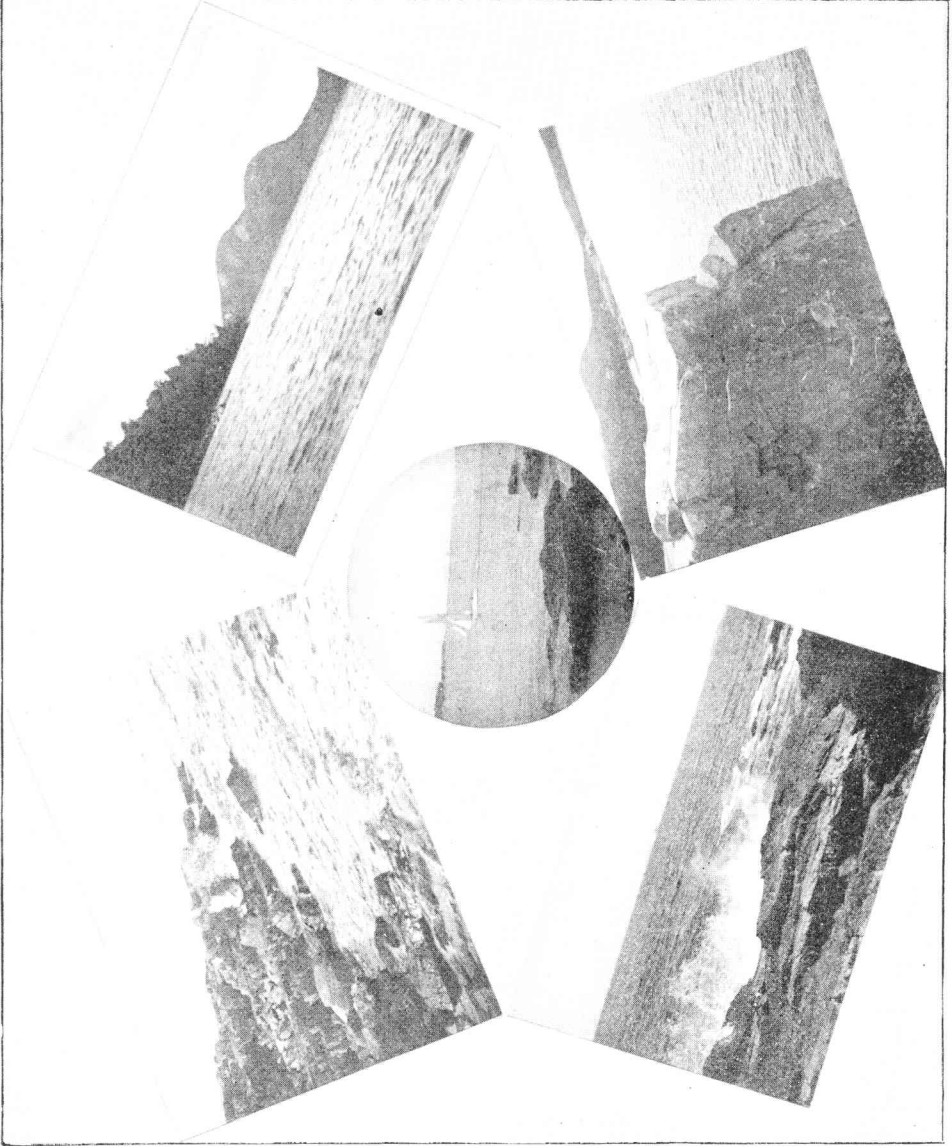
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WM. SHEWELL ELLIS

TWO WEEKS IN MAINE

A New Method for Sizing Paper.



GOOD sizing material is a desideratum devoutly to be wished for, and I believe I have hit upon a good one which is new as far as I know.

Gelatine sizing is attended with some inconveniences, and most novices make a mess of the process and they are not complimentary in their expressions when you ask them how they succeeded.

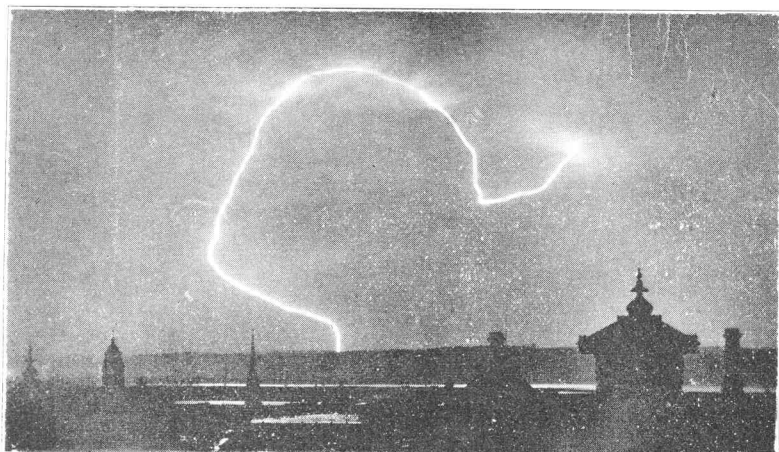
I have substituted another protein compound for the gelatine, which comports itself better when applied as a size to paper.

I make use of casein—but not the casein you may buy at the chemists, but a modification of it. There are two distinct forms of casein entirely different in their behavior—according to the method of preparation: one giving an insoluble substance, the other a readily soluble one. We shall concern ourselves only with the latter.

Procure a quantity of skim milk, the more it has been skimmed the better, but even with the utmost care of the milkman some traces of cream will persist. Every particle of the cream must be removed, and to do this get a large funnel and cork up the neck. Support the funnel in a vertical position, place the milk in it and allow it to remain over night. The cream will arise to the surface. Now carefully remove the cork and draw off the skim milk and remove it to another vessel. There will be still traces of the cream or fat of milk, which can only be gotten rid of by chemical means. Add to the skimmed milk hydrochloric acid until the curds refuse to form. Filter out these curds, wash them off with very diluted hydrochloric acid and re-dissolve them in dilute solution of carbonate of soda (washing soda). Let the solution stand and siphon off the liquid under the film which forms on top.

Reprecipitate the dissolved curds with hydrochloric acid and dissolve again in carbonate of soda solution. Wash with very weak (two percent.) hydrochloric acid two or three times and dry. Casein so formed may be kept indefinitely. Take two drachms of this casein and place in ten ounces of water. It swells up and gradually dissolves, especially if the temperature is raised to 100°.

This forms a most excellent size, and it may be applied directly to the paper with a brush: the paper needing no salting, the traces of hydrochloric acid in the casein being sufficient. It may be necessary for certain purposes to increase the amount of dry casein to the quantity of water.



DURQUE BY A LIGHTNING FLASH

G. E. DAVIS



Bradley Platinum Paper
Hammer Plate
Hart Portrait Lens

FELIX RAYMER

Impressionism and Photography.

Charles Bolden.



EVERYONE who visited the Paris Exposition art collection was made aware of the immense growth of the impressionist school. Every exhibit showed a marked departure from the old conventional methods of painting. It is no wonder, therefore, that the now-a-days photographer has deserted the old methods of technical excellence and rushed to impressionism, for the painter has always been the "bright, particular guiding star" to the artistic photographer. But the question presents itself: has impressionism a legitimate place in photographic art? Is it possible with the limitations of photography to give the effect, even in a minor key, which the painter gives?

The fundamental idea of the impressionist is that a picture should be a momentary conception of the sense of sight. In this particular it is to art what a snap shot is to photography. The only difference being that the physiological shutter is not the same as a Thornton-Pickard. And why? The stayed and reproduced effect of a bit of nature as presented to our vision is made through an atmosphere which modifies, not only the forms, but also the colors of the scene.

The impressionist, as well as the photographer, knows that the sun is constantly painting new pictures, and, as it mixes its colors with varying gradations, there is nothing old or stale even in the oft repeated sheep-fold picture or the hay-rick. Some moment is selected, some center of interest, and that often of the simplest character.

This central phase is worked out with the greatest care, and is emphasized above all other phases, allowing everything else to sink into a blur of subordinate color. As the photographer would express it, impression pictures have but one plane of sharp-focus. The genuine impressionist does not make his picture one general blur of monotony. He depends for effect upon the relation and interplay of light and shade in color, and vivid color at that—not in black and white.

