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HEIMBECKER PROCESS.

THE VAUXHALL GARDENS, LONDON.

THE CANADIAN PHOTOGRAPHIC JOURNAL.

DEVOTED TO THE INTERESTS OF THE PROFESSIONAL AND AMATEUR PHOTOGRAPHER.

Vol. V.

TORONTO, FEBRUARY, 1896.

No. 2.

THE Canadian Photographic Journal

PUBLISHERS

The Nesbitt Publishing Co., Ltd.,

TORONTO, CANADA.

GEORGE W. GILSON, - - EDITOR

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THE NEW PRICE.

As we expected, the \$1.00 a year price has proved unusually popular. It has unearthed the names of more photographers new to our subscription list than we thought existed in the Dominion. We have scores of letters from old subscribers speaking their appreciation of the reduction. One just received, containing a renewal and subscriptions for five amateurs of the town, caused these remarks, and is as follows: "I congratulate you on your 'popular price' movement, and enclose you practical proof of my appreciation of your progressiveness. I don't want a journal for nothing, in fact would not read it, on principle; but I do think a dollar a year enough for the present day trade-journal," etc. This is only one, but it speaks the language of the many others.

We want everyone interested in photography to see that their names are on our subscription list. Send in the dollar while we can still supply the January number to make the year complete.

THE MONTH.



AN ENGLISH writer, speaking of carbon printing, says that a great many are deterred from trying, thinking it would involve a considerable expense, while in reality the apparatus actually needed for carbon printing is not much more than what every one who practises photography already has, and that the cost of the extra apparatus is very trivial. Carbon prints can be developed in a wash-hand basin with a jugful of hot water, the edge of the hand, unless it is too bony, will serve for a squeegee, the finger tips will do for a thermometer, and a bit of printing-out paper, with a few thicknesses of tissue paper over it, will serve as an actinometer.

THOUGHT PHOTOGRAPHY.—The Amateur Photographer, in a late number, publishes an interesting article by W. Ingles Rogers, in which he propounds the question, "Can thought be photographed?" and describes some experiments the result of which seem to have some bearing on the point. The article is illustrated, and there is one striking reproduction of a photographic plate which was placed before the experimenter's eyes for twenty minutes in a dark room, after he had been steadily gazing at a postage stamp for one minute in the light. The experiment was performed in the presence of credible witnesses, and the plate, when developed, revealed two faint images of the postage stamp, and the print clearly shows

these, surrounded by whitish fog. Curiously enough, the distance between the central points of Mr. Rogers' eyes is two and a half inches, but that between the two images is three and one-eighth inches. It would appear, therefore, that this is a case of projection, and not merely reflection. The phenomenon is doubtless optical, but an interesting field of inquiry is opened up, and some time may elapse before it becomes capable of explanation.

A BRITISH contemporary speaks sensibly on a point that is always a source of annoyance to visitors attending a "no-name" exhibition, and reflects upon the powers of the judges to judge fairly: "We want to point out one little matter to exhibition committees and others. It is not a new point, but too frequently seems overlooked. Why, after certain gentlemen have been asked to judge, is a doubt in their impartiality and integrity implied by debarring exhibitors from letting their name appear on the works shown, as though the fact of their authorship would influence the judges' award? When an exhibitor has attained to the position that his name might possess an influence upon the minds of the judges we may be pretty sure that his work has become possessed of an amount of individuality which renders signature quite unnecessary. Moreover, is it fair to the exhibitor that he shall not sign his work? From the growing custom of writing the name on the corner of the print itself, after the manner of painters, a considerable amount of work must be shut out, or the photograph-

ers are put to the trouble of reprinting specially, and all for a regulation which is foolish, useless, undignified, and of questionable courtesy to the judges. Fortunately it is a regulation rapidly becoming obsolete."

INTERNATIONAL PHOTOGRAPHIC EXHIBITION.—An international exhibition of photography will be held at Berlin, between September 1st and October 16th, 1896, under the distinguished patronage of her Majesty the Empress Frederick, in the splendid halls of the new building of the Imperial Diet, under the joint auspices of the German Society of Photographers and the Free Photographic Association, both of Berlin. It will be divided into the following classes: (A) History of photography; (B) Photography in its use for scientific purposes; (C) Photography in its use for the science of art and the industrial art; (D) Landscape photography; (E) Portraits and genre pictures; (F) Instantaneous photographs; (G) Transparencies, lantern slides, and stereoscopic photographs; (H) Photo-mechanical processes; (I) Apparatus and chemicals; (K) Photographic literature. The classes B to G will be open only to amateur photographers. The entries must be made before April 1st, 1896. Full particulars and application forms may be obtained from the secretary, Director Schultz-Hencke, Berlin S.W., Koniggratzerstr, 90 Lettehaus.

THE QUEEN SITTING FOR HER PORTRAIT.—A Canadian artist, Mr. Frederick Bell-Smith, recently enjoyed the rare privilege of a sitting of

the Queen, and he now gives his impressions through the Canadian press. The Canadian Government, it seems, wish to place in the gallery at Ottawa a large picture representing the scene in the courtyard of Windsor Castle when the Queen, with the royal household standing round her, placed a wreath upon the coffin of Sir John Thompson as it was being borne away from the scene of the premier's tragic death. The sitting lasted a whole hour, and the result was "a common little wooden panel a few inches long." Mr. Bell-Smith and the photographers were waiting for the Queen when in came the Princess Louise, whose residence in Canada gave her a special interest in the occasion, though Sir John Thompson had not entered federal life when she and the Marquis of Lorne were at Ottawa. "The Queen wants to know if she shall wear her bonnet." "Yes, please," was the reply. Almost at once the Queen entered, supporting herself with a heavy cane and resting lightly on the arm of her Indian secretary. "I am sorry to have kept you waiting," said her Majesty, and bade the artist be seated. But there was no chair close at hand, so the Princess Louise was despatched to fetch one, which we are told she did "with the best grace imaginable." It was, the artist found, very embarrassing to "work close to the wrinkles," especially as the princess watched each stroke over his shoulder, but he was encouraged by such remarks as, "It is very like you, mamma, dear." The Queen proved to be an excellent sitter, and at the end of an hour she rose, bowed to the painter and left the room.



**RANDOLPH
PARKER
BELL-SMITH,**

Cincinnati, O.,
President of the Photographers' Association of America, was born on February 16th,

1857, in London, Eng., his father being an artist of considerable note. Mr. Bell-Smith removed to Canada with his parents at an early age. He first took up the study of art, intending to follow in his father's footsteps as a portrait painter. Later he decided to study photography, being convinced that in this profession there was really more scope and opportunity for a young man to succeed than in painting. His first lessons in photography were gained in the studio of Frank Cooper, of London, Canada, under whose able teachings he remained for several years. By his own hard work and the constant study of the art in all its phases, combined with a born ability as an artist, Mr. Bell-Smith has advanced in his chosen profession until at the present day his standing is among the first artists of the camera. As a man, he is well liked by hosts of friends in all parts of the States. On his return from the convention at which he was elected President of the P. A. of A., some of the leading citizens of Cincinnati gave him a dinner, presided over by the mayor, as a testimonial of their appreciation of him as a citizen and the honor bestowed upon him as a business resident of their city.

In the following lines, Mr. Bell-Smith gives a little of his early experiences, some advice to young men, and his opinion on the present state of photography :

"My first attempts at operating were very indifferent, my employer assuring me that 'I might try for a hundred years, but I would never make an operator'; but I persevered, agreeing to work for a good deal less if I could have an opportunity to learn, and finally succeeded in making myself very valuable to my employer.

"My advice to a young man starting in the photograph business would be, first, to learn thoroughly every branch, and then to save every cent he could. I know of no other business that can be made to pay so well on a limited capital, the necessary requisites being good workmanship and sound business sense.

"I think there is a bright future ahead of photography. There are more business men in the profession than formerly, which is improving our financial and social standing as a profession. There is less of that jealous rivalry among photographers and more honest competition and the sincere desire to improve their work, which is bringing the fruit of higher and better remuneration for their work. I attribute this largely to the National and State conventions, which, having brought photographers of the different sections together, started competition in work and general improvement, and have invariably been a means of mutual benefit. In a number of cases I have known men in the same city who had never recog-

nized each other; these men have met at a convention, and each finding out the good qualities of his competitor, have become fast friends.

"I know of nothing that pays so well as a competitive exhibition of work at a convention. If a sincere effort is made to make a creditable display it will bring out all the latent ability in the man, with the result that his grade of work becomes elevated, and whether he wins a medal or not he is the gainer, and perhaps a second effort will win success.

"The use of the carbon tissue has become almost universal, and I would urge every photographer to make these fine productions. A good substitute can be found in the Aristo Platino, with the new platinite bath, it being hard to distinguish them from the 'real thing.'

"I would urge every photographer who takes any interest in his profession or his own advancement to get right to work on his exhibit for the coming convention of the Photographers' Association of America, to be held at Chautauqua in July next."

We take great pleasure in presenting our readers with a portrait of Mr. Bell-Smith himself; also several samples of work from his studio. The pose and lighting of the beautiful head used as our frontispiece is most pleasing and will repay careful study.

The Labor Question.

"See here, Maginnis, this man is doing twice the work that you are."
 "That's what Oi've bin a tellin' him for the lasht hour, sor, but the bloody Oitalian won't stop."

FAKE COMPETITION.

One of the most annoying features of the photographic business to-day is the present system—not past or future, but present tense, or rather pretence. It kills to a great extent honest and intelligent work, and in the end works havoc with the instigator. A 16 x 20 crayon (?) given away with every order for \$3 a dozen cabinets is demoralizing alike to the party who makes such an offer to the public as to his immediate competitors. It is, as nearly every photographer knows, no boon to the public, who invariably get a poor quality of photo, a worse crayon, and are frequently chaffed by some friend who has paid a decent price for his or her pictures and has something worth exhibiting to acquaintances. The others have something to look at which they become more convinced each day is no good, and naturally make up their own and friends' minds to give the photographer a wide berth who sold them. The result is easily seen. The photographer who has been so unwise as to go in for cheapness loses his trade, removes by walking, or other process if he has the money, and the trade in that particular town must be worked up again by another party. It seems strange that the photographer cannot realize the utter absurdity of such a move on the start. It is all very well to "boom" business. There are many legitimate ways of doing so, but to cheapen the standard of your work is folly itself. It captures only the meanest of your patrons and loses you the better half, which, as we all know, is the half that

pays. A new mount judiciously advertised, silk pocket-handkerchief photographs and other little schemes will always draw for a time, and when the fad lags you still have your legitimate business to fall back upon, which the little run has all the more improved. This "something-for nothing" business is not by any means confined to photography. Dry goods, groceries, hardware, in fact almost every branch of industry is pestered with the beautiful something with every five dollar order; even journalism comes in for its share. The little philanthropic monthly journal (?), with the optional charge of \$1 or 50 cents per annum, finds its way to the consumer—the jokes, prose and poetry clipped from reputable journals, and interspersed with statements to the effect that Brown, Jones & Smith's "red-eye" is superior to all others; that Murphy, Mike & Blunder's chicken feed out-sold all others fifty times over, etc. Like the patent medicine fakers' statements, on the surface they are philanthropies, but when we read between the lines we must of necessity wink the other eye and refuse to be carried away by the literary (?) persuasive powers of an individual to dispose of his wares.

