



on Stanley Plate

The Canadian Photographic Journal

DEVOTED TO THE INTERESTS OF THE

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Professional and
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Our Illustrations.

THE frontispiece this month comes from the gallery of Wm. Notman & Sons, and is a good specimen of the fine work done by this well-known firm. A head of this size is as good a test of the work of a photographer as could be wished, and the picture submitted to our readers certainly stands well the test. This illustration also shows well the fine qualities of the Stanley plate, and it should make many new friends for this popular make of plates.

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The excellent work done by the Elliott Illustrating Co., of Toronto, is well represented by the "Scene on the John Smith Farm," near Brandon. The scene is typical of the Northwest, and well executed. We lately had the pleasure of going through the different departments of this establishment under the guidance of Mr. Elliott, and found

them fitted up with all the latest improvements in their line, and capable of turning out the finest of work.

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The half tones from negatives by Mr. Thos. Langton and Mr. R. T. Clark, of the Toronto Camera Club, show the usual good work done by members of this club.

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Amateur Work.

WE notice in the issue of September 30th of the *Photo. Times*, mention of the receipt by them of some very excellent work by a clever Toronto amateur, Mr. Harry English, a snap-shot of the Wanderers' bicycle races being especially well spoken of.

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It is our intention to reproduce in half-tone some of the good work done by our Canadian amateurs, and the **THE JOURNAL** would be pleased to have our amateur friends send us well-printed albumen prints for that purpose. We will acknowledge receipt of all prints sent us, and publish all that we can.

Don't Miss a Copy.

We hope the three hundred odd subscribers, whose six months' subscription has expired, will send in their renewals at once, so as not to miss a copy of THE JOURNAL. The easiest way and the best is to "join the majority" and send in two dollars for a year. Don't put it off. Send in at once.

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Change of Address.

The Thornton-Pickard Manufacturing Company inform us that they have now completed the erection of their new factory and offices at Altrincham, near Manchester.

The whole of their business will be transferred to the new premises, and all communications should be sent to the new address after this date.

The factory has been designed and built expressly for the manufacture of the Thornton-Pickard specialties, is fitted with the best machinery and appliances for the purpose and possesses every facility for the prompt despatch of goods, being in close proximity to four railway stations.

The rapid increase in the company's business has rendered this extension absolutely necessary, and we have no doubt that the improved facilities will enable them to successfully cope with it.

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A Correction.

In speaking of the different displays at the late Convention in our September number, it was stated that Mr. Lyonde's prize pictures of "Dora" were made on the "Star" plates. This should have read "Stanley" plate instead of "Star."

We also owe Mr. Wm. Still, of Orangeville, an apology for having unintentionally omitted, in our notice

of exhibits at the Convention, mention of his very excellent display of portraiture and view work. Mr. Still carried off two prizes for excellence of work on Omega paper; 1st prize for view work and 2nd for photos.

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We would call the attention of our readers to the advertisement of Benj. French & Co., of Boston, Mass., which makes its appearance in our advertising columns with this issue. Messrs. French & Co. are the American agents of the ever-popular "Euryscope" lens, and any one thinking of buying a good lens should send for their catalogue before purchasing.

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That Alleged Cribbing.

To the Editor of THE JOURNAL:

SIR,—My attention has been personally called to the editorial in the September issue of THE CANADIAN PHOTOGRAPHIC JOURNAL, commenting on the claim made by the *American Journal of Photography*, that the matter contained in the article contributed by myself in the June number of your valuable journal on "Working Aristo" was taken from the pages of their journal. To this charge, sir, I wish to give an unqualified denial. The article in question was written at your own request for the purpose of publishing the formula and directions made use of in our studio for the working of gelatine-chloride paper. Being, as I think I can safely state we are, among the largest users of Aristo paper in the province, which has been exclusively and most successfully used in our studio for the past twelve months, I complied with your request, not for the purpose of writing an essay on Aristo paper, but as a means of assisting those among the fraternity who had not met with the