Without color it is impossible. The impressionist can well afford to sacrifice outline, even to deform the true image of things, to give only masses and neglect detail, because he gives the true physiological effect by juxtaposition of color. He does not mix his color like the old school painter, on the palette to give a toned effect, but fearlessly places raw colors side by side.

By placing red, blue and yellow side by side he gets a brilliancy of quality, which even the greatest of the old painters could not achieve. But the photographic impressionist does not seem to court brilliancy of effect. He delights in sombre tints, but sombre tints can never be made to give a conception akin to the work of the impressionist.

We do not want it to be thought that we are "ravin' tooth and nail" against the new school, but only objecting to that branch which resorts to what is called faking to produce an effect which was never present to the vision, either instantaneously or at any time from "morn to eve."

If photographic impressionism is the right thing, let us have it as nature presents it to us at the moment of time when the sun delineates it with all the distortion which the refracting atmosphere gives the scene. Whether such a picture would please is another consideration.

The photographer, who uses his camera to obtain an impression from nature merely as a substratum from which his imagination is to evolve an impossible confusion of lights and shades, where there is no high light, no deep shade but a monotonous waste of indistinctness, has no right to an affiliation with the true impressionistic painter, who conscientiously attempts to give us an impression from nature as seen with his vision.

When a photographer makes a negative from an actual scene which has recommended itself to his artistic perception, and then to accommodate his conception to the perverted taste of a certain school, he begins a work of degeneration upon that negative, we may well feel that "Othello's occupation is gone." An actual case may be cited: the photographer after having secured a realistic scene from nature, began by first making from the print a lantern slide out of focus, and again producing a four-fold enlarged negative from this slide, to be employed in its turn as the medium, in conjunction with bolting cloth for producing a print in gum-bichromate (bartolozzi-red) to get a recognition from gushing admirers of smudge and a prominent place on the exhibition wall.

Let us thankfully receive the lesson the new school teaches—the value of the subordination of detail in a picture—but let us not forget, as many of the new school unfortunately do, that it is not high finish which is objectionable, but the lack of tonal quality. Where this perversion of art is to stop is hard to say, but it is clear that it is only the finish that belittles which is wrong. Pope defines art as “Nature not altered, but to advantage dressed.”

ON GROUPS.

We have incidentally acknowledged the debt the professional photographer owes to the amateur with all his sensationalism, exaggeration and slouchiness of style. We have only to look at the exhibits of the professionals at conventions of recent years, or in their show-windows to note the stride made in the direction of art. The amateur spur did more in a couple of years to prod the old professional nag to a better gait and to bring out the mettle in him than the slacked rein and lazy pace of the previous thirty years along the photographic road. But there is a goad still needed for both professional and amateur “to prick the sides of their intent” when either undertakes to make what is called a group. Look in show-cases of the professionals, or at the great majority of amateur pictures of college groups or foot ball players or even domestic groups. Could anything be more execrable? The way in which both kinds of photographic artists marshal a group into a coherence of absurd relation is anything but artistic. The big ones in the back-ground, the little ones in front—squatting, kneeling, crouching or lounging, and the whole perspective of the picture woefully distorted to get all within the limits of an 8 x 10. The short focus lens, which is invariably used, being accessory



IN THE POPPY FIELD

to the absurdities depicted. Who is accountable for these abortions in the shape of pictures? The patrons themselves seem satisfied. Is it because they have been persuaded that it is a necessary concomitant of group management, or is each member of the group so absorbed in the contemplation of his own physiognomy that he fails to see its incongruity with relation to the others? We remember having, when the flash-light first made its advent, a commission to photograph a group of choir boys. We suggested a picturesque disposition of the choristers somewhat after the beautiful frescoes of Robia del Robia, but when we submitted to the master some engravings of the work of that painter, he emphatically declined on the ground that the parents of the boys would not like to have them depicted with mouths wide open in the act of singing, and as the group was intended for raising revenue, we had to take those picturesque boys in serried columns according to the stereotyped method. But we had our innings after all by inviting a number of the choristers to a private grouping, but the picture had not the beautiful and appropriate architectural setting of the cathedral. So you see the photographer is not always to blame.

But grouping is such a universal law of nature that we wonder the unconstrained artistic photographer does not go to nature for instruction.

Nature pleases the eye in the disposal of objects by the subordinating of many to one giving unity in *variety*. In observing crowds we notice the picturesque way in which the individuals compose themselves, because there is a center of interest. In flocks of sheep or herds of cattle how many charming so-called accidental arrangements present themselves! Even in inanimate nature there is a tendency to artistic grouping by natural means of environment, etc. The photographer's eye is supposed to be open to all this harmony of nature's grouping, and he is eager to secure a picturesque natural setting, yet when he has a group of humans at his disposal, how preposterously he goes about the arrangement, though frequently the group has one general sentiment animating various members, which would serve as a clue for unification. University students, school boys, athletes, etc., when they come to have their pictures taken in groups, certainly should be given better treatment than by the crowding-into-limited-space method.

There are so many excellent pictures representing groups of men and women by the painters of note that there is absolutely no excuse for the way groups are made in the gallery or elsewhere. Professionals are not the only offenders; cultivated amateurs, who are capable of making beautiful landscape groupings, fall into the same error.

True, it requires thought as well as natural ability to adjust the parts for a harmonious relation.

It demands no ingenuity to arrange the figures one after the other in a file and an alternating column behind this, and then if there are a few over to pile a couple on the apex and sprawl the balance in front of the first row, and then ask the collection of animated puppets to look pleasant.

Much experience, if you have not inborn aptitudes, is required, combined with taste and judgment to so dispose of a goodly number in a group to produce pleasing variety in attitude and animation in the picture.

The principal figure in a group, that about which the others center, should receive the most attention. But it is not necessary to place him in the center of the group. Unless the secondary or accessory figures are arranged to show their relation to the leading figure they will look like trespassers upon the scene, a lot of individual photographs taken upon the same plate (and, by the way, this is not a bad definition of a modern photographic group.)

On our opposite wall are two pictures by Faed, we believe—"Shakespeare and his Friends" and "Sir Walter Scott reading one of his manuscripts to a choice circle," and if the reader could see these pictures he would receive better instruction in grouping than can be written. There are twenty figures in the Walter Scott picture, and though the room space is small, they have not the appearance of being crowded. The individual attitudes are excellent, and each contribute to the unification of the motive. There are hundreds of pictures of groups accessible to everyone, and next time you have a commission to to photograph a college, club or foot ball team, look over the pictures and make something better than the stereotype abortion called a photographic group.

Talking about groups suggests the query: "What has become of the Genre picture?" The salon says it is not in here. "There is no greatness but in portraiture."

While photography, as an art, has gained in some directions, it has lost considerably in others. The new school has shown itself weak in its means of telling a story pictorially, that is it has failed altogether in Genre. In the last Philadelphia salon we do not remember having seen a single example. Of course one cannot say how many may have been rejected by the judges, who may have a special antipathy to such subjects.



EARLY MORNING

A. F. B.

Development a Cure for Halation



It is just as well that from time to time emphasis should be laid upon the fact that if improper development does not actually cause halation, it is, at any rate, responsible for making it more prominent than it need be.

At the last meeting of the Oxford Camera Club Mr. Rippon, in a paper on the subject, said that the use of backed plates was all very well as far as it went, but it would not prevent all kinds of halation, when the word was taken in its usual sense as meaning a diffused light around the high lights. He also said that except in extreme cases proper attention to point of view, exposure, and development would itself prevent halation altogether without the plate being backed at all. Halation is due to four causes: (1.) Reflection from the back of the plate, which is the only kind that can be stopped by backing the plate. (2.) Lateral spreading of the light. (3.) The brilliant illumination of small particles of solid matter suspended in the air. (4.) The selection of a subject in which the chief, and practically the only, source of light is directly in front of the lens, with nothing at the sides or behind the camera to act as a reflector.

