NEGATIVE ON
STANLEY PLATE

Printed on
LANDON'S
"O K"
GELATINE
ARISTO PAPE

THE CANADIAN PHOTOGRAPHIC JOURNAL.

DEVOTED TO THE INTERESTS OF THE PROFESSIONAL AND AMATEUR PHOTOGRAPHER.

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GEORGE W. GILSON, - - EDITOR.

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THE MONTH.

AN English writer says that photographic gelatine films, bathed in a solution of auramine and erythrosine, the latter in small proportion, give an approximation to correct color values without the use of any screen or light-filter, and are sensitive to all colors, including red.

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SPEAKING of dirt and general untidiness in the studio, the *Photo Beacon* says: "The chief patrons of a studio are ladies, and such being the case one would suppose that every photographer would endeavor to have everything in his gallery suited to their tastes. And yet that is the last point many men seem to consider. The furniture and fittings of both reception room and the skylight are about as uninviting as it is possible for them to be, being without arrangement and style, and not infrequently ill-cared for—in fact, dirty. Now, both by birth and breeding the average woman is a dirt hater, and has a keener eye for it than she has for

the merits or defects of a rival's dress, and her first visit to a slovenly-kept studio is almost certain to be her last. Nor does the matter end there, for she possesses a tongue, and is almost certain to exercise it to the disadvantage of the careless photographer. When a lady patronizes a photographer, either for a picture of herself or children, she and they are generally dressed in their best garments, and it is unreasonable to expect that she would wilfully go where there was the slightest possibility of their clothes being soiled, no matter in how small a degree. Such being the case, every photographer is bound to see that his premises are kept not fairly clean, but absolutely so, and we feel sure it would redound to his advantage in many ways, both directly and indirecty.

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THROUGH the courtesy of Messrs. Colt & Co., of New York City, who are probably the largest manufacturers of projection lanterns and views in the United States, we lately had the pleasure of a practical demonstration of the different illuminants used for the lantern. The most interesting part of the demonstration centered in the difference between the light of the oxy-hydrogen jet and that of the electric light. The oxy-hydrogen jet was placed in the lantern and a slide shown on the screen. The effect seemed more satisfactory; the lights pure and white and seemingly very strong. The electric light was then arranged in another lantern and thrown on the screen through another slide. The effect was astonishing. Slide No. 1 was simply drowned by the volume of light from the electric lamp, and slide No. 2 showed nearly as perfectly as though it alone occupied the screen. The electric arc light is without doubt the most suitable and strongest light for optical use, from the fact that it is at once the most brilliant, and, what is of great importance, the smallest of known lights. With the electric lighting of streets becoming so universal, it is to be hoped that in the near future currents suitable for use may be readily obtained for home and public exhibitions.

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A NOVEL PRINTING METHOD.—The sensitive papers on sale by dealers are not always of the tint desired for special cases, and we will call attention to a very simple process which will permit a trial of any or all the water colors which may be had ready prepared. Mix with a little water the cake of water color chosen, making a semi-fluid paste. Mix one part of this with two parts of a tolerably thick solution of gum arabic, and two parts of a saturated solution of bichromate of ammonia. Rub the mixture in a mortar; mix it as intimately as possible. With a flat brush coat white paper with this mixture, and dry in the dark. Print under a negative in 10 to 20 minutes in the sun, or an hour or two in the shade. The prints are developed in lukewarm water. The parts on which the light has acted are insoluble, and the image appears little by little. Monochrome prints on a white ground can be obtained in this manner in any color, or by coating

the paper with several colors after having traced the outlines as carefully as possible from the negative. When the choice of colors is well made, landscapes printed by this method are charming. The prints are permanent. It is merely a new application of the carbon process.

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A CORRESPONDENT writing to the *Photographic Times* says, "There are few photographers that really understand the proper care of the eyes in the developing-room. It is a well-established fact that a sudden change of light is a source of injury to eyes, *i.e.*, being in the dark-room for a time and suddenly exposing the eyes directly to a strong light, the strain is at once noticed, with little consideration of the damage to the eyes. This same result can and does occur in the dark-room by looking directly into the red or yellow light for a few seconds, then directly afterward straining the eyes by carefully examining the progress of development, or by trying to notice the resulting sharpness of image or other fine details, etc. No one has more use of perfect eyesight than a photographer. The remedy is obvious. Retouching is, in spite of any amount of care exercised, injurious to eyesight, yet many retouchers are in the habit of looking closer than they should. In the commencement of a face retouching is more straining on the eyes than the final modelling. A retouching glass is certainly a great benefit to the eyes. It not only rests the eye but is also a material benefit to the final results, a closer texture to the surface being possible by the use of the glass. It is, however, possible to fatigue the eyes by overuse of the glass. When this is the case the glass should for a time be abandoned, when the eyes from the change will again be resting. Any strain, whatever the cause, is injurious, and it is the strain that should at all times be watched and avoided."

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WE have often had to resort to the cutting of the name of some inquirer for sample copy or information from the postal card or letter received and the pasting of it on the journal or letter sent in answer on account of the undecipherable signatures adopted by some people, but the following from an English paper goes a step further: "A curious little incident occurred the other day, which goes to prove what I have always contended, viz., that, however 'wooden' the postal authorities are in their everyday transactions, they seem to save themselves up for special feats which are outside the common ruck. A gentleman connected with this paper spent some days on the East Anglian coast last June, and promised prints from some of his negatives to certain of the fishermen who figured in the pictures. A week ago when these prints were packed up for transit, he discovered, to his annoyance, he had lost both the name and address of the man to whom he had arranged to send the prints for distribution. After a fruitless search for the address he resolved upon an experiment. Taking one of the prints, he cut out the figure of the individual whose name he had forgotten, and pasted it on the outside of an

envelope, added the name of the village, together with the somewhat vague information—'Fisherman, near the gap in the cliff!' He enclosed a note stating the facts, and, asking that the name and address might be forwarded, posted the envelope. Two days afterwards, to his pleasant surprise, he had a letter from his fisherman friend, stating that the note had safely reached him and enclosing his name and address!" The evident pains taken by this gentleman to fulfil his promise to give a print to the fisherman who posed in his pictures, is commendable. There is a little doubt that one of the easiest and most often indulged in ways for the amateur to get himself and his craft disliked is the readiness with which a print is promised to all obliging men, women or children who are good-natured enough to give "life" or finish to any or all out-door pictures, especially if the amateur be working in a district some little distance from his home. These promises are too generally made without even a thought of fulfilment.

SOME WORK OF OUR LADY SUBSCRIBERS.

WE take pleasure in presenting our readers this issue some very pleasing samples of the work of six of our lady subscribers. "Trout Stream" of Mrs. Macfie was selected from several very choice bits of landscape received from her, all equally good and showing a most artistic comprehension of the laws of grouping and pictorial composition. Mrs. Macfie uses an 8 x 10 camera, quite an heroic size for a lady.

IN "A Piece of Good News" we have one of Mrs. Wade's charming genre studies. Mrs. Wade is known to most of our readers as a welcome contributor to our pages, and as a winner of a number of photographic competition prizes.

"AFTER the Day's Work" is one of Miss Farnsworth's prize-winning genre studies. Miss Farnsworth's work has been admired and medaled in most exhibitions of note. The picture here given is one of her best efforts.

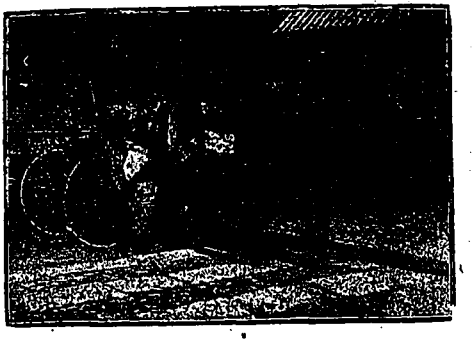


PHOTO BY MISS MATHER, OTTAWA, ONT.

A MARKET SCENE.

"LOVE'S Young Dream" is the work of Miss Heneker, one of Sherbrooke's leading ladies, and is one of several extremely good bits of work from her camera in our possession. In the photograph from which the reproduction was made, the handling of light and shade is particularly artistic and pleasing. The posing of the girl figure is very graceful.

ANOTHER genre study is "The Fairy Tale," the work of Miss Kate Matthews, Pewee Valley, Ky. The posing is very good, and the light and shade effect most pleasing.

MISS MATHER'S "Market Scene" does not show as satisfactorily in the

reproduction as we would like. The photograph from which it was taken and several others from her camera prove her a successful amateur. Miss Mather has successfully exhibited in several exhibitions.

KALITYPE PRINTING.*

This paper was invented by Dr. Nicol, of Birmingham, about 1889, but has never come very much into use—why, I cannot say. To me, there ought to be a great future before it, as it is exceedingly pliable, and in addition to the tones obtained by development, it is possible—by a method of after treatment that I shall mention—to obtain tones varying from red to blue.

We have, all of us, heard of, or used, ferrous oxalate as a developing agent, as it has the property of reducing to the metallic state salts of silver, such as the nitrate, chloride, bromide, etc., which have been exposed to light. Now iron has the power of forming with oxalic acid two compounds, ferric oxalate and ferrous, and when the former is exposed to light it is changed from the ferric to the ferrous state. We therefore make a mixture of ferric oxalate and silver nitrate, and brush it over suitable paper and dry. If now we expose to light under a negative the ferric oxalate is reduced to the ferrous state. But although the ferric salt is soluble in water, ferrous oxalate is not, so we develop by immersing the print (in diffused daylight) in a bath composed of some salt which will dissolve it. At the moment of its dissolution, however, it attracts the silver salt and reduces it to metallic silver. When printing the ferric oxalate has been reduced in direct proportion to the quantity of light which has fallen on it, *i.e.*, according to the density or otherwise of the various parts of the negative, so that when in the developer, on the parts of the print which have the largest quantity of ferrous oxalate present, the greater quantity of silver will be deposited, and thus the clearest and least dense portions of the negative will be represented on the print as almost black, and the other parts also in due proportion. It will be seen from this that the process is almost identical with platinotype, except that silver is substituted for platinum.

