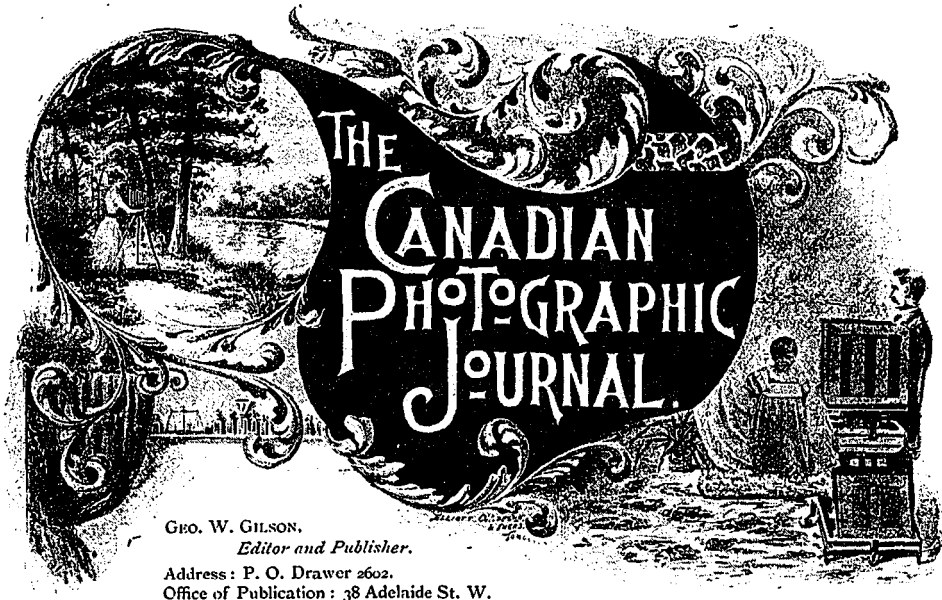


Portrait by
The Snider Studio,
Ottawa.

Stanley Plate.
American Aristo Paper.

His Excellency
The Right Honourable The Baron Stanley of Preston, P.C., G.C.B.
Governor General of Canada.



GEO. W. GILSON,
Editor and Publisher.
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Devoted to the Interests of the Professional and Amateur Photographer.

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No. 3

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His Excellency the Governor-General.

His Excellency Lord Stanley of Preston, G.C.B., of whom we present our readers a portrait from special sittings in this issue, is the second son of the fourteenth Earl of Derby. He was born on the 15th of January, 1841.

He sat as Colonel Stanley in the Imperial Parliament for the Northern Division of the county of Lancaster from 1868 to 1885, and for the Black-pool Division of that county from 1885 till his elevation to the Peerage in 1886. Lord Stanley is A.D.C. to the Queen, and he has held many important offices, amongst which have been those of Secretary of State for the Colonies and President of the Board of Trade. He

held a commission as Captain in the Grenadier Guards, from which he retired in 1865.

Lord Stanley was appointed to the Governor-Generalship of Canada in succession to the Marquis of Lansdowne upon the appointment of the latter to be Viceroy of India in 1888. His Lordship was married on 31st of May, 1864, to Lady Constance Villiers, eldest daughter of the Earl of Clarendon. Their Excellencies have seven sons and one daughter. The family seat is Witherslacke Hall, Grange-over-Sands, Co. Lancaster.

.....
Our Illustrations.

MR. Geo. A. Snider, an example from whose atelier illustrates this month's number and to which reference is made above—is a *fin de siècle* man, an up-to-date man. He reads, thinks and acts. Reads the current literature so that he may be

kept *au fait* with every improvement introduced into the art, or suggestions made in regard thereto; ponders upon the matter and after thoroughly digesting it, adopts whatever ideas are good and calculated to permanently enhance the value of his work, to add interest to its artistic details.

He believes that a photographer should be a man of taste; should have tasty surroundings, and that those surroundings should be tastefully displayed in a studio, so artistically arranged that visitor or client may be impressed with the fact as being conducive to business—accordingly his reception rooms are of modern arrangement. The appointments, specimens of work small or large, framed or unframed, and all the etceteras are so disposed of or placed, as to produce at once the idea of refinement and culture as well as elegance, which can hardly fail to fix itself upon callers, and naturally produce the impression that the same tasteful qualities can be utilized for their benefit. As a matter of fact, experience has demonstrated this to be the case, for though only established in Ottawa some two years, Mr. Snider has attracted to himself a goodly slice of the best and art loving people of the Capital.

But he does not stop at this. Good work means good apparatus. And that being so his practical training, coupled with business acumen, leads him to procure the finest instruments obtainable—instruments which though more costly at first, have amply repaid themselves in better results. The same remarks also apply to the various articles used in the operating and finishing rooms. His axiom has always been to employ the best, being fully persuaded, that even if the expense of production be somewhat

higher than usual, the greatly superior work resulting is all the more appreciated and becomes an excellent advertisement.

It will thus be seen that this studio and its appointments present many features of interest which will no doubt recommend themselves to our friends.

In the making of this noted illustration, Mr. Snider used American "Aristo" paper and Stanley plates. The exquisite tone and general technical excellence of the work speaks volumes for both paper and plates.

The negative from which the half-tone reproduction of a "Scene on the Humber" was made, is the work of a talented Toronto amateur. That of the "Scene on the St. Lawrence," is from a negative by Alec. Murray of Brockville and was made on a "Stanley Red Label."

Books and Pictures Received.

AMATEUR PHOTOGRAPHY, by W. Lincoln Adams. New York: The Baker & Taylor Co. Illustrated.

A book that every beginner in the fascinating art of photography should carry in his pocket and consult frequently, from the time he unpacks his newly acquired treasure—*i.e.*, camera—until he has learned well the good lessons it teaches, and is able, through its easily understood and concise teachings, to take a satisfactory picture. The following headings of chapters will show what an immense aid this little work will prove to the young amateur: "In the Field," "In the Dark-room," "Printing and Toning," "Portraiture," "Instantaneous Photography," "Flash-light Photography," "Orthochromatic or Color-sensitive Photography," "Composite Photography," "The Fathers of Photography" (an historical sketch), and an



ON THE HUMBER.

appendix containing many handy tables and formulas. It is printed on heavy paper, and costs in paper 50 cents, in cloth \$1.

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BLUE BOOK OF AMATEUR PHOTOGRAPHERS AND BRITISH SOCIETIES. Edited and published by Walter Sprange, London, Eng.

As its name suggests, this work is a directory of the various photographic societies of England and the British colonies, and is a most interesting volume of some five hundred pages, giving the names of all English and colonial photographic societies, when organized, place and date of meetings, and a complete list of officers and members of each society, with their addresses. The Blue Book also contains two very interesting illustrations from negatives by the author, and a quantity of useful information in the shape of tables, formulas, postal rates, etc. The price in blue cloth, limp binding,

is \$1.25. It can be ordered direct or through this office. We understand that Mr. Sprange will publish in May a companion Blue Book of the Amateur Photographers of the United States, which will include a full list of Canadian amateurs, and will be duly noticed in these columns.

.....

The Kodak Girl.

To the Eastman Kodak Company we are indebted for a handsomely framed picture, in color, of a very *chic* young lady, dressed in walking costume and kodak, that almost necessary addition to a toilet nowadays. We understand the young lady is presented as on her way to the World's Fair to see how many pictures can be obtained for two dollars. She has shown her wisdom in the selection of her camera, and we wish her luck.

To Messrs. Farmer Bros. we are indebted for a very fine 14 x 17 flash-light picture of the Harmony Club production of the comic opera "Falka," the scene being taken from the third act. This is probably the largest flash-light ever taken in Toronto. The taking of this interesting photo is fully described in our columns this issue. Copies of it can be obtained from Messrs. Farmer Bros. at \$1.50.

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Photographic Association of Canada.

ANNUAL MEETING,

TO BE HELD AT TORONTO, NOV. 1, 2, 3.

The following is the official report of the Executive Committee as adopted at the late meeting at Hamilton :

Twenty-four cabinets and 8 x 10 or larger.

Highest possible in any and all of the following ten points : Posing, lighting, chemical effect, retouching, printing and neatness of exhibit, making sixty as the highest possible. All exhibits reaching thirty-five or more to be in class A. All reaching twenty-five or less than thirty-five, to be in class B.

Awards on Stanley, \$135, to be divided between all reaching these classes, A to receive one-sixth more than B.

According to previous years, it is estimated that class A will receive \$15 each, and class B about \$12. Of course, the value of the prize will be governed by the number of successful exhibitors.

Awards for work on Eagle or Star plates, \$135 to be divided as above plan.

Views, landscape or interior, on Stanley plates, be not less than 8 x 10, \$13, \$10, \$7.

Views, landscape or interior, on Star or Eagle plates, same as above on Stanley plates.

Best six prints (cabinet bust) of one person, different pose and lighting (not retouched), \$10, \$5, on Stanley plates.

Best six prints (cabinet bust) of one person, different pose and lighting (not retouched), \$10, \$5, on Star or Eagle plates.

Three photos, not less than 8 x 10, representing any three phases of human character, \$10 and \$7.50, on Stanley plates.

Three photos, not less than 8 x 10, representing any three phases of human character, \$10 and \$7.50, on Star or Eagle plates.

Work on Omega paper : Best twelve portraits, cabinets and six 8 x 10, or larger, \$12. Next best, \$8 and \$5.

Best views, six 8 x 10, or larger, \$12. Next best, \$8 and \$5.

Work on Vici paper : Best twelve cabinet portraits, \$15 ; next, \$10.

Hope to have a prominent photographer from the United States to demonstrate lighting and posing.

Photos for competition to be without the name of the photographer.

Twenty-five dollars of Association funds : Best four bromide enlargements not less than sixteen-twentieths, \$12 ; next best, \$8 and \$5.

Best twenty-four contact prints, cabinet portraits, in any process other than albumen, collodio-chloride or gelatino-chloride, made in exhibitor's studio, ordinary spotting only allowed.

It is intended to give employe's prize for retouching and for printing, but apparently it was overlooked.

E. POOLE, Sec'y.

.....