If the eye is directed towards a brilliantly lit window, it will be seen that all the objects in the immediate neighborhood of the window are viewed through a kind of haze or glare. If the window were photographed, without due precautions to prevent halation, this glare would be enormously exaggerated. Some photographers who pride themselves upon their technique, would reproduce such a window without the glare at all. This, in its way, is quite as great a defect as the other, and, in fact, is a more deadly error, since the defect has been intentionally introduced, and could not be due to carelessness. The aim of the photographer should be to reproduce as truthfully as possible the glare which he sees, but not either to exaggerate or to diminish it. In order to do this a backed plate should certainly be used whenever possible. In our own practice we use backed plates not only for interiors, but for all hand camera work, in making lantern slides, and for both the positive and the enlarged negative when making enlargements.

As far as halation is increased by development, Mr. Rippon in his paper strongly advocated a pyro developer. He said, according to the report that has reached us, "the light reflected from the back of the plate influenced most strongly the bottom of the film next the glass, and was rarely strong enough to penetrate to the surface. Consequently, to avoid developing that part of the film, a full exposure should be given and a pyro developer used, for pyro caused the silver to be deposited in a much more non-actinic form than any other developing agent, and with it it was not necessary to develop through to the back of the plate." The only exception we have to take to this is that the pyro developer does not cause the silver to be deposited in a more non-actinic form, strictly speaking, but it forms with the deposit of silver an image consisting of stain. This supplements the silver image and certainly enables sufficient vigor to be obtained without carrying development so far into the film as when the image is simply a black one.

If a developer of a quick acting character, free from bromide, be compared with one in which a great deal of bromide is present, on subjects likely to give halation; it will be seen at once that the presence of bromide in a developer greatly encourages halation. Any form of developer which tends to keep the image on the surface tends to reduce it.

At some future date we may refer to this subject again, and point out how by one or two simple dodges the development of the deeper portions of the film can be prevented almost entirely. In the meanwhile we would only remind our readers that if they are troubled to any great extent with halation, they can at any rate minimize it by suitable development as well as by the use of backed plates. At the same time we would caution them against being tempted to carry this reduction so far as to lead them to fall into the opposite error.—*Photography* (London).



Agfa-Intensifier.

C. H. Bothamley, F. I. C., F. C. S.



THE Agfa-Intensifier is a colorless and odorless liquid, which, before use, is diluted with water, in the proportion of one part of the intensifier and nine parts of water.

I have made numerous experiments with this intensifier, some being supplied by Messrs. A. & M. Zimmerman (London), and some being purchased from photographic dealers in the ordinary way. The undiluted intensifier remains unchanged after many months and apparently would retain its properties indefinitely in a well-corked bottle.

When a negative, previously well washed to remove all traces of hyposulphite of soda is immersed in the diluted intensifier, it gradually gains in opacity without being stained in any way, if the washing after fixing has been done with reasonable care. The intensified image has a dark brown color and considerable printing density. The intensification proceeds gradually and can readily be watched. The maximum intensification obtainable is reached in 12 to 15 minutes at the ordinary temperature, and the negative should then be removed and well washed with water. No further treatment is necessary and the material composing the intensified image seems to be of a very stable character; it shows no signs of fading even after several days' exposure to direct sunlight, but, on the contrary, increases slightly in opacity.

It will be seen that the process is extremely simple, only one operation being necessary. The intensification obtained is greater than with mercuric chloride or mercuric bromide, and if, on the other hand, it is not so great as that obtained by the mercuric bromide and silver cyanide method, the Agfa process has the advantage of being much simpler, whilst it gives sufficient intensification for all ordinary cases. The Agfa process is also superior to the mercuric chloride and ammonia process in the greater permanence of the intensified image.

If negatives are left in the intensifier, after the maximum effect has been produced, the opacity begins to diminish, and the image, when viewed by reflected

light, has a bleached appearance. Should this happen, it is only necessary to wash the negative thoroughly with water and then treat it with an ordinary developer, when a strongly intensified image of a black color is obtained.

The Agfa-Intensifier can be applied to lantern slides with very satisfactory results. The brown color of the intensified image is suitable to most subjects, and the deposit is not likely to fade.

My experiments have led me to the opinion that the Agfa-Intensifier affords a means of intensifying gelatino-bromide negatives and lantern slides, which is not only effective but is also very simple and convenient.



Plain Talks by the Editor.



AN amusing accident (?) happened to a friend recently that, considering he has been a photographer for twelve years or so, makes it the more ridiculous. He was invited to go out in an automobile, and after riding some fifteen miles, concluded that a picture should be taken of the natural beauty surrounding the roadside. This was done, and before his plunder could be stored away, something got wrong with the "Auto." The camera was laid on a stone wall, and the amateur mechanics started to repair the damage. This was finally completed, and they hied homeward. After arriving, our friend suddenly finds out that the camera had been left "on the garden wall." A return trip was made by train, but the camera had vanished. The other day it was offered for sale to the manager of a well-known house in town, and through his efforts the camera was restored to the original owner.

At a recent meeting of the photographic section of the Franklin Institute, we had the honor of making a motion, which was unanimously adopted, that a photographic exhibition be held in this city under the auspices of the Franklin Institute, in which photography in its broadest sense would be the paramount issue. From the start, the plan has met with approbation, and an exhibition early in the spring of 1902 is now an assured fact. Pictorial, Scientific and Technical photography will all receive space and proper recognition, as well as an exhibit of the various apparatus in photography from the time of Daguerre to the present day. Plans are now in preparation, and at an early date full particulars will be announced, which will, we believe, make the photographic exhibition of the Franklin Institute the largest and most complete ever given. Owing to the many branches to be embodied, it is impossible to give data at this time, although we had hopes of doing so when we made the preliminary announcement last month.

Not a magazine does the photographer buy but he finds many items worth preserving, and incidentally worth many times the cost of the magazine, when he gets in a fix, if he could only *remember them*. Now why not buy a book and enter those tips in it, indexing each entry carefully. It would not only be of great service to the person who did so, but would, when filled, be *salable* to many publishers, so there's a double incentive in the matter.

THE CAMERA

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FRANK V. CHAMBERS } Editors
JOHN BARTLETT }

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APRIL, 1901

Awards in Photo Competitions, Nos. 10 and 11.

Through a series of delays, we were unable to forward the prizes or announce the winners in our Portrait Competition before this late date, and even now will have to beg your indulgence until our May issue, when the winning portraits and the criticism on the first four will be published. Fortunately we can place the blame upon Prof. Raymer. He shifted his headquarters back to the Illinois College of Photography and then visited a relative, where he was quarantined for several weeks. He promises to do better in the future and be more prompt.

The general improvement in the photographs submitted in the portrait competition is commended, and we trust our contestants will continue in the good work started. The awards are:

First Prize. CAMERA Silver Medal, Rob't Talbot, North Edmeston, N. Y.

Second Prize. CAMERA Bronze Medal, Joseph W. Daub, Sellersville, Pa.

INTERIOR COMPETITION NO. 11.

First Prize. CAMERA Silver Medal, "Library, State Capitol, Hartford, Conn.," H. S. Redfield.

Second Prize. CAMERA Bronze Medal, "Bank Interior," E. M. Roberts, Ashland, Kentucky.

The interior pictures submitted are the best it has been our pleasure to see in a competition of this nature. The mounting, printing and general excellence leaves nothing to be desired. Comments on these will be published next month.

Prizes to Users of Collinear Lenses.

The Voigtlaender & Son Optical Company sent us the following, and invite all those who are possessors of a Collinear lens to participate in a competitive exhibition of prints, the object of which is to bring out as much as possible of the good work done with Collinear lenses during the past two years. We offer the following prizes:

1. \$15.00 in cash, for the best print, 5x7 size or over, showing high-speed instantaneous work.
2. \$15.00 in cash, for the best print, 5x7 size or over, showing time work, 1/2-second exposure or more.
3. \$10.00 in cash, for the best print, 4x5 size, showing high-speed instantaneous work.
4. \$5.00 in cash, for the best print, 4x5 size or under, showing time work.
5. \$5.00 in cash, for the best print made with No. 2 or No. 3 Folding Pocket Kodak or No. 3 Folding Weno Hawk-Eye.