There is an end or change to everything, and as time goes on the philanthropic (?) business man has less and less influence for the certain good of all concerned.

THE use of a small quantity of sulphurous acid as a preservative of metol and amidol developers is highly recommended.

A TEST OF ACETYLENE GAS.

By H. H. BUCKWALTER.

While reading an article on acetylene gas in a late number of *The Canadian Photographic Journal*, the possibilities of the new illuminant from a photographic standpoint were very suggestive. If, I reasoned, this gas is of such wondrous brilliancy, why can't it be used in the gallery in the place of the unsatisfactory illuminants now employed? The more I reasoned the more discouraged I became. There seemed to be no probability of my being permitted to experiment with the gas. One day, a month later, I was suddenly astounded by receiving an invitation to call and make what tests I desired with the new gas. I had no idea there was any within a thousand miles, and to find that it was being used within a few hundred feet of my home astonished me. Well, I went around to the demonstration plant and saw the gas used in competition with city gas, oil, electric light and the much-boasted Welsbach burner, and its brilliancy was simply grand. Here, burning a ridiculously small quantity of gas, was a light dazzling in its brilliancy and of wonderful actinic power.

After making a number of tests, which confirmed in every particular the published claims for the new gas, I secured a small piece of the sodic carbide (possibly two pounds) and took it home to experiment. First, I arranged a small, wide-mouthed bottle with a brass tube protruding through the cork and surmounted by a burner.

DEVELOPER FOR BLACK TONES ON VELOX.

In the bottle I placed a small quantity of the carbide and then poured in a small quantity of water. The gas began to form very quickly, and a match applied at the burner tip started a pretty, white flame. A foot away, and at an equal distance from a camera as the acetylene flame, I had a four-foot-an-hour flame of city gas. A rapid exposure on a Cramer plate was made on the two flames, and when the plate was developed the acetylene flame was clearly shown, while the city gas flame was very much under-exposed. This showed that the light was rich in actinic rays, and suggested the possibility of its employment at night under the skylight. Burning so little gas, a hundred small burners might be arranged on rods of ten each, and the possibilities of lighting and diffusion of shadows are almost unlimited. I venture the prediction, based on the very imperfect and crude experiments which I have made, that within the present year there will be a large number of galleries using acetylene gas under the skylight, and within two years its use will have extended to the smaller establishments in the country towns. The facility with which the carbide may be converted into gas, and also the readiness with which it will be possible to secure a small cylinder of liquefied gas sufficient for a month's use, will result in bringing to the smaller galleries the facilities which, with the expensive fittings for the electric light, they were compelled to forego. Surely every great step taken in chemistry and scientific knowledge is a gain for photography.

Few of our readers know, perhaps, that very nice black tones can be obtained on Velox paper by using any developer to which enough bromide of potassium is added in order to avoid fogging the whites. The time of exposure can be about one-third of what would be required for red tones with our regular Velox developer. A print can be obtained from an average negative by about one minute exposure at a few inches distance from a gas or kerosene lamp. Development is very quick and is finished in about one or two minutes. After developing, the prints are simply thrown into hypo, where they should remain for about five minutes in order to enable them to be thoroughly fixed, then they should be washed during at least twenty minutes. This way of making prints is exceedingly well adapted for amateurs. The great advantage of this method of printing is that the paper does not need to be handled in a dark room and development can be done quite near the same lamp by which the exposures are made. Here is the formula for a developer which can be used with advantage :


Warm water	27 oz.
Metol	30 gr.
Sodium sulphite, cryst. . .	1½ oz.
Potassium bromide	15 gr.
Potassium carbonate	5 dr.

Dissolve the chemicals one after another in the same order as indicated by the formula. This stock solution will keep indefinitely in well-stoppered

bottles, filled to the neck. For use, dilute a sufficient quantity with an equal quantity of water, or more if needed.

You can also use iron oxalate, or amidol, or any other developer, provided a little quantity of bromide of potassium is added to them in order to get the whites pure. If you use too much bromide you will get greenish blacks.

ANNUAL CONVENTION OF SOLIO DEMONSTRATORS.



THE annual convention of the Eastman Kodak Co.'s Solio demonstrators was held at Rochester on the 2nd, 3rd and 4th of January. "Solio" was discussed from every standpoint, the boys deriving great benefit from the exchange of ideas and experiences. Mr. George Eastman attended the sessions, from which fact we can predict that the travellers acquired many good business hints that will prove helpful on the road. Mr. L. B. Jones, manager of advertising department; Mr. S. H. Mora, manager of Solio department, and Mr. W. G. Marshall, head demonstrator, saw that the members of this interesting convention were filled full of—pointers for the advancement of Solio. On Saturday the demonstrators visited Kodak Park and the State Street works in a body, and in the evening a banquet was tendered them by the company. After the demonstrators had duly demonstrated the strength of appetite which is the outcome of a contented mind

such as is enjoyed by users of Solio, Mr. S. H. Mora took the chair as toastmaster and proposed the following toasts, which were responded to by the gentlemen as below :

1. The Company, George Eastman;
2. The Company, Walter Hubbell;
3. The Oldest Man on the Force, F. S. Glaser;
4. Hobbies of Ours, J. B. Guthrie;
5. Our Record, F. S. Crowell;
6. The Ladies, F. W. Godfrey;
7. The Dark Room, T. G. Adams;
8. Kodak Park, D. De Lancy;
9. That Tired Feeling, W. G. Marshall;
10. The Kodak News, L. B. Jones;
11. The Financial Question, C. A. Matthews;
12. Our Plate, W. G. Stuber;
13. Our Customers, H. W. Robertson;
14. The Early Riser, J. H. Hurst;
15. People We Meet, F. P. Bushnell;
16. The Demonstrator, L. H. Parmelee;
17. As Others See Us, Milan Ray;
18. The Kicker, W. C. Duryea;
19. Our Impression, E. H. Janson;
20. Our Paper, F. Kilborn.

On another page we take pleasure in presenting our readers with a group of the demonstrators who were in attendance at the convention.

Silvering Mirrors.

A method of silvering mirrors, producing mirrors of much greater brilliancy than those made by ordinary processes, has been discovered by Herr Hans Boas, of Kiel. It is based on the fact that when a heavy metal forms the cathode of a vacuum tube containing a trace of hydrogen, the electric current volatilizes the metal, which is deposited as a firmly adherent and highly-polished layer on the walls of the tube.



THE EASTMAN DEMONSTRATORS.

	Lee.	Bowden.	Boardman.	Ray.	Campbell, J. A.	Wright.	Fairchild.	Kelley.	
Mathews.	Campbell, E. B.	Godfrey.	Smith.	Guthrie.	Parmelec.	Robertson.	Turpin.	Norton.	Duryea.
Wood,	Bushnell.	Adams.	Crowell.	Marshall.	Mora.	Jansen.	Gerhard.	Daws.	
			Hurst.			Stacey.	Chase.		

BROMIDE PRINTS BY CONTACT.

It is a matter of surprise, says an English writer, that so little use is made of bromide paper for contact printing, especially for portraits. A good portrait negative is generally too thin for printing in platinotype, but such a negative has just the right density for bromide paper, which now possesses a delicate matt surface instead of the unpleasant slimy look of the old smooth papers; the rough paper is too coarse for anything under whole-plate.

The developer which has given me the best results is :

Metol	160 gr.
Soda sulphite	2 oz.
Soda carb.	1½ "
Water to	80 "

A 10 per cent. solution of bromide of potassium should be kept at hand for thin negatives, as a few drops added to the developer give greater contrast.

The exposure at about two feet from a good batswing gas burner is about ten seconds for the slow paper ; if a vignetting card covered with tissue paper is used the negative should be moved to soften the edges, and a little longer exposure should be given.

A very thin negative should have the glass side coated with ground glass varnish, the exposure made at double the distance from the light, and a little hydroquinone may be added to the developer. If the negative is excessively thin a brilliant print can be obtained with ferrous oxalate developer.

The exposed paper need not be

wetted previous to development unless of large size. The image appears almost as soon as the paper is covered with developer ; but several minutes are required before the proper depth is attained.

When large numbers of prints are developed at a time metol is very convenient and economical, as sufficient to cover half a dozen prints can be poured into a dish and used again and again until the developing power is exhausted.

The light used for development should not be red but yellow. A paraffin lamp with a wick one inch wide will give plenty of light if enclosed in a wire cage about seven inches in diameter and eighteen inches high, covered with two thicknesses of golden fabric, which should be well greased with paraffin wax to render it more transparent and to prevent spotting with developer, etc. The top need not be covered, as the light that escapes does no harm ; there is no need for air holes at the bottom if it is left quite open, and no light escapes.

The prints should be developed to nearly the proper depth, as they darken a little in drying, and placed without washing in a solution of common alum (one ounce to twenty ounces of water), where they may remain until the whole of the batch are developed. If placed in plain water development will continue, but the alum stops it at once, and enables the light to be turned up to examine the print or to make another exposure, which is very convenient, as only one or two prints are required from each of several negatives. The unfixed

print should not be exposed to daylight. After washing in several changes of water to remove all the alum, they can be fixed in the usual way (hypo three ounces, water twenty ounces). When freed from hypo by two hours' washing (not soaking) they can be put in blotting paper to dry. If the alum is not removed before fixing, the prints when dry will be covered with patches of white deposit, but which can be removed by firmly rubbing with a soft sponge.

The result should be a print of a delicate silvery grey color. Friends have mistaken prints by this method for platinotype, at the same time denouncing bromide prints as far inferior.

IMPROVEMENT OF NEGATIVES.*

Dr. Janeway, Chairman of the Committee on Progress in Science and Art of the Society of Amateur Photographers of New York, spoke on the subject before the society as follows:

The most important of all photographic manipulations is to obtain a satisfactory or perfect negative, and I think that you will all agree with me that this is a practice that involves more or less difficulty to the worker—success sometimes, but more often failure, resulting. The announcements of new and improved developing substances, corrected and simpler formulæ, and new and improved dry plates and films, show how earnest the scientist and manufacturer are in their endeavors to improve and simplify this important process.