G. A. Ellis, of Lucan, was in town last week.

G. A. Briggs, of Port Elgin, has opened up new studios at Simcoe and Port Dover.

Re the Convention of '93.

NOW is the time for every photographer in Canada to begin preparing his exhibit for the coming convention, which, unless the date is changed, will be held at Toronto, November 1st, 2nd and 3rd, in probably the same hall as last year.

Every "sitter" should be "sized up" as to the probability of their being the nucleus of a prize-winning negative. In a small place, where good subjects are scarce, advantage should be taken of every opportunity offered to get a good negative from all good subjects that chance or persuasion should bring. It's comparatively easy to get an additional negative or two when chance presents, and, if "time is taken by the forelock," a lot of "winners" can be secured and an exhibit gotten up by any photographer who *is* a photographer that will surprise even himself and prove an *addition* to the convention display.

Don't put it off; don't leave it to the last moment, and then try to hustle a fair picture together, without even time to look up good (old) negatives, much less new ones; but **BEGIN NOW**. And when the convention meets you will tack up a display that you will be proud to point to as "mine." Of course, you are coming this year, you cannot afford to miss the many new and interesting features that will be provided. Arrange now for that also, and if possible bring along your operator or your printer, and give him, as well as yourself, a chance to improve by comparison of work, by observation, by exchange of ideas with fellow-workers, and by listening to the words of wisdom that will be spoken. It all pays, for it means better work afterwards, the natural consequence of which is more business, because patrons notice you are keeping with the times.

Lantern Slides.

BY JOHN CLARKE.

WHY do I select this subject on which to give a little good advice to my amateur brethren in the April number of the JOURNAL, a time when those who possess lanterns and are interested in lantern work are thinking about laying them aside for the season? Well, it comes about in this way. I have, during a pretty long intercourse amongst lantern-loving and slide-making folk, become the fortunate possessor of a tolerably large collection of slides, gathered from "A' the airts, the wind can blow," and including almost every conceivable subject. During the recent gloomy winter that will now soon be away, it occurred to me that I could do something to break its monotony to the villagers amongst which my lot is at present cast, by occasional lantern exhibitions, and the first attempt was so successful that they were repeated weekly, to, on each occasion, as many as could be packed into the largest room of the house; and so thoroughly were the pictures appreciated that many drove, or rather sleighed, again and again distances varying from two to four miles.

Now, with such an audience—perhaps, spectators would be the better work—it is not always the best pictures, either artistically or technically, that are most highly appreciated, although I noticed that even with them glaring errors in composition had a dampening effect; but one thing was particularly noticeable, viz., the enthusiasm evolved by recognizable bits of local scenery, snap-shots at children playing in the village streets, or pictures of the various operations incident to the farm, with which most of them were practically acquainted.

If, as I suppose it may be taken for granted, the average amateur photographer derives as much pleasure from the exhibition of his work as he does from its production, he may increase that pleasure a hundredfold by making a lantern-slide from each suitable negative and either, or both, showing them himself or lending them to others who may have opportunities of doing so.

But although the making of lantern slides by camera copying from negatives of any size, or suitable portions of any negative, is a simple affair, I know very well that for various reasons it will be adopted by only a very few, while the mistakenly supposed to be simpler and easier printing by contact would be employed more than it is if the average out-put of negatives were generally suitable.

Here then is the *raison d'être* of this article! An earnest plea to the amateur photographer who would secure for himself a happy winter by making others happy, to begin now the preparation for that desirable consummation, by seeing in every pretty bit or interesting group a possible slide. Those who confine themselves to sizes not exceeding 5 x 4, need do little more than see that they focus carefully, as there are few negatives of that size that may not be utilized by contact printing; indeed the same may be said of sizes up to 8 x 5 as made by probably a large majority of the amateur fraternity, their object apparently being to get as much as possible into the plate. Negatives of the kind illustrated in my January article that not only bear but need heroic cutting down, are, of course, available, but such wilful waste is not to be commended, and the more nearly negatives from 5 x 4 upwards approach perfection artistically, the more they become unsuitable for slide-making by contact.

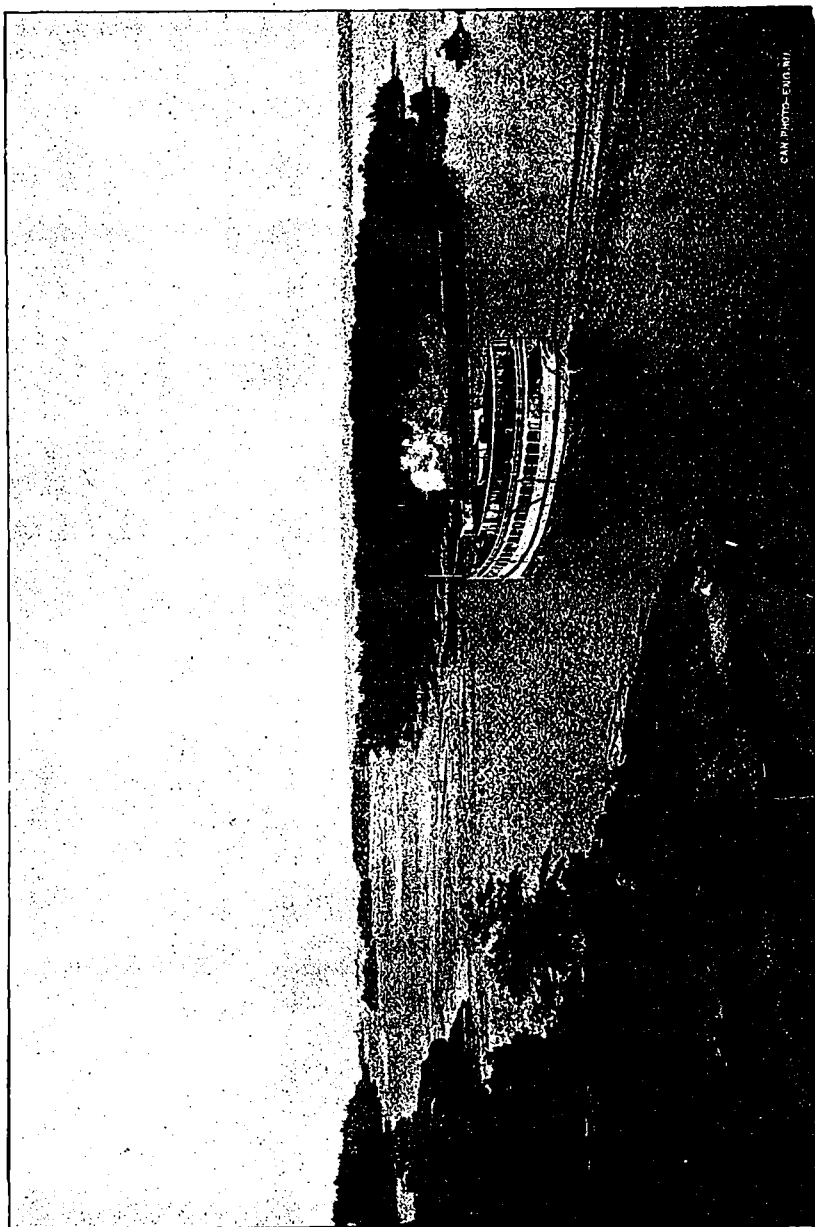
The remedy is obvious. Of every suitable subject make two negatives, one from which to print by any of the ordinary methods, occupying the whole of the plate, not with scattered masses of uninteresting, or more frequently actually injurious and distracting material, but only with the principal subject and its necessary adjuncts, never forgetting that in all probability the beauty and effectiveness of the picture will be in proportion to the simplicity of the composition.

If the photographer is thoroughly satisfied with the composition, all that he has to do in exposing a second plate for lantern-slide purposes, is to move back to such a distance that the whole will be included in a pencil-marked opening of about three inches square on the ground glass. But the impetuous amateur, or the careful amateur, whatever may be his financial position, will not waste 40 inches of plate where 14 will answer the purpose as well, or better, and those of them at least who employ double dark slide or plate-holders, will furnish each with a *kit* or carrier for a $4\frac{1}{4} \times 3\frac{1}{4}$ plate on which to make the slide negative. This, at least, is how I managed before I adopted reduction in the camera; and, although on the whole, better results may be got by that method than by contact printing, I have many contact slides that not even an expert could distinguish from my best made by the camera.

I may add, that to prevent mistakes, the dark slides should be numbered on both sides, and the large plates put, say, in the odd, and the small ones in the even numbers.

.....
The following formula for Amidol is said to give most excellent results:

Amidol	120 grs.
Water.....	20 oz.
Bromide of Potash.....	10 grs.
Sulphite	1 oz.



CAN. PHOTO-ENG. CO.

*Murray & Son, Photo.
Brockville*

SCENE ON THE ST. LAWRENCE.

*Negative on
Stanley Plate*

(*Pacific Coast Photographer.*)

Shutters Theoretically and Practically Considered.

BY SANDFORD ROBINSON, Ph. B.

I.

The "Shutter," which should more properly be called an "Exposer," has become an integral part of the camera, and is now playing a most important part in scientific investigation. Much ingenuity has been devoted to so-called improvements in it, the principal effort having been to obtain compactness and speed with small power. The earliest form of shutter, that known as the "Drop" is still preferred by many, and I propose to show that its general principles are essentially correct, and then, by comparing other types with it, discover whether they are or are not constructed on equally scientific principles. To do this, I shall use certain well-known forms of shutters as examples. Few amateurs have considered the shutter scientifically, generally taking it for granted that it is all right in principle if the mechanism is ingenious and the instrument easily manipulated. Especially, is very little attention paid to the shape of the orifice, this point, as I shall show, being of great importance; nor as to whether the *apparent time* of the shutter is its *true time*.

An analysis of the principles involved in shutter construction may prove interesting and possibly useful. I do not claim any especial originality in my views, but have never seen the subject treated in the manner that I propose to adopt in this article.