same success in working this paper that we ourselves had, and the further inquiry I have received from a number of photographers is an assurance that the object aimed at was obtained. As an introduction to this article I quoted the information that the successful working of the various so-called Aristo papers was, with the professional photographer, one of the leading problems of the day, the names and derivation of both kinds of Aristo paper, and the name and birth place of the inventor. This information, sir, you will find, if you refer to the original article, was written under quotation marks, the absence of which in the printed article I deemed a mere typographical error, but the subject matter of my article, viz., the formula and directions for the successful use of gelatine-chloride paper is, without the shadow of a doubt, absolutely and entirely original, neither copied from nor inspired by anything that has appeared in the *American* (or any other) *Journal of Photography*, but is the exact process made use of in our studio at the time of your visit, some seven months ago. I thank you, Mr. Editor, for the impartial comments made by yourself *re* this charge, and take this opportunity of again wishing THE CANADIAN PHOTOGRAPHIC JOURNAL continued success.

Yours truly,

A. E. LYON.

Guelph, Ont., October 1.

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Photography at the Industrial Exposition.

To the Editor of THE JOURNAL :

SIR,—Kindly permit me to make a few remarks regarding the exhibition of photography at the Industrial Exposition, held in Toronto from Sept. 3rd to 17th. For a number of years prizes for

the best exhibits in photography in various classes have been offered by the directors of the exposition, and until within the last year or two competition in the different classes was very keen. For some peculiar reason, this has now changed, and there is scarcely any competition whatever. In past years those interested in photography could direct their footsteps to one particular section on the ground floor of the exhibition building and feast their eyes on a collection of photography in its different branches that would please and educate them, and give them a fair idea of the progress of the art. Now, however, a person has to wander around from one point to another, and, if he is quick in the matter of seeing, he may observe in some out-of-the-way corner, covering some blank space in a very poor light, a small collection of photographs. These photographs may be good, or they may be thoroughly indifferent under the circumstances. It is almost impossible to judge fairly of the technical quality of the work. This certainly is the fault of the directors, or the gentlemen who have charge of the allotment of space. This department ought to be in one section, as it is equally as important as the art gallery, and is entitled to the same consideration that it received three years ago.

After exercising a great deal of patience and endurance, combined with a certain amount of skill, I discovered (in some cases quite accidentally) that the total number of exhibitors in photography amounted to six. Think of it, readers! Six photographers, out of a possible five hundred, who were pleased to let the light of their *art* shine before the eyes of multitudes of people from all over Canada. I trust I may be pardoned for using the word "art," for I must say that it has never been my privilege

to see such a poor exhibition of photographs, leaving out entirely the question of art. In the matter of judging the technical points of photography, such as lighting, posing, chemical effect, etc., they were entirely overlooked; not wilfully so, I would not say, but simply because the judges did not understand in any degree what constituted a good photograph. This is the conclusion I am forced to after seeing the manner in which the prizes were awarded. One of the exhibitors, Messrs. Murray & Co., of Brockville, had on the whole a very good exhibit of photography in nearly all its branches. He was particularly fortunate in receiving the lion's share of what was going. I am not reflecting on Mr. Murray's work when I say that he did not deserve the number of first prize tickets he received. In the matter of portraits, there was a sameness pervading the whole exhibit. There was little or no variation from one style, and really only one style of portrait was exhibited, namely, figures from cabinet size to $6\frac{1}{2} \times 8\frac{1}{2}$. In the whole of Mr. Murray's exhibit there was not one study of a head, and all photographers know that in the posing and lighting of a head lies the most difficult part of portrait photography. Yet Mr. Murray takes first prize in portraits, when a competitor (C. S. Cochran, of Hamilton), who has a collection of portraits comprising figures and heads ranging from cabinet size to life size, has to be content with second place. This is where the judges erred. They saw a large exhibit on one hand that did *not* embrace all the points of portraiture, and a smaller exhibit on the other hand that embraced nearly all the points of portrait photography, and awarded the first prize to the one that was least entitled to it.

In the class of landscape photography the same error occurred. The judges evidently did not take into consideration, as they ought to have done, the composition of a picture, the quality of the negatives, and the class of prints upon which they had to pass judgment. These are particularly necessary and essential points to bear in mind when judging is taking place, but they were entirely overlooked. They awarded first place to Messrs. Murray & Co., second to Messrs. Thomson & Co., of Vancouver, B. C., and no place to the Toronto Photo Co. and F. Micklethwaite, of Toronto. It would take too much time to enter into the respective merits of all the exhibits in this class, but one thing certain, is, the prizes were by no means correctly awarded. It gives me the impression that the judges had a certain time allotted to them in which to distribute prize cards, and they distributed them indiscriminately, without any consideration as to the merits of the exhibits.