Of course, I do not for one moment wish to claim that kalitype is equal in every respect to platinum, but the range of tones is far more varied, and being able to sensitize any surface at once is, of course, a great advantage. The chemicals needed are silver nitrate, ferric oxalate, borax, Rochelle salt, citric acid, sodium acetate, and ammonia. A large and formidable list, you will say, but really only in name. Silver nitrate is about three shillings an ounce, but this quantity will suffice for about three square miles of paper, so cost is here of little moment. Ferric oxalate is rather expensive in the dry state, as its evaporation is conducted with difficulty, but by the following method it may it made very cheaply.

Take 144 grains or 9.331 grammes of pure iron wire, and dissolve in about 30 c.c. strong hydrochloric

* Paper read by W. J. BROOKE before the East Worcestershire Camera Club.

acid and about 20 c.c. water, and when dissolved add about 20 c.c. strong nitric acid to oxidize the iron. Then dilute to about a litre and warm, and then add enough strong ammonia to precipitate all the iron in the form of ferric hydrate $Fe_2(OH)_6$, boil, allow to settle, and decant and filter. Wash the precipitate several times with hot water, and then take the filter paper with the hydrate on very carefully out of the funnel, and place in a porcelain dish, and remove as much paper as possible. Then take a hot saturated solution of oxalic acid, and add carefully, warming and stirring the mass all the time. When nearly all the hydrated oxide is dissolved, cease adding the acid and filter and make up to 6.4 ounces or 181 c.c. with water. This solution contains 75 grains of ferric oxalate to the ounce. As pure iron wire may not be always at hand, 391 grains or 25.336 grammes of ferrous sulphate may be dissolved in water and oxidized with nitric acid, and conducting the subsequent operations as before, distilled water being used all through. To make the sensitizer, take

Neutral ferric oxalate	75 grs.
Or as prepared above (of solution).....	1 oz.
Silver nitrate	30 grs.
Water (up to).....	1 oz.

Of course, if *solution* of the oxalate be used, no water must be added.

The commercial oxalate will probably not at first all dissolve, so it should be placed with the requisite quantity in a small bottle, which again must be placed in a saucepan of boiling water and shaken occasionally. By these means nearly all will be dissolved, the remainder consisting chiefly of ferrous oxalate, which has been formed by the action of light on the original salt, and is insoluble. This must be filtered off, and the silver nitrate added.

This is now to be brushed over the paper by means of a broad, stiff brush, as evenly as possible, or else when dry streaks will show, if very apparent, in the finished picture. The paper should, after this, be allowed to wait till the solution has slightly penetrated the paper, and then dried quickly before a fire, without, however, being allowed to get hot, when fogging will result. When dry, it may be printed at once, and if kept from light will keep a few days, but if kept in a calcium tube it will remain good for several months. Printing is finished when the details are just faintly visible, that is, when the dark parts of the picture change from the lemon yellow of the prepared surface to a slaty blue. It is also very necessary for the paper to be perfectly dry, and a piece of waxed paper should be placed behind it in the printing frame, otherwise, if damp, printing will be difficult to judge, and resulting picture will not be of so good a color. They are then to be placed in the following solutions :

For black tones—

Sat. sol. soda acetate	2 fl. ozs.
Water	2 ozs.

Two or three prints may be developed at one time, but care must be taken to remove air-bubbles at once by a light touch with the finger, otherwise markings will occur. A saturated solution of acetate is gen-

erally recommended, but I prefer a diluted bath, as results are quite as good as in the stronger one, and development is more gradual. From this bath transfer to one of

Potassium oxalate ..	12 ozs.
Water	64 ozs.

Wash and fix for fifteen minutes in

Ammonia .880	½ fl. oz.
Water	10 ozs.

The oxalate bath tends to remove the iron and prevents subsequent precipitation in the ammonia bath, which would cause yellowing of the whites. If this, however, should occur, clear in

Citric acid.....	1 oz.
Water	10 ozs.

And wash.

The yellowness (consisting of hydrated ferric oxide in the pores of the paper) may, if desired, be allowed to remain, when a very agreeable toned etching paper effect is obtained.

Rochelle salt.....	1 oz.
Saturated sol. borax..	6 ozs.
Water	4 ozs.

The less borax used, the browner the tone. I have found that with Whatman's papers, it is difficult to get a very brown image. But with cartridge paper, most beautiful sepias can be obtained, colors which are quite impossible with any toning bath I know of.

Another funny thing is that on cartridge paper engraving blacks cannot be obtained even with the acetate bath, the results then being a warm black, very nice for some subjects. I have forgotten to mention that to each ten ounces of either developer, fifteen or twenty drops of a one per cent. solution of potassium bichromate must be added as a restrainer. If this be omitted, whites will be degraded, and the pictures have a muddy look about them. The process I have just mentioned is the one recommended by W. K. Burton; but now I should like to make a few remarks on certain facts which have occurred to me during experiments which I have made with this paper. Having read in the *B.P.J.A.* for 1893, that kalitype may be made to print out by the admixture of potash oxalate, I made a sensitizing solution up as before, only adding thirty grains of that salt to each ounce of solution. This gave pleasing prints by development, perhaps, as Professor Burton has observed, with a tendency to foxy brown tints in the shadows, but this only occurred with very hard negatives, and when using the acetate bath. With soft ones I did not notice it, and if developed in borax bath it is entirely unnoticeable. As regards the printing-out, I was at first rather discouraged, as even after very prolonged exposures I could not obtain the black image. I then bethought me of certain print-out platinum papers which require a certain degree of moisture present to enable the chemical change to take place. So the print was breathed on, when presto! the image came up with a flash and gave a very fair brown picture, which only required washing in citrate of soda and ammonia to finish it. The half-tones were, however, deficient as potassium oxalate was reduced to ten grains. This gave very fair fair results, but not quite equal to developed ones. Besides, the exposure needed was two or three times that for the others. It was

also noticed that if the paper was moistened after exposure the image was brown, but if before, black. This might be utilized in double printing for clouds, etc., by printing landscape brown and clouds black. Potassium oxalate seems to be an improvement in one way—that is, it seems to considerably improve the rapidity for development. Two negatives were chosen of as nearly even density as I could get, and a piece of paper sensitized in the ordinary bath placed behind one and behind the other piece from the bath to which potassium oxalate had been added. The day was very dull, and being in a hurry I took them in, when only the very deepest shadows were faintly indicated. Both were developed in the same bath. The potassium oxalate one was found to be fully printed, while the other was very much underdone. These two prints I have brought with me, and I think fully bear out my statements.

I should now like to say a few words about the after treatment of kalitype prints. If pictures made by the oxalate method (the ordinary one does not seem so good for this purpose) be immersed in a bath of diluted hydrochloric acid (one in thirty), the silver is changed into chloride, and the image totally disappears. Previous to this, prints must have had a double fixing in ammonia, and have been very well washed. If now they be washed and exposed to light, and afterwards developed in variously restrained developers, colors from black to red can easily be obtained. For red tones the developer must be very weak, and, of course, takes a correspondingly long time to act; stronger baths tend to colder tones. If now we take a red print, and place it in a sulphocyanide toning bath it may be toned to a purple blue very suitable for sea views. Any developer may be used, but I prefer metol, or for very black tones pyro and ammonia. Any ordinary formula will do diluted ten or twelve times for red tones, and correspondingly less for colder ones. Prints may also be bleached by an iodine solution, made by dissolving iodine in potassium iodide solution to a sherry color. This turns the whites of the picture blue, owing to the sizing, and the image is seen white on blue ground. This blue is removed in the developing bath. I, however, do not prefer this method. Red tones may also be obtained by toning with uranium. Kalitype seems to lend itself very well for this, as there is no hypo present, and consequently no uneven toning. Prints made by the ordinary bath are best for this. In conclusion, I hope these very few and imperfect notes of mine may induce others to take up what seems to me a most useful and beautiful, as well as much neglected, process. The results should be permanent, I think, as the image-like bromides are composed of metallic silver, and although these sometimes fade, yet I fancy that is because of the hypo used for fixing, and which is very difficult to remove from the gelatine film. But in kalitype there is no such salt, ammonia taking its place, and even if any be left behind it is harmless. I therefore contend that kalitype should be the more permanent of the two, provided the operations are carefully carried out in every detail.

PRINTING ON MATT AND ROUGH SURFACE PAPERS.*

By JOHN WATSON.