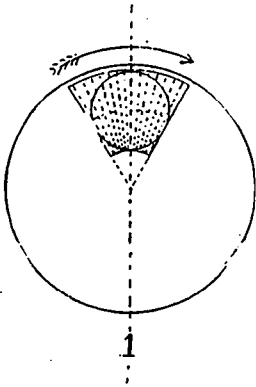
Instantaneous pictures are not taken for the sole purpose of obtaining short exposures. We can usually get better pictures with longer exposures and smaller diaphragms. Instantaneous work is *necessary* only in the case of

moving objects. We must have a good actinic light and use large diaphragms in order to obtain the utmost possible illumination. Therefore, a shutter should permit all the illumination of which a lens is capable, and in no way "diaphragm" or cut out rays. If, in exceptional circumstances, diaphragming is necessary, it is not within the province of the shutter to perform that operation. While there are very many different forms of shutters, they may be resolved into a very few classes. The oldest and simplest, and up to a recent period the most commonly used, is the well-known

DROP SHUTTER.

In this class may be included the Revolving Shutter, usually made in the form of a disk of some light material like hard rubber, and frequently found in the "Detective" camera. The little cylindrical shutter used in the original small kodak is of the same class. Both the Revolving Shutter and the small Kodak Shutter are based on the principles of the "Drop." As generally made, the "Revolver" has a circular orifice. That this is entirely incorrect in principle I will show farther on. The Kodak cylindrical Shutter is correctly designed. The ordinary Drop Shutter, placed usually in front of the lens, has almost invariably a circular orifice. The opening should be rectangular, having the sides not less than the diameter of the lens. It may be square or oblong, the essential principle being that the top and bottom edges of the opening, or, to speak more correctly, the opening and closing edges of the orifice should be parallel. The "Revolver" should have an orifice with the two ends drawn on radial lines from the center of revolution of the disk, the other two sides being circular and drawn from

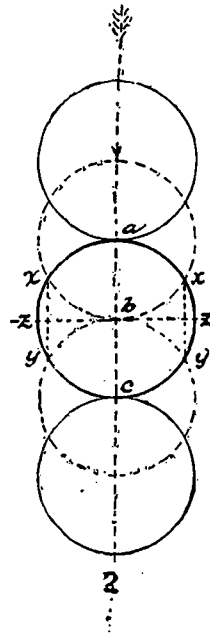
the same center. The distance between the two radial ends, measured on a circle drawn through the center of the orifice, should be not less than the diameter of the lens, and the distance between the circular concentric sides should be the same. Diagram No. 1 will illustrate this.



The effect of this opening in the "Revolver" will be precisely the same as the square opening in the "Drop."

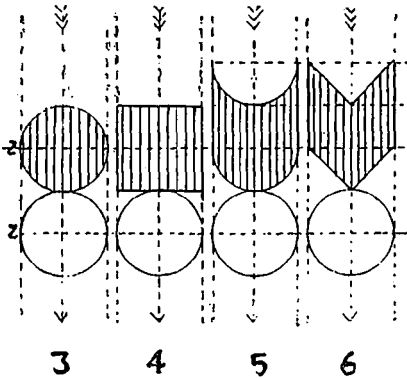
The best drop shutter that I have ever seen is that of English manufacture, called the "Thornton-Pickard." It has a square opening, travels with great velocity without jar or shock, is very light, takes but little space, (its whole length not being more than twice the diameter of the lens), its speed can be regulated, it can be set for time, and it can be easily attached to or removed from the lens front. There are other drop shutters, some of which have automatic time attachments, but all that I have seen have the circular orifice. This defect could easily be rectified by substituting a blade with a rectangular opening, but the makers do not seem to have considered this very important point. Diagram No. 2 will show the action of a shutter with a circular opening.

The circle which has "b" for a center is the lens orifice. The circle touching it above and having the arrow-point for a center is the shutter orifice. Suppose for example, that it takes the bottom edge of the shutter orifice one second to cross the orifice of the lens from the point "a" to the point "c" it will fall to the center "b" in one-half second. At this instant the point "x" of the lens orifice is opened. The bottom of the shutter orifice will fall to the bottom of the lens orifice at the point "c" in another half second. At this instant the point "a" will have had one second exposure, the point "b" one-half second, and the point "x" one-half second, and the point "c" nothing. At this same instant the upper edge of the shutter orifice commences to close at both the points "a" and "x," so that they get no more exposure. In one-half second more the upper edge of the



shutter opening has fallen to the point "b" which point has now had one sec-

ond exposure, and in another half-second it has fallen to the point "c" which has then also had one second exposure. The point "y" which was only opened when the lower edge of the shutter reached "c" and was closed when the upper edges reached "b," has had but one-half second exposure, the same as the point "x." The point "z" has had no exposure. This point, which should open when the lower edge of the shutter orifice reaches "c," is however instantly closed by the upper edge. Therefore, all the points on the middle vertical line "abc" get an exposure of one second and all the points on the line "xy" of but one-half second, while the point "z" gets none. It will be seen



that the line "xy" is much nearer to "z" than it is to the line "abc." The exposure or admittance of rays to the lens is therefore decreasing with an increasing ratio, as the distance from the middle line increases. There is, therefore, a narrow strip only, lying each side of the middle vertical line "abc" that gets a full second of exposure.

The same result would be obtained in an analysis of a revolving shutter with a circular orifice. Diagram No. 4 shows the square opening in a drop shutter, and no explanation is necessary to prove that every point of the

lens orifice gets an equal illumination. If circular edges to the shutter orifice were desirable they could only be made as shown in Diagram No. 5.

The upper and lower edges being parallel all points of the lens are equally exposed. Diamond shaped orifices have the same error as the circular in an increased degree. They could only be made as shown in Diagram No. 6 and would then be correct in principle.

A comparison of the two Diagrams, Nos. 3 and 4, will serve to show in a simple manner why the illumination is less in the circular orifice than in the square. All the vertical lines shown in the square orifice and which are drawn parallel to the direction of motion of the shutter, are of the same length and must take the same time to pass any and every point on a corresponding line on the lens. The vertical lines on the shutter orifice in Diagram 3 decrease in length from the middle to the sides, the ratio of decrease being an increasing one. If the middle line, as before assumed, takes one second to fall, the times taken by the other parallel lines will decrease toward the sides until we arrive at the point "z" where the line being zero in length the time of exposure of the lens to the light is also zero, as previously found. The time taken by any line to pass any point on the lens will be in exact proportion to its length. Assuming the length of the middle line or diameter of the lens to be one inch and the time to be one second, the lengths of the other lines shown in the diagram on each side of the middle, and consequently the time that will be given to any point on the lens under the respective lines, will be as follows: 98/100, 94/100, 86/100, 74/100 and 55/100 of an inch and of a second and at the point "z," zero.

(To be continued.)

Rational Development.

(Concluded from the March Number.)

I have seen—indeed, I am constantly seeing—very excellent results obtained in this way—results, however, in no way superior to those gained—not by me—by a competent manipulation of the processes I am about to describe.

Well, to return to this question of exposure. The orthodox way of exposing a plate is first of all to focus the view, then to insert a sufficient stop, and next, with the value of the rapidity of the plate clearly fixed in the mind as a numeral, to calculate the correct exposure.

What is a correct exposure? The text-books tell us that when the darkest shadows of a subject have received the critical exposure, that is, when the deepest shadows have received the least possible intensity of light the action of which a given developer can make visible, then that subject has had a correct exposure, and I believe that to be true. But if, as too frequently happens, the critical exposure of the shadows is not reached, or is exceeded, what happens? Why, in the first instance, we have a hopelessly under-exposed negative, which no skill, save that of retouching or dodging, can make perfect; while in the second instance we have an over-exposed plate, which will be ruined (in cases where the correct exposure has been very much exceeded) unless we very quickly modify the developer.

It was this glorious uncertainty in exposure that prompted me, some time ago, to adopt the method I now employ, and which renders me practically independent of any but the simplest calculation before exposing a plate.

Well, gentlemen, we have seen what correct exposure is said to be; let us now see what correct or normal development is supposed to mean.

With every box of plates that you buy you will get a printed formula for the composition of your developer, and you cannot do better than adhere to it. For a correctly exposed plate the developer mixed in the proportions recommended is called the normal developer.

We will not now take into consideration the merits of this or that developer, but will assume that the alkaline-pyro developer—the alkali being ammonia—will serve our purpose.

In a pyro-ammonia developer, the pyro is the real reducing agent; sulphite of soda does not influence the production of the image in any way, but is used to prevent the discoloration and rapid deterioration of the developer by oxidation; citric acid and nitric acid serve the same purpose; and bromide of potassium acts as a restrainer; while ammonia is simply the accelerator, rendering the pyro active and enabling it to do its work.

Given then a plate *accurately timed for a particular developer*, we need have no hesitation in at once pouring on the normal developer in the proportions recommended by the plate-makers; always provided that the subject does not require special treatment, as the softening down of the high lights in a too brilliantly lighted picture, say the windows in an interior; in such case we must modify the developer, and it is in this process of modification, requiring at once, in many instances, judgment, precision and promptitude, that we find the rock on which so many amateurs split. A skilled photographer (and I do not think that any society can claim as members a larger number of skilled amateurs than the Birmingham Photographic Society) takes a negative in his mind's eye as well as on his plate and works for a certain result, so modifying

his processes as to gain it in the majority of instances; but the inexperienced are too prone to treat all plates and all subjects alike, and the only results in nine cases out of ten are discomfiture and disgust.

We have seen that a correct exposure is one in which the darkest shadows of a subject receive the smallest intensity of light that a given developer can make visible, and that if this exposure is very much prolonged, say for three times the duration, the plate is to be considered over-exposed. But is it really over-exposed? Why should an exposure which with a normal developer gives a perfect result be considered a correct exposure, while an exposure greatly exceeding it in duration, *but giving equally perfect results* under different treatment in development, be considered an over-exposure?

I do not believe in over-exposure until it is manifest in the developed negative. It has been laid down that there is an absolutely correct exposure for every subject. Granted, but which is really the most rational way of gaining the *results* of that absolute correctness—to stand with the cap in your hand, and to endeavor in a moment or two to give the exact value to the concomitants of light, stop, plate, distance, shadows, and several other things, or to say, "I cannot with certainty gauge these values; I think four seconds would do it, but I will make sure and give twenty seconds, feeling confident that the EQUIVALENT of correct exposure will appear during development *and may then easily be secured as such?*"

You are all, I think, aware of the difficulty of giving any particular subject an absolutely correct exposure, and are prepared to admit that many failures are the outcome of errors of judgment in this respect. I would ask you then

if it would not be an advantage to be practically independent of exposure, provided we have a method of development which will give us the same results, in a simpler manner, as a correct exposure and a normal developer would do? I am of opinion that that would be a very great advantage, and I will now lay before you the way in which you may make the most of this advantage.