The conditions governing the competition are as follows:

1. Only prints from negatives made with a Collinear lens may participate.
2. Prints must be in our possession on or before May 5th, 1901.
3. Each set of prints must be accompanied by a letter containing the name and address of the sender, and particulars as to the series, size and running number of the Collinear lens used, the aperture, the shutter, and the time of exposure.
4. All prints are to remain our property, and we are to have the privilege of using the negatives.
5. Only one prize will be given to any one exhibitor.
6. The prints will be judged with respect to their technical excellence and artistic merit by three disinterested and competent judges, to be selected later.

It will give us much pleasure to have all those who are users of Collinear lenses participate in this competition.

Very truly yours,

VOIGTLAENDER & SON OPT. CO.

The second number of the *Aristo Eagle* reaches us this month, and is full of good things of interest to the photographer. Sample copies can be had by addressing American Aristotype Co., Jamestown, N. Y.

Correspondence

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 16 South Fifth Street, Philadelphia.

No questions answered by post.

Copying Tin-types.—"BOB."—We shall shortly give a paper on "Copying," which will include the copying of tin-types. If you understand the method for copying engravings or photographs you will encounter very little extra trouble in managing the tin-type. Place a velvet cloth at the base of the copying board to cut off reflections in the polished surface.

Changing Blue Prints.—How can I turn ordinary blue prints from blue to brown, or black?—JOHN DAINS.

Blue prints can be changed to brown by placing the dry prints in strong ammonia, six drops; water one ounce. As soon as the color has disappeared, the prints are put into tannic acid, nine grains; water, one ounce. The whites will be discolored, but this cannot be prevented. They can be made black by placing them, after rinsing, in a solution of silver nitrate, nine grains to the ounce of water. When the image is bleached, the prints are washed, dried, exposed to the fumes of ammonia, exposed to light, and then developed in an ordinary oxalate developer. It is a good deal simpler to adopt some other process, as we do not believe the change permanent.

Removing Silver Stains.—I have a negative that is stained by P. O. Paper sticking to it, and one that the paper has stuck fast. Can anything be done?—HENRY W. CHAMBERS.

To remove the paper from the negative soak it in a solution of hypo, the strength used for fixing plates. If the negative should have silver stains on it after the paper has been removed, it will have to be treated with iodide of potassium.

Potassium Iodide 10 gm. or 1 oz.
Water 100 c. c. or 10 "
Iodine 0.2 gm. or 10 grains

When the stains are almost invisible by transmitted light, transfer the plate to a weak (1 in 20) hypo bath for a few minutes. Then well wash.

Printing in Clouds.—Please tell how to print in clouds in the sky of bromide enlargements.—W. W. SWOYER.

Select the cloud negative. Expose the foreground in the usual way, the dense sky preventing the light from affecting the print in that part. When the exposure is finished cover the lens with a yellow glass cap, or a B. & L. Ray Filter, so that you can see the image without the light having any power. Then cover the landscape, *almost* up to the horizon, with a sheet of red or black paper. Put the cloud negative in position and cover the enlargement with a large sheet of card. Uncap the lens and give a rather short exposure, unless you want very deep clouds. During the *entire* duration of exposure, alternately move the cardboard slowly, first downwards, until past the horizon, and then move upwards, until the sky is completely covered. In this way there will be no visible joint between clouds and view.

Combining Lenses.—I have two single lenses. Can they be formed into a rectilinear, and what is the rule for ascertaining the distance between the lenses?

W. H. H. RILEY.

There is no rule that is strictly applicable to all lenses that may be combined. As a rough guide, we may point out that a separation of about one-eighth the focal length will usually be found to answer best. The separation can be altered within certain limits without making the lens any less effective, provided that it does not give rise to a flare spot. The rule to find the separation between the lenses to give any particular focal length is as follows: Add the focus of one in inches to the focus of the other, and subtract from this—the two foci multiplied together and divided by the focus of the combination. Thus, if we have two lenses, one of 12-inch and one of 13-inch focus, and we propose to combine them to make one of $6\frac{1}{2}$ -inch focus, then the separation is obtained as follows: $12 + 13 = 25$, $25 - (12 \times 13 \div 6\frac{1}{2})$ equals one inch, which is the separation necessary. The limits within which the separation can be profitably varied are, however, limited.

Bromide Paper.—Will you please give me a formula for making Bromide paper.

CHAS. J. HOLZER.

The following is recommended for obtaining a glossy paper: A glass plate is to be procured of suitable size, made perfectly clean, and polished with chalk. Upon this plate, well warmed, the emulsion is poured, and the plate put upon a leveling table to settle. Whilst this is going on take a quire of paper, wet it in pure water, and drain it off well; lay it upon the emulsion, pressing it slightly over and drying it with gentle heat. After it is thoroughly dried it is removed from the glass, which operation requires the greatest care, but occasions no difficulty.

BROMIDE OF SILVER AND BROMO-iodo SILVER EMULSION.

A.—For Black Tones.

Gelatine	15 grammes
Bromide of Potassium	9 "
Water	150 ccm.
Nitric Acid	2 drops.

To this 11.2 grammes of nitrate of silver, dissolved in 150 ccm. of water, are added.

The mixture is kept at a temperature of 38° C. for half an hour or an hour, according to the degree of sensitiveness required, and then allowed to set, and washed in the usual way.

B.—For Brown Warm Tones.

Gelatine	15 grains.
Bromide of Potassium	7.5 ounces.
Iodide of Potassium	1.6 "

Dissolved in 150 ccm. of water, to which 2 drops of nitric acid are added. To the whole is added a solution of

Nitrate of Silver	11.2 grains.
Water	150 ccm.

and treated just like A.

CHLORIDE OF SILVER GELATINE.

Gelatine	30 grains.
Chloride of Ammonium	5 "
Chloride of Ammonium	9.4 "

Dissolve in 300 ccm. of water. Then 30 grains of nitrate of silver are dissolved in 300 ccm. of water, and added to the first, well shaken up, and heated to 80° C. for ten minutes. It is then allowed to set, and washed as before.

CHLORIDE OF SILVER GELATINE WITH NITRATE OF SILVER.

Gelatine	30 grains.
Chloride of Ammonium	5 "
Citrate of Soda	9.4 "

are dissolved in 300 ccm. of water and added to a solution of

Nitrate of Silver	30 grains.
Water	300 ccm.

After mixture and agitation, the emulsion is kept at a temperature of 44° C. for an hour, and allowed to set, and then washed.

The bromide of silver paper is used for enlargements, by means of the camera, which are to be afterward developed with the usual developers. The chloride of silver paper is for printing in the usual way. The printing is done in a frame, and the prints toned with gold. The only care required is thorough washing.

We advise you to buy the paper ready prepared. The maker's thereof spend time in perfecting their products and are reliable, whereas you will spoil more material than is good.

Photographing Snow.—(1) Can a person photograph and show the snow flakes in the air during a snow storm? (2) If so, about what time with a Cramer Iso. Inst. Plate, Goerz No. 3 Lens and No. 8 U. S. stop? (3) Should a Ray Filter be used? (4) What developing agent will give best results on above exposure?

GEO. D. COGGAN.

Impractical, when one considers the actual size of the flakes in nature. Would be imperceptible upon any size photographic plate, even supposing it possible to get them.

John Woodward.—There is a chemical difference between Meta-Bisulphite and Sulphite of Soda. You can use the former in the making of your developer, but there is no advantage in this particular over plain sulphite. We would not recommend it, as the price is more than three times as much as sulphite.

You will find the answer to your question as to solubility of the different chemicals in a Dictionary of Solubilities. We have not room for the reprinting of so long a list.

J. W. Street.—(1) There is less risk of encountering halation or solarization in using a film, and hence the sky is better rendered than with a plate.

(2) Equally good results may be obtained by using films as are secured by plates, but the film is more liable to deteriorate by time, and good work is obtained only with fresh made films.

J. W. O.—(1) Dry them under moderate pressure.

(2) A portrait lens will generally be found to work more rapidly for studio work, but a rapid rectilinear of any good make may be employed.

(3) You should focus so as to have the eyes sharp. A falling off in sharpness on the other parts of the head is not as perceptible.

(4) Of course you secure better results by using a larger lens than that first adapted to the dimensions of the plate, but then your angle of view is not as great if the focus of the larger lens is longer.

(5) You are not explicit enough in your inquiry. The answer depends much on what kind of lens you wish to insert between the combinations.