It is useless for me to attempt to pass judgment on the other branches in which exhibits were made. I would only be forced to tell the truth about them, and in these cases it would not be very flattering. I was very much disappointed in the whole exhibition of photography; particularly so, when I know that there are photographers in every part of Canada who can turn out work that is open to the keenest kind of criticism. Why they do not come forward and exhibit, even if they do not win a prize, is something I cannot understand. The expense is very little, and the reward sometimes is a great deal. In this, as in all other things, let the best man win.

Yours truly,

X. Y. Z.



37 King St. East, Toronto

SCENE ON THE JOHN SMITH FARM NEAR BRANDON.

Elliott & Fry, Esqrs.

“Ars Longa, Vita Brevis.”

THE truth of the quotation that heads this article has long been recognized, and its natural deduction put into practice by professors and practitioners in every branch of science and art, including the various manufactures incident to the every-day life of this busy world. The adage, “a Jack of all trades, but a master of none,” has a wider application than was intended or thought of by its originator, as it applies to the professions as well as to the trades; and it is, to a large extent at least, to the recognition of that fact that we are indebted for the great advance that has been made in recent years, in our cosmic knowledge.

There is no branch of human knowledge sufficiently limited to be fully grasped by any one individual during the working period of the allotted three-score and ten, and hence he who would know all that has been already discovered, and perchance be permitted to turn over one or more new leaves, must give an undivided attention to a single sub-division—must become a specialist if he hopes to excel, or even to keep abreast of his fellows.

To the almost universal recognition of the necessity of specialism there seems to be at least one exception—the amateur photographer. I don't mean the tyro in the “how long do you think I should give it?” stage, to whom the swing back and the use of the stops are mysteries, and who delights in a one-solution developer because “it's all mixed and ready, don't you see?”; or if, perchance, he has been induced to employ separate solutions, knows them only as Nos. 1 and 2, and uses them only in the prescribed proportions on all sorts of subjects and for the pro-

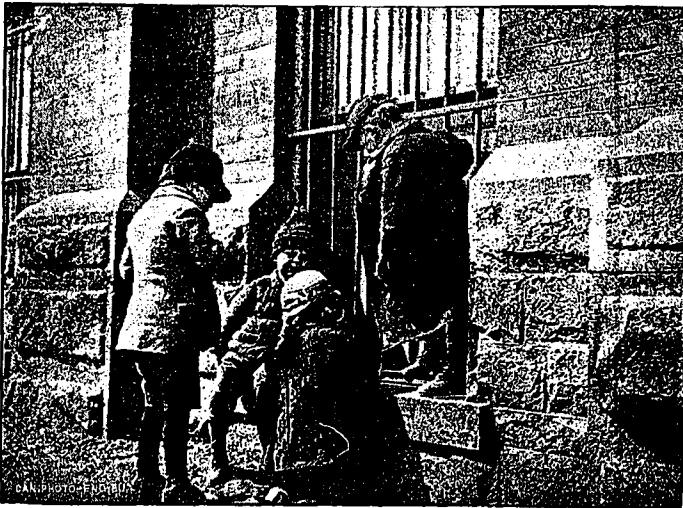
duction of all sorts of effects. By amateur photographer, in this case, I mean he who has passed up above the mechanical and chemical haze into the clear atmosphere of picture making, and who looks on what he formerly considered photography as merely a means to an end, and the apparatus and chemicals simply as tools to be intelligently employed in the production of pictorial effects.

The material for pictorial effects includes all nature, animate and inanimate, but, like a sectional puzzle, only the trained eye and practised hand can arrange and harmonize the various elements. Then, not only are those elements practically illimitable, but each class or group may be so combined and arranged as to form a vast number of classes, divisions or styles of pictures, each requiring for its most perfect rendering much study and long practice.