The printing and toning of matt surface papers, whilst opening up a large field for experiment and research, must of necessity be treated by me in a very brief manner, as the object of this little paper is more to show you some of the results which I have obtained in experimenting with matt papers, rough surface and otherwise, than to deal with the manufacture of the paper. There are now so many excellent brands of matt papers on the market that I do not think anyone will gain much, and they may lose a great deal, by endeavoring to sensitize their own paper. Perhaps it is sufficient for me to tell you that, roughly speaking, the process consists of sizing and salting plain paper with gelatine and chloride of sodium, and then sensitizing with nitrate of silver. In the course of the manufacture of all sensitized papers, the amateur and professional alike has to contend with that great and persistent enemy of the photographer, dust; and considering that you cannot possibly make it cheaper than you can buy it, the game is not worth the candle. There is not with matt papers the inducement even to the professional to sensitize his own paper. You all know of the advantage of using freshly prepared sensitized albumen paper, but there is this peculiarity about matt papers, and particularly so with the "Venus" and "Mezzotype" brands, that they actually seem to improve by keeping, and even when the back of the paper has become very much discolored, and the face of the paper shows signs of discoloration, you will be enabled to get a better result than with freshly made paper. I do not know why this is the case, but I myself, in common with those who have worked the paper, find it to be so. Therefore, I would recommend you to buy your paper ready sensitized, and when it shows signs of discoloration do not throw it away. No one who has attended the numerous photographic exhibitions held during the last two years can have failed to notice the immense increase in matt surface prints; indeed, it is quite a rare thing now to see any glossy prints sent in for competition. This is very remarkable when you come to think of the enormous sale of gelatino-chloride papers. Only a few years ago there were very few, comparatively speaking, who manufactured gelatino-chloride papers. Now the name of manufacturers is legion. Let us for a moment consider why it is that men of experience and ability prefer to print from their negatives on matt paper in preference to glossy papers. I take it that the object of the photographer in photographing a landscape is, as far as possible, after composing an artistic picture, to reproduce it in as artistic a manner as possible. Recollect that the photographer has only his negative, his printing process, and his brains to enter into competition with the painter, who also has the immense

*Paper read before the Newcastle and Northern Counties Photographic Society.

advantage of drawing upon his imagination. I hope you will all agree with me that it is quite possible to make pictures by photography. To my mind some of the photographs of our great masters are in every respect as beautiful and naturalistic as some of the paintings of the greatest artists. There is no doubt about it, and you cannot but admit it, that the public taste is still for the old highly-glazed photographs. But I feel sure that the time is fast drawing near when all our best photographers will discard, to a very great extent, albumen and gelatine paper, and substitute in their stead carbon, platinum, or some of the other matt papers. Do not let me be misunderstood. The question of taste is entirely one of individual opinion, but I am led to this conclusion from the fact that many professionals, who supply their clients with the glossy gelatine print, will themselves send in for competition prints on matt paper, well knowing that they will be judged by men of ability, artistic taste, and experience. I think there is no possible comparison between the highly glazed surface of one print, compared with the delicate soft surface of a carbon or platinotype, or some of the other matt papers, giving the appearance of an etching. I have lately had two carbon prints, one in blue carbon, representing a sunset, and another in brown carbon, of a nest of eggs, and it has surprised me to find how many people have thought that these were paintings and not photographs. Had they been printed on ordinary glossy papers, anyone could have distinguished them. Like everything else, it takes time and keen observation, with an earnest desire to aim high and produce the best work, to effect a change from the old groove ; but with this aim in view, with association with your superiors in the art, with a study of their great triumphs, commences your art education, and this, studiously followed up, enables you to appreciate and admire the beauty and artistic nature of their productions, and stimulates you with a desire to go and do likewise. And here I think I ought to pay a high tribute of gratitude to our worthy President, Mr. Gibson, and our leaders in photography. These men, with noble generosity, make no secret of their processes, but are at all times willing and anxious to take the young amateur by the hand and lead him safely over the rocky ground to finally land him on the road to fame. Leaving now altogether the artistic side of the question, which you must decide for yourselves, I pass to the more important and practical side of my paper, and shall deal with the treatment of matt papers, speaking briefly upon "Venus" paper and "Mezzotype" paper. Of gelatino-chloride and collodio-chloride I shall say nothing. I would just like to remark that, although very beautiful results are obtained on these papers, the surface is too smooth for large negatives. Platinotype I would prefer to leave for another occasion, believing that there is ample material for another night. Carbon printing, the most beautiful and the most permanent of all our processes, I have only worked but slightly. At any rate I do not feel, without further ex-

periment, qualified to speak to you on the subject. What I have done convinces me that some of the most artistic effects can be produced on that paper. To-night I wish to introduce to your notice two of the finest printing papers that I know of—"Venus" paper and "Mezzotype" paper. In these papers you have, I think, the nearest approach to perfection in art papers that you possibly can have—that is, for pictures whole-plate size and upwards. I would not recommend you to print on the rough paper with anything under a whole-plate negative. It is obtainable in several degrees of roughness, which enables you to select that most suitable for your negative. Let me at once say that for regularity of tone and ease in working I prefer the "Venus" paper over the "Mezzotype," but I submit you samples of both and leave you to form your own conclusions. Let us then consider the class of negative suitable for the matt papers. It is useless to try and get good results from under-exposed negatives, such as many instantaneous negatives are. The best results are got from a negative which has been freely exposed, and if possible with fairly strong contrasts. The class of negative which will give you a good platinotype suits these matt papers admirably. Very good results, indeed, however, can be obtained from soft negatives full of detail, and which are so suitable for bromide enlarging. If you have a weak negative, print in subdued light and through a piece of ground glass. With a suitable negative, however, print in the best possible light, even in sunlight. Print until the shadows begin to darken. A little practice will soon let you know just when to stop. And here let me mention that the proper printing of a negative is everything for the finished result. If you underprint you will find that the fixing bath will, as it were, completely bleach away your tone, leaving you a very sickly print. On the other hand, if properly printed, whilst slightly reducing the print the color will come again on drying. You are all possibly aware that a strong fixing bath and long fixation will materially reduce an over-printed print, but in the case of these matt papers—and this applies to them all—a strong fixing bath is not admissible, as it altogether alters the tone of the print from the beautiful sepia to an unpleasant black. Many who have tried these papers have given them up in desperation, not because they have failed to produce good and beautiful tones, but because after drying the paper is found to have double tones, and to be altogether different to that first produced in the fixing bath. I will endeavor to show you how you get these double tones, and how you may avoid them, It is the old story of perfect *versus* imperfect washing, and perfect *versus* imperfect fixation. Unless you wash thoroughly in running water for quite half an hour before toning you can expect to get double tones. Particularly is this the case with the rougher or thicker papers, which are so thick that unless the paper becomes thoroughly soaked, the toning will act very irregularly. This is one reason of double tones—when one part of the print is toned

the other is not. Therefore, please remember a thorough washing is absolutely necessary. Secondly, the strength of the toning bath must be not greater than half the ordinary strength, slow toning being an absolute necessity. If you tone with a strong bath, it tones, as it were, only the surface of the print, and this in the fixing bath disappears, leaving you quite a different result to that anticipated. After toning again, wash well for about five minutes, and then transfer to a fixing bath of hypo two ounces, water twenty ounces, just half the ordinary strength, for fifteen minutes, constantly moving the prints about, and then put them into another bath of the same strength and for the same length of time. Thorough fixation is most important, otherwise you will get double tones. After fixing wash well for four to six hours in running water, and then dry. The tone desired must to a large extent depend upon the subject. With some a warm sepia brown is desirable, whilst with others a darker and colder tone would be preferable. This must, of course, be left to the individual worker. And now as to toning baths. Any ordinary gold toning bath may be used, and some of the finest tones I have got are from a plain gold bath, neutralized with common chalk. Platinum in the form of chloro-platinite is also largely used, and acts splendidly, though great care is necessary, it being very energetic. A mixture of platinum and gold acts very well indeed, if used the same day as mixed ; but it will not keep. Beautiful results, perhaps the most beautiful, and certainly the most satisfactory, can be obtained with the combined toning and fixing bath, taking care to refix for half an hour in a weak fixing bath. I do not intend to enter into the old and vexed question of permanence, believing, as I firmly do, that if the prints are properly fixed in a separate bath, they are as permanent as those toned and fixed separately. The treatment of all matt papers is the same, and it would be but repeating myself to go into them. I will just ask you to remember that the great thing is to wash and fix properly, and use a weak toning bath.

CARBON PRINTING—THE "CONTINUATING ACTION OF LIGHT."

An important point in connection with carbon printing is that termed the "Continuating Action of Light." This subject, if not understood, may entail upon the novice some trouble as well as a waste of material. On the other hand, when its conditions are fully realized, instead of causing trouble, it is really a very valuable power to command, inasmuch as it enables us to secure, within a given period, several times as many prints as could otherwise be obtained.

In the earliest days of the carbon process it was found, even by the very first workers, that if pictures were kept for some time after they were printed, they turned out darker than they would have done had they been developed at once. It was also noticed that this darkening

action was by no means regular. Prints at times would darken as much in a few hours as they would at others in a day or more. These vagaries remained without any real explanation until 1877, when the late Mr. J. R. Sawyer brought the subject before the Photographic Society of Great Britain. In a valuable paper he read, and in the results he showed, Mr. Sawyer proved conclusively that prints which, though secured from the light, were freely exposed to the air, darkened much more rapidly than did corresponding ones which were preserved from it. The protected ones at the end of five or six days had gained no more than the unprotected ones had done in half the time. The examples proved, as well, that the action in the former had been more regular from day to day than it had been in the latter. In those there were considerable discrepancies —some days the prints had darkened much more than on others.