J. W. Watts.—Doubtless the dark streak on the negative is fog caused by a beam of light striking the plate during exposure. To remove take a piece of soft chamois, draw it tightly over the end of the finger, dip it in alcohol, and gently rub the fogged place. As the chamois becomes blackened by the silver, substitute a clean piece. It will take some few minutes to remove the fog, but it can be done effectually. Take care not to rub the film hard enough to break it.

Photographing Lightning.—How are the various photographs of lightning obtained?—**CYRUS.**

Place the camera in an open window facing the storm-cloud, open the shutter, and leave the plate exposed until a brilliant flash of lightning has passed across the field of the lens. Use a large stop and a quick plate. Develop gradually. The shutter may be left open until several flashes of lightning have been impressed on the plate.

Brush Development.—How is brush development done on platinum prints?—**D. BRUCE.**

Lay the print face up on a sheet of glass and coat with pure glycerine by the aid of a brush. Prepare also the following solutions (saucers are capital things to keep the solutions in whilst working, and have three or four brushes of various sizes):—No. 1, Glycerine, 3 parts; oxalate developer, 1 part. No. 2, Glycerine, 2 parts; oxalate developer, 2 parts. No. 3, Glycerine, 1 part; oxalate, 3 parts. No. 4, Plain oxalate developer. After the print has been well glycerined, brush No. 1 solution all over it; the shadows will probably appear. Then apply No. 2; this brings out the half-tones; and by local application of Nos. 3 and 4 any part may be coaxed out, as the glycerine acts as a physical restrainer and keeps back the well-exposed parts.

Broken Negatives.—Will you please tell how to repair broken negatives so they may be printed from without notice of the break?

MRS. W. W. SAWYER.

(1) A broken negative is placed upon a sheet of glass, and the two bound round the edge with narrow strips of paper. Print in a very deep frame so that the light may fall vertically upon the negative and keep the frame in motion, (2) Yes, any of the meters advertised in *THE CAMERA* will fill your needs.

Black and White P. O. Paper.—Will you kindly tell me whether there are any printing-out papers giving good black and white effects, which can be used by artificial light showing the image before development as the platinotype does by daylight, and if so, name and address, please?

R. S. FOWLER.

We are not acquainted with such kind of paper. It would be something to be desired.

Metol-Hydro.—(1) Please give a reliable formula for making gold chloride. (2) How many grains of gold chloride will 24 grains of pure gold make? (3) Can you give a formula for Metol-hydroquinone to be used like the one for Eiko-hydro, given in your October issue under an article headed "A Rational Method of Development?"

F. G. DOWNS.

1 and 2 answered in March issue.

- (3) (a) Water 16 ounces
Sodium Sulphite (crystals) . . . 1 ounce
Hydroquinone 80 grains
Metol 60
- (b) Water 16 ounces
Carbonate Potassium (crystals) . . 2
Sodium Sulphite ½ ounce
- Use equal portions.



"Confound it! If I could only take a snapshot of myself. Just my luck!"—*Ally Sloper.*



Things New Photographic



The Nepera Chemical Co., Nepera Park, N. Y., have just issued a handy *Velox Manual*, which will be a boon to all users of Velox. It explains the method of working the paper in such a clear and concise manner that everybody should have a copy, which is sent free upon request.

Many amateurs have refrained from using Platinum paper owing to what they thought was the extreme high price, but this illusion is easily dispelled when one realizes that failures are reduced to a minimum and perfect prints secured. The Bradley Platinum paper, which we advertise this month, we have been using for years with great satisfaction. A neat little manual has been prepared by John Bradley, 49 N. 13th Street, Philadelphia, telling more about the paper than we can in our space. A copy will be sent upon request.

It is somewhat strange, in view of the postal card craze that has existed throughout Europe for a number of years past, that the amateur and professional photographer have both failed to realize this important factor of amusement to the one and profit to the other. It is impossible to visit any foreign city without being able to obtain a pleasant souvenir of every point of interest, the familiar faces of royalty or those famous in music, literature or art. The postal cards are thus not only a source of revenue to the professional artist, but are highly cherished by the friend or relative at home who can follow every footstep of the wanderer, receive each day or two some visual token of the scenes visited and thus read the occasional letter that the hurry of travel permits, with far greater intelligent interest than otherwise. To the amateur they possess a double value, in not only bringing about an inexpensive interchange of views taken, but in favoring the chosen friend with a scene of his surroundings or the face of one near to him. We understand that the Rotograph people now carry a line of these sensitized postal cards in stock, coated upon either glossy or matt paper; and we would suggest that our friends give them a trial.

A foreign inventor has devised an apparatus by which dry plates may be employed on the Folding Pocket Kodaks and similar cameras. A special plate holder is supplied, which is attached to the camera body by friction. They have not, as yet, reached this country.

From *The Photographic Dealer* we notice that the Secco Film Company (England) will be closed up, a petition having been presented requesting the winding up of the affairs of the concern. This is the company that promised so much for photography about a year ago, and received prominent notices in this country and abroad.

Mr. Harry Venables, late manager of the Providence Photo Supply Company, and one of the earnest workers of THE CAMERA, has resigned his position and accepted the management of the photo department at Gimbel's in this city.

We take great pleasure in announcing that the Wager Exposure Scale is now made of Aluminum. This device, which first appeared about a year ago, has been followed by a number of imitators, but none of them have attained the perfection of the Wager. Its accuracy, speed of manipulation, elimination of sensitized paper and mental arithmetic, etc., etc., have won thousands of friends for it. Our tests with it have been highly satisfactory.

A Curious Copyright Decision.

A curious decision as to the right to rebind books, which also involves the question of copyright, was given by the United States Circuit Court of Appeals. The court announced that to trim old books, to cut off the edges of the leaves and to rebind them is no invasion of the rights of the person holding the copyright of the books. The court in its ruling put in a proviso that a book so rebound, recovered and offered for sale should have prominently displayed and stamped upon its cover notice that the book was a second-hand copy. The American Book Company have complained that the

defendants were selling old school books on which they owned the copyright. They were then revamped and sold. The court in its decision says: "We think that, so far as respects the copyright laws of the United States, no legal right of the appellee was invaded by so doing. What was done was merely the restoration of the books to their original condition when sold by the appellee, or so nearly so as could be done."—*Scientific American*.

Toning Bath for P. O. P.

P. O. P. workers are always annoyed at the necessity for washing the prints in several changes of water before the toning is commenced. The process of eliminating the free silver is an uninteresting and tedious one, it often requiring half a dozen changes of water before the milkiness may be said to have disappeared. Here is a toning bath ("Mason's") which abolishes the difficulty:

Sulphocyanide of ammonia	15 gr.
Common salt	64 gr.
Chloride of gold	2 gr.
Water	10 oz.

The prints may be taken straight from the printing frame and immersed in this, care being taken to remove all air bubbles that may form. When toning is complete, the prints are placed in the usual hypo bath for fixation. The tints obtainable are from warm red-brown to purple, according to the duration of immersion. The extent to which toning has proceeded may be judged by inspecting the print by transmitted light. For the coldest purple no red color should remain, even in the darkest shadows, when looked through.—*Amateur Photographer* (London).

Travel and Recreation

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THE CAMERA, 16 S. 5th St., Philada.

To Make Dishes, etc., Waterproof.

It sometimes happens that the amateur has some dishes, etc., made of wood, which he desires to make waterproof. To do this he must melt and mix up in an old tin pan the following:

Common brown resin	4 parts.
Beeswax	1 part.

When this mixture is quite fluid it should be coated over the article to be made waterproof, which must be first well dried and warmed.—*Photographic News*.

Black Varnish.

THE following black varnish can be flowed over a glass and any diagram or title drawn or scratched through the film, when it is dry, with a sharp penknife or stout darning-needle, and thus show up as white on a black ground:

Day & Martin's Brunswick black	17 ozs. or 500 cc.
Benzole	7 " 206 "
Chloroform	3½ " 103 "

G. M. W. in *Photographic News*.

Development of Platinum Prints.

A CORRESPONDENT writes: "I have come across a French formula for platinotype developer, which, as I find it very good, and as to me it presents some features of novelty, perhaps might interest you:

Water	1000 parts.
Ox. potash	300 parts.
Alum	25 parts.
Tartaric acid	3 parts.