Take, for example, only a few of those classes into which artists have naturally, but necessarily, drifted. There is portraiture; historical illustration; animal painting; landscape pure and simple; landscape with figures, and figure subjects with landscape; marine subjects; architecture; *genre*, etc., etc., etc., *ad lib*. It is true that there have been master minds capable of successfully grappling with most, or many, of these divisions, but they are few and far between; and so fully is this limitation of ability recognized by some of our best modern men, that it is a common practice for the landscape painter to employ a figure-painting friend to put in his figures, and *vice versa*. Would Reynolds, Raeburn or Lawrence have reached the pinnacle on which they have so long stood if they had not confined themselves to portraiture? I trow not; nor would



BEGGAR. — THOS. LANGTON.



A SUNNY CORNER. -- R. T. CLARK.

Wilkie, Landseer, MacCulloch, and all the other giants, each in his own chosen department, retain their ever-living influence if, instead of sticking to one particular line, they had, like the industrious bee, wandered about from flower to flower. The exceptionally few, what I may call poly-artists, serve only to emphasize the law which says thou shalt not excel in more than one branch of art, and even in one only by sticking closely to it. If this be so with the born artist, how much more so it is with the amateur photographer, who, more frequently than not, is not so born, and has to grope his way, often through much darkness and difficulty.

Photography has but little more than passed its jubilee, and its union with art has not yet reached the golden period; yet its practitioners, especially those of the amateur persuasion, already number more than can be claimed by any other hobby, amusement, or change of occupation; and yet how few of all that vast array are known beyond their more immediate circle! From the earlier days come Hill and Adamson, Rejlander, Salomen, and Mrs. Cameron; and at the present time we have H. P. Robinson, George Wood, and a few others, probably not more than might be counted on the fingers. Why are the known so few, and the unknown so many? Simply, or at least mainly, because the former have adopted one branch and gone in for it thoroughly, while the latter have laid all nature under contribution, taking everything for fish that came into the net, and turning the camera, with equal want of discrimination, on every object or subject that seemed pleasing to the eye, as if the lens possessed some occult power to transmute nature's vagaries into artistic pictures.

There are, of course, some who have no ambition beyond the making of *pretty* pictures, and who are satisfied with an exact representation of natural objects, even in their scattered-from-a-pepperbox form, so long as every line or leaf is "as sharp as a needle," the negative free from flaw or stain, and the print as glossy as a mirror; and there may be some who could not do better if they were to try; but for such I do not write. I want the ear of those who see in photography the means of making natural objects tell the story of nature's moods; of leading the mind from the visible to the invisible; of creating thought in fact, and helping to fill the cup of human happiness—that cup so much sought after and so rarely found.

To such seekers after the higher ideal of photography I would say per-severe. The goal is reachable, but only by much patient study and work; so much indeed of each that life is too short, and with most amateurs leisure too limited, for it to be possible to master more than one of its many phases. He should fix on one branch, but not without much careful consideration. His heart must be in the work, and therefore the branch must be one for which he has a special liking; while at the same time it must be one the essential conveniences and appliances for which are easily come-at-able.

The branch thus selected and adopted must be stuck to through thick and thin; thought of by day and dreamed of by night; be present with you in the streets and lanes of the city, as well as in the highways and byways of the country, or wherever material for your specialty is to be found. The difficulty of utilizing that material will at first be great, but grow less and less with every determined trial, until in course of time

it will be with you as clay in the hands of the potter, and you will take rank amongst what are at present the honored few, but will, I hope, ultimately be the honourable many.

JOHN CLARKE.

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Printing and Toning Albumen Paper.*

BY C. A. LEE.

THIS is a subject upon which there has been a great deal said and written, and there is still much more of a practical nature to be said. It requires both brains and experience to be a good printer and toner, and that is what many studios in this country lack. But you will find plenty of inferior help, men who do not know the first principles of the work required of them. The proprietor, who may be a first-class printer, cannot keep his eye on all the petty details of the printing room, and the first thing he knows prints are being made that are not fit to be delivered. Then he starts to investigate and finds, perhaps, a sensitizing bath that is acid, weak, or charged with albumen or other organic matter; then he has to resort to doctoring. Now, Mr. President, I will give this convention assembled my mode of working albumen paper. In the first place choose a brand of paper and stick to it until you can get good results; keep your paper and chemicals working in harmony; keep your paper in the proper condition for sensitizing, just damp enough to prevent it from cracking while handling, float two minutes on a bath containing water and silver nitrate (65 hydrometer test) made slightly alkali by the addition of a small lump of sodium carb., which will form a precipitate, and so long as that precipitate