A couple of years later I determined to investigate the matter further, and try to find a solution of the problem, if possible. I had long noticed that the darkening action proceeded far more rapidly in warm and damp weather than it did when the atmosphere was cool and dry—then the action appeared to me to be almost *nil.* The experiments made at the time need not be described in detail; it will be sufficient to explain that the prints were, after exposure, suspended in a warm chamber (80 to 85 degrees), the atmosphere of which was kept saturated with moisture, for various times between exposure and development. It was found that prints which had received but half the normal exposure were, after the lapse of one hour, considerably over-printed. Others were then exposed for a quarter of the proper time, that is, supposing they had been developed in the ordinary course. They were then developed at half-hour intervals, and it was found that the one that had been kept for an hour was of the right depth, while all the others were too dark. In the longest kept one of this series the action had gone right through the tissue, and the paper could not be stripped from the shadows, though the gelatine was soluble enough on the lights. Another experiment was with the exposure reduced to one-sixth, and here it was found that, after an hour's keeping, the prints were nearly dark enough, and after an hour and a half a little too dark, the others, of course, all being much over-printed. It may here be mentioned that one-sixth appeared to be about the minimum exposure that could be given with a negative with strong contrasts, for in even the darkest prints of this series there were some few points that were quite white, proving that the initial lighting had not been sufficient to penetrate the densest parts of the negative to set up the action.

Finding that the rapid continuating action was due to moisture, accelerated by heat, experiments were next made to see how far its absence would retard it. Prints were exposed for half the normal time, then thoroughly dried, and afterward sealed up air-tight in a metal case. The prints were developed at intervals up to six months, and at the end of that period

they had not got a bit darker than they were when they were taken from the negatives. Neither had the tissue lost any of its original solubility.

The above experiments show that if the prints are not to be developed till some time after they are printed, allowance should be made for that in the exposure, as it will then save time in the development, through their turning out over-printed. Also, that the printing should not be carried so far in warm and humid weather as it may be when it is cool and dry. Indeed, in dry and frosty weather the printing may be carried to the full depth, and yet the prints be kept for a day or more without their getting materially darker, assuming, of course, they are not exposed to a damp atmosphere in the meantime.

The value of the continuating action is great, for when a large number of prints are wanted from a particular negative in a given time, a quarter or a fifth of the full exposure will suffice if advantage be taken of it. And when the conditions governing the action are understood by the worker, the matter becomes one of certainty. The humidity of the atmosphere and its temperature are all that have to be considered. Although it is possible with a fifth or less of the proper exposure to obtain, in an hour or so, the same result as if the tissue had been fully printed, it is not recommended in practice to proceed quite so violently, but to allow a longer time under more normal conditions than those detailed in the experiments.—*E. W. Foxlee, in Autotype Notes.*

"FLAT-FIELD" LENSES AND A CHAT THEREON.

By JOHN A. HODGES, F.R.P.S.

Many photographers, both amateur and professional, good practical men though they may be, appear to possess very hazy notions indeed of the advantages of the modern types of lenses, such as the anastigmats of Zeiss, the double anastigmat of Goerz, and the new Cooke triplet, over the now universally used rapid and wide-angle rectilinears of the Steinheil type. The complaint has been more than once made by purchasers of one or other of these modern instruments that no better "depth of focus" can be obtained (that being apparently the particular direction in which by the practical mind improvement is called for), than when using one of the older forms of lenses. It cannot be too widely known, among those whose knowledge of photographic optics is limited, that the problem of wide angular aperture combined with great depth of definition has not been solved in any of these new constructions, and it would scarcely require a prophetical knowledge of the subject to venture the opinion that, in the present state of optical knowledge, it is not likely to be. In what respect, then, it will naturally be asked, do these new lenses excel the old ones, and will the practical gain be such as to warrant the expenditure of the large sum of money which is at present charged for them? To answer this question in practical and simple language is the task which Mr.

Hodges has set himself in this month's *Scraps*.

The special property in which these new objectives, to which I will apply the generic term of "flat-field lenses," excel all other types that preceded them is their extraordinary flatness of field. Every photographer knows when using an ordinary rectilinear with a fairly large diaphragm, for instance f—8 or f—11, how difficult it is to get anything approaching evenness of definition all over the plate, even though that sharpness be required only in one plane. It is easy enough to get some object, fairly centrally situated, in critically sharp focus, but no amount of manipulation of the rack and pinion will distribute the desired definition equally over the entire surface of the focusing screen. True it is that we may, by focusing for a point nearer the edge of the screen, secure a better definition there, but directly this is done the central portion of the image becomes as ill-defined and out of focus as the margins were when in the first instance we focussed for the middle of the screen. The fact is that this defect is one which is inherent in the construction of the lens, and no amount of technical dexterity in manipulating the focusing screw will overcome it. It is due to what is known in photographic optics as "roundness" or "curvature of the field," and it exists in a greater or less degree in all lenses constructed prior to the introduction of the types to which I have previously alluded. The image produced by such lenses is spherical and if we were to receive it and focus upon a hollow spherical surface instead of a flat one, we should find that we could easily obtain approximately even definition from centre to margin. This, however, in practice, would be an impracticable method of working, and, therefore, photographers have had to adopt other means of flattening the field. A ready method of doing so is provided by the optician in furnishing us with a set of diaphragms, or stops. Supposing the centre of the plate to have been sharply focussed, the insertion of a stop will have the effect of extending the area of sharp definition, and the smaller the stop used the greater will be the flatness of the field. The practical drawback to the use of small stops is well known; as the aperture is reduced the necessary exposure is increased, and on this account, in dealing with a very large number of subjects, the photographer is precluded from resorting to "stopping down," and has to be content with a more or less ill-defined picture.

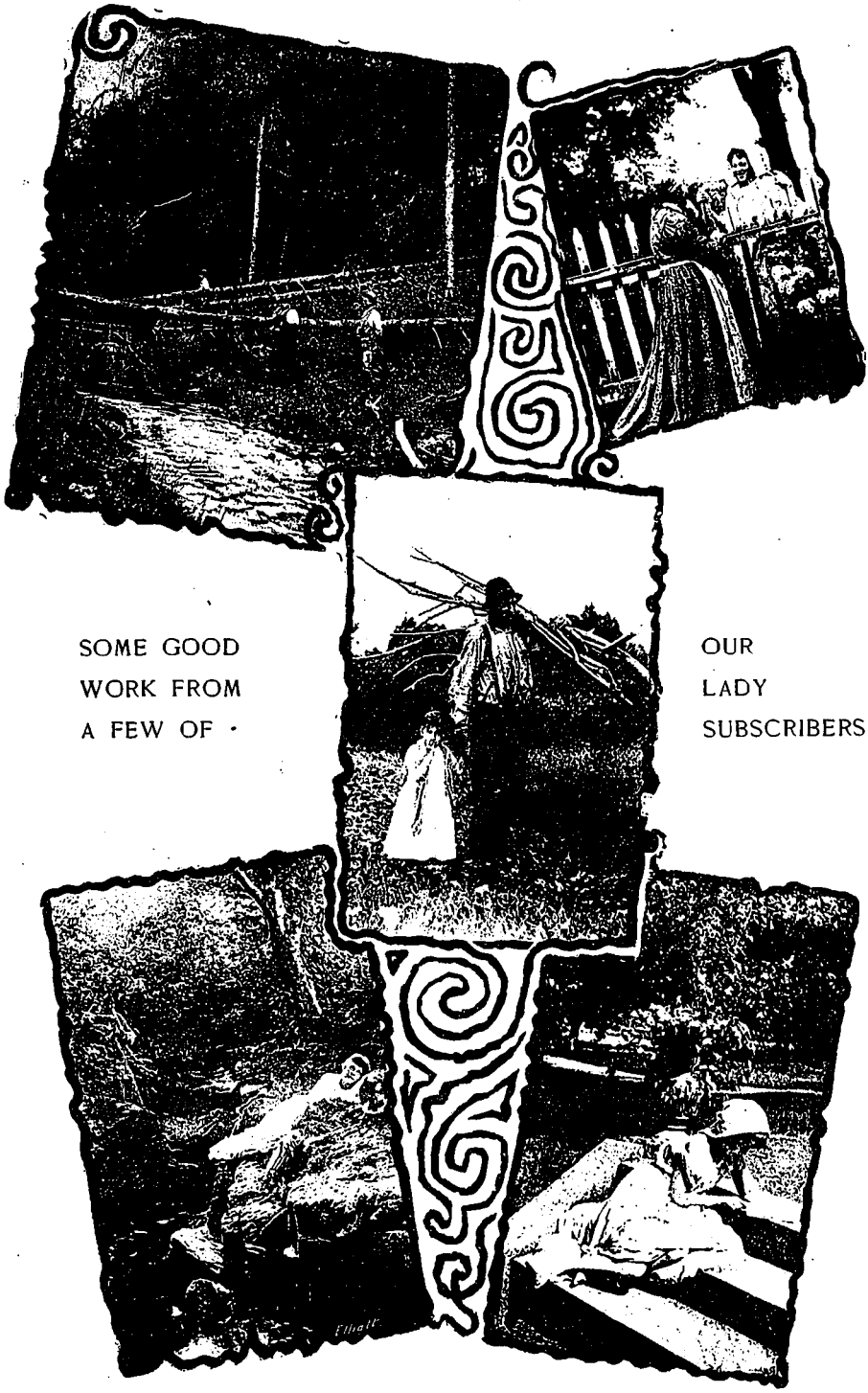
With one of the new lenses, however, we have, in dealing with similar subjects, a very different result. If we examine the image produced by one of these lenses we shall find that not only is the centre critically sharp, but the definition continues equally good right up to the margins of the plate. The opticians have in truth solved one of the most difficult problems that practical photographers have presented to them—they have succeeded in producing a lens that will bring to a focus equally well on a plane surface both axial and oblique rays—in other words, they have constructed a lens that will, with a large

aperture, at least equal or even larger than previously existed in rapid lenses with round fields, give one that is practically flat.