I use it half strength."—*British Journal of Photography*.

Reproducing Negatives by Over-Exposure.

WRITING in the *Moniteur de la Photographie* (1st August issue, 1900, p. 297), M. Louis Fuilla urges the convenience of this method, which consists in exposing an ordinary gelatino-bromide plate in the printing frame under the negative to be reproduced, and developing as usual, but to secure the full benefit of the reversed action of light the exposure must be about that which should be given to obtain a print on a rather sensitive printing-out paper; ten to twenty minutes in the shade. No special precautions are required in development, only it must be remembered that a flat and fogged result indicates under-exposure, and a hard picture

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on a clear ground indicates over-exposure. M. Fuilla says that rapid plates are best for the reversed action process, and in the case of thin negatives the exposure is best in the shade, under a ground glass, or under a sheet of green glass. Direct sunlight is useful in other cases. M. Fuilla reminds his readers that the reproduced negative obtained by this process is laterally reversed, as required for single transfer carbon printing, or for colotype. When a direct or ordinary negative is required, it may be made from the first reproduced negative by repeating the process. It goes without saying that the over-exposure method is equally suited for the reproduction of positive transparencies, and indeed for all cases in which lateral reversal is required without any other difference from the original.—*Amateur Photographer* (London).



Hints on Velox.

MR. DONALD C. NIGHTINGALE, who is at present making a tour of various provincial societies and demonstrating the use of Velox paper, gives an exceedingly good and instructive entertainment. The following are some of his practical hints, the actual lecture of which this constitutes a report, being that given to the Burnley Camera Club on October 18th, Mr. W. Sutcliffe presiding:

Exposure.—As a guide to correctness of exposure, make a print on a strip of paper before printing from the whole negative. This method enables one to determine the exposure to a nicety, and economy in paper results. Have your printing frame at a distance of about six inches from an ordinary gas flame or incandescent electric lamp. To ensure even illumination gently revolve the printing frame. An alternative method which is more readily applicable in the case of electric light is to place the printing frame on a table and holding the lamp directly above; move it about from time to time, always at a uniform distance from the negative.

Development.—Having made the exposure, or series of exposures, moisten the paper by passing it through clean water in a dish—in the case of Carbon Velox it is preferable to apply the developer to the dry print—and immediately proceed to develop either by means of a tuft of absorbent cotton wool or a soft brush soaked in the developing solu-

tion; or as for bromide papers, by immersing each sheet in the developer contained in a dish. In either case development proceeds rapidly; is complete in about twenty seconds with carbon and the ordinary varieties of Velox, whilst the "special" papers develop somewhat less rapidly—in half to three-quarters of a minute. Should the prints on development have greyish whites, add more bromide—say one or two drops of ten per cent. solution to the ounce. In addition to producing slightly increased contrast the further bromide gives brilliancy to the resulting print. Greenish or brownish blacks will result if too much bromide be present. Over-exposure also occasionally produces similar results; but this, of course, may be determined by the rapidity of development of the print. Greatly over-exposed prints become fully developed in quite a few seconds, and in many cases development is not uniform over the whole print.

Rinsing and Fixing.—The fully developed print should be rinsed very rapidly; merely passed through a little clean water contained in a dish, and then transferred to the fixing bath, which for preference should contain the acid solution prepared according to formula. During the first few seconds of fixing, each print should be kept moving in the fixing bath in order to avoid the possibility of stains resulting. Immersion from five to eight minutes in the fixing bath is amply sufficient. When fixed, the prints are transferred to the washing water, in which they should remain for about one hour.

Drying.—Velox prints may be dried by any of the usual methods. Perhaps the simplest is to lay each print face upwards on a sheet of blotting paper.

POINTS TO BE OBSERVED.—To avoid stains, use fresh developer and take care that the rinsing, both before and after development, is speedy and thorough. Use preferably an acid fixing bath as per formula. Avoid excess of potassium bromide in the developer, but wherever the print yields greyish whites increase the bromide up to three drops per ounce in addition to the proportion for normal developer. Wherever markings occur on the surface of Velox prints erase from the dried print by means of cotton wool well moistened with methylated spirit. Avoid prolonged development, on account of its tendency to produce stains.—*Amateur Photographer* (London).

Tinted Cover Glasses for Lantern Slides.

THE following method of tinting lantern cover glasses is due to a contributor to the *Amateur Photographer*, who points out that underexposed plates after being fixed and washed may have the clear gelatine color stained by longer or shorter immersion in some one of the following dye baths:—Red: Congo red or fuchsin, eosin or red coralline. Orange: Aurantia, chrysoidine. Yellow: Uranine, Manchester yellow, tropaeolin. Green: Malachite green, acid green. Blue: Gentian blue, Hoffman's blue, indigo carmine. Violet: Methyl violet. Brown: Bismarck brown. The strength will vary according to requirements, but as a rough guide, 1 part dye to 100 or 200 parts water will be about right. Of the methyl violet, which is powerful color, 1 part dye to 400 or 500 water will probably be strong enough. If the dye does not dissolve sufficiently freely in water you may try the addition of a few drops of acetic acid; or the dye may be dissolved in alcohol and then diluted with water.

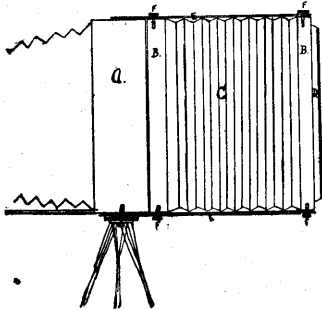
Idea Interchange

This column is open to our readers for criticism upon any subject appearing in THE CAMERA, and we invite ideas, private formulae and hints from all. Statements published herein do not necessarily voice the opinion of the journal.

EDITOR OF THE CAMERA:

Dear Sir:—Re. long focus attachment for hand camera: I made one some months ago, which can be easily carried about in the camera case.

My camera has a reversible back, and I made two frames of the same dimensions as the outside of the camera and about $\frac{3}{4}$



A—Camera body.
B—Frames.
C—Bellows.

D—Reversible back,
E—Brass straps.
F—Thumb screws.

inches deep; one to fit the camera when the reversible back was removed, and the other to fit the reversible back, fastening them in their respective places by the same method as the reversible back was fastened to the camera.

To these frames I fastened a bellows of the proper length, made as described in the June, 1900, number of THE CAMERA.

Some means of holding the attachment rigid was necessary, and the best means that I know of is to get two brass or iron straps and fasten them by thumbscrews, allowing them to project over camera body, the lower strap having a hole to allow the tripod screw to pass through.—ARTHUR E. ERB.

The Photo-Fellows of Chicago.

MY DEAR MR. CHAMBERS:

The following notes on a new organization may prove of interest to you and your readers. If so, use them as you see fit.

Very truly,

GEO. H. HAZLITT.

THE PHOTO-FELLOWS.

(Preamble.)

Being associated together as "Photo-Fellows" in all that the name implies, and believing that honesty and sincerity of purpose are alone sufficient for the guidance of gentlemen, we purposely ignore all precedent and establish this declaration of principles for the benefit of any who may hereafter be selected to affiliate with us.

1. Fellowship can be acquired only by unanimous selection.

2. To become a Fellow costs \$20.00; to remain one costs \$30.00 each year.

3. Our affairs shall be in the hands of a governing board of five, elected for one year. The decisions of the board are without appeal.

4. Each Fellow is required to prove his ability when requested by the governors.

There is no constitution or by-laws. There is no president. A member of the board presides at each meeting. The board makes rules to govern occasions as they arise. The governors for 1901 are:

W. T. JAMES,
F. K. LAWRENCE,
A. K. BOURSALT,
DR. CHAS. G. FULLER,
GEO. H. HAZLITT.

The other members are Henry G. Mohr, J. F. Palmer, H. G. Brinsley, R. J. Bassett, H. G. Maratta (artist), W. L. Wells (artist), J. S. Driver, E. L. Bourke, E. A. Hall and Edgar Cameron (artist). Mr. A. K. Bour-sault (chemist) is scribe and treasurer. The rooms are located in the Stewart Building, State and Washington Streets, and consist of a reception room, laboratory, dark room and lantern room. Unlike most society dark rooms, that of the Photo-Fellows is fully equipped, not only with all necessary graduates, trays, washing and fixing boxes, but also with all the ordinary chemicals used in photography. A 11x14 reducing and enlarging camera is located in the lantern room, as are also lockers for each member. The organization having so few members, things can be managed more as they would be in a family, and chemicals, etc., can be kept at hand where they could not be in a large organization. The dark room is supplied with hot and cold water and compressed air, the latter being very handy for dusting plates, paper and plate holders. The limit of membership is fifty members.