Although so much has already been accomplished in the past of our art science and so much of it is understood, yet it is a melancholy fact that many of the simple ways by which an imperfect negative can be greatly improved, and hence made available, are ignored, or not employed to the extent that they are entitled to, because of not being sufficiently known or understood. How often the amateur and every-day worker resorts to intensification to improve his negative without full consideration whether it is the best thing, or not, to do; or turns to the retoucher, no matter how good or incompetent, trusting that the existing defects may possibly be harmonized. As we well know that no one remedy will answer for every defect, it will be well for us to carefully and separately explain the various known processes for the improvement of a defective or unsatisfactory negative in as plain and practical manner as possible. The most frequent defect in a negative that besets the path of the every-day worker, as well as the amateur, is a fog or veil usually caused by the use of too highly sensitive plates, together with extra light or strong developer; but other causes may also produce this defect. It is usual to divide this defect into two classes: Plain or light fog, and chemical or colored fog. Both of these classes can be entirely removed provided proper methods are employed—which methods are necessarily different according to the kind of fog to be treated.

Plain, light or ordinary fog:

Certain makes of plates seem to be

*As reported in the journal of the Society.

more afflicted than others by this defect which, however, can be removed quickly and with certainty by the application of any slow-acting reducing medium. The simple acid fixing bath is one of the best.

Sulphuric acid	30 min.
Sodium hyposulphite	8 oz.
Sodium sulphite	1 oz.
Chrome alum	5½ dr.
Warm water	32 oz.

Dissolve the hypo in twenty-four ounces of water—the sulphite in three ounces; mix the sulphuric acid with one ounce of water, and pour slowly into the sulphite of sodium solution and add this to the hyposulphite solution; then dissolve the chrome alum in four ounces of water, and add to the bulk the above solution and the bath is ready. Immerse the fogged negative into this bath and allow it to act until the requisite clearness in the shadows is reached.

Belitski's permanent green reducer offers great advantages for clearing fog, giving results equal to any of the existing formulæ.

Water	7 oz.
Potassium ferric oxalate	2½ dr.

When this is dissolved, add:

Neutral sulphite of soda, crystallized	2 dr.
Oxalic acid	40 gr.
Hyposulphite of soda	1½ oz.

This must be kept in corked bottles in the dark, as under the influence of light the ferric salt is reduced to ferrous. It may be used repeatedly, as, if care is taken, it keeps a long time and acts in a remarkably even manner.

The chemical or colored fogs, green, yellow or red fog, are, however, not to be removed by reduction, a peculiar condition of the reduced silver giving rise to their appearance, which necessitates a different procedure. It is, therefore, recommended by the best authorities to change the reduced silver once again into a silver bromide, and then, by a suitable development, obtain the desired grey-black argentic reduction with corresponding clearness in the shadows. The manner of obtaining these results is a simple one, and the results are sure in almost every instance. Any discoloration arising from the oxidation of the developing agent will not yield to the above method, but must be treated by a method of its own, and hence we are compelled to use the word, almost, as above.

To overcome the defects produced by the green, yellow, or red fog, it is recommended to place the dry negative in water for ten minutes, so as to thoroughly soften the film, then place it in a solution of

Water	3½ oz.
Bromide of soda	75 gr.
Bromine	45 "

The mixture is to be thoroughly mixed by shaking in a well corked bottle. Place the negative in a tray and then pour the solution over it—this must be done in the open air, as strong, noxious fumes are generated.

In this bath the negative bleaches out completely and appears on the reverse as a positive. It is then well washed, after which it is redeveloped with a fresh solution of any developing formula. This can be done by daylight. The development is to be

FOR METOL BROMIDES.

By MAC.

continued until the plate appears black, and by transmitted light appears grey black. Reddish or brown tones sometimes appear during development; they are transitory only and are not to be taken into account as they disappear without continued development. The only point aimed at is to obtain the desired grey-black tone with requisite clearness in the shadows; therefore, the time of development is of no moment, as it has no detrimental effect. When redevelopment is complete the negative should be washed for two hours. Should frilling make its appearance, or the plate be one with a known tendency thereto, it can be overcome or prevented by placing the plate for a few minutes in a weak solution of chrome alum.

Ordinary yellow fog yields easily to treatment with a thiosinamine solution which has less objectional features than the above.

Thiosinamine	5 dr
Citric acid	2 ½ "
Water	32 oz.

The negative is merely placed in the above until cleared. The result is permanent.

How to Test a Thermometer.

Before purchasing a thermometer invert the instrument; the mercury should fall to the end in a solid "stick." If it separates into several small columns, the tubes contains air and will not register accurately. Nine persons out of ten think the mercurial column is round, but this is not the case; it is flat, and the opening in the tube is as small as the finest thread.

So many inquiries have come to me for my formula for metol developer for Bromide paper that I have concluded to publish it. I do this, I fear, out of sheer laziness, to avoid the necessity of replying personally to the many requests received. I make up my stock solutions thus:

No. 1—

Water	10 fl. oz.
Metol	150 gr.
Meta-bisulphite potash	400 gr.

No. 2—

Water	10 fl. oz.
Sulphite sodium crystals	3 oz.
Carbonate potash	3 oz.

For use, take an ounce each of No. 1 and No. 2 and fifteen ounces of water, adding a few drops of 10 per cent. bromide solution to avoid any suspension of haze.

In publishing this formula I do not wish to claim any proprietorship in it. I did not originate it at all. It is simply a modification of a formula I found in a German magazine, and I publish it only as "the one I use." In this connection I will also give the developer used by Professor Newton with such perfect results on Eastman Bromide papers. It is a single solution developer and works with great rapidity, giving deep rich blacks and strong contrasts:

Water	10 fl. oz.
Sulphite soda	200 gr.
Carbonate	100 gr.
Hydroquinone	10 gr.
Metol	10 gr.
Eikonogen	5 gr.

For use, take one part of above solution and one part water. This developer gives excellent results on lantern slides also, and the stock solution will keep water-white for a long time.

I should be glad to hear from some of our readers, if they have formulas better than the above.—Snap Shots.

A NEGLECTED METHOD OF RETOUCHING.

The higher the artistic pretensions, says J. Gaedicke, in *The Photographisches Wochenblatt*, with which we may endeavor to invest a photograph, the more difficult will it be found to justify the almost universal practice of retouching by means of dots and short strokes. At the present time a freer and broader treatment of the picture is required. Laborious working up easily ends in a tortured expression, and as the methods of retouching now followed are excessively laborious, the results often have a tortured, stiff and dull effect.

Photography depicts in even tones that blend with each other in the most delicate manner, and it is therefore natural that retouching should also be done in even, soft tones. In place of this, strokes and dots are used, which are crowded together in enormous quantity to present to the naked eye the appearance of even tones. This may be approximately attained in albumenized prints, but not in collodio-chloride.

It is patent that the general effect may be lost sight of in this way, be-

cause attention is concentrated upon very small areas. The loss of time, too, in brightening up large surfaces very often leads to sins of omission, and the possibilities of a better interpretation are lost.

In contrast with this, we would recommend a more general use of the stump in conjunction with powdered graphite or finely scraped lead pencil.

A paper stump is preferable to one of leather, and may be bought of any dealer in artists' materials, or they may be made of unsized paper cut in long strips and rolled up to the thickness of a lead pencil. The last layer of paper must be fastened down with fish glue or gum to prevent the stump unrolling itself. Both ends of the roll of paper are then sharpened with a penknife, which may be repeated as often as the point becomes too blunt. A broad as well as a sharp point should be prepared.

The stump is now dipped into the graphite, and rubbed upon a sheet of paper until it is equally distributed over the point. The most delicate tones and the softest of lines can then be produced in perfect harmony with the tones of the negative. Portions of the picture that are too sharp may be moderated and made subordinate. Large areas may be brightened up in the quickest manner.

A still larger number of effects may be attained if the back of the negative is taken advantage of. To this end it is coated with a matt varnish, and the heaviest of shading can be rubbed on. By such means portions of the picture may be blocked out altogether, if occasion requires.

In retouching the film side of the negative, it is best to roughen the surface of the varnish by rubbing, or to use a retouching medium if heavy shading is required.

The stump will be found sufficient for most of the retouching, and only for very fine work will it be necessary to use the pencil. Under any circumstances, the stump will effect a great saving of time, and, as more attention can be given to the general effect, the stump should not be absent from any retoucher's desk.

MOUNTANTS.

Herr Valenta says that a good mountant must possess good holding power; it must be nearly neutral, and never show a strong alkaline or acid reaction; nor should it contain any matter which can attack the image, and must not therefore contain, for instance, mercurial salts, which have sometimes been suggested as anti-septics.

A good useful mountant should be cheap and easy to prepare, and ought not to quickly decompose. For glossy or matt chloride papers it must not penetrate through the paper or the surface will be spoilt. The following mountant, which is suitable for albumenized or bromide papers and for chloride, glossy, or matt prints, is a very good one, as it does not penetrate the paper, and has good holding power: Allow from thirty to forty parts of gum arabic to swell up in three times the quantity of water, and when dissolved press through linen to remove foreign particles, etc., and add it to thirty parts of starch in

a mortar, and then heat the whole on a water bath till it forms a clear paste. A small addition of sugar is an advantage.

The gum arabic can be replaced by dextrine. A good formula is:

Dextrine.....	60 to 90 parts.
Alum	4 "
Sugar	15 "
Water.....	120 "
Carbolic acid, 10 per cent.....	6 "

Gelatine or glue may be used, and Liesegang recommends that acid free glue, such as Cologne glue, should be allowed to swell up in water, the excess poured off, the glue melted, and to every ounce add seventeen drops of amylic alcohol. This must be warmed every time before use, but can be diluted with water, and smells abominably of the fusel oil.

Mixtures of glue and starch paste, to which small or large quantities of turpentine oils have been added, possess good holding power, and have been frequently recommended. Such a mountant can be prepared as follows: Forty parts of good Cologne glue should be allowed to swell in one hundred parts of water, and melted, and then at about eighty to one hundred deg. C. on a water bath forty parts of starch, rubbed up with fifty parts of water, added with constant stirring and heated till it clears, and then add ten parts of oil of turpentine and stir well till a homogeneous brownish clear liquid is obtained. This must be used warm, and experiments have proved that the turpentine has no prejudicial action on gelatino-chloride prints.



A BEAUTY

Photo by R. P. Bell-Smith, Cincinnati

A good mountant can also be made as follows, only, unfortunately, it is patented: Forty parts of gelatine or Cologne glue are swollen in one hundred and twenty parts of water, and then melted on a water bath and twenty parts of chloral hydrate added, and the mixture heated for some time. A clear thick liquid is obtained, which can be neutralized with a few drops of soda solution.