We will suppose, if you please, that we have focused our picture and inserted the necessary stop. We look at the subject; any subject will do, and we will suppose it to contain deep shadows in the foreground, and a brightly lighted distance—mountains, for instance. We can ignore the distance and consider only the shadows in our estimate, committing to memory, however, the general lighting of the scene. We think four seconds will be enough, but are we sure? No, we are not—if we could give eight, sixteen or twenty, we should be sure that we had given the critical exposure to the shadows; any exposure in excess of that need not trouble us at all.

But you will say that would be excessive over-exposure! Well, I beg to dissent; no one at this stage is justified in saying the plate has been over-exposed. If the completed negative shows any trace of the so-called excessive exposure, then your criticism will be just, but if a perfect negative is the result, how can you say the plate has been over-exposed? So much for the exposure. We will now mix our developer, which is practically a standard pyro-ammonia developer: To 3 ounces of water for a whole plate, we add 15 grains of sulphite of soda, $\frac{3}{4}$ grain of citric acid, and 6 grains of dry pyro. In another glass we will put 2 drams of ammonia solution, made up as

follows: Ammonia .880, $\frac{1}{2}$ ounce, potassium bromide, 40 grains; water, 10 ounces. Such a developer contains 2 grains of pyro, 2 minims of ammonia, $\frac{1}{3}$ grain of bromide, 5 grains of sulphite of soda, and $\frac{1}{4}$ grain of citric acid to the ounce, when used in normal proportions, and is really the formula of the maker for the plates I always use, namely, the Paget Prize Plates.

Removing now the backing from the plate (you see I back my plates, and I advise you always to do so under all circumstances. I am sorry time will not permit me to explain to you fully now the great importance of doing so), I place it in the dish, and pour on the 3 ounces of pyro solution, *without the alkali*, and move it about until the developer lies evenly on the film, no air bubbles showing; then we can leave it with a cover over the dish while we make other preparations. We will pour about $\frac{1}{2}$ dram (or one-fourth the normal quantity) of the ammonia solution into the 4 ounce measure, and returning the solution now on the plate to the glass, once more pour it over the plate. The developer is now slightly alkaline. Do not be anxious if the picture does not show quickly; it rarely does so with so weak a developer; it is all there, and by and by, say in a minute or so, the picture will show, and if you have not overdone the ammonia for the particular exposure, will grow as if correctly exposed, *only more slowly*.

The plates I am developing received the one 30 seconds exposure with stop $\frac{f}{8}$, the other 150 seconds at the same time, and with the same plate and light, and I shall hope to show you that the one which had 30 seconds is correctly exposed for the normal developer, and that the plate which had five times as

much will produce an equally good, if not better, negative.

We are now developing the one which received the 150 seconds. There need be no hurry; indeed, the less the better—you will have more time to coax forward more quickly the detail in a very deep shadow, or you can subdue a very brilliant high light with weak bromide solution; indeed, the facilities for making up for some of the shortcomings of the commercial dry plate, in giving correct values of light and shade, are unlimited.

Watch your picture closely, and when your shadows indicate that you have obtained the equivalent of a correct exposure as regards detail, add a dram of citrate of ammonia solution to the developer and pour it back on the negative. Any detail that at this stage may still lie latent, so to speak, in the film, at once ceases to exist. At the moment of the addition of the ammonia citrate, the deepest shadows should show little or no change under the action of the developer.

We have now the same result as regards detail, gradation, etc., as we should have if the plate had received only the critical exposure. But the plate lacks density. Well, that is easy enough to get.

In this dropping bottle I have a solution made up as follows: Potassium bromide, 200 grains; ammonia .880, 1 ounce; glycerine, 1 ounce; water, 6 ounces. We will add twenty drops of this solution to the developer and see what happens. The image gradually darkens (if not quickly enough, then add more, but slow intensification gives the best results. You cannot very well fog the plate with it, strong as it is), and in a few minutes we have gained the density we require, and the plate is ready for the hypo-bath. Under this

process of intensification only the image which was actually formed when we stopped the development of more detail is strengthened. Excessive exposure, as such, ceased to exist upon the application of the citrate, and if we have not erred in our judgment of the necessary amount of detail in the shadows, we shall have produced a negative equal in every respect to a plate said to be correctly exposed and developed by the orthodox method. We have been able to do this with certainty, because development has from the beginning been entirely under our control, and because we have been able to see on the plate what is so difficult to see mentally, the equivalent of correct exposure.

There are one or two points I should like to reiterate. Always back your plates. To my mind to do so is essential in all photography, and especially under the system I have explained to you. A good backing will enable you to obtain results which would be impossible without it. Give plenty of exposure, and make sure of all detail even if in excess of what is really required. Begin development very gently and tentatively. Do not add more ammonia unless necessary, one-fourth the normal quantity will usually be sufficient. Stop development before the deepest shadows veil over; you will soon learn how much you must make allowance for detail that the after-process of intensification will make visible. And do not consider a plate over-exposed—within reasonable limits—unless through error of judgment in development you have made it so.

If you ask me what are the advantages of this method over the old one, I will say in my opinion they are these:

(1) It is much easier to over-expose a plate than to give it a correct exposure.

(2) Development is gradual and perfectly under control.

(3) If we wish a soft negative very full of detail we can have it. If we require the negative to show marked contrasts, or if we wish to brighten a view taken in a bad light, we can have that too, both with the same exposure.

(4) The planes of a picture are more correctly rendered, because these planes are built up slowly in due sequence, and are really controlled by that portion in the shadows which we decide shall show the critical exposure.

(5) The negative does not stain even under prolonged development.

(6) No hasty modification of the developer is even necessary, provided that the plates have been sufficiently, we will say over, exposed. The proportions of the developer I have given you will do for all subjects, from interiors to seascapes; that is to say, you may always commence with 2 grains of pyro to the ounce, and with one-fourth the normal quantity of ammonia. You will admit that such a formula is simplicity itself. These are a few advantages I claim for this method, there are others which will appear in the working.

And now, gentlemen, it is my duty to tell you that not even the merest detail of this method of development can I lay claim to as my own. It was first brought to my notice in a paper by Mr. George Bankart, of Leicester—an amateur almost without peer in the landscape department of photography. If you had seen his pictures you would admit them to be perfect both in composition and technique—indeed, when I tell you that he was associated with Doctor Emerson in the illustration of the most beautiful edition of Walton's "Complete Angler" that has ever been published, you will not doubt

what I say. Mr. Bankart's contributions are superb. Well, Mr. Bankart always works in the way I have endeavored to describe, and it is knowing that, and not—believe me—any consciousness of merit in myself that has given me the courage to address you upon the subject to-night.

CITRATE OF AMMONIA SOLUTION.


Dissolve 1 ounce of citric acid in 3 or 4 ounces of water, then add liquid ammonia .880, until, when tested with neutral test paper, it is neither acid nor alkaline—that is, neutral. Then make up to 10 ounces with water.

J. SIMKINS.

In connection with this paper, Mr. Simkins developed the two negatives mentioned, and produced both of them equally perfect, and so much alike that you could not recognize which had received the long exposure.

.....

Reproducing Negatives from Paper Prints.

E have lately been retrying the old experiment of reproducing negatives, which have long been lost or destroyed, from prints that have been taken many years since, and the success attending the effort has been such as to warrant our bringing the subject before such of our less experienced readers as may not be aware of this method of reproducing a negative.

It is very curious that, in prints produced from some of these negatives, there is to be found *more* detail than is to be seen in the prints from which the negative was made. This is not difficult to understand when we consider that in a strong print—one obtained from an intense negative in which much of the finer details in the shadows had to be sacrificed, in order that the lights

might not be altogether chalky, and thus get buried in the substance of the paper, presenting only a uniform blackness on the surface—such details are still found to exist if the print is examined when held against a strong light. Make a print on albumenized paper from any intense negative, continuing the exposure until nothing but the highest lights remain visible on the surface, and when held up against a strong gas flame, and viewed as a transparency, the details that are lost under examination by reflected light are still to be seen when the light is transmitted through it.

The print selected for making a negative of ought to be as vigorous as one as possible; and, from what has just been said, it will be seen that it is not an objection, but quite otherwise, that the deep shadows are clogged or seemingly obliterated.

The way by which the prints are removed from their mounts is to place them in lukewarm water for a few minutes, until, upon raising up one corner of the print from the mount, it is found to strip off. It is sometimes necessary to increase the heat and prolong the time of immersion to ensure this, as much depends upon the nature of the paste by which it was mounted. When removed, the back of the print must be carefully sponged, so as to remove any adherent paste. It must then be dried between sheets of blotting paper.

The printing frame that is to be employed in reproduction must be fitted with a plate of stout and flat glass. On this the print is laid, face up, and a dry plate superimposed, face down, of course. It is not easy to indicate the exposure that should be given, but five seconds to a common gas flame with an ordinary slow plate proved ample in

the last trial we made. A slow-acting weak developer has been hitherto preferred by us, but the selection of this depends upon the softness or the intensity of the print. When the negative thus made has been finished, it is ready for being printed from.

The method here described presents important advantages over the reproduction of a negative by the camera. By the latter nothing is copied but what appears on the surface, whereas the method advocated reveals what is concealed in the texture of the paper. We have one production which forcibly illustrates this. The scene is one in the Maraposa Grove, California, and in the original print one portion is presented in such deep shadow as to reveal no detail whatever. It was first copied by the camera without showing more than was originally visible; but, when copied by transparence as described, a group of figures not hitherto seen in the print became plainly visible, and now forms an addition to the pictorial value of the print, more especially now that a lantern slide has been made from it sufficiently crisp and sharp as to betray no suspicion of its having had a paper origin.