EDITOR OF THE CAMERA :

Dear Sir:—I enclose you the following, which may be helpful to many who have not the advantage of running water for the washing of their plates and prints. First, get a piece of cork, about four inches square and an inch thick, and then fasten to each of the sides of the cork at the center an ordinary clamp, such as is used to fasten cuffs to the sleeve of a shirt. Then fill a pail or washtub with water, and taking the negative fasten it at that end where the clip in the holder retains it, in the little jaws of the cuff clamp, and place it in the water. The cork will float on the water and hold suspended the plate, thereby allowing the hypo to freely pour out from the film on the plate. The reason for this is a chemical one, namely, that the hypo is so much heavier than the water, so that anything saturated with it and then suspended in the water the hypo will of its own weight leave it. A 4x5 can be thus thoroughly cleansed of all hypo in a remarkably short time, and where one has not the advantage of running water this method is to say the least very practical. A trial will convince one of this common sense method of eliminating the hypo from a plate.

HENRY M. GREEN.

EDITOR OF THE CAMERA :

Dear Sir:—Would like to say in answer to question of Emil Erthol, on page 114, that if Velox or Vinco prints are put under a letter press when pasted and kept under pressure until dry, the leaves of his album will be perfectly flat and stay so.—T. F. W.

EDITOR OF THE CAMERA :

Dear Sir:—The article of Mr. R. E. Schouler, of our Club, in your January issue, has been productive of valuable accessions of new members to our Club, and I desire to make this tardy acknowledgment of your courtesy to the Club in giving space to his letter.

If not trespassing too much on your good nature, I would like to ask just one more favor and that is: I would like to say, in connection with Mr. Schouler's article, that just at present the membership of our Club is confined to persons residing east of the Ohio River, and that while we would gladly welcome desirable members far west of that river, it will not be practicable on account of the expense for exchange of the albums.

Yours faithfully,

G. A. BRANDT, *Secretary*,
Postal Photographic Club.

Washington, D. C.

EDITOR OF THE CAMERA :

Dear Sir:—Could the white lines in cut on page 77 have been made with a brush in dusting the plate? I have seen it stated that by using a brush rapidly and vigorously electricity would streak a plate. An occasional stiff hair in the brush might have caused the cracked lines.—E. P. ROBINSON.

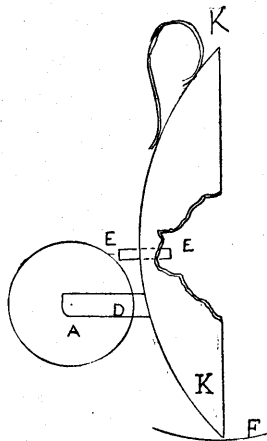
Method and Apparatus for Flashlight.

Probably one of the most unsatisfactory things that the amateur has anything to do with in photography is that of the flash light, and the difficulty has been caused by the very unsatisfactory methods that are in present use for producing the light. These methods are, in almost all cases, disagreeable, and in many, are dangerous. Just the proper instrument for use has never to my knowledge been placed on the market. A method, however, which was used some years ago by a Western man, and which so far as the

writer knows has never been used except by himself and which is perfect for flash light photography, may be interesting. Back in the 1860's the Mammoth Caves in Kentucky were photographed by the aid of a locomotive head light, and with an exposure of from 10 to 250 hours, and even with this long exposure many of the views were not satisfactory. In 1893 the Mammoth Caves were again photographed by the aid of this new apparatus, and much better pictures were produced with the exposure of from 5 to 20 minutes than with the exposure of 250 hours years ago. The instrument, which is very simple, is as follows:

Take an ordinary reflector (K) such as comes for lamps. Punch a hole in the center and put through the hole a small piece of tin tube (E) (part of a putty blower will do). This tube is to project $1\frac{1}{2}$ inches each side of the reflector. In the next place get a blacking box or any other tin box (A), and place inside this a coil of magnesium wire. Fasten this box to the back of the reflector by tin strips (D), and pass the end of the magnesium wire through the tin tube (E). On the bottom of the reflector fasten a small piece of tin (F) so as to get the drip from the wire. A handle can be placed on top of the reflector or on the side. The wire having

been passed through the tube (E) can be lighted, and by leaving a small space between the blacking box and the back of the tin tube, the wire can be fed by pushing it out with the finger, and in this manner you can have a flash light of as long a duration



as you desire. The instrument is light and so convenient to handle that you can flash all around a room or either side of a group, and we think ways and means can be found for using the thing by our readers.

GEO. H. NEIDLINGER.

PATENTS RELATING TO PHOTOGRAPHY.

ISSUED IN MARCH, 1901.

Reported specially for *THE CAMERA* by R. W. Bishop, Patent Attorney, Washington, D. C., who will furnish complete copies of patents at the rate of ten cents each.

- 669,616. Vignetting device. Robert Burgess, Jr., Congleton, England.
- 669,971. Magazine-camera. Josef Adler, Berlin, Germany.
- 670,117. Shutter. J. E. Thornton, Manchester, England.
- 670,118. Photographic stripping-film. J. E. Thornton and C. F. S. Rothwell, Manchester, England.
- 670,154. Folding panoramic camera. D. H. Houston, Hunter, N. D.
- 670,165. Developing-tray. A. B. Sheppard, South Burgettstown, Pa.
- 670,233. Folding panoramic camera. D. H. Houston, Hunter, N. D.
- 670,349. Continuous photo-printing apparatus. L. F. Rondinella, Philadelphia, Pa.
- 670,381. Magazine plate-holder. Philip Bogler, Salida, Colo.
- 670,635. Timing attachment for cameras. Bernhard Hernhuter, New York, N. Y.
- 670,683. Photographic-roll holder. W. N. Moore, Washington, D. C.
- 670,842. Photomicrographic plate-holder. N. A. Cobb, Sydney, New South Wales.
- 670,843 and 670,844. Shutters. N. A. Cobb, Sydney, New South Wales.
- 671,035. Shutter. W. O. Stanley, Dublin, Ireland.
- 671,066. Lens. Christoph Graf, Closter, N. J.
- 671,075. Print washer. Thomas White, Vallejo, Cal.
- 671,154. Panoramic camera. P. N. Angsten, Burlington, Wis.
- 671,213. Photograph and mount. R. W. Johnston, Crafton, Pa., assignor to R. W. Johnston & Co., Pittsburg, Pa.

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FOR SALE.—8x10 Extra Rapid Rectilinear lens, Iris Diaphragm, cost \$30; will sell for \$20. Does fine work. Geo. H. Frees, Reading, Pa.

TO EXCHANGE.—Winchester Rifle, 38-55 cal., ex. bbl., 25-20, Lyman sights, reloading tools, both sizes, set triggers, telescope sight, that cost \$12.00; in fine condition. For Zeiss, Goerz or Collinear lens, 5x7, with shutter. Write me. Wm. G. Bacon, Nobscoot, Mass.

Miller's Photo-Exposometer. Sent free to every amateur photographer sending 15 cents (stamps) for three months trial subscription to *Photo Straws*, 115-117 Nassau Street, New York.