REPRODUCTIONS OF ASTRONOMICAL PHOTOGRAPHS.

The Council of the Royal Astronomical Society of London has recently undertaken the reproduction (by paper prints and lantern slides) of a selection of the astronomical photographs now in the possession of the Society, or which may be submitted to the Society for the purpose.

In accordance with the decision of the Council, several photographs have already been reproduced. The list given below shows those of which copies are now on sale; others will follow. The prints are in two styles, platinotype and aristotype, mounted on sunk-cut mounts, measuring 12x10 inches, and the price has been fixed at 1s. 6d. each.

In ordering prints it will only be necessary to quote the R. A. S. reference number; orders to be addressed to W. H. Wesley, Assistant Secretary Royal Astronomical Society, Burlington House, Piccadilly, London W. Full details as regards subject, instrumental data, exposure, etc., will be found on the back of each print. Suggestions will be gratefully re-

ceived, either as to subjects of which reproduction is desirable, or as regards any of the details.

The following prints are now for sale:

R.A.S. Reference Number.	Subject.
1	Total Solar Eclipse, 1889, Jan. 1.
2	" " " 1893, Apr. 16.
3	" " " 1886, Aug. 29.
4	Nebulæ in the Pleiades.
5	Nebula M 74, Piscium.
6	Great Nebula in Orion.
7	Milky Way, near Messier II.
8	Milky Way, near Cluster in Perseus.
9	Comet <i>c</i> , 1893, IV. (Brooks).
10	Comet <i>a</i> , 1892, I. (Swift).
11	Nebula about η Argûs.
12	Portion of Moon (Hyginus-Albategnus).

Arrangements are also being made for the supply of lantern slides prepared from the photographs in the possession of the society. Further particulars respecting these will be issued as soon as arrangements are complete.

PRINTING-OUT PAPERS IN PRACTICE.

By J. PIKE.

There is no doubt whatever that the latter-day amateur is much better off for printing papers than his predecessor of the early seventies. To say nothing of the variety of the sensitive materials, the results are, as pointed out only recently in the British Journal of Photography, even from thin weak and (from an albumen point of view) unprintable negatives, very good indeed.

It is, however, rather rough on the tyro that he should be so overwhelmed with such an assortment of directions, designed apparently with a view to demonstrate that these gelatino-chloride papers are all distinct chemical preparations. Why, otherwise but for a charming variety or frolicsome bamboozlement, should Brown give instructions so entirely antagonistic to Jones and so remarkably opposed to Robinson? For my part, I think the great charm of printing-out paper lies in the fact that if you can't get Brown's paper, you can fall back on that of Jones, and, in the event of this failing, you can use that of Robinson with equal facility, and with a comforting assurance that practically identical results will follow. There is naturally a small amount of difference as regards rapidity or sensitiveness, and possibly one paper may show on printing a different color to that of another maker; but these are, after all, trifles, and we may take it as a fact that gelatino-chloride paper is what its name implies, and nothing else.

There is one crowning advantage which, by the way, is not to be entirely and strictly conceded to the papers under question, but which has come to the surface as the result of their use more particularly; this lies in the fact that we are able, by means of development, to save proofs which come from the printing-frame accidentally or intentionally under-timed. The fact that we are able to develop under-printed proofs, and by a simple process (merely the application of a modified form of developer), bring them up, quite up, to a level with

others which have received full light impressions, is, I am afraid, rather lost sight of. This is a pity, for, apart from any use which could be made of the novelty in winter time and during dull printing weather, the method fully deserves consideration and trial on other grounds.

Printing-out papers have proved a great force with those of our workers who produce, either from choice or want of skill, negatives having a tendency to weakness, bearing in mind that the best of us have, on occasions and in spite of tables and exposure meters, difficulty in getting quite the right density, much more satisfactory and brilliant prints resulting from the use of printing-out papers with such negatives than would be possible were albumenized paper employed.

There are negatives also which we find almost impossible to intensify; do what we will in reasonable practice, we cannot add much to their density, and they give what may be termed impossible prints in the ordinary way. I have such a negative now in hand, and I can recall many others which have passed through my hands of a similar character—pretty pictures, some of them, which I should like once more to tackle. Give this negative an average exposure, and the resulting print is a hopeless failure; but there is a stage during the printing of this plate when we can see a full amount of delicate detail which, if we could secure and "fix" just as it is, would mean a still delicate but quite passable picture, and this is possible and practicable by means of development.

I have on many occasions heard

workers say, alluding to the color and brilliance of a newly printed proof, just out of the frame, "how they wished they could secure that result just as it then appeared." This is also possible and practical by means of development.

It may also be mentioned that "copies" may be improved by partial printing, followed by development. The rough grain may be considerably softened by a little judicious but not ostentatious "sunning," the action of the developer completing the work, a more generally harmonious effect being produced thereby.

My own experience in this work is that the Eastman developing formulæ may in all cases be followed; it is quite safe to use this, and it will be found quite reliable, no matter whose paper may be in use. The formulæ have a foggy appearance, they look complex; but just make up liberal quantities of each solution, and by the time these are ready and a little time has been devoted to their study we shall find them quite reasonable and workable.

I have mentioned the Eastman developer, the formulæ for which can be ascertained from any dealer. With regard to the necessary toning bath, I suggest the use of the following (from The British Journal Photographic Almanac), which has certainly, in my hands, produced the best results.

Combined bath for toning :

Water.....	20 oz.
Hypo.....	5 oz.
Citric acid.....	60 gr.
Acetate of lead.....	60 gr.
Sulphocyanide of ammon..	240 gr.

the ingredients being added and dissolved in the order named. Make a good supply of this; let it stand twenty-four hours; decant the clear liquor, and when required for use add to each ten ounces used one grain and a half of gold chloride. It is, I think, advisable to make this bath in quantity, two or more Winchesters at least, adding the new to the old; in fact, "blending" the mixture as far as possible.

A set of prints which have received variable exposures in the printing frame should be carefully stowed away from unnecessary daylight until ready for treatment. I find it safer in daylight to work at a window screened with a yellow blind, or we may use a lamp or gaslight. Such proofs as are distinctly underdone, those also which we may judge are only doubtful and a trifle below the mark, are immersed in the developer one after the other, keeping them moving about and carefully noting the changes which follow. They all weaken somewhat at first; gradually then, in the course of a few minutes, recovering density, regaining and piling up detail until fully developed. Much care will be exercised naturally to prevent those prints which only required the least addition of strength from being overdone; it is safe to remove these at once on recovery of their normal appearance. The print fades away to a pale yellow, then, still remaining yellow, gradually recovers itself until it shows all the detail but about half the strength of a finished print. A proof only about half printed, or even a quarter printed, will, of course, be left longer in the

solution ; the stage will arrive when all detail will be visible, no matter how faint the original impression may have been. Wait until the yellow color has become fairly strong, then remove to a bath, previously got ready, of water slightly acidulated with acetic acid. Prints, as developed, are dropped into this acidulated water, avoiding contamination by means of the fingers with developer, and are then to be washed for five minutes or so in several changes of water.

At this point we may take in hand the prints which we decided were properly printed ; these should receive a preliminary wash in a bath of water by themselves. I invariably wash printing-out prints previous to toning. Uneven toning is, I notice, put down as often the result of not using a washing water prior to immersion of the print in the toning bath ; at the same time, printed directions say, "Place the prints at once, without washing, into the bath." We shall be on the safer side if, in this case, we discard the directions and take care that our prints are thoroughly limp and evenly washed before being put into the toning solution.

Toning proceeds evenly and uninterruptedly. Care must be taken, however, to ensure, as far as possible, a reasonable uniformity of temperature, and litmus paper should be used to test the acidity or otherwise of the bath. It has been pointed out more than once, lately, that, apart from consideration of the negative merely, upon the temperature of the bath will largely depend any loss of density and strength of color in the prints. It is a fact that our work may be all

rendered of no avail, from inattention to points of this kind, particularly at this season of the year, when, with warm fingers dabbling in the solution, the latter will rarely be below 60° Fahr. It is a sad waste of time to use the developing bath, bring the prints up to the mark, and then lose all our labor in the toning bath ; but it can be done without care. On the other hand, how readily and easily we can rectify errors in the printing frame, and economize daylight, and otherwise even up a batch of prints. No doubt, where large numbers are worked, such precautions indicated would be carried out as a matter of course, in a methodical way, thus reducing risks to a minimum. The operator does not require to be a chemist, but he must be able to make up his solutions accurately, and use them with reflective intelligence.

From my own observation, I am inclined to think that those who experience trouble with regard to loss of tone and color of their prints when working in the usual way might find it worth while to try a preliminary developing bath previous to toning, if only for the purpose of giving a little added strength, something to withstand the weakening action of the toning bath, always bearing in mind the necessity for caution as regards temperature.

Another point is worth mentioning, the decidedly more brilliant color of the finished prints, the rich browns, sepias, and purples obtainable, if the operations have been carefully attended to. In other words, when such results are to be had for what is, after all, only a little extra trouble, it

is only reasonable to suppose that considerably more than ordinary care and thought will be forthcoming.—
British Journal of Photography.

FLASH NOTES AND FORMULÆ.

The January issue of The Practical Photographer contained a very interesting flash-light supplement, from the pages of which we abstract the following :

Magnesium flash-powder : Mr. L. Boner recommends a mixture of :

Magnesium	4 parts.
Potassium bichromate	3 "
" permanganate	3 "

Aluminum magnesium flash-powder :

Potassium chlorate	70 parts.
" perchlorate	40 "
Magnesium	45 "
Aluminum	20 "

These are powdered separately, and afterwards carefully mixed and made into small cartridges, with a little pyroxiline at the bottom to act as a fuse.

Flash-light for orthochromatic work : By associating magnesium powder with binoxide of barium, a flash-light powder is obtained that not only gives the required predominance of yellow and green rays, but also burns with the necessary rapidity.

The proportions given are :

Magnesium powder	1 part.
Binoxide of barium	5 parts.

A very rapid mixture : A powder employed by Messrs. Gædicke and Mieth is estimated to give a flash lasting about one-fortieth of a second. It consists of the following :

Chlorate of potassium	6 parts.
Magnesium	3 "
Sulphite of antimony	1 part.

Each ingredient must be powdered separately, and the mixture made by gently shaking up small portions of it in a silk handkerchief.

M. Sayers, of Paris, writing to a contemporary, in 1865, gives the following formula for a flash-powder :

Potassium nitrate (well dried and powdered)	24 parts.
Flowers of sulphur	7 "
Red sulphite of arsenic	6 "

This mixture, says he, can be sold at 3d. a pound and its light is therefore much cheaper than that of magnesium.