is in the bottom of your bottle, you can be sure your solution is alkali. Now that you have your paper sensitized, dry with moderate heat and fume thirty (30) minutes; do not place the ammonia directly under the paper, but a little to one side, so the vapor will not come in contact with the paper at any direct point, but will spread evenly throughout the box and your paper will be evenly fumed. Cut sizes required and it is ready for the frames. Now, sir, we will take a cabinet head of a lady in light draperies. To vignette this, we will put a piece of wood one inch thick all round ordinary printing frame. Cut a hole in the card, notch it and spread it to the size required. Print in a soft light and the result is you will get a print with a soft, even blend almost to the edge, but put the card on the frame, and put in a strong light and you get a saved-off, ungainly looking affair. Now we will tone this print. Any of the many formulas published will give good results, but I use a very simple tone; 1 gr. chloride gold, 10 ozs. water, neutralize with bi-carb. soda and add a little soda carb. (it will prevent the bi-carb. soda from attacking the albumen surface, but be sure and not add too much; if you do, you will stop the process of toning). Tone until the high lights assume a pearly white, then stop. Put the print in a weak solution of salt. Fix in hypo, 1 oz. to 10 water and keep the prints in motion.


Last year we had quite a discussion on hot hypo versus cold. Hot hypo, in my estimation, is a thing never to be used. You have a forced chemical action and you must have forced results, sacrificing that softness, richness and brilliancy to a more or less degree. After your prints are fixed do not pour off the hypo, but add water to the hypo and weaken it, pour off half the bulk

*Read before the P. A. C. Convention.

and add more water, keeping them face down all the while, and if the temperature of the water has not been too low, you can look for blisters, but you will not find any. Keep your sensitizing bath, tone and hypo about the same alkalinity. Give your prints a good liberal washing and they are ready for the card.

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With a Kodak.

 N the steep, rugged bank of a stream famed for trout, that comes from the mountains to wander about through rocks here and there in a tortuous way, till it empties at last in the Georgian Bay—on its banks then, I say, one fine morning in June, a young man was seated. 'Twas drawing near noon, and each ray of the sun seemed to scorch like an ember (such a June before scarcely the oldest remember), so he sat there, or lay inertly at rest, doing lazily nothing, it must be confessed.

Now, very well chosen indeed was the ground on which this most indolent youth we have found, while reclining on soft, mossy cushion at ease, 'neath the murmuring shade of the tender-hued trees, one opens or closes one's eyes—which he wills—on the soft, restful verdure of summer-clad hills; on a blue, serene sky, and a glint and a gleam—where the shrubs break away—of the swift-running stream.

On this scene looks our hero in idlest way. It is really too hot to go fishing to-day. But he suddenly rouses himself with a start; he seizes his kodak, and then, with a smart, quick motion, born only of practice and skill, exposes its plate to a neighboring hill.

While the plate he replaces a footstep draws near. It startles our amateur artist to hear, as he gloats o'er his

prize with the glee of a boy, "That negative, sir, I must beg you destroy." The tone was quite frosty, I freely admit, but one cannot blame the fair speaker a bit. Think! Fresh from the galling restraints of the town, to be photographed! Caught in the act! Running down, in childish abandon, a tempting incline. Pretty picture indeed! That was all very fine! Oh, it was too provoking! He surely must see he should give up the plate—and he would, *wouldn't* he?

In such a predicament what could he do? Surely not refuse outright—I leave it to you—when commanded, beseeched, by a beautiful girl whose impetuous words put his brain in a whirl. What man could do he did. He vowed he would make two copies, two only, and then she might take the negative, either to break or preserve. And his eloquence conquered at last her reserve (he was handsome and courteous, I'm sure you will guess), so she finally gave her assent and address.

* * *

Two months have gone by, now the summer is over, and back to his work hies the tardiest rover. Our hero, Jack Harden, returns to his den, delighted to be in its precincts again. And now is begun the arrangement of all the views he had taken; the picturesque fall, the fishing excursion, a wild, rocky glen, the islands at sunrise, a boat race, and then—do you know, the mere sight of it gave him a thrill—a beautiful girl running down a steep hill. Many others he noticed, among them was one, he laughed when he saw it, just as he had done when first the original had dawned on his view; 'twas a comical scene, and the likeness was true.