The advantages of such lenses in ordinary practical work are so obvious as scarcely to need pointing out, but it may be well to remind the reader that the full capabilities of the new lenses are only brought out when the subject photographed is itself practically a plane. In ordinary work in the majority of cases the field of the subject will generally approximate to a plane, and the advantage will consequently be with the new lenses; but it is equally true that with some subjects, such, for instance, as a view looking down an avenue of trees in which the "field" is decidedly curved, a lens with a round field may give a better result.

To the professional photographer in what is admittedly at once a very difficult, and yet remunerative, branch of his work, the introduction of these lenses must prove of the greatest possible advantage. I refer to the photographing of groups, both in and out of the studio. Here the procurement of a flat field lens would probably be a direct economy, for its employment, besides producing results otherwise scarcely attainable, would lead to less waste from spoilt plates, which, in the large sizes usually used in this class of work, forms a considerable item in the general expenditure. Every photographer knows what a difficult matter it is to get the marginal figures in a group into even decently sharp focus, and he is beset with difficulty on either hand, for he knows that although the insertion of a smaller stop will give him the required definition, the exposure will have to be considerably prolonged, and the risk of the negative being spoilt by the movement of some of the members of the group will at the same time be greatly increased. In quite another class of work, the photographing of buildings, both interior and exterior, and more particularly the latter, where oftentimes on account of passing traffic, a quick exposure must be given, and consequently a large aperture maintained, the use of a flat-field lens will confer advantages not otherwise attainable. Most lenses of this type are aplanatic; *i.e.*, they give sharp definition with the full aperture of the lens, and the focus once obtained with that aperture is not disturbed by the subsequent insertion of a smaller diaphragm. One lens of this class, which may perhaps be regarded as the forerunner of many others designed to effect the same objects, namely the concentric of Ross, is an exception to the rule, and being non-aplanatic, its focus is slightly disturbed by the insertion of a diaphragm smaller than the one employed for focusing. This lens, though slower than some others which have succeeded it, possesses an extraordinary flatness of field, and should have a large sphere of usefulness in another branch of work not yet alluded to, but for which these flat field lenses are perhaps pre-eminently adapted, namely, copying of all descriptions, and more particularly where great precision and scientific accuracy are required.

The advantages to which I have so far referred, appeal perhaps, more to



SOME GOOD WORK FROM A FEW OF OUR LADY SUBSCRIBERS

THE TROUT STREAM.
Photo by Mrs. R. C. Macfie, London, Ont.

A PIECE OF GOOD NEWS.
Photo by Mrs. Elizabeth J. Wade, Buffalo, N.Y.

AFTER THE DAY'S WORK.
Photo by Miss E. J. Farnsworth, Albany, N.Y.

LOVE'S YOUNG DREAM.
Photo by Miss Heneker, Sherbrooke, P.Q.

THE FAIRY TALE.
Photo by Miss Kate Matthews, Pewee Valley, Ky.

the professional than to the amateur, but to a large class of the latter, namely, those who take small negatives with a view to their subsequent enlargement, the substitution of one of these new flat-field objectives for the older lenses of the Steinheil type, however perfect the latter may be in construction, will effect a very marked improvement in the technique of the enlarged pictures, whether they be produced direct, or by the intervention of an enlarged negative. The small original negatives are more often than not taken into a camera held in the hand, when a large aperture and quick exposure are essential. Such conditions tend, as we all know, if ordinary lenses are used, to a falling off of definition towards the margins of the plate. This is often very noticeable in the small direct print, but becomes painfully so in an enlargement. Here then there is an undoubted advantage in the use of a "flat-field" lens, and its skilful employment would result in a very marked improvement in the technique of the work. Indeed, I have no hesitation in saying that from such negatives, when the same lens is used for the amplification, enlargements may be made up to moderate dimensions which could not be distinguished, so far as sharpness is concerned, from prints from negatives taken direct. I may add that this is not a mere theoretical conclusion, but one that I have seen verified in the practical experience of others and confirmed by my independent experiments.

In the foregoing remarks I have regarded "definition" from a strictly technical point of view. Opinions differ as to what its character should be, but into controversy upon that subject it is quite unnecessary to go upon the present occasion. There are some photographers who have even ventured to assert that these wonderful productions of the opticians' skill were un-needed, and their use subversive of the best interests of artistic photography. With such opinions I have little sympathy. Good definition is, as I have always maintained, absolutely compatible with every attribute demanded by true artistic feeling in a picture produced by photographic agency. Let us, therefore, gratefully avail ourselves of any improvement which recent advances in optical knowledge may place at our disposal.

COUNTING TIME.*

I have seen so many methods of counting time for a photographic exposure, that I hardly know which to recommend. Many are good, and some are really remarkable, so perhaps I had better describe a few, and let you make your choice. Some of them you may have seen. For instance you have doubtless all seen the operator who removes the cap and with it slowly describes imaginary cart wheels in the air, each circle representing a second of time. He then replaces the cap with the air of one who has achieved a brilliant success, which no doubt he has. It is really a great idea, but rather dis-

* By Tom Quill, in the journal of Gordon College, Geelong.

tracting to children when he is taking a family group, and sometimes upsets the gravity of an adult. There is also the man who alters his mind regarding the time of exposure.

If you are standing by, he will probably try and get your opinion. "Let's see," he will say, it's a bit dull and late, about five seconds ought to do, eh? What do you think?" You reply that it ought to be about right, not that you really think so, but everyone is a bit hazy about exposure. By the time the slide is in he has altered his mind, and reckons he had better give another second, to which you agree. He takes the cap off, rapidly counts to seven, and replaces the cap. He informs you that after he uncapped he thought he would give the seven seconds to make sure, but thinks he made a mistake after all, and wishes he had stuck to five. In truth, he has given about four seconds. I should not recommend you to seek his advice when about to expose.

Then there is the friend who has learned how many he can count in a single second, and recommends you to do the same, and says he will show you what it is like. He fills himself with wind and suddenly starts off at you sputtering his figures out at an incredible rate, gets red in the face, gasps for breath, and glares at you, waves his arms, and reeling off to about fifty-seven, suddenly stops counting and triumphantly informs you that he has counted exactly nine seconds better than any clock could have done. You are too bewildered to dispute his statement, and have no time to work out his arithmetic.

Then there is the happy-go-lucky photographer. He is not very particular about anything, and the number of seconds constituting an exposure is a matter of great indifference. If his camera falls over during an exposure he remains unruffled, and calmly picking it up again planks it down as near the old position as possible, and serenely finishes the exposure, quite content with whatever occurs. I like such men for companions, they vary the monotony of a tiring walk.

I went to see a photographic friend the other day; his wife let me in, and informed me that he was messing about as usual somewhere upstairs. I suddenly became conscious of a most terrific pounding at regular intervals. Thump! thump! thump! for about twenty times, and then a pause. The whole place vibrated with the concussion. I found my way upstairs, and when just outside his door it recommenced. I entered, and saw my friend with the cap in his hand, thumping seconds with his foot on the floor. The place was in a quiver. "One, two—Hullo, old man—three, four, five—come right in!—six, seven, eight, nine—How are you?—ten, eleven, twelve—just doing some copying!—thirteen, fourteen, fifteen, sixteen—I'll be through in a minute—seventeen, eighteen, nineteen, twenty—and that does the trick. Am giving twenty seconds you see." The earthquake gradually ceased as the ponderous pounding came to an end. I remarked that there was no doubt about the twenty seconds and a good many more that slipped in

uninvited during his greetings. Whether it would be sharp was a horse of another color.

Another acquaintance invented a sort of clock that on pressing a spring struck off the seconds on a gong concealed in its internal organism. It was thrilling to listen to. When he took the cap off he would touch a spring, and away she would go like a bell calling you to morning church, or a fog bell on a steamer. Sometimes through forgetfulness he would start the spring off without setting it to the proper number of seconds, and as he always waited till she stopped before replacing the cap, he would stand by with the gong in one hand and the cap in the other, while she reeled off an exposure long enough to take the inside of a church organ. He says that he is going to improve it, so that it will do the capping as well, and then take out a patent for it.

I sincerely trust that one of the above methods of counting time will meet the requirements of all earnest photographers, and if they do not suit you it must be because you are indeed difficult to please.

PHOTOGRAPHIC MOUNTANTS.

By PROF. E. VALENTA.*

Plain starch paste is the oldest and most universally used paste for mounting albumen prints. It still remains the most simple and cheapest medium for the purpose, and is certainly the least injurious, provided the precaution is observed always to use the paste fresh, never after it commences to become sour.

A different condition, however, exists where the prints are made upon the modern emulsion papers. Where the paper support of these emulsions is not too heavy, they show little or no tendency to curl, and may be mounted wet in the usual manner, a small percentage of glue being added to the paste, care being taken that there is absolutely no acid reaction.

Heavy papers that have a tendency to curl, or aristotypes with a high gloss, require to be mounted dry, and require a different paste. A mountant is here required having a greater degree of adhesiveness; at the same time, it must not penetrate the paper, or it would destroy the high gloss of the print. To overcome this difficulty has resulted in the publication of many widely different formulas for mountants in the various photographic periodicals, and in every case it is claimed a perfect mountant has now been discovered.

Upon the other hand, manufacturers and dealers have put proprietary mountants on the market, and sold them to unsuspecting amateurs at exorbitant prices, although they by no means fulfil the requirements for a photographic mountant.