Aluminum flash-light powder :

Powdered aluminum	22 parts.
Antimony sulphide	14 "
Chlorate of potash	65 "

All by weight. The three substances should be powdered separately, and the admixture made by shaking well, in, say, a paper bag. It is unsafe to grind the mixture with chlorate of potash, as it would perhaps cause an explosion. The above burns in about one-seventeenth of a second. A mixture burning less rapidly is composed of :

Powdered aluminum	3 parts.
Chlorate of potash	7 "

This burns in one-fifth of a second

Developing flash-light pictures :
Dr. Eder recommends the following
formulæ for developing flash-light
pictures :

A.

Hydroquinone 2½ dr.
Sodium sulphite 10 dr.
Water 14 oz.

B.

Potash 5 dr.
Water 5½ "

Shortly before developing mix :

Hydroquinone sol. (A) 1¼ oz.
Potash solution (B) . . 5½ dr.

As freshly made developer may cause fog it is well to put the plate first into an already used solution and to transfer it to the fresh one only towards the end of development. Another way is to add a few drops of acetic acid to refresh the developer, five to six drops to one-half ounce of solution, which then has the same effect as if it had been already used. For developing flash-light pictures many prefer the oxalate of iron developer to every other. Take :

A.

Neutral acid oxalate
of potash 3¼ oz.
Distilled water 10¼ "

B.

Ferrous sulphate 3¼ oz.
Distilled water 10¼ "
Sulphuric acid (chemi-
cally pure) 5 drops.

The solutions must be filtered. A will keep indefinitely, B about a fortnight in full well-stoppered bottles. Shortly before beginning developing, add one part of solution B to three parts of A (not the reverse) and pour into the

dish. The mixture will keep some days and can be used repeatedly. Before putting in the plate, lay it for one-half to one minute in a solution of :

Hypo 1 gr.
Water 5 oz.

Let the plate drain and then immediately put into the developer. Warming the developer to 43° C. produces beautifully soft negatives free from fog. The temperature must not be below 15° C., or the picture will be hard. An addition of bromide is not to be recommended, as it may make the contrasts too great ; but if it is desired to remove slight fog let it be only a few drops of a 2 per cent. saturated solution of ammonium bromide, as it does not make such hard pictures as bromide of potassium. Use the following acid bath for fixing :

Hypo 6 oz.
Sodium sulphite 1½ "
Water 34 "

It keeps perfectly clear for a long time even though much used. The printing is very important. If the negative is not soft choose a sensitive paper which prints soft, e.g., albumen paper, and during printing cover the printing frame with a piece of matt glass or tissue paper. Printing quickly in a bright light is always bad.

In burning magnesium ribbon for photographic purposes, the smoke sometimes gets in between the flame and the subject, and so diminishes the actinic power of the light. The ribbon should be burned edgeways towards the subject, the smoke then goes behind the light and acts as a

reflector, thereby increasing the intensity of the light.

A simple flash mixture : Mix equal parts of magnesium powder and potassium chlorate ; these having been previously pulverized separately. The mixing must be done in a cardboard box, gently turning it over, and taking small quantities at a time. Both the potash and magnesium must be dry, and the mixture must not be kept in a stoppered bottle, but in one with a cork.

Professor Rudolph Bottger, of Frankfort, photographed a plaster bust in the summer of 1860, by means of an artificial light, produced by burning two pieces of sulphur the size of a pea, dipped quickly one after the other in liquified chlorate of potash. The latter chemical was kept fluid in a glass vessel over a spirit lamp. The exposure required was five seconds.

Explosive flash mixtures : When mixing flash mixtures it is advisable to bear in mind that potassium permanganate should not be mixed with organic substances such as sugar, glycerine, alcohol or spirituous solutions. Turpentine or any other volatile oil should not be mixed with strong mineral acids, nor with iodine or bromine. Chlorate of potash should not be mixed with organic matter.

The dangers of carelessly handling flash-light powders cannot be made too well known. The following is a case to the point : While a carrier was delivering a case of the powder at a shop in Philadelphia he accidentally dropped it on the pavement ; the next instant the carrier was shot

high amidst a large white sheet of flame. A crash of broken glass followed, and the buildings in the neighborhood were shaken. The man was conscious, but suffering intense agony from the burns and cuts all over his body. He had received no notification of the dangerous contents of the trunk. This should be a warning to those sending dangerous compounds in bulk.

A correspondent writing to *The Photographic News* on October 14th, 1859, asks for a method of photographing the mammoth cave at Kentucky. In reply, *The News* says : " Possibly the best chance of succeeding would be to make use of the brilliant light emitted by burning phosphorus in oxygen. The camera could be arranged, and the lens and shutter opened, before producing the light, and then, when all was ready, several pieces of phosphorus could be burnt, in as many jars of oxygen, in different parts of the cave. Faraday has called this light the "sun in a bottle," and it well deserves the cognomen. A still more brilliant light, but a terribly expensive one, can be obtained by burning the new metal magnesium, in oxygen."

Magnesium as a source of light : Mr. Frederick J. Rogers, in *The American Journal of Science*, after pointing out that the spectrum of burning magnesium approaches more nearly to that of sunlight than does the spectrum of any other artificial illuminant, says that the temperature of the flame, about 1340° C., lies between that of the bunsen burner and the air-blast lamp. The

“radiant” efficiency (the ratio of luminous energy) is higher than that for any other artificial illuminant with the exception of electric discharge in vacuo; while efficiency of the magnesium light is about 10 per cent. as compared with a quarter of 1 per cent. for illuminating gas. He concludes that it is certain that, per unit of energy expended, the light-giving power of burning magnesium is from fifty to sixty times greater than the gas.

A gigantic flash-lamp: A short time ago a gentleman drew the attention of the lighthouse authorities to the invention of Professor Schevin, of Berlin. The apparatus is only two meters high by thirty-five centimetres in diameter. On the inside is a bellows through which benzine gas is passed while air is forced through pumice stone strongly impregnated with benzine. This benzine gas is then passed through very fine magnesium and saturated therewith, thence it passes out of an upright pipe through a small flame by which it is lighted and here it develops a luminosity of four hundred thousand candles. The activity of the apparatus is regulated by clockwork. Economy is an important feature of this invention. With the use of about ten centigrammes of pure magnesium a flash of four hundred thousand candle power may be obtained, which can be seen on a clear, sunshiny day at a distance of six miles.

Mr. John Burgess, who uses magnesium largely for copying purposes, gives the following hints: “Sufficient ribbon is taken to produce the re-

quired amount of illumination, and cut into lengths—the greater the number the less time it takes to burn. The lengths are fastened together at one end with cotton, and the whole inserted in a glass tube. On the outside of the tube a cork or piece of wood was fitted for convenience of holding same. A spirit lamp is then placed in a position where it is desired to “fire” the lights, and when the camera and all other arrangements are ready the lamp is lighted. The glass tube is then taken and one end placed close to the lighted lamp, while the lengths of magnesium were pushed forward from the opposite end by a taper or something of that kind into the flame, causing the magnesium to ignite and burn as it was pushed forward. For illuminating a large space I consider that powder mixed with chlorate of potash is superior to ribbon. Some persons object to powder by reason of its explosive character; but if two parts of castor sugar are added to one part of chlorate of potash, and afterwards mixed with the amount of magnesium required to produce the necessary light, on burning it will be found to consume quietly. This mixture should be burned in a tin lid or on a piece of sheet iron. A simple method of igniting the above mixture is to take a small quantity of sulphuric acid on a glass rod and allow it to drop onto the powder, which will cause it at once to burst into flame. The intensity of magnesium may be increased by consuming it in oxygen gas. The bad fumes arising from the combustion can be absorbed by passing them through a solution of soda hydrate.

INTENSIFICATION OF NEGATIVES AFTER DRYING.

It not unfrequently happens that, after drying a negative and taking a print, it is found to be capable of improvement by means of judicious intensification, or the reverse—reduction; but many photographers are reluctant to meddle with matters as they stand, if a moderately satisfactory result is obtainable, in the belief that, after drying, the film is less amenable to successful treatment. To some slight extent this is actually the case, but, by suitable preparation almost any film, after once drying, may be brought into a perfectly fit condition for the application of the usual methods of treatment. Naturally the means adopted will differ according to the character of the films, gelatine requiring totally different treatment from collodion, and a bath plate from one prepared from collodion emulsion.

We say that almost any film may be so treated, and practically it may be that all are susceptible of being brought into proper condition, though occasionally, under very abnormal circumstances, instances may be met with which refuse to give way to the ordinary processes. For instance, we have more than once met with gelatine negatives which, from some peculiarity in the character of the gelatine employed, coupled, no doubt, with the action thereon of the alum bath, have proved utterly beyond the reach of any form of intensifier or reducer, after they have been some time dried; and, in cases where

chrome alum was used after development, we have known the films to refuse to fix, so thoroughly had the gelatine been hardened. Again, many years ago, when on a holiday tour, with collodion dry plates, in order to save trouble while away from home, the negatives developed were simply washed and dried without fixing, that operation being left until our return; but, after drying, it was found that the collodion was of so "horny" a character, that it had become quite impervious, not only to aqueous solutions, but also resisted the penetrating action of alcohol, and in this case also the films refused to fix, although those treated immediately after development gave no trouble whatever. These and similar abnormal cases may, however, be left out of consideration.

In a general way, with gelatine plates, no special treatment will be required beyond a thorough soaking in water, but, before any absolutely uniform and complete action can be expected, the entire thickness of the film must be permeated. It is not of the slightest use just to moisten the surface of the plate before applying the intensifying or reducing liquids, as this is only tantamount to courting failure; the film must be submitted to the action of clean, soft water, until the latter has soaked completely through the whole thickness and brought it to an even degree of saturation. The length of soaking necessary to bring about this result will vary according to circumstances, the character of the gelatine, the development used, and whether or not alum has been used in the process. Some

plates will, in fact, require ten times the amount of soaking to bring them into suitable condition that others do, and, without knowing the plates, it is difficult to judge at sight when the proper stage has been reached. Generally speaking, those which appear to repel the water and become quickly surface-dry may be set down as requiring a lengthy soaking, and this will usually be found to be the condition of plates that have remained a long time in the dry state, especially if alum has been applied to them before drying. Those, on the other hand, that take the water readily, and after a minute or so allow it to flow smoothly over the surface, will be ready for treatment after a comparatively short soaking; but, as there is no satisfactory method by which the exact minimum can be ascertained, it is as well to allow plenty in all cases.