Without having yet tried it, we can scarcely suppose that a print on a gelatine emulsion paper will show the same discriminative power in the burying of detail that one on albumenized paper will, seeing that in the former case the image is confined to the thin pellicle which contains the silver haloid, whereas in the latter the silver nitrate not only sensitizes the albumen film, but penetrates beyond it—a fact that is easily proved by the stripping off of the albumen and observing the vigour of the image still visible on the denuded paper. With a view to facilitating the printing and destroying granularity in

the paper, we have rendered one-half of a precisely similar pair of stereoscopic prints translucent by Canada balsam varnish, allowing the other half to remain *in statu quo*, but have not found any advantage to arise. It may, however, prove advantageous with thick and uneven paper.

While on this subject, and correlative to the foregoing, we may remark on a useful application of the principle of producing a negative from a paper print with which, several years prior to the advent of modern dry-plate photography, the names of Valentine Blanchard and Claud Leon Lambert were associated. Given a negative imperfect from whatever cause, a print is produced from it which, when fixed and washed (it need not be toned), has the lacking detail put in with a pencil or a brush or the too dark shadows lightened by any of the reducing agents now so well known. This then forms a *cliche*, from which a negative is printed on finely surfaced paper, and which in turn, after further retouching if requisite, is employed as a negative to reproduce perfect impressions of the original. Some sixteen or eighteen years ago this system formed the means of producing many excellent prints, which were justly much admired. We mention this, as the method appears to have fallen into abeyance.—*British Journal of Photography*.

Geo. Gillespie, of Shelburne, was in town a few days.

Mr. G. F. Allen, formerly with D. H. Hogg, of Montreal, is now connected with the firm of Mulholland & Sharpe, Toronto. As Mr. Allen has been a number of years at the business, he will no doubt prove a valuable acquisition.

Amidol.

[“Some notes upon the Chemistry of Development, as regards the character of the new developer Amidol,” read by Charles L. Mitchell, M.D., at a meeting of the Photographic Society of Philadelphia.]

PART I.

IN a recent lecture upon the Chemistry of development, delivered before the Photographic Society of Philadelphia, the writer had occasion to review the chemical theories of the various methods of development, and to describe, in a general way, the various phenomena attending the use of reducing agents as a means for rendering visible the latent photographic image. The “building up” of the image upon the surface of the film, which takes place during the development of a wet collodion plate, and the “etching in” of the picture which results when a film of gelatine emulsion is acted upon by a pyro-developer, were alike referred to as parts of the general scheme of development, and without any special allusion to the individual characteristics of the developer. In the general discussion which followed the lecture a member attempted to pervert the lecturer’s remarks into the rather sweeping conclusion that all *acid* developers “built up” the image on the film, and all *alkaline* developers etched it in. He followed this by stating that “the latest German developers—as, for instance, amidol—were *acid* developers, not a *particle of alkali entering into their composition*, yet the same “etching was produced.”

Although there was nothing in the remarks of the lecturer to warrant such a conclusion, and the member was immediately set aright, these false conclusions were repeated subsequently. The author of these conclusions would seem, therefore, to be so ignorant of

the common chemical theories of development as not to know that the rendering visible of the latent image on a photo-sensitive film is a matter influenced altogether by the nature of the reducing agent employed and by the character of the film upon which it acts. Neither would it seem necessary to prove that the “building-up” action which occurs in wet-plate development is not in consequence of the use of an *acid* developer, but from entirely different causes. When development takes place on an exposed wet collodion film, although the silver haloids in the film are altered by the action of light, they are not visibly reduced by the developer usually employed—an acid solution of ferrous sulphate. This agent has no practical reducing action, under ordinary circumstances, upon the silver haloid salts. It has, however, upon the free silver nitrate existing upon the surface of the moist collodion film. This is reduced, and the reduced silver, by some peculiar action, probably electrolytic, is attracted to those portions of the silver haloids in the film which have been acted upon by light. As the source of this silver supply is practically outside of the film and on its surface, the image must necessarily be “built up.” Should this free silver nitrate be removed from the film the iron developer will not act. Ferrous sulphate will also reduce the silver nitrate and deposit the reduced silver upon the film *without the presence of an acid*. In this case the reduction takes place quickly, and the reduced silver is deposited all over the surface of the film. The purpose of the acid in the developer is simply to retard and restrain the activity of the reduction and cause it to proceed more gradually, when, by selection, the deposit is attracted preferably to but certain portions of the

film instead of being "built up" uniformly all over it.

Again, in the development of an exposed gelatine or collodion dry plate with alkaline pyro, the image is etched into the film, because as all the action takes place on the silver haloids contained in it, the process must necessarily proceed downwards and inwards in order to reach them. If, however, as is shown by an experiment of Captain Abney, an exposed film of emulsion be partly coated over half its surface before development, with another layer of emulsion, and then developed, the image on the doubly-coated portion will be both "etched in" and "built up," owing to the opposite directions in which the supplying sources of haloid salts exist. Furthermore, the same "etching" occurs when ferrous oxalate is used, a developer which is neither acid nor alkaline. It is, therefore, hardly necessary to allude further to this portion of our subject. The statement, however, that "the new German developers—amidol, for example—were *acid* developers, and *not a particle of alkali* entered into their composition," seemed diametrically opposed to the generally conceived views concerning these substances particularly so in the case of amidol, which is directed especially to be used only in conjunction with sodium sulphite, commercially always an *alkaline* salt. The writer, moreover, could find no support for the acid theory in any of the recent publications concerning this new developing agent, and the subject seemed an interesting one for conclusive investigation. The following experiments were, therefore made with a view of definitely determining whether amidol was an *acid* developer; whether its reducing action would only take place in the presence of free acid; and whether

the employment of an alkali was at all a necessity.

Amidol, the latest claimant for the favor of the photographic world, is stated to be a di-amidophenol, a compound radical of the glycine class. This is presented for use, combined with an acid so as to form a salt. At present it is manufactured only by two German firms—M. J. Hauff, of Feuerbach, and Dr. M. Andresen—both under letters patent. It is claimed to be far superior to all other developing agents, in its rapidity of action, freedom from fog, full rendition of detail, etc.—all terms we are by this time well acquainted with—while in addition it is said to possess the property of acting freely and powerfully in the presence of sodium sulphite, without the addition of the usual alkaline accelerators. Samples of amidol were accordingly procured from the manufacturers' agents, that made by Hauff being obtained direct from Messrs. Schulze, Berge & Koechl, of New York—that of Andresen from The Scovill & Adams Company.

The amidol of Hauff was first examined. This was in the form of small acicular crystals, almost white, inodorous, and freely soluble in water. The solution in water, when tested with litmus paper, reacted strongly acid, and upon standing, shortly began to change in color, growing of a pinkish tint, until at the end of a few hours the liquid was of a deep orange-brown color similar to an old pyro solution. Three separate solutions were next made, each representing 10 grains of amidol and 4 ounces of distilled water; to these were added, respectively, 25, 50 and 100 grains of chemically pure sodium sulphite. These were set aside for observation. At the end of 24 hours they had all slightly changed and become pinkish in color; that containing

the 25 grains of sodium sulphite being the most discolored. No perceptible deepening of the color was observed after this, even after several days. This seemed to show that sodium sulphite exercised the same preservative action, owing probably to its oxygen-absorbing properties, upon solutions of amidol that it does with solutions of pyro, eikonogen, or hydrokinon.

The action of amidol as a developing agent was next tested. A sheet of Eastman's bromide paper was placed under an evenly balanced-negative, and then exposed to gaslight for 30 seconds. This was cut into four parts and treated as follows :

EXPERIMENT NO. 1.

Part No. 1.—Treated with a solution of 10 grains amidol in 4 ounces water. No image appeared, even after the lapse of five minutes.

Part No. 2.—Treated with a solution of amidol 10 grains, sodium sulphite 25 grains, 4 ounces water. The image began to appear in thirty seconds.

Part No. 3.—Treated with a solution of amidol 10 grains, sodium sulphite 50 grains, 4 ounces water. The image began to appear in fifteen seconds.

Part No. 4.—Treated with a solution of amidol 10 grains, sodium sulphite 100 grains, 4 ounces water. The image began to appear in ten seconds.

These experiments showed clearly that amidol *by itself* was *not* a developer, and that the presence of other agents—in this case sodium sulphite—were necessary to start the reducing action, and that the rapidity of this increased in proportion to the amount of sulphite present. So far these results proved nothing new, for the same facts had been previously noted by several other observers (See *American Amateur Photographer*, pages 481 and 542). The question at once arose, however,

in the writer's mind, whether, as long as amidol by itself in solution had no appreciable reducing action, and that as sodium sulphite—a salt always found in the market in an alkaline condition—would bring this reduction into force in proportion to the quantity of the salt present, whether, therefore, the alkaline character of the salt was not really the cause of the reducing action, and whether, furthermore, other alkalies or feeble alkaline salts would not produce the same effect. A second series of experiments was accordingly made.

EXPERIMENT NO. 2.

A sheet of bromide paper was exposed as before and divided into two parts. A solution of amidol 5 grains, water 2 ounces, was then made and this divided into two parts. These were poured at the same time upon the two portions of bromide paper in separate dishes. No action took place on the paper in either dish, and no image appeared even after five minutes. To the liquid in one dish now added in small portions of 1 dram at a time, a 5 per cent. solution of sodium carbonate in water. The liquid immediately changed color, grew darker, and with the addition of the third portion the image began slowly to appear, and development then regularly progressed. With the other portion of bromide paper no image appeared at all.

EXPERIMENT NO. 3.

Another sheet of bromide paper was next taken and exposed as before and divided into four parts. These were treated as follows :

Part No. 1.—With amidol 5 grains, sodium phosphate 50 grains, water 4 ounces. Liquid changed in color to dark brown in a few minutes. Image appeared in about a minute.

Part No. 2.—With amidol 5 grains, sodium bichromate 50 grains, water 4

ounces. Liquid changed to a dark purple almost immediately. Image appeared in thirty seconds.

Part No. 3.—With amidol 5 grains, sodium acetate 50 grains, water 4 ounces. Liquid changed rapidly to a light brown. Image appeared in about a minute.

Part No. 4.—With amidol 5 grains, potassium ferrocyanide 50 grains, water 4 ounces. Liquid changed dark brown rapidly, but it exerted no developing action, and the image failed to appear, even after five minutes. A dram of the 5 per cent. solution of sodium carbonate was then added to the developer, and in a minute the image began slowly to appear.