These requirements are as follows: In the first instance, the mountant should have a greater binding power than ordinary paste. It must show a neutral reaction, or nearly so, and in no case should it show a marked alkaline or acid reaction. Further, it must not contain any substance

* Translated from the German and amplified by Julius F. Sachse, of the *American Journal of Photography*.

which will prove injurious to the photographic image, such as the mercurial salts so frequently added to commercial mountants as an antiseptic or preservative.

A useful, safe and practical mountant must be cheap and easy to manipulate and be slow to decompose or spoil. For glacé or matt aristo papers it is requisite that the paste shall not penetrate through the paper, else the enameled face of the print, be it glacé or matt, would suffer.

In the photo-chemical laboratory of the K. und K. lehr von Versuchs Anstalt for photography and reproduction process at Vienna, a large number of formulas and mountants have been tested, with special reference to their composition and fitness for photographic purposes. The deductions from these experiments show the following results :

Starch Mountants.—If starch is treated with aqueous alkali under certain conditions it swells and forms a semi-transparent, viscid mass, having strong adhesive properties. This product is variously known in commerce as vegetable glue, glutine, triticine, collodin, etc. Most all of these preparations show a strong alkali reaction, and upon this account are useless for photographic purposes, notwithstanding their great relative adhesive properties.

In cases where the product is neutralized with acid, it proved at the expense of the adhesive properties. Consequently, on account of this effect, all advantages of these vegetable glues over ordinary starch paste are lost when the former is in a neutral condition.

Far superior, for photographic purposes, are mountants composed of starch in combination with the gum-arabic or dextrine. These mountants have the advantage over all gelatine mountants that they are viscid or pulpy at an ordinary temperature, and at the same time possess a relatively strong adhesiveness. An excellent mountant of this nature is made as follows, and which answers for mounting ordinary photographs, such as albumen, platinotype, aristo and celloidin prints, as well as glacé or matt aristo prints, in all their variety, as it has the advantage of not penetrating through the paper.

White gum-arabic. 35 grammes.
Water..... 100 c.cm.

After the gum is dissolved, strain through a piece of muslin to remove any possible foreign substance, then add

Starch..... 30 grammes.

Stir this in a mortar or suitable dish and heat the whole mass over a water-bath until the paste has reached the required consistency. The addition of a little white sugar has proven of advantage. The substitution of dextrine for gum-arabic somewhat lessens the adhesive properties of the mixture. Compounds of dextrine, alum, sugar, water and carbolic acid (as an antiseptic) have also proven of service and value in these experimental tests. A good formula is as follows :

Dextrine.....	60–90	parts.
Alum.....	4	"
Sugar.....	15	"
Water.....	120	"
Carbolic acid, 10 p.c..	6	"

Mixtures of Starch-Paste and Dextrine in various forms have of late been brought into commerce and sold for photographic purposes. One of the most widely advertised pastes of this class is one labelled "Concentrated White Paste." This paste represents a viscid white mass, which according to careful analyzation consists of water, starch-paste, dextrine, boracic acid, glycerine, and a small portion of thymol as an antiseptic.

Gelatine or Glue Mountants are absolutely unfit for mounting photographs. As the gelatinous mass has to be liquefied by heat for use, it readily decomposes, and if diluted to a proper consistency has the fault of penetrating through the paper. The simplest method to overcome the latter drawback, and at the same time prevent rapid decomposition, consists in adding to the liquid glue a small quantity of amyl-alcohol (fusel-oil).

Liesegang recommends as mountant for his glacé aristo prints a paste made from good glue (Cologne glue, free from acid), to be first swelled in water, the surplus water poured off, which is to be added, under constant stirring, one c.cm. of amyl-alcohol for every 30 c.cm. of the dissolved glue. This mountant can be diluted with water. It sticks well, but must be used warm. The disadvantage in its use is the strong smell of fusel-oil that it imparts to the print.

Compounds of Glue and Starch-Paste, to which a greater or less quantity of turpentine is added, possess strong adhesive properties, and have frequently been recommended for photographic purposes. An excellent mountant of this class can be made as follows: Forty grammes of good (Cologne) glue is soaked in 100 c.cm. of water and melted over a water bath. When from 80 to 100 C., 40 to 50 c.cm. of dissolved starch is added, the mixture being constantly stirred. When these have united and formed a homogeneous glutinous mass, 10 c.cm. of turpentine is added gradually until the whole mass forms a thick, brownish, sticky liquid. This mountant, unfortunately, must also be applied warm. The addition of the turpentine, as proven by many experiments, in no manner affects aristo prints.

Good results, with extraordinary adhesiveness, were obtained according to the process patented in Germany by E. Wiese, of Hamburg. This consists in a liqueaction of gelatine or glue by means of chloral hydrate (D. R. P., No. 77,103).

When gelatine or Cologne glue (a bright-colored, very adhesive glue) is steeped in water and then melted, and a certain quantity of chloral hydrate added, an adhesive paste results of great strength, which has the property of remaining liquid, and, as proven by experience, is well calculated for photographic purposes. A good formula for preparing a mountant of this class is as follows:

Gelatine or Cologne glue..... 40 grammes.
Water..... 120 c.cm.

The glue is to be steeped in the water, and then dissolved over a water bath.

Chloral hydrate ... 20 grammes

is then added and the whole mass heated for some time. This results in a clear, sticky fluid, which can be

neutralized with a few drops of a soda solution. This mountant has the advantage that with its great adhesiveness it does not go through the paper.

Above mountants, continues Herr Valenta, are only to be recommended in cases where starch-paste fails to fill the requirements; for instance, with aristos having a glacé or matt surface, etc.

As all the above recipes have been carefully tested in actual practice, they may be relied upon without hesitation in all cases where their use is desirable or necessary.

PLATINUM TONING OF PRINTING-OUT PAPERS.

Valenta discusses platinum toning of printing-out papers in the *Photographische Correspondenz.* He recommends the following method of procedure:

Wash the prints well in water (soft if possible), place for five minutes in the following bath:

Water	1000	prts. by wt.
Salt	25	" " "
Sodium bicarb.	5	" " "

The prints are then washed and toned in the following:

Water	1000	prts. by wt.
1-10 solution of potass. chloroplatine	30-40	" " "
Aluminum chlor.	20	" " "

(this solution may be turbid, but the turbidity does no harm.)

After toning, the prints are washed in water containing a little ammonia, or a little ammonia is added to the fixing-bath:

Hypo	1 oz.
Water	10 ozs.

His reasons for following the above method of procedure are, that he has found that if a printing-out paper contains its silver salts, only in the form of silver chloride and silver nitrate, it tones to a good black. But if an organic acid is present in the paper, the prints will not tone beyond a brown in the *acid* platinum bath, and toning proceeds very slowly. Now most, if not all, commercial gelatino and collodio papers contain, *when printed,* besides pyroxilin or gelatine, silver subchlorides, organic silver subsalts, metallic silver and undecomposed silver compounds, *e.g.* silver chloride, silver citrate, tartrate, etc. Besides, the papers themselves, he says, are treated with citric or tartaric acid for the purpose of preserving the coated papers. The preliminary alkaline bath gets rid of these. The aluminum chloride is acid, and assists the chloroplatinite to tone. It also hardens the gelatine in the case of gelatino chloride papers. The ammonia in the wash water, after toning, and in the fixing bath, clears the whites. He maintains that there is not so much degradation with his slightly acid bath as there is when much nitric or tartaric acid, etc., is present. He also holds that in toning and fixing, gelatino chloride papers are eaten away more than collodio chloride papers. (N.B.—They should therefore be printed darker.) The resulting tones are somewhat different in the different papers, but are all good. Valenta's reasons seem valid,

and we have tried his formula against the one we now recommend, but have so far discovered no appreciable difference in the resulting tones. The use of ammonia in the wash water and fixing bath shows perhaps a slight advantage over carbonate of soda.

KEEP IN TOUCH.

In the *Professional Pointer* for October, Mr. Pattison, the able editor of that interesting journal, makes the following suggestions that might be profitably followed by the profession:

"A great mistake is made by the majority of photographers, in all branches and in all localities, by overlooking this important item, viz: Keeping in touch with their customers. Most photographers depend upon their work for their patrons to bring in future orders, and it is a good plan, too, but there is no doubt but that thousands of dollars' worth of extra work could be done, each year, if the photographer made some effort to keep in touch with his customers.

"Ordinarily, a job is done for a family, and we will assume that the work done is creditable and gives entire satisfaction. After it is delivered, the photographer sits down in a very contented frame of mind, *satisfied* that some day those people will be back, or some of their friends will be in after some pictures. He don't for a moment think of hustling after these same people, with some inducement to urge their early return. All he does is to *wait!*

"There isn't one gallery in ten that does ordinarily a *fair* business but that could employ, at a splendid profit, a corresponding clerk and typewriter. After a gallery has been established a year or two, the name list of customers that have had satisfactory work is invaluable; but how many photographers use it? Not one in a hundred, for any other purpose than to chase up a negative that a lot of duplicates have been ordered from.