If it should occur, in spite of very prolonged soaking, that irregularity of action follows, it is pretty sure evidence that alum has been largely employed either in the process of manufacture of the gelatine or the films, or in development, and steps will have to be taken to counteract its hardening action and restore the permeability of the film. For this purpose nothing surpasses a weak solution of acetic acid, one part of the acid to one hundred of water, in which the plate should be soaked instead of in plain water. After the use of this bath the film should be further soaked in plain water to remove the acid, more especially if the subsequent treatment is to consist of reduction by means of hypo and ferridcyanide of

potassium. A weak solution of ammonia or other alkali is also found to exercise a softening action, but this has also a tendency to rot the gelatine, which the acetic acid does not. The alkali must be thoroughly removed before applying such solutions as mercuric chloride; and, in fact, wherever it is possible to dispense with either acid or alkali, it is preferable. —British Journal of Photography.

A POINT IN THE USE OF CARBONATES IN DEVELOPMENT.

Adverting to our article of last week, it is not at all difficult to understand why the two classes of alkalies should behave differently under the circumstances we instanced; but, in order to assure ourselves that such was the actual explanation, we have made the following experiments, the same stock pyro solution being used throughout.

Two ounces of developer were mixed containing six grains of pyro, one grain bromide of potassium and six minims of strong ammonia. The first plate developed showed the first traces of image in forty seconds, and development was complete in about four minutes and a half. The second plate showed the image in about ninety seconds, no further addition of ammonia being purposely made up to that point; but, on adding two or three drops of 10 per cent. solution, the action proceeded nearly as rapidly as in the first case, and the completion of development did not occupy much longer. Three other plates were subsequently developed in the

same solution, fresh ammonia being added as apparently required. No actual comparison could be made of the results, owing to the constantly changing constitution of the developer; but the developing energy showed no signs of abatement, though the negatives differed in the matter both of clearness and vigor.

A similar quantity of developer was next made, containing, instead of the ammonia, forty grains of carbonate of soda. The first image began to appear in a little over a minute, and development was complete in six minutes. The second image appeared faintly in two minutes and a half, and was apparently finished in a little over fourteen minutes, being then apparently as dense as the other, but, on fixing, was found to be less vigorous in the lights and veiled in the shadows. A third plate was then placed in the solution, but at the end of five minutes no image had appeared; so it was transferred, after washing to a fresh solution of the same constitution, when it came up as quickly as the first, but with a slight veil as if from the prolonged action of the first solution. The latter was then strengthened by the addition of forty grains more carbonate and another plate immersed, but neither prolonged action nor further additions of carbonate would produce a satisfactory image.

Similar results as regards comparative energy of action were obtained when sodium hydrate was used in competition with the carbonate; but, as regards the comparative rapidity of action, we shall not speak, as the quantity of restraining bromide neces-

sary to place the hydrate on equal terms with the carbonate would require to be ascertained accurately, which was not done.

With the newer developers, notably metol, the behavior of the carbonate is somewhat different, and this brings us back to our old experiences that caused the relinquishment of successive development. It is well known that amidol, and also metol, para-amido-phenol, and similar agents owe as much of their developing agency to the sulphite used with them as to the alkali. It is not to be wondered at, therefore, that when the carbonate is employed with metol, and with "meto-quinone," that the developing power remains after several plates have passed through the solution; but the vigor and density decrease with each plate until, after two or at the most three developments, nothing but a flat feeble image results.

It was this behavior of the combined solution that puzzled us, and caused us to give up using the solution a second time; for, whereas the first operation produced strong vigorous negatives, succeeding ones were inferior to metol alone. This is now quite explicable, since hydroquinone being present in a way helped; but, perhaps rather checked by sulphite, and comparatively little influenced by the carbonates while strongly acted upon by the restrainers, is practically thrown out of action in the combined developer after the first time of use, and the solution for all actual purposes is reduced to an over-restrained solution of plain metol.

Besides this action in repeated

development, it is easy to understand why a solution of pyro and ammonia, or any other reducing agent in conjunction with a caustic alkali, should give a better result with extremely short exposures than is the case when the carbonates are used. The latter, as we have shown, become increasingly restrained as well as weakened as development proceeds, so that, in the case of an under-exposed plate just at the very time when its fullest strength is required in forcing out detail, it is found to be in a reduced and exhausted condition. We know perfectly well that, in the case of pyro and ammonia under such circumstances, it is worse than useless to strengthen the alkali, the only chance being perseverance with a comparatively mildly restrained but moderately energetic developer, conditions the very reverse of those that prevail in the case of carbonate after bringing out the main portion of the image. The moral of all this is, then, that those who wish to economize by repeatedly using the same solution, must relinquish the use of the carbonates and take to one or other of the caustic alkalies, as also must those who wish to make the most of short exposures. This has already been done to some extent with the newer developers; but the practice is, after all, only the reversion to the original plan. Those who elect to cling to carbonate of soda on the score of convenience may find a way out of the difficulty by rendering it caustic by means of calcic hydrate; but this will, of course, involve a thorough overhaul and alteration of the formula.

However, having pointed out what

we believe to be a hitherto unrecognized point in the use of the carbonates, we leave our readers to derive what benefit they may from the explanation.—The British Journal of Photography.

WHEN TO USE ORTHOCHROMATIC PLATES.

By W. DE W. A.

The writer says in Photography that he has been hauled over the coals in a friendly way rather recently because he stated that there was not much good in using an orthochromatic plate for landscape work in the middle of the day. It is proposed to examine this statement in some detail, in the hope that any misunderstanding may be avoided. Of course there are orthochromatic plates and orthochromatic plates, but the remarks made applied to those which are at present on the market. These are vastly more sensitive to the blue than they are to the yellow. How is a landscape lighted? Let us take as an example one in which there is plenty of sunlight from a high sun, the sky being comparatively free from cloud. Here we have an example of lighting which is the worst to deal with in a photograph. The high lights are lighted by direct sunlight, and often with skylight, whilst the shadows are illuminated by skylight and local reflections. The shadows are very dark compared with the high lights, and it requires very skilful photography to

render the subject at all decently, the great fear being chalk and soot effect. First, let us take the effect on an ordinary plate. We can, if we have proper means, throw any part of the image as seen on the focusing screen on to the slit of a spectroscope, and most people would be surprised to find how little variation there is in the spectrum of the green of a tree from that of a grey wall. Whatever part of the image we observe we shall find that there is a whole spectrum visible, which, for our purpose, we may divide into red, green and blue. If we point it to the blue sky we shall find that we have the same spectrum but the blue intensified at the expense of the red. In all parts of the image we shall have a continuous spectrum, neglecting, of course, the Fraunhofer lines which must exist in sunlight. As a matter of fact, any object above a few feet away has its local coloring shrouded by the white light reflected from the particles which intervene between it and the camera, and the further away the object the greater is that shrouding, until in the distance an object looks positively blue, with only a faint suspicion of local coloring. If we mix two or three parts of sunlight with about one part of blue of the color of cobalt blue we get the color of the blue light of the sky, which indicates that there is an abundance of blue light in sunlight which has to be reckoned with as much as that in skylight. As an ordinary plate is sensitive to blue light, it follows that, as sunlight and skylight both being active in the high light, and the latter principally in the shadows, the photo-

graphed effect is principally due to the white light of either kind which is reflected from the objects, and from the intervening small particles, and will give a fair representation of the object. If we use an orthochromatic plate without a screen, what is the gain or loss? Say it is sensitive to the yellow as well as to the blue (and the yellow sensitiveness is not one-tenth of that blue sensitiveness), the effect will be to intensify by some portion the high lights, leaving the shadows unchanged, since skylight possesses but a small proportion of yellow rays compared with sunlight. In other words, the negative will be a slightly harder one, but not harder than would be made by a slightly faulty exposure. The distance will be rendered the same in the two cases.

Let us go a step farther, and use with the orthochromatic plate such as I am describing a yellow screen, and see what effect that will have. The blue rays will be cut off from sky and sunlight. If the sunlight be reduced so as to be of equal intensity with the skylight, the latter will become much less luminous through the yellow screen, owing to the fact that it is so much less rich in yellow and red rays. The high lights being illuminated with sunlight and skylight, it follows that they will be relatively more photographically active than the skylight which illuminates the shadows. Suppose the total illumination of a high light were forty sunlight plus ten skylight, and that a shadow had an illumination of the skylight, and if the proportion of yellow to blue in sunlight were thirty to ten and in

skylight one to one, the above numbers would be expressed by—

40 sunlight	+	10 skylight	
Yellow 30	+	5	} for the high
Blue 10	+	5	

lights, and half yellow plus half blue for the shadow. Without a screen, the blue being by far the most effective color photographically, the high light would be represented by adding the blues and whites, that is, fifteen to half or thirty to one. When the screen was interposed, the blue being cut off, the photographic activities would be represented by adding the yellows and whites, or by thirty-five to half or seventy to one. The negative would therefore be much harder with a screen than without one, a result which one would certainly not care to have in the landscape under consideration. Further, if there were any local color it would benefit by the sunlight for the same reason.

If we take a negative of a landscape on a cloudy day, the lighting is of uniform quality, and screen or no screen will not matter. The results would be very closely identical.

When we come to a sunset, however, we have different conditions. The lighting is still as before, the high lights being illuminated by the sun and the sky. Now, in the orange light of a sunset there is very little blue light, and, as is well known, the most brilliant illumination of a setting sun fails to show itself on a plate without a screen on this account. Practically, all the photographically actinic light is high light, and shadow is skylight. Place a yellow screen in

front of the lens, however, and the whole aspect is changed. Let us take the same figures as before, making sunlight all yellow. We get as a result that, whilst on an ordinary unscreened plate the ratio of high light and shadow is five to half, or ten to one, with the yellow screen inserted it is seventy to one as before. The effect of sunlight would, therefore, be shown in the last case, but not in the first. It must not be assumed that the above proportions of yellow to blue represent the facts entirely, but they are sufficient to argue upon. Any of these legitimate factors would lead to the same results. If we want cloud effects, the use of the yellow screen at all times is useful, for whilst from the clouds it allows the yellow contained in sunlight to pass, it only leaves the small amount in the blue sky. The consequence is that the white cloud will be much better delineated when the screen is used than without it. When we have a blue distance the yellow screen is a very useful adjunct to ensure its absence.

It is hoped that this explanation may satisfy those who disbelieved the statement previously made by the writer. It is a matter capable not only of theoretical proof, but of practical demonstration, which every photographer can try for himself.

The fantastic idea that any landscape has a particular colored screen which is most effective with it seems to have no foundation of fact in a photographic apparatus as ordinarily constructed. There may be occasions, however, which may render some screens useful.