(To be continued.)

Large Flash-Light Pictures.

THE performance of the comic opera "Falka," by the Harmony Club, at the Grand Opera House in Toronto, in the early part of April, was of particular interest to Torontonians, the chorus and cast being almost wholly made up of amateurs.

Their desire to possess a picture that would show them in one of the acts, caused Messrs. Farmer Bros. to undertake the production of a flash-light picture of the whole company on the stage. There had been a number of unsuccessful attempts made at various times before, so the prospect was not bright. Their undertaking was carefully planned and executed with the determination to succeed with the result of the most successful pictures of this kind that has yet been produced in Canada. The lighting arrangements were in the hands of Mr. D. J. Howell, who has recently left the ranks of the amateurs to enter Messrs. Farmer

Bros. employ. A battery of six lamps was used, supplemented by two very powerful electric lamps, and all the gas available. Four of these lamps were the recently introduced magazine flash lamp of the Photo Supply Co. and gave great satisfaction. The lights were placed before specially constructed reflectors arranged so as to equally light the whole company and to be flashed simultaneously by the operator. The camera was operated by Mr. J. H. Farmer, who used a Voigtlander Eury-scope, stopped down, and 14/17 Starr plates, which proved equal to the severe demand made upon their rapidity, giving fully timed negatives. A picture of the different casts was made on Friday night and Saturday matinee. The Harmony Club are to be congratulated on the successful production of pictures of such large proportions, and which will be souvenirs of great value, as well as of artistic merit.

DRY PYRO.

⌘ Kodak Victory.

THE Commissioner of Patents has recently reversed the examiner's decision in the suit between the Rev. Hannibal Goodwin and the Eastman Kodak Co. It will be remembered that Mr. Goodwin claims priority to certain processes in the manufacture of sensitive film on which the Eastman Kodak Co. holds patents. In February last a decision favorable to Mr. Goodwin was made by the patent examiner; but this has now been reversed by the commissioner and in case Mr. Goodwin decides to pursue the matter further he must assume the burden of proof.

The Rochester concern holds several other and much broader patents covering the manufacture of film so that even

if Mr. Goodwin should finally get his patent, which now seems hardly possible, he would still be unable to make the sensitive film and as the Eastman people can make film without the process involved in this interference he would also be unable to prevent them from continuing the manufacture of film.

From whatever standpoint the case is viewed the Eastman Kodak Company seems to have decidedly the best of it.

Correspondence.

MR. EDITOR,—Ever since the first gelatine-chloride paper was manufactured I have tried a number of the combine baths and am sorry to say that none of them proved satisfactory to me, although I did everything possible to produce the results which I wished. This mode of operation has a number of things in its favor, especially with the small photographers who desire to do their own toning at the same time are apt to be called out to make a sitting at any moment. It is not only easy of manipulation there being less number of solutions, and the print is supposed to be toned when taken out of the bath, there being no danger of it continuing to tone as the separate bath when put in the hypo. These are the results recognized, and I find my ideas to coincide with a number of my acquaintances but I have had the trouble of prints assuming the greenish cast in the half tones. This as I said before showed in all of the baths which I have tried until I wrote to the Hopkins Co., of whom I am buying paper with a request that they help me out of the difficulty if possible. They informed me that they were at present practising with a combined bath which they sent me samples of, and a copy of the formula which I send you herewith.

I have tried this bath now for three weeks and find it fills my expectations and their promises to the fullest extent. Of course I do not know how it will act on other gelatine papers, but with the "Omega" I find they can be toned very deep without producing the dreaded green tint and producing absolutely pure whites. I send this to you thinking that a number of your readers might use it with this paper, and they will be surprised at its results.

I know full well however that a large proportion of the photographers prefer using the combine bath in preference to the separate if as good results can be obtained. This is my method :

Hot water.....	1 gallon
Hypo-soda ...	12 ozs.
Borax.....	1 "
Alum	4 "

Dissolve thoroughly, place in evaporating dish, heat to near the boiling point, let cool and filter. For use ; to each 32 ozs., add 1 dr. of an 8 gr. sol. acetate of lead and 1 gr. of gold. This ought to tone in about 10 to 15 minutes, if it should tone more rapidly than 10 minutes add more of the stock solution but if more slowly than 15 minutes add a little more gold. Do not wash the prints previous to toning, but place them dry into the bath, one at a time, being careful to manipulate them briskly, and break all air-bubbles. Do not place too many in the bath at once, and do not try to tone too many in a given quantity of solution. One quart of bath will tone and fix from 40 to 50 cabinets. Do not try to do more. Throw this away and use fresh bath. Should the film become soft, rinse through two or three changes of water and soak them a few minutes in a plain alum bath, about 4 ozs., to the gallon. It is surprising what beautiful tones may be produced by this process, no indication

of that "double tone" so common to combine baths. Stop the tone very nearly where you want it, as there is very little change in drying. Wash thoroughly before mounting. If there is any inclination to stick to the rubbing down paper use a soft wet sponge.

Respectfully yours,

JOHN DESENBURY.

17 Euclid Ave., Toledo, Ohio.

Our Question Box.

A. G. wants to know if a portrait lens can be used for taking landscape pictures. Ans.—Take off the back lens and screw front lens in its place, putting in stop. You will then have a single combination, as in the ordinary cheap landscape lenses.

"MONTY."—See answer to J. N. in March issue. You might also write Jonathan Fallowfield, 146 Charing Cross Road, W., London, Eng.

J. Y., Toronto.—Yes. Join the Camera Club, by all means, and get the benefit of what you see and hear there. You are wrong to think a new beginner would be considered *de trop*.

F. B. asks—(1) Can you tell me how the *glace* finish is given to Aristotype prints? (2) What paper would you advise me to use? Ans.—(1) The easiest way is to take prints as they come from final washing and squeegee them, face down, on a ferrotype plate, or on a piece of plate glass which has been thoroughly cleaned and rubbed over with a piece of French chalk, taking care to thoroughly dust off the chalk. Let prints stay on until perfectly dry, when they will either fall off or can be easily pulled off, giving print the desired enamel. (2) We cannot undertake to recommend any one brand

over another in this column. They are all good. Use the one which gives you the best satisfaction. The same with dry plates.

J. E. S. asks—Will you please solve the mystery of the spots, or blotches, on enclosed prints? Ans.—From the meagre information you give it is rather hard to judge. We should say, however, that carelessness in the use of hypo was the cause.

In the recent fining of a poverty-stricken prince of Italy for selling a work of one of the old masters to persons who were going to take it out of Italy, an exchange thinks it sees a scheme for adding revenue to the kingdom by levying an "export duty" worthy of a "Yankee from the East," and remarks as follows: "Italy is bent upon keeping within her borders the works of the old masters, and is strictly enforcing the law which prevents the owners of such works of art selling them to persons living outside of the kingdom. One of the numerous impoverished princes of Italy has just been fined for disregarding the law, but the penalty does not seem to have been sufficiently large to deter other princes from imitating him. The apparent severity may, after all, merely be a clever Italian device of adding to the income of the kingdom by indirectly exacting a commission upon all old works of art sold to foreigners."

H. F. Sharpe, of Mulholland & Sharpe, has returned from a very successful business trip through the lower provinces, and he reports big business all along the line, and says that much better prices prevail in the East than in Ontario, very little being done under \$3 and the larger portion being over \$5.

Toronto Camera Club.

OFFICERS 1892-93.

E. HAVELOCK WALSH.	- - -	President.
A. W. CROHL.	- - -	1st Vice-President.
W. H. MOSS.	- - -	and Vice-President.
ERNEST M. LAKE.	- - -	Secretary.
R. G. MUNTZ.	- - -	Treasurer.

Club Rooms and Studio :

COR. YONGE AND GERRARD STREETS.

MONDAY evening, April 10th, was the second "exchange night" of the season, when a set of 104 slides from the Camera Section of the Hamilton Association were shown. There was a large turnout of members and their friends, including quite a number of ladies. In the absence of the club's veteran lanternist, Mr. Hugh Neilson, who was unfortunately out of town, the lime light was operated by the Secretary, with the kind assistance of Mr. C. B. Petry. The slides shown were the work of Mr. Wm. White, Secretary of the Hamilton Club, and Messrs. A. H. Baker, J. M. Eastwood, A. T. Neill, R. A. Matheson, E. Mills, J. R. Moodie, George Lees, A. C. Crisp and one other gentleman who omitted to place his name on his slides. Among Mr. White's slides, his best were probably two of the Niagara River, one below the Falls, showing the American side and the "Maid of the Mist," and the other of the rapids, above the Falls. His "Hayfield, Muskoka," was a pleasing bit of rural life, and "Near Waterdown" and a view of Bracebridge were also of good quality. Mr. Baker's "Albion Mills" was a good piece of composition and was much admired as was his "Rapids above the Whirlpool." Mr. Eastwood showed a good specimen of an interior and his "Fishing Smack" and "Ancaster Ravine" were good pieces of work, as was also "Schooner, Hamilton Bay," by Mr. Neill. Mr. Matheson's "Waterdown Ravine" was a

a pretty bit, but somewhat marred by a figure introduced a little too conspicuously.

Mr. Mills showed a large and excellent collection of views in the Yellowstone Park, the best of which were, probably, "Grand Canon and Falls," "Lower Falls," and "Gateway, Garden of the Gods." Mr. Mills also showed a snap shot taken on board a steamer, which fairly brought down the house. It was a young man and his best girl both sitting on the same chair. The young man is gazing very fondly in her eyes, and at the same time has gallantly put his arm around her waist, no doubt to prevent her from falling. Mr. Mills is to be congratulated on "pressing the button" at just the right moment.

Mr. J. R. Moodie showed some very clever marines, notably the yachts "Oriole," "Nancy," and "White Wings in a Race"; the latter is full of action, and "everything is drawing." His "Chedoke Ravine" was also much admired.

Mr. Lees showed a good portrait of President Briggs, and several pretty bits in Central Park, New York, and in Prospect Park, Brooklyn; also a pretty sylvan stream at Oneida, N.Y.