"For instance, about a year ago, you made a splendid portrait of Mr. Blank. The pictures were quite satisfactory. He has given them to friends, because he had the pictures. He has other friends that would like his picture, but he doesn't want to bother with sitting again. He doesn't know that he can get a lot of duplicates from his negative without the bother of a new sitting; there isn't one in a dozen sitters who knows this. He doesn't know that you are making finer prints this year than you did last. He doesn't know that you are using matt surface Aristo Platino and producing beautiful olive tones—and can take his old negative, and within two or three days deliver a lot of them, without bothering him to sit again. He doesn't know that you can take that same picture, and produce from it a beautiful life-size crayon or pastel portrait, which would make such an appropriate present to his wife or family. He doesn't know that you can take your Williams Flash Machine under your arm, and go to his home, and make life-size pictures of his aged parents, who are too old to get

to a gallery ; or that you can do the same thing of a baby that is too young to take under a skylight. In fact, there are a whole lot of things that he doesn't know, but it is your business and for your best interests to tell him. Some photographers have an idea of issuing circulars to cover such points. But circulars do not get there. They get to the waste basket too soon. Write letters, and write them often ; make them business-like ; use a type-writer, if possible. You have not a lady customer on your books that wouldn't be pleased at receiving a real letter from you, calling her attention to the new style portraits you are making. She thinks at once that you are taking a *special* interest in her, and will call at your gallery at the first opportunity to look over your work, if not to buy. It will pay any photographer to incite this interest, and there is no reason why it should not be done.

" A scheme practised successfully is the soliciting of duplicate orders from negatives of adults. Certain negatives are selected for a day's work of the corresponding clerk. Proof of the negatives are made on Aristo-Platino paper, and *toned*, but not mounted. Letters are written to each subject, stating that : ' As we are about to store away certain negatives, it occurred to us that, inasmuch as we are producing better work than we did at the time of your sitting, you might like to place an order for a dozen or more from your negative before it is stored away. We have the pleasure to inclose a proof on the new permanent material which we are now using, which, when finished, makes the finest and most artistic picture imaginable. Should you desire a lot of these pictures, kindly notify us within six days, in order to enable us to hold your plate.'

" The party naturally takes the proof, and compares it with the old picture you made a year or two ago. The old picture is, of course, scratched, and shows plainly that it has been knocked about considerably, while the *proof* looks fine as silk, and as it is understood that it is ' unfinished,' it must be great, so the natural inclination is to place an order. And generally they are in a hurry about it too, for they understand that you are about to ' store away ' the original plates. They just don't understand what that ' store away ' means, but it causes them to get a move on themselves, and the result is generally gratifying.

" Aside from such schemes, it pays to keep one busy writing letters to customers. Don't allow them to forget you. Keep them posted as to what you are doing in the way of producing new styles. Ask them to drop in first time convenient, to look at a beautiful picture of Mrs. Uptown that you have just completed. The picture will be on exhibition in your studios for a few days, etc. If you can induce the ladies to call, it gets them to thinking of pictures, and is bound to pay you.

" Get a typewriter and keep it clicking in your office. It sounds like business, and makes a good impression on your customers."

A SUCCESSFUL LADY PHOTOGRAPHER.

Miss Johnston, who has enjoyed several years of training both in the Parisian ateliers and the Washington art-schools, has built up her present success from very modest beginnings. Studying art with the hope of eventually doing illustrative work, an opportunity was offered her to supply photographs and other illustrations to a news syndicate in New York. On the suggestion of a friend that her illustrations would be more exclusive and better suited to her purpose if she took them herself, Miss Johnston, with characteristic decision, promptly invested in a camera; and in spite of an absolute lack of photographic knowledge, was successful from the start. The technical training which she needed so much in the beginning was supplied by the unusual courtesy of a course of instruction in the photographic laboratory of the United States National Museum; and Miss Johnston now possesses as thorough a knowledge of practical photography as most of the best professionals.

Aside from her special illustrative work, which is familiar to the readers of the *Harper's*, *Century*, *Cosmopolitan* and other magazines, this versatile young woman has opened a most lucrative field by writing descriptive sketches and illustrating them with her own photographs, the *Demorest* magazine alone having within the last few years published twenty of these as leading articles.

Everything Miss Johnston undertakes she seems to put through successfully; her interior work among the historic houses of the Capitol, and the handsome modern homes that are now so numerous here, being as well known locally as is her magazine work generally.

Her crowning success, however, has come to her since the possession of a perfectly-lighted studio has given her facilities for carrying out her ideas in artistic portraiture. During the few short months in which Miss Johnston has been putting her experiment into effect her time has been so much in demand that she has found it necessary to make appointments for sitting several days, and sometimes weeks, in advance. Her sitters have come from the most distinguished, fashionable, and wealthy circles of society at the Capitol, and this slight, quiet-mannered, but energetic young woman is rapidly earning her flattering title of "photographer to the American Court."

OUR ILLUSTRATION.

One of the most novel and at the same time useful illustrations that we have ever had the pleasure of giving our readers constitutes our frontispiece this issue. It forms a most appropriate illustration for this, the first month of the year, and is one that will probably be carefully kept until time has circled around the very good portrait of Mr. Landon from January to December. The prints are on the popular "O.K." Aristo paper from a Stanley Plate negative, which forms a most pleasing combination. Mr. Landon has a great many friends among the profession who will heartily return his good wishes for their prosperity in 1896.

BOOKS AND PICTURES RECEIVED.

Photographic Mosaics for 1896. Editor and publisher, EDWARD L. WILSON. Paper covers, 50 cents; library edition, $1.00.

One of the best and most practical American Year-Books, profusely illustrated with the convention pictures of 1895, and valuable articles by the prize-takers. Also contains a review of the methods and formulæ of 1895, and a number of practical papers on subjects of interest to the photographer.

Photograms of 1895, published by the proprietors of the *Photogram*, is intended to be an annual reproduction of the best work of the two great exhibitions of London, the Photographic Salon and the Royal Photographic Society. The greater part of the book is given up to the reproduction of these pictures. The few pages of reading matter appearing are very interesting contributions from Prof W. K. Burton, Gleason, White and Alfred Stieglitz. The half-tone work is quite satisfactory.

The International Annual of Anthony's Photographic Bulletin. Edited by F. J. HARRISON; Publishers, E. & H. T. Anthony & Co., New York. Price, paper 75c, cloth $1.25.

This welcome annual is fully up to its usual high standard, is richly illustrated, handsomely printed, and has for a frontispiece an actual photograph, from the gallery of a leading artist, on Aristo Platino. The articles are all of more than usual interest. All the annuals are having a large sale this year, and this is especially true of "Anthony's" If you haven't a copy, secure one at once.

THE January issue of the *Photographic Times* will be a special holiday number, containing a list of attractions including over one hundred illustrations. It will be published on the 15th of December, and begins the new volume. With this issue an Encyclopædic Dictionary of Photography will be commenced. It will be so printed that when complete it can be separately bound, and will form the completest work upon the science of photography that has ever been published, containing over two thousand references and five hundred illustrations.

The American Annual of Photography and Photographic Times Annual for 1896, edited by WALTER E. WOODBURY. New York: The Scovill & Adams Co.

This elegant annual is fully up to its usual standard of interest. The articles given, while of the usual "annual" kind, are of a very high grade, being at the same time instructive and interesting. Over two hundred illustrations are given. Of the fifty full page pictures, some sixteen are effectively printed on tinted paper. Taken all-in-all the annual for '96 is worth many times its price, and we hardly need advise our readers to become possessed of a copy at once as the edition, although very large, is rapidly being exhausted. Price in paper, 75c.; in cloth, $1.25.

Santa Claus is a triplet this year, as usual, in the office of the *Illustrated Buffalo Express*. Three sumptuous holiday numbers are to be issued by that popular journal, for the weeks of December 15th, 22nd and 29th. The first is to have a stunning cover in three colors. The second, besides colored cover and other Christmas attractions, will contain the prize-winning photographs in the *Express* amateur camera contest. The third or New Year's *Express* will also be extra big and extra fine. It is evident that the *Illustrated Express* means to end the year in a blaze of glory. Certain it is no one can afford to miss the holiday issues.

The Christmas number of the *Art Amateur* is replete with valuable practical material in every department of art work, and special articles suited to the season. The picture of the old fiddler, which is this year the attraction of the news stands throughout the country, is from the famous picture by J. G. Brown. Even more valuable to the art student is the striking study of "Fleur-de-Lis," in water colors, by Frieda V. Redmond, shown in progressive stages of painting, like the companion panel of "American Beauty Roses," issued with the October number. Examples of decoration in the supplements are numerous—china painters and wood carvers especially are given a rare treat. In the letter press, among countless good things, the story of Lady Emma Hamilton, with the portrait by Romney, is sympathetically and briefly told; "The Study of Human Expression" deals with a subject of universal interest, and the article on "Teaching the Child to Draw" will attract not only teachers, but every mother in the land. It is not easy to imagine a more suitable holiday present for an artistic friend than a year's subscription to this sterling magazine. Montague Marks, publisher, 23 Union Square, New York; $4.00 a year.

A LETTER FROM STANLEY DRY PLATE CO. TO THE TRADE.

In commencing the year 1896 we wish to express our thanks for the liberal patronage which our plates have received in the past. There has been a marked increase in the sale of the Stanley Plates ever since their introduction into Canada, 1895 far surpassing any previous year, notwithstanding the dulness in the photographic trade which characterized the greater part of it. It will continue to be our aim to put upon the market the best plates which it is possible to turn out, our facilities being always of the best. We therefore feel confident of the continuation of your favors, and hope that any one not using our plates will give them a careful trial and be convinced of their qualities. Wishing all a Happy New Year and continued success.

We are, yours very truly,

STANLEY DRY PLATE CO., Montreal.

NOTICE BOARD.

W. A. Lyon & Co. inform us that they have bought the entire stock of the Star Dry Plate Co., and will offer these plates, of recent make, at greatly reduced prices, to clear.

If You are Going to take any out-door pictures while the snow is on the ground a Bausch & Lamb Bichromate of Potash cell will be a most necessary part of the combination. They fit on the front of the lens hood, are easy to place in use and the effect is magical.