With a lens used with a polarizing

EXHIBITION OF CANINE PHOTOGRAPHY.

apparatus, for instance, a great deal of the reflected white light can be done away with, since, being polarized, it is cut off when the Nicol prism is turned in one direction. In such a case we have local color, such as the green of trees, playing a part which cannot be neglected. Here we may use a screen in order to render this local color, and we may get results which are rather startling, sharp and "wanting in atmosphere," an expression which merely means that the sky effect produced by intervening particles between the lens and object is cut off.

We may finish this article by describing an interesting experiment which can be made by placing in front of the eye a couple of colored screens. If we take a deep cobalt blue glass and examine a landscape with it, we shall find that the greens of foliage begin to show a pinkish tint, quite unlike that of a white surface when viewed through the same glass. If in front of this we place a yellow glass, the pink becomes scarlet, all the foliage appears red, and a similar effect, but one that is slightly modified in tint, appears when for the yellow a purple manganese glass is substituted, the scarlet becoming a crimson. The reason of this is that the greens when examined by the spectroscope exhibit red bands, due to chlorophyll. The blue glass itself allows a band of red to pass, which is fairly coincident with the red chlorophyll band; the blue is dimmed, and the green is so totally absorbed that the residue of light issuing from the foliage is the red. A landscape viewed in this way appears almost grotesque.

Our English friends are very fond of photographic exhibitions. A number of very successful ones have been held showing photographic art in all its phases. Now comes The Stock-keeper in an announcement as below, in which art, as applied to the bow-wows, will have a show. "Photography has become a very useful handmaiden to a number of pursuits and professions, and the scope of its utility to the sportsman in general, and the breeder and exhibitor of dogs in particular, can hardly be over-estimated.

"For the purpose of impressing this fact upon the kennel world, and also with the idea of inducing those interested in dogs to pay greater attention to the proper application of art and correctness of position in canine photographs, arrangements have been made to hold an exhibition of canine photography on the occasion of Cruft's Dog Show, at the Agricultural Hall, on February 12th, 13th and 14th, in a specially reserved portion of the gallery. Competition will take place on the following classes:

"Class 1.—The best portrait of a prize-winner.

"Class 2.—The best portrait of the head of a prize-winner enlarged to life-size.

"Class 3.—The best photograph of a sporting dog at work.

"Class 4.—The best photograph of a recognized pack of hounds.

"Class 5.—The best photograph of a dog running or jumping.

"Class 6.—The best photograph of one or more dogs in a subject picture.

"Class 7.—The most interesting photograph of a dog from an historical point of view.

"Class 8.—The best photograph of a kennel establishment.

"All the photographs must be taken from life, and in Classes 1, 3, 4, 5, 6 and 8 no exhibit will be admitted of less than cabinet size.

"There will be no entry fee.

"An appropriate number of The Stock-keepersilver and bronze medals will be awarded to the various classes, and there will also be a large number of specials offered. Some of them will be for certain breeds in particular. A list of these will be published shortly, but there will be one special which should be of interest to all intending exhibitors at the show, viz.:

"A three-guinea cup (money or plate), offered by Mr. Chas. Cruft for the best photograph of a dog exhibited at the show."

PHOTOGRAPHING AT NIGHT.

Mr. George Shiras, of Pittsburg, Pa., has perfected an invention by means of which he is enabled to take a flash-light photograph in the darkest night, and by a much simpler and more satisfactory method than any heretofore known. The method is patented, and will be manufactured by one of the largest photographic specialty houses in New York. Mr. Shiras' invention is creating a good deal of interest in photographic circles. The simplified method by which he procures the "flash" enables him to lie in a boat in the water, or secreted in any place, and wait for the appear-

ance of any object, a photograph of which may be taken instantaneously without causing the slightest alarm in advance. It will be seen that it opens up a wide field also for detective work.

Aluminum for Flash-light.

Dementjoff states that 15 grs. of a mixture of aluminum powder, the so-called aluminum bronze 1 part, potassium permanganate 3.45 parts, burns in one-eightieth of a second.

NEW YORK, January 10th, 1896.

We regret to announce the death of our late honored President,

MR. WASHINGTON IRVING ADAMS, which occurred at his residence, in Montclair, New Jersey, Thursday, January 2nd, 1896.

We beg, gratefully, to acknowledge the many expressions of sympathy and good will which we have already received, and to state that MR. W. I. LINCOLN ADAMS, who has been our Vice-President, has now succeeded his father in the official position, which he has practically been filling for the past several months, during his father's retirement, owing to ill-health, so that the management of the business will continue the same as heretofore.

Very truly yours,

THE SCOVILL & ADAMS CO'Y
OF NEW YORK.



Three Poses by Bell-Smith

COLORING PHOTOGRAPHS.

Now that photography is such a universal hobby, a few hints upon coloring and touching up the prints may not be devoid of interest and use. As the ordinary albumenized paper prints are most commonly met with, it will be best to start with these, and to touch up bromide and opals at the last.

Good cake water-colors are the best, but the moist ones can be used, and a few good, brown, round sable brushes will be needed; crow and duck, or Nos. 1 and 2, are the most useful sizes for small heads, etc., larger ones being required for landscapes and background. If colors have to be bought, the following will be sufficient for most purposes: extract of vermilion, scarlet alizarine, rose madder, light red, gamboge, raw sienna, yellow ochre, burnt sienna, warm sepia, neutral tint, cobalt and indigo.

The print can be worked upon either mounted or not. The glossy surface is prepared to take the colors by wetting with the tip of the tongue, in case of a small face or for a larger surface by using either a weak solution of isinglass with a few drops of spirits of wine, or a mixture of

Purified ox-gall	1 dr.
Distilled water	7 oz.
Rectified spirits	3 oz.
Carbolic acid	10 drops.

This should be mixed and rubbed lightly over the print.

It is necessary to use some kind of medium with the colors in order to prevent them from looking dull and

flat, and one of the simplest and best is made by dissolving $\frac{1}{2}$ oz. of the best white gum arabic in sufficient water to just cover it. It should be kept in a warm but not hot place, and be frequently shaken till all the lumps appear to be dissolved; it can then be strained through muslin into a small, wide-mouthed bottle, and six drops of glycerine and a small lump of camphor should be added to the liquid. A little of this is to be mixed in with colors when they are rubbed down on the palette. Special paints called Brun's glossy colors can be obtained, and require no medium, but the ordinary kinds do very well if used with the gum mixture.

In the case of faces it is usual to obtain the flesh tint by hatching, or, in other words, by a series of faint parallel lines in a slanting direction, crossed by other lines at a different, but not a right angle. These should be so light and fine that no color should be at first perceptible, and a mixture of either scarlet alizarine and raw sienna, rose madder and yellow ochre, or vermilion, rose madder and raw sienna, will be found a good flesh tint. The color on the cheeks should be slightly deepened, still in the faintest of lines, with vermilion and rose madder, and the lips with thin vermilion only. The delicate shadows of the face require a faint tint of raw sienna or yellow ochre and cobalt, and in places where the shade is too cold a little sepia and vermilion may be used, with touches of sepia and alizarine for strength. Cobalt, or cobalt and a little Chinese white (for children), or indigo, can be used for the iris of a blue eye, and raw or

burnt sienna or sepia for brown ; the bright light on the pupil should be put in with a tiny touch of pure white, a similar touch being sometimes required on the under surface of the eyeball. For the hair, yellow ochre, pure or mixed with gamboge, raw sienna or sepia, and burnt sienna can be used, shading with burnt sienna if not too dark.

If the dress is to be colored, take a thin wash of color over it, stippling, if necessary, to give evenness, touching in gold ornaments with gamboge (which, being a gummy color, requires hardly any medium), shading with raw sienna, and indicating the high lights with white.

If the head is a vignette, with white or pale background, a good plan is to use a wash of malachite green, which being a dye, does not work up. It should be deepened near the face, and can have a faint tint of cobalt and madder, or ultramarine and sepia, washed or stippled over.

An ordinary print can be touched up with good effect by using a mixture of India ink, or neutral tint and madder, or lake mixed with a little medium.

Bromide prints lend themselves to coloring even better than photos on albumenized paper, as there is so much less gloss, and the soft grey tints form an admirable basis for the delicate colors of the face. A light in preference to a dark print should always be chosen, and one with the smallest amount of shade upon your face. The foregoing directions apply equally to bromide prints, with the exception of mediums, the best for

these being the glass medium No. 2 or the following mixture :

Ox-gall	30 gr.
Glacial acetic acid	30 drops.
Distilled water	3½ oz.
Rectified spirits	1½ oz.

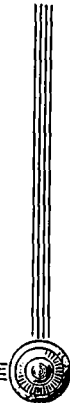
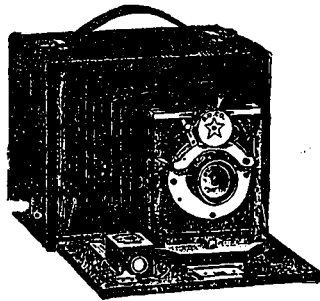
This should be well mixed and strained into a stoppered bottle, and a little added to the colors used. The bromide opals can be treated in the same way with really beautiful effect, care being taken to avoid too great brilliancy in coloring or too much pink in the flesh tints, it being right for the yellow to preponderate. Animals are colored mostly by hatched lines in the direction of the coat ; but landscapes should be painted in bold washes, with shadows and small details stippled in warm, transparent colors, such as raw and burnt sienna, crimson lake and sienna, etc.

Both kinds of prints can be colored in oils, but they should first be firmly mounted on stiff cardboard and given a thin coating of warm size all over. The colors should be used as transparent as possible, i.e., without any admixture of flake-white except to indicate lights in draperies, flowers, hairs, eyes, etc., and should be thinned down to the required consistency with megilp ; this gives a pleasing gloss. With bromides or platinotypes, the color may become opaque, but not so much as to obliterate forms, and for these the rough surface paper produces the best results. In general, the main thing is to avoid crudeness, hard lines and edges, and to strive for refinement and delicacy of color and treatment.—By Mahl-Stick.

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"PREMOS PRODUCE
PERFECT PICTURES"

ROCHESTER OPTICAL CO.
ROCHESTER, N.Y.

NOTICE BOARD.

We have before us a most artistic piece of work from the studio of Mr. E. Poole, St. Catharines. It is an 8 by 10 bust of a lady taken sideways the plate. The head, which is quite large, is beautifully lighted and well posed. The whole effect is most charming.

Sharpe, Eakins & Ferris inform us that they have secured the Canadian agency for Carl Ernst & Co's mounts and card stock. Those who saw the attractive display of Ernst & Co. at the Detroit convention will be pleased to hear of this arrangement which brings this elegant line of mounts into Canada.