Mr. Crisp had a couple of pleasing studies of children.

The gentleman who did not disclose his name should not hide his light any longer, as his "Surf at Long Branch" was a clever piece of work. His "Webster's Falls" and "Grand River at Galt" were also favorably commented on.

SNAP SHOTS.

Several gentlemen from Hamilton were present during the evening.

The Hamilton slides have been forwarded to Montreal, and will be shown there on 20th inst.

First Vice-President Croil has returned from a trip to Chicago. He took a folding kodak with him.

Mr. T. D. Bailey was at Clifton Springs, N.Y., recently, and secured several good views of local scenery.

It is understood that Mr. John Miller contemplates the purchase of a fine new biennial lantern.

Mr. H. M. Kipp has become an active lanternist, and has recently converted his lantern from oil to gas.

Mr. H. English has a good display of prints and slides at the big exhibition held in Philadelphia this month.

Mr. Bert Smith recently gave a very successful lime-light entertainment before the Toronto Musical and Literary Society. Mr. Smith's set of military slides is excellent.

In the Art Supplement of *The Mail* on Saturday, April 15th, was a half tone portrait of Second Vice-President Moss, also a reproduction of his picture "The Humber, near Weston," which took the Bronze Medal at the last Industrial Exhibition in the Landscape Class.

The U. C. C. Camera Club.

THE members of the Upper Canada College Camera Club held their first exhibition on March 23rd to 25th.

In quality and quantity the display made by the members was most excellent, especially so when considering that the club has only been in existence a little over a year. Mr. R. Holmes, of the Toronto Art League, and head of the art department of the college, is president of the club, and has given the club the benefit of his experience and good taste, from which the boys have profited much. Besides competing in several of the classes, Mr. Holmes had on exhibition a mag-

nificent lot of views of the vicinity of Quebec City.

The principals of the college have realized that photography is a good (preliminary, at least) education of the art side of their pupils, and have aided the club considerably, giving them a well-equipped dark-room, etc.

One evening of the exhibition was given over to lantern slides, and a large audience gathered to see over a hundred very good slides, the work of Messrs. Gooderham and Leslie from negatives of the club members, thrown on the screen. The following are the prize winners:

I.—College buildings (given by Principal Dickson)—1, W. Allan Neilson; 2, D. A. Rose.

II.—College life (given by Dean Jackson)—1, C. H. Bradburn; 2, R. Holmes; 3, O. M. Biggar.

III.—Architectural subject (given by Mr. Collinson)—G. M. Clark.

IV.—Copies of pictures (given by Mr. Holmes)—G. M. Clark.

V.—Pictures of animals (given by Mr. Neilson)—1, R. Holmes; 2, O. M. Biggar.

VI.—Figure subjects—1, W. Allan Neilson; 2, R. Holmes.

VII.—Landscape and marine subjects—1, G. M. Clark; 2, G. M. Clark and W. Allan Neilson (equal).

Notes from Hamilton Association.

CAMERA SECTION.

A large number of the friends and members of the Photo Section met in the Museum of the Public Library Building on Tuesday evening, March 28th, 1893, for the purpose of viewing the slides of the Montreal Camera Club along with the set selected to be exchanged with the Toronto Camera Club and then forwarded to Montreal.

The lime-light was operated by J. R. Moodie, ably assisted by C. W. Moodie. When a set of 75 slides of the Montreal Camera Club were shown, and a very fine set they were, those present were highly pleased with them; unfortunately a great number of the slides were not named so that a good deal of guess work had to be done.

Those exchanges are bound to do a great deal of good for the photographic art. It is a great pity that there are not more clubs in Canada, so that a larger circuit could be made. Thanks to the Government, any exchange with American clubs is hindered by the *great policy of Protection*.

VIEWING THE TORONTO SLIDES.

A good attendance of members and their friends assembled on Friday evening, April 14th, 1893, at the Museum, Public Library, to view the set of 105 slides of the Toronto Camera Club, the whole set, the entire work of the members of the Toronto Club being shown. The lime-light was operated by Mr. J. R. Moodie, assisted by Secretary White. Of the set, which were very much admired, the following were among the best:—"Old Mill Wheel," "Cattle at Noon," "Frazer River," "Scene on Don," "Nepigon Bridge," "Valley of the Bow," "Maitland River," by A. M. Ross; "In Rose-dale," "Castle Frank Bridge," "Ice Grotto," by Mr. Moss; "Femeo" and "Face in the Rock," Muskoka, by Mr. Neilson; "Fenelon Falls," by Mr. Hock; "River Don," by H. M. Glover; one, "A Flash of Lightning," by H. English, does him great credit, it is a most perfect slide of a flash in all its detail.

Out-door work will be resumed soon. One feature that will be new to the members, is sunrise outings.

Photogravure, or Photographic Etching on Copper.*

BY HERBERT DENISON.

IN the first place, before dealing with the details of the photogravure process, it will be well to consider it from a general point of view, to determine what sort of a plate it is to be our aim to produce, so that having this in our minds we may be the better able to understand the reasonableness of the preparations and manipulations to which the plate, in course of production, is subjected.

The plate is to be of copper with the image in intaglio; that is—the portions of the plate bearing the darks of the picture are sunk, having been eaten out by the etching fluid or mordant, and the whites are represented by the original bright surface of the plate, which has been protected from the action of the mordant. But, as it does not follow that every image bitten into a copper plate will hold the ink necessary to produce a print from that plate, it is necessary to consider the mode of printing it, so that we may understand what characteristics our bitten image must possess.

The mode of printing is by rubbing well into the depressions a very stiff ink composed of lamp black or other pigment (according to the color desired) ground up in strong (*i.e.*, stiff) linseed oil. This ink is specially prepared for printing from intaglio plates, and is known as copper-plate ink. The mode of applying it is by means of a roll of woollen material, the fibres at the end of which have been frayed out called an ink dabber, a small quantity of the ink is taken up on the frayed end of this, and with a rocking motion and a considerable amount of pressure, the whole

*A lecture delivered before the Photographic Society of Great Britain.

face of the plate, both the etched portions and the bright copper, is covered with the ink. The surface of the plate is then wiped clear of ink, but in the etching portions the ink should remain imprisoned to a greater or less extent according to the depth of the depression.

If a sheet of damp paper be now placed on the plate with one or two thicknesses of blanket behind the paper, and the whole passed through the rollers of a copper-plate press, the ink remaining in the depressions of the plate will be taken up by the paper, and you will have a print with the shadows, half tones and high lights proportionate to the depth to which image on the plate has been etched.

This mode of printing is common to all intaglio plates, etchings, engravings, mezzotints, and photogravures, the prints are in each case obtained as the result of the inequalities in the surface of the plate; the difference in result is due to the various methods by which those inequalities are produced.

In etchings, the depressions in the plate are in the form of lines; the surface of the plate is first covered with a coating composed of wax and other ingredients which will resist the action of acid and the picture is then drawn upon the waxed surface with a needle, the copper being thereby laid bare. The plate is subjected to the action of a weak acid, and the lines, from which the wax has been removed, are more or less bitten, according to the length of time the acid is allowed to act.

In engraved plates the copper is removed in lines or dots by hand, with a tool called a burin, without the assistance of a mordant.

In both etchings and engravings the depressions in the plate are in the form of lines or dots, and on account of their narrowness in the one case, and small-

ness in the other, it is an easy matter to remove the ink from the surface of the plate without disturbing that which should remain in the depressions.

When, however, the intaglio plate is in half tone, it is found that if the plate is simply etched without taking special precautions to break up the etched spaces into a number of minute depressions instead of a few large ones, the ink will be wiped out of the hollows as well as from the surface, and a print cannot be obtained from the plate.

A magnified section of a half tone intaglio plate etched without special precautions would be something like this:—



If such a plate were inked and then wiped with muslin there would be no ink left upon it, except just where the step is produced by the margin of the plate (A A), all the rest would have been wiped clean.

This difficulty has to be overcome in some way, and in mezzotint intaglio plates (which plates by the photogravure process most resemble) the method of overcoming it is this:—

The plate is first roughened all over by rocking it with a tool somewhat resembling the rocker of a baby's cradle (and for that reason called "a cradle"), having its convex edge indented saw-like, with a number of teeth. Each tooth makes an indentation in the plate, and raises round that indentation a "burr," which assists in holding the ink. A print from such a plate after the rocking would be simply a rich black impression of the same size as the plate.

The picture is produced by scraping away the burr to a greater or less extent, thereby reducing the ink-holding

capacity of the plate in certain parts, and so making, what will in the print be the half tones and high lights of the picture.

In the photogravure process we have to arrive at a similar result, but we cannot avail ourselves of the same means, for obvious reasons; we must therefore adopt one or two methods, either that of allowing the mordant to act only upon minute portions of the plate, separated from each other by spaces of the original unbitten surface, which will imprison the ink as it were in the cells of honeycomb; or, that of protecting minute portions of the plate from the action of the mordant, these protecting points being so close together that the plate, after biting, somewhat resembles a file; the teeth of the file being represented by small points of the unbitten original surface of the plate which stand up, as it were like hillocks, in greater or less relief in proportion to the depth to which the surrounding space has been bitten.

This second method is the one which, in my opinion, is calculated to give the best results, it is moreover the only one I have worked, and I therefore propose to confine myself to this in my demonstration before you, but I have thought it best to call your attention to the existence of the first method in case any of you may be disposed to experiment with it.

There are several ways of effecting this partial protection of the copper.

1. A solution of bitumen in benzole may be applied with a spray and when the solvent has evaporated, the plate will be found covered with little dots of bitumen which is impervious to the mordant.

2. A solution of resin in absolute alcohol may be poured upon the plate, which is then placed on a quickly re-

volving plate called a "whirler," so that the solution may be equally distributed. On drying, this layer of resin will be found to have become reticulated, so that, instead of being continuous, it is intersected by fine cracks through which the bright copper may be seen. The mordant will, of course, only be able to attack the copper through these fine cracks.

3. By allowing the dust of bitumen, or other like substance, to fall upon the plate and afterwards heating the plate sufficiently to cause the bitumen to melt and adhere to the copper. This is the method we will adopt in making our plate.