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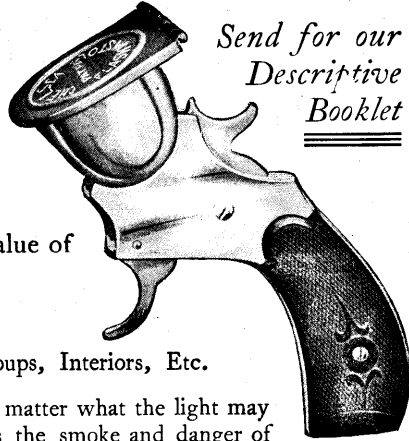
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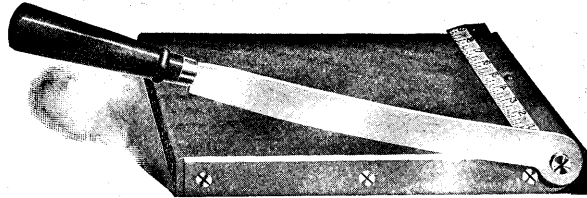
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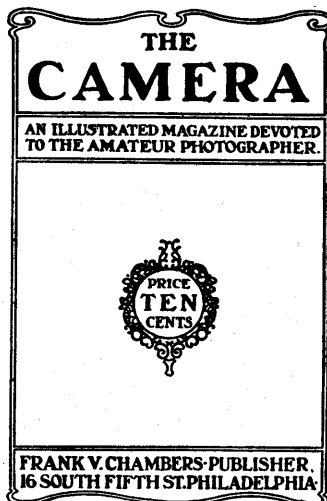
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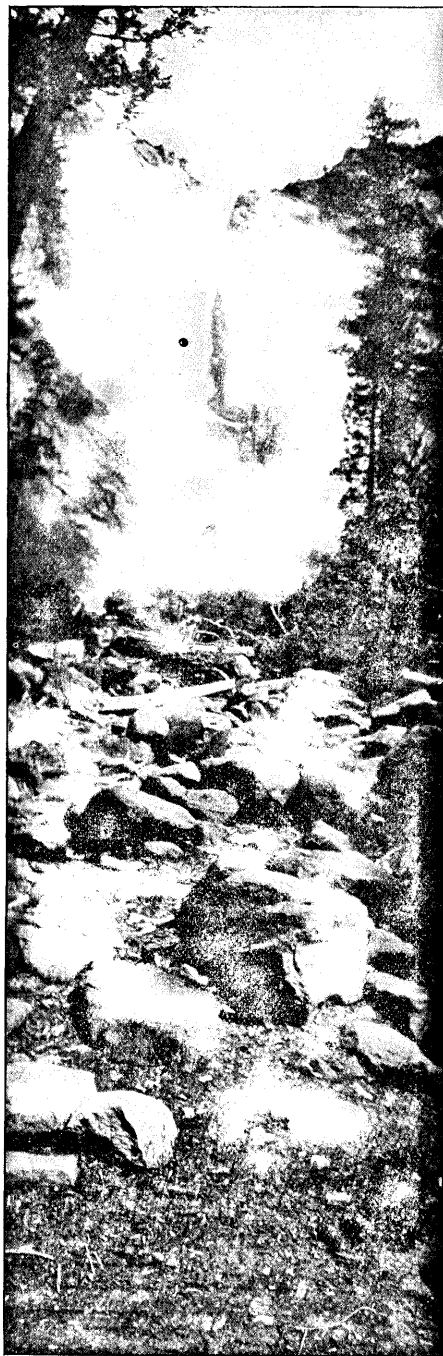
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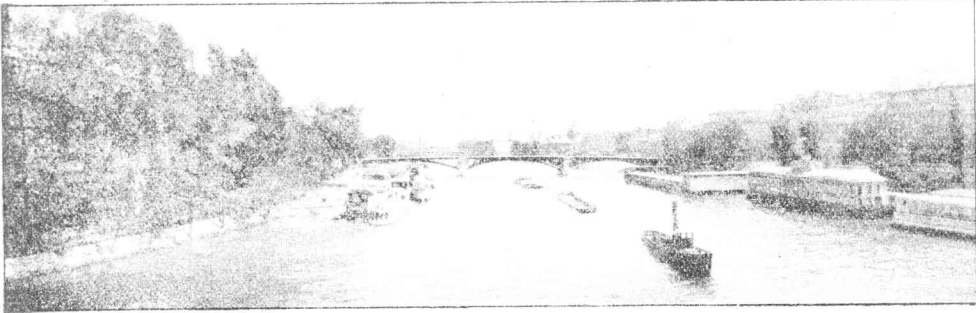
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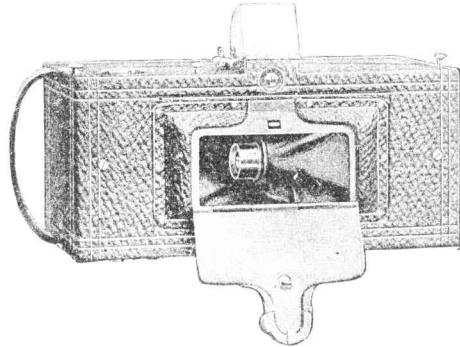
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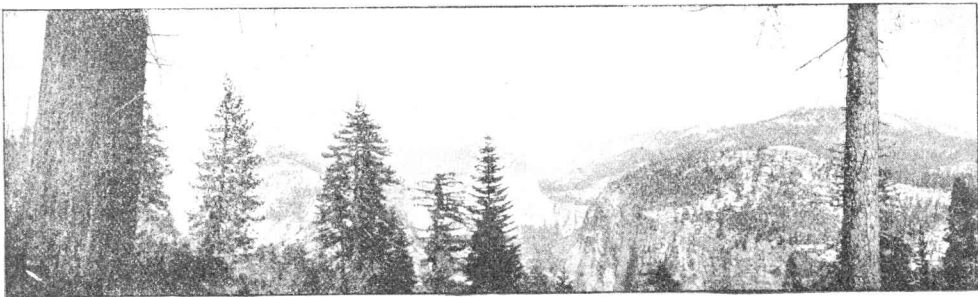
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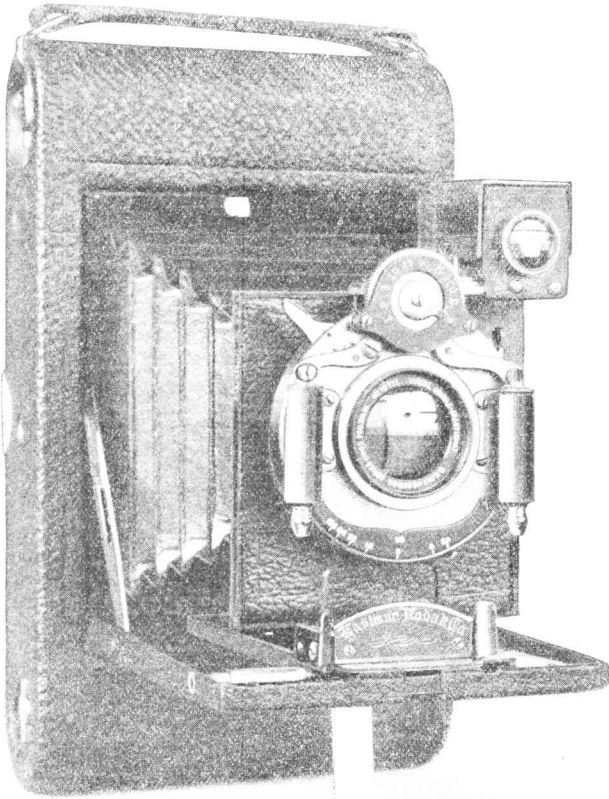
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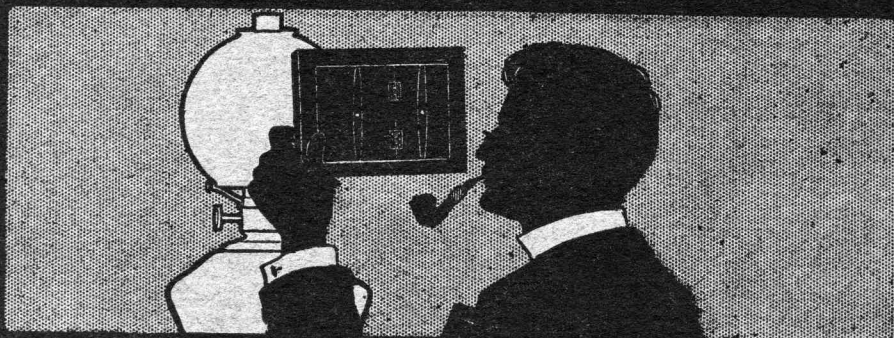
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