As usual the beginning of the new year sees a change in the appearance of some of the photographic journals. For 1896 we have to notice the decided improvement of The Photographic News (English) and Snap Shots (American). We congratulate our friends on the very good taste both have displayed in selecting the new dresses. Quite the most striking change, however, is shown in the January number of that most excellent journal, The Practical Photographer. The size is changed from the somewhat insignificant looking little square magazine to the size of the usual monthly journal, which is a most decided improvement. The paper and printing are excellent. A flash-light supplement with the January number goes most thoroughly into the subject

of flash-light photography. This is now one of the best of English photographic journals. The Amateur Photographer (England) sports a new heading on the cover page which is easily read, at any rate.

New Lantern Plates.—The E. Beernaert Company, of England, have brought out a decided novelty in lantern plates, and have at the same time inaugurated a novel method of putting them up. They are made in two series, E and F. The series E possess the new features. They are chloride printing-out plates, suitable for transparencies or lantern slides, and are intended for contact printing in strong daylight. An exposure of several minutes will produce a rich, deep red image, which, without washing or fixing, may be shown in a room or several times in the lantern without suffering any noticeable deterioration. If, however, it is wished to make the plate suitable for permanent exposure to light, it may be toned and fixed as with ordinary printing-out paper. These plates place a very convenient method of making slides or transparencies in the hands of the worker. They are packed in dozens, and each box contains besides twelve masks and twelve gummed binders. The series F, intended for exposure to artificial light and development, as usual, contains besides twelve pieces of magnesium wire for making exposures. The slides are now on the English market and will, no doubt, be eagerly sampled by the host of slide makers over there.

Two years ago

. . . We condemned the combined bath; our competitors advocated it.



Two years ago

. . . We introduced a hardened gelatine film as a basis for a printing-out paper; our competitors have since been obliged to imitate us.

Two years have shown that the

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ARE THE STANDARD FOR UNIFORMITY, RELIABILITY
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NEPERA A Glossy Printing-out Paper

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TONES IN PLAIN AND GOLD BATH

NEPERA-BROMIDE Platinoid, Enameled,
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MATT OR
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Prints by daylight or artificial light 500 times quicker than Albumen; gives any tones; no dark room required; keeps indefinitely. Not affected by heat or moisture. 50 cents for trial package of 2 doz. cabs., or 4 x 5, developer and three sample prints.



NEPERA CHEMICAL CO., NEPERA PARK, N.Y.

BOOKS AND PICTURES RECEIVED.

Photo-Engraving by the Half-Tone Enamel Process. By ROBERT WHITTET. Edited by A. C. LAMOUTTE. Published by Scovill & Adams Co. of New York.

This is a most practical work on the enamel process. Careful attention is given by the author to the elucidation of every point of the process, so that the reader may be the worker, which cannot be said of some of the books written on half-tone work. It is a book that should certainly be in the hands of all interested in the subject. Price, cloth, \$1.00; paper, 50c.

MR. FRANK G. KIBORN, of Ridgetown, favors us with a very cute photograph of two perfectly white pug pups.

FROM far-off Japan comes to us a Christmas card of greeting from the editor of *The Shashin Sowa*, which is one of the leading photographic journals of Japan. Although a little late in reaching us, owing to the great distance, it is deeply appreciated and the good wishes expressed fully returned.

CRAMER PLATES are unsurpassed in quality and are used by leading photographers of the country. The catalogue issued by the Cramer people contains a quantity of valuable tables, formulæ, and information of a generally useful kind. The catalogue is sent free on application to the firm or your stock house.

We have to thank Mr. E. A. Wilson, of Halifax, N.S., for a very artistically

arranged souvenir made up of many photographs of very pretty scenes in Halifax. In the centre of the group of scenes are portraits of Mr. and Mrs. Wilson. The arrangement of the card shows great care and good taste. It is quite the neatest thing we have received.

PERSONAL NOTES.

FOR the accommodation of their immense eastern trade, the G. Cramer Dry Plate Company has established a New York depot for the supply of their plates, at 65 Greene Street.

GEORGE BASSETT, whom everybody knows as one of the best fellows that ever "talked" for a firm, has severed his connection with the Cramer Dry Plate Works and formed a partnership with Mr. Morceau, of Indianapolis. There is no man more at home under a skylight than Mr. Bassett, and it's a sure thing that the new firm will do great work and great business. All success to them, say we.

TOM PATTISON suggests that photographers who would like to attend the convention at Chautauqua (and we trust this includes everyone) should, if they feel they run any risk of being a little "shy of the price," start what he terms an "educational fund," and drop into it every week two or three dollars; then by next convention time enough money will have been saved to more than pay expenses of the trip. This is good advice, such as usually emanates from "Pat's" fertile brain. Every real photographer should "be

CHAPPED SKIN.

From Med. Standard.

"Chapped skin is a winter plague easily avoided by use of



From Lancet-Clinic.

"An excellent remedy for chapped skin is found in the use of

"Packer's Tar Soap"

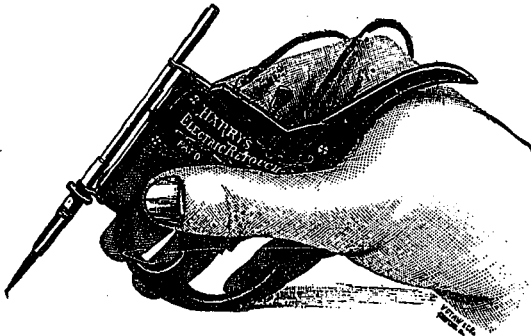
Prof. D. G. BRINTON, M.D., LL.D., Phila., says: "PACKER'S TAR SOAP is remarkably pure, cleansing, and healing; contains the balsamic virtues of the pine in a high degree, and is soft and refreshing to the skin."—*Med. and Surg. Reporter.*

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It is used and endorsed by the leading galleries.

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FOR SALE

Advertisements in this column, on and after this date, will be charged at the rate of one cent a word. The amount must, in all cases, accompany advertisement.

PHOTO business for sale, in good live town, population 1,000, no opposition within twelve miles, reasons for selling to intended purchaser. Address PHOTOGRAPHER, Blyth, Ont. 2

SAY, HERE'S A SNAP FOR YOU—5 x 8 New Model Camera with lens and carrying case, \$12; five 5 x 8 perfection plate holders at \$1.75 each, \$8.75; one 5 x 8 kit to hold 4 x 5 plates, 30 cents; combination folding and sliding tripod, \$3.50; reversing attachment, 50 cents; good drop shutter, \$2.00; focusing cloth, 50 cents; cost new \$27.60. The above are just as GOOD AS NEW. Were bought new five months ago and were only used for a few exposures. Will give a dozen 4 x 5 plates and half a dozen 5 x 8 plates with the lot. Will sell all for \$22. Write quick. HOWARD KING, Hanover. 1

SITUATIONS WANTED

Advertisements under this head free.

A PHOTOGRAPHER of first-class English experience desires situation as operator, or operator and retoucher; could undertake entire management. Apply to E. WEEKS, Port Arthur, Ont. 12

A YOUNG lady wants a situation as retoucher, will take charge of reception room also. Wages moderate. Address, Box 102, Brussels. 12

YOUNG man wants situation as general assistant; good references if wanted; nine months' experience. Address HERBERT PARKIN, Orangeville, Ont. 12

SITUATIONS WANTED

(Continued)

SITUATION wanted by a first-class printer and general workman. Wages moderate. Two years' experience. Can furnish samples if required. Address Box 173, Cranbrook. 2

WANTED, situation by young man as operator and retoucher or general assistant; or would rent a furnished studio. Best references as to ability, character, etc. Address W. J. WINTER, Box 136, Chatham, N.B. 1

LADY retoucher wishes a situation. Address N. KIDD, Elsinore. 1

AN A-1 all-round photo artist is open for position 1st January, 1896. Has had 16 years' experience in U.S.A. and Canada. Can take full charge. Address A. B. SOVEREEN, Listowel, Ont. 1

R. J. ATKINSON wishes position as printer and finisher in a good gallery. Address ROBT. J. ATKINSON, Listowel. 1

WANTED, a situation by young man with three and a-half years' experience; capable of taking complete charge of any gallery in all its branches. Best of references. Address "A," Box 275, Stouffville. 12

SITUATIONS VACANT

PRINTER who can retouch. Young man preferred. State lowest salary and where formerly employed. Send samples of retouching and printing. Steady employment to good man. Apply to Box —, this office. 2

there" this year, even if it is necessary to walk one way.

D. R. COVER and Frank A. Place, two of the leading photographers of Chicago, in fact of the States, have formed a partnership. The new firm will conduct two studios, but by the combination either of the partners will, by appointment, make sittings in either studio. Mr. Place's studio was in West Madison Street; this has been removed to an elegant new building in the fashionable residence portion of the city, Ashland Avenue. Mr. Cover's studio will remain where it is, in the centre of the business district. These gentlemen have both been officers of the P. A. of A. Their reputation as artists is world-wide.

GLYCIN AND PYRO DEVELOPER.

Hertzka warmly recommends a combination of these two developing agents, and suggests the following formulæ :

No. 1.

A Water 7 oz.
Sodium carbonate 308 gr.
Glycin 62 gr.

B Water 7 oz.
Sodium sulphite..... 618 gr.
Pyrogallol 100 gr.
Sulphuric acid..... 2 to 3 drops.

For use, mix equal parts A, B, and water. This gives soft results, especially suitable for portrait work.

No. 2.

A Water 7 oz.
Potassium carbonate.. 124 gr.
Glycin..... 31 gr.

B Pyro solution as in No. 1.
For use, mix as directed for No. 1.

This gives negatives of greater density and great clearness, which are especially suitable for platinum printing.

No. 3.

A Same as in No. 2, but with 61 gr. of potassium carbonate in addition.

B Same as in No. 1.

Mix as in No. 1. This is very suitable for instantaneous work.

Increase of alkali produces more details in the shadows and lessens the intensity of the high lights, thus giving soft negatives. This should be used, then, for instantaneous work or under-exposure. Increase of glycin and pyro produces denser high lights and more contrast, and this will be useful for over-exposure and flat subjects. Dilution of the developer with water also gives softness. Old developer acts as a good restrainer, producing clearness, and is useful also in case of over-exposure.—Pharmaceutical Journal.

LETTERS TO THE EDITOR.

To the Editor :

SIR,—A recent statement to the effect that Mr. J. C. Walker, Woodstock, is the only photographer using "Aristo Platino" exclusively, is incorrect. I know of several other prominent photographers throughout the Dominion who have completely discarded the use of glossy papers in favor of "Platino," to their own and customers' interests.

Yours truly,

W. A. TAPRELL.

Toronto.