The effect in the finished plate of this partial protection of the copper is called the "grain," while the means by which it is produced (that is the melted dust of bitumen) is called the "ground" (I will describe the mode of laying the ground, more particularly when I come to the details of the process.)

I have a plate here with prints from it which will show you the effect of the grain. After laying the ground the plate was divided into four parts and etched—No. 1 for a minute, No. 2 for two minutes, and so on; you can examine it at the close of this evening's paper.

We have still to consider by what means we are to obtain the etched image upon the copper plate.

The first step is to obtain a photographic negative of the subject it is desired to reproduce; from this it is necessary to obtain, by means of a transparency or positive, a *reversed* negative (of course you will understand that the method of printing from an intaglio plate necessarily reverses the picture, so that in the image on the plate the proper right hand of the picture must be on the left of the plate). This reversed negative is made on pigmented gelatine tissue, commonly called carbon issue, and is transferred to its proper position on the plate and there developed and allowed to dry. The result of development has been to dissolve away so much of the

tissue as has not been rendered insoluble by the action of light, and as the exposure was made under a transparency, the portions representing the shadows will be almost dissolved away leaving the bare copper visible, while the half tones will be represented by a more or less thick film of gelatine, and under the highest lights the bright surface of the copper plate will be only just visible.

The result of applying a mordant to a copper plate so protected with a film of gelatine of varying thicknesses will now be apparent; the thinnest parts of the film (or the shadows of the picture) offer the least resistance to penetration, and so the mordant will begin its attack on the copper there, it will then attack the next thinnest part of the film, and so on through the half tones of the picture until the film representing the highest light is about to be attacked, when the etching must be stopped.

(To be continued.)

California Camera Club Lecture.

FROM BOSTON TO PARIS WITH STEREOPTICON VIEWS.

THE members of the California Camera Club and their friends packed Metropolitan Hall last evening, (March 28.) It was the occasion of the *thirty-fourth monthly** public illustrated lecture, and the many hundreds present showed their keen appreciation of the views presented. The lecture was a description of a voyage from Boston to Paris, with especial reference to the great Paris Exposition of 1889.

The lecturer was Captain Henry Clay Cochrane of the United States Marine Corps, and his remarks on the different views were closely listened to and appreciated by the large audience. Captain Cochrane has a good voice, and kept his hearers' attention by his pleasing language. Bunker Hill was the first scene and it created considerable enthusiasm. The embarking aboard vessels bound to Paris followed, and then the sight of that city and the ex-

hibits made by foreign nations in the great exposition. Many humorous points were introduced to enliven the entertainment. Some of the scenes created the wildest enthusiasm. Boulanger as a hero and then as a foot-ball brought down the laughter of the audience, while the pictures of Lafayette and his tomb evoked fervent applause. A Javanese village and Javanese dancing girls were displayed shortly before the close of the entertainment. Intermissions during the long programme were taken advantage of by two clever vocalists, Miss Millie Flynn and Charles T. Parent. The former had a very sweet soprano voice and the latter a fine bass. The club members considered the meeting their most successful one.

The above, from the San Francisco *Chronicle*, reaches us shortly after receiving the illustrated programme of their usual monthly lecture, and causes us to wish *again* that we were an active member of this very enterprising club. Most every week brings us notice of some interesting event having taken place. Any member of this especial Camera Club who is not thankful for having been a member for the past winter should be—well, compelled to discover a new developer at least.

Katona Paper.


During the past year a great variety of chloride papers have been placed before photographers, almost all of them good, reliable papers, but differing a little in the amount of care required in manipulation to obtain the best results. They have all, however, possessed greater rapidity than old albumen, enabling work to be finished more promptly, an advantage for which photographers have doubtless been duly grateful during their busy holiday season.

A few days ago I received a small lot—from the first batch sent out—of

*The Italics are ours.—Ed. C. P. J.

Kalona, a collodio-chloride paper, made by the New York Aristotype Company. The gelatino-chloride paper sent out by this firm, especially their matt-surface paper, has given me good prints, and consequently I was perhaps somewhat prepossessed in favor of *Kalona*. My experience confirmed all expectations. The paper prints rapidly, does not curl unduly if properly handled, behaves well under intelligent manipulation; toned with the simple formula sent with it (No. 1), a little slowly, but presenting rich tones of great depth and delicacy, and after fixing and washing, my prints were all that I could desire.

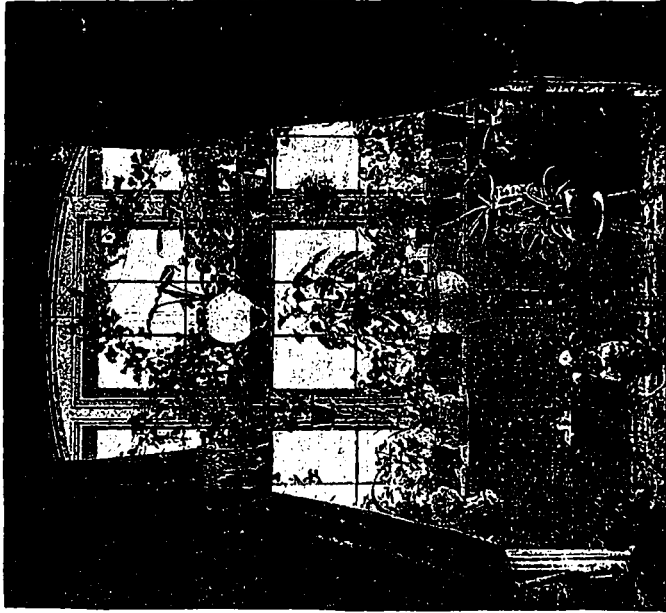
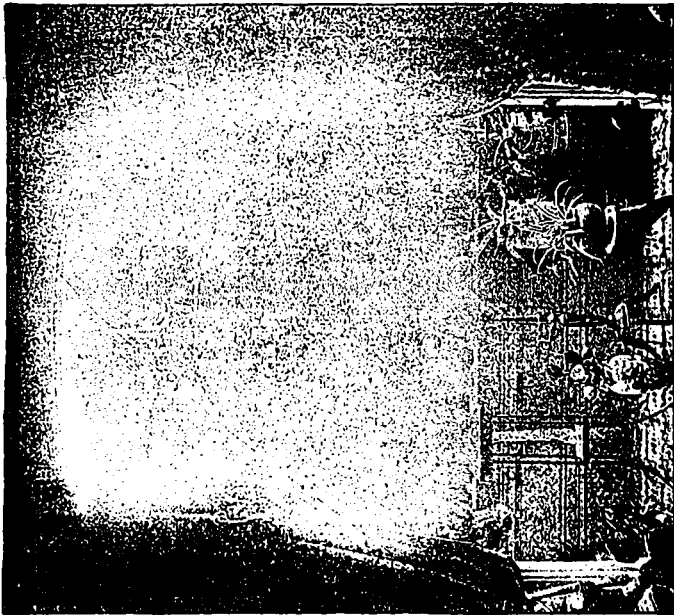
This experience, it should be noted, is precisely similar to my experience with most of the American papers. I have not found that *Kalona* possesses any decided quality or advantage over its competitors, except that, perhaps, because of the simple toning bath, a little slower than those generally recommended, I thought the tones richer and the shadows a little more transparent than with some papers.—*John A. Tenant in Wilson's Photographic Magazine.*

ISS Catherine Weed Barnes, of Albany, N.Y., who is editor of the *American Amateur Photographer* and one of the best amateur photographers in the country, believes that in professional photography there lies a fine field for women. But it means work, she thinks, hard, persistent, earnest labor, to become a good photographer. "I believe," she says, "that women are especially adapted for this kind of occupation. They have the delicate touch, the artistic feeling, and, above all, the capacity for taking pains. But to be successful they must study to become practical photographers, so that when anything is wrong with a plate they may know

where the fault lies. To do this it is best to go to a professional and learn to do anything he wishes done. Climb up the ladder slowly and keep your eyes open." Miss Barnes herself took up photography some seven years ago just for the pleasure it afforded her. When she took up photography she knew absolutely nothing about a camera. She bought one. It looked simple enough standing in the store. It came home; then she discovered that it was not so simple. It took her over an hour to get it into shape. Then she didn't know which end to look into. Now she owns some twenty cameras of different sizes and makes. She started in with the idea of studying the scientific as well as the artistic side of photography. She began the study of chemistry in connection with it. She was not willing to have anything happen by accident. The study fascinated her, opening up as it did so many new channels of thought and experiment. She now makes all her own baths and developing chemicals and tests new ones. She does everything pertaining to a picture, from the beginning to the end, just as a professional would. Not long ago an authority on photography told her she could easily make \$8,000 a year should she care to become a professional.—*Com. Advertiser.*

.....

A "photo corrector" has been invented and is in practical use by an English artist, by which the dimensions of any part of a photograph can be altered "and the whole made harmonious." A person five feet and a half in height can be made to look five feet high or six feet high, as desired, and hands, feet, or any other part can be similarly corrected. The Society of Arts is to be told all about the invention by the inventor next month.



A Non-Halation Plate for Canada.

Our readers will no doubt be interested in learning that the Anderson Robinson Co., now well known as the makers of the Star and Eagle dry

plates, have acquired the sole right to manufacture the Wuestner "Imperial" non-halation plate for the Dominion of Canada. The difference between the ordinary and the non-halation plates is well shown by the illustrations published

in this issue. The character and quality of these plates is well defined by the following clipping from a recent number of the *Photographic Times*:

"Wuestner, of Jersey City, has very much improved upon the best efforts in

this direction. His first substratum was a slow ortho-chromatic, and upon that spread one or two emulsions of high and highest sensitiveness; working upon the premises, that halation occurred less with dyed than plain plates. Since then he has also prepared another brand, simply with plain bromide of silver emulsions of different degrees of sensitiveness. It is said that either of these plates work rapidly and can safely be used for instantaneous exposures, and that halation has been reduced to nil. The reversal of the image is evidently caused by the same action of light as in halation, but that action has ceased before halation is produced."

The first picture was taken on ordinary "Eagle," and the second on an "Imperial" non-halation. Both negatives were exposed on the same subject one immediately after the other and developed in the same disk at the same time; and absolutely no favor shown.

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