We Continue to Hear words of praise from the trade regarding the very satisfactory work done for them in Bromide and other enlargements by Mr. H. N. Macdonald, of Mount Forest. If you have not done business with him the quality of his work and his prices will surprise you.

The Thornton-Pickard shutters are deservedly great favorites both with professional and amateur photographers. They work entirely without vibration. Their new silent studio shutter is proving a great winner. The descriptive booklet issued by the firm contains much useful information. Send for one if you have not already done so.

The Moss Photo Co. of Halifax, N.S., send us a very pretty and ingenious holiday greeting in the shape of a two-leaf card graced on the inside with a Bromide print of excellent quality. With their usual energy they are making a holiday "push" in the shape of Platinotype and Bromide prints and will undoubtedly reap considerable pecuniar gain therefrom.

One Dollar a Year is now the price of this journal, and it's great big value for the money. Show a copy to your friends so that they may take advantage of our offer to give as good a photographic journal as is published for *one dollar*. Remember it's the only journal of the kind published on earth that can and does give an actual mounted photograph as a frontispiece.

The work of W. M. Hollinger, of Dayton, Ohio, attracted great attention at the Detroit Convention, owing to the evident individuality of the work. Mr. Hollinger handles his light in such a manner as to cause his picture to seem to stand out in bold relief, and, at the same time, he preserved the flesh tints perfectly. Mr. Hoefle, the popular representative of the Hammer plate, recently wrote an exchange the following interesting account of Mr. Hollinger's methods under the skylight: His studio sidelight is twelve feet by sixteen; the top light, which is at an angle of thirty degrees, is twelve feet by fourteen. The glass is corrugated. Mr. Hollinger has entirely discarded the ordinary curtains, and depends for securing his effects entirely upon a screen which is placed between the sitter and the source of light. On this screen are a large number of little curtains, and by drawing any one of them he can let a flood of light in upon the sitter, since working with curtainless skylights he gets the direct rays wherever he opens a space in the screen. In lighting a face it is impossible to get a successful effect unless one knows what is aimed at. After long study of the matter Mr. Hollinger has found that it is best for him to select a very small part of the face and concentrate all his efforts in getting the modeling of that right, and when that is attained the rest will look after itself.

His object in every case is to define clearly the little triangle underneath the inner corner of the eye, along side of the nose on the side of the face next the light, and once he attains that he makes the exposure. The flesh texture is easily got. Mr. Hollinger recognizes that photography is emphatically the most perfect method of rendering texture of any kind the world has yet seen, and believing this to be the case has no hesitation in sending out much of his work absolutely free from the contamination of the retoucher's pencil, and where its use is absolutely necessary to remedy defects is as sparing with it as possible. He holds that every stroke of the pencil detracts so much from the quality of his work.

NOTES FROM A TRAVELLER.

J. J. KERFOOT, Forest, Ont., has worked up a nice steady business in that town, which speaks well for him, as he is a young man and Forest was his first venture.

W. F. CHARLTON, Aylmer, Ont., has built one of the finest galleries in the Province. No expense has been spared to make it first-class in every detail.

CHAS. T. DESJARDIN, Sorel, has gotten in shape for the winter months. Sorel is practically a summer port, and at that season of the year is a very beautiful place. Mr. Desjardin has a very fast sailing yacht, and your correspondent has often enjoyed an hour's cruise on the waters of the majestic St. Lawrence.

MR. M. D. KILBURN, Coaticook, has been getting out some nice Christmas work. He is doing a good business and is just as kindly and as genial as ever.

R. S. PRIDHAM, Amherst, N.S., has opened out a first-class studio in Sackville, N.B. Sackville is a great college town, and Mr. Pridham will certainly do a good business.

JOE FERGUSON is kept busy with his St. Thomas and Dutton studios. Reports say Mr. F. has been attending tea parties and socials in Dutton very regularly of late, with an *object* in view. Be careful, J. F.

COL. G. H. PRESBY is at present temporarily at Danville, Que., taking a few snap shots of the natives there. His son is looking after their main business in Sherbrooke. When last seen Mr. Presby, jr., was busy with Christmas work.

W. BURTON FINLEY, Sherbrooke, has just got out some beautiful work on Platino, from cabinet up to eighteen by twenty-four. Speaking of his trip to Detroit in August, Mr. Finley said he had no idea of the points he had picked up until he reached home. His work to-day is really first-class and is bringing him good prices.

J. L. PINSONNEAULT, St. Johns, expresses his determination to join us in Toronto with his brother at the next convention. During the few years he has been in St. Johns, he has thoroughly convinced the residents that photographs are a necessity as is evidenced by his large patronage. Like his brother, he is up to the times—it counts.

MR. GEO. JOHNSON, Sherbrooke, is working up a nice trade among his friends in that city. His success does him great credit.

MR. HOPKINS has been doing some very nice work with his flash machine, one group particularly of 200 people. 'Tis a pity he has not put it on the market more than he has.

MR. NANTEL, of East Sherbrooke, has decided to remain in that place and given up the idea of migrating to Uncle Sam's country. He is a good workman, a gentleman in every sense, and has the respect of his patrons and competitors.

HENRY HENDERSON, Kingston, reports business very good. Mr. Henderson has been in Kingston since 1863, engaged in photography. He has not allowed time to place him in the background, but rather gets the latest and keeps abreast of the times. His healthy condition of trade is the reward.

P. F. PINSONNEAULT, Three Rivers, Que., was seen some time ago, and expressed himself as more than pleased with his trip to the convention in September last, and said he would not miss another. Mr. Pinsonneault is one of Quebec's progressive photographers, and his work at the present time reflects great credit on him.

AFTER years of retirement from photography as a business, Mr. M. E. Robb, Knowlton, Que., has demonstrated the truth of the time-worn saying, "that they can't quit it," and is now running a first-class gallery in Granby, doing a good business and good work.

W. L. RICHARDSON, Kingston, has been doing some nice work lately on Platino. He is improving in his work every day, and his patrons are more than pleased with his efforts.

M. LAFRAMER some time ago assumed charge and control of Thos. Yeoward's gallery in Stratford, and is doing some very nice work, which the people of Srratford will certainly appreciate.

J W. BARRIE, Richmond, is still doing a lucrative business in that town. Bro. Barrie is getting a trifle grey, but by *no means old*, and is just as gay a cavalier as when the fiend knew him several years ago.

MR. FRANK COOPER, London, and his large staff of employees have been as busy as beavers during the holiday season, and the year's business has exceeded all previous records. Mr. Cooper's reputation as an A1 photographer reaches out all over the Province, and many a successful photographer, both in the United States and Canada, owes his success to Mr. C.'s thorough photographic drilling.

J. T. CONLON, Prescott, is determined that the photographic species shall not die out, and his latest addition is a very interesting baby boy (the very image of his papa). Mr. Conlon was recently elected one of the city fathers of Prescott, and is enjoying a lucrative photographic trade. Brother Jim's star is in the ascendant, but honors sit lightly on him, and he is just as kindly and unassuming as ever.

MR. J. E. ETHIER, Waterloo, Que., reports business first class. He has a very nice gallery, well appointed, and although in Waterloo only a few years, he has the thorough confidence of the people of that town.

OUR worthy ex-president, Mr. Alex. Cunningham, was seen a few days ago, only for a minute, as he was busy operating, Mr. Cochran's rooms being full of sitters ready to have their faces indexed for Christmas. He was looking first-rate, wished to be remembered to all his friends, but hadn't time to indulge in superfluities.

COL. DAVIS, of Sheldon & Davis, Kingston, was interviewed lately. The Colonel smiled one of his winning smiles which (in his case), like good wine, improve with age, and remarked that he felt as young as he ever did, business was good, and his mind was settled on the paper question, and consequently contented. A mild Concha Maduro was tendered, but I was informed in a decided stage whisper that he had "quit," and was *forced* to smoke it myself. The Col. is a very agreeable and captivating gentleman, and an hour or two spent in his company is a rare pleasure.

HOW TO PRESERVE LENSES.

Lenses should be kept in a pure dry atmosphere, away from dust and damp. These impair the perfect polish of a high-class instrument, and by scattering some of the light which passes through, produce a degree of "fog" in its images and negatives.

Use an old clean cambric handkerchief to remove dust. Never *rub* the glass, nor use whiting, leather, flannel, paper, or anything likely to contain a particle of grit; but only brush it lightly with such a smooth soft duster as the clean old cambric handkerchief. Hold the lens inverted and wipe the under side that the dust may fall away from it.

A visible speck on the lens is of less importance than an invisible and general imperfection of polish or a film of fine dust or moisture.

Lenses should not be left before a fire nor in the sun to become unduly heated; nor should they be so cold, when used in a damp atmosphere, that moisture is condensed upon their surfaces.

In screwing together the parts of a lens, turn first in the wrong direction until the fittings snap together in the position for starting; then reverse the motion to screw them together.

To guard against a frequent cause of fogged nagatives, and to secure the full effect of a high-class lens, the inside of every camera should be quite black and free from any trace of shiningness. This important matter is too commonly neglected.

ST. CATHARINES CAMERA CLUB.

A local Camera Club has been lately organized in St. Catharines, Ont., under the following officers: Honorary President, Rev. P. L. Spencer; President, J. A. Abbs; 1st Vice-President, W. G. Maybee; 2nd Vice-President, R. E. Foote; Secretary-Treasurer, H. A. Burson. The club will be glad to hear from other clubs with regard to exchange of lantern slides, etc.