'Twas an elderly man, very short, very stout, who in frantic excitement was playing a trout, his knees braced

like iron, his mouth firmly set, his eyes gleaming fiercely, his clothes dripping wet. A bite! a big trout! how supremely he's blest! "Let me conquer or die!" in his pose was expressed.

At this view laughed Jack Harden until he was tired, then a letter he penned:

"DEAR MISS S.,—You desired this negative sent when the summer was past. The summer is over; your photo at last, with another, which perhaps you will fancy, I send; if it causes a smile 'twill have served its great end, This letter, 'tis short, so I hope you will pardon. Believe me,

"Sincerely your friend,
J. M. HARDEN."

Two days after this came a small dainty note from Miss Seymour:

"MY DEAR MR. HARDEN," she wrote, "That photo you sent is my father's. As he would never consent to be photographed, we are more than delighted to have such a view. So lifelike; so perfect; and strange enough, too, when he saw the picture he said with delight 'twas capital! Quite a romantic thing, quite. He wishes to see you, and begs you will call; we're at home every Thursday. Sincerely,

"That's all."

But Jack Harden's heart beat in all sorts of ways, and Jack Harden's fingers were checking the days from Monday to Thursday. Just four days, and then—the mere thought was ecstatic—to see her again!

But why need we follow this tale to its close? What the ending of course must be everyone knows—how he saw her on Thursday, and many times more; how together they studied Love's intricate lore; suffice it to say that the very next June they went to Muskoka on their honeymoon.—JOHN FRANCIS DEANE in *Saturday Night*.

The pupils of the High School of Salem, Mass., are preparing an interesting memorial of that ancient town for

the World's Fair. The amateur photographers of the school are engaged in the preparation of a series of views of the many points of historic interest in which the town abounds. These are to be finished by the pupils themselves and are to form the illustrations of a handsome album. The descriptive letterpress of the book, also the work of the pupils, is to be neatly written on a typewriter, so that the whole volume will be literally the handiwork of the children of Salem.

A Collodion Dry Plate.

IT is more than three years ago that the Photographic Convention met at Birmingham, and amongst the papers read thereat was one by Dr. Hill-Norris, the then president of the Birmingham Society, in which he announced that he had succeeded in making a collodion plate which could be used dry, and which would keep, and that it would shortly be placed on the market. Months passed by without news of the article, and then we learned that Dr. Norris had formed a company to work the patent, and that a factory was being erected for the preparation of the new plate in one of the suburbs of Birmingham. This was a year or more ago, and we were almost giving up looking forward to its appearance, when one day last week we received a wire from Mr. Tylar, asking us to meet him at Coventry station. We did so, and were forthwith carried off by him to Marston Trussock, a secluded village in Northamptonshire, where at the vicarage, we found Mr. William Law, the octogenarian vicar—an enthusiastic amateur photographer, with an experience dating from the wet collodion days—awaiting our arrival. Mr. W. Tylar brought with him the first box of

the Hill-Norris dry plates sent out to the public, as a present to Mr. Law from the doctor, with a request for his trial and opinion. Needless to say, the plates were soon in the holders and the trio at work. Beyond the fact that about three seconds in sunshine with $f/32$ was stated to be about the correct exposure for an ordinary landscape and that almost any developer was suitable, we had nothing to guide us, but working on these lines, a couple of exposures were made and developed with a ready-made two-solution developer—presumably hydroquinone—which happened to be handy. The results were good, the negatives having all the characteristics of the old wet-plate negatives, with perfectly clear glass in the deepest shadows. Subsequently one of Mr. Law's dogs attracting our attention, two exposures were made upon it. It was a tan-colored collie, and with the sun shining, and using $f/8$, an exposure of about $\frac{1}{2}$ second was made, which, on developing, gave a good negative; another exposure, however, with the slowest speed of a Thornton-Pickard shutter—say $\frac{1}{175}$ s.—proved under-exposed. The negatives were fixed both with hypo and cyanide of potassium, and Mr. Law expressed himself as well satisfied with the results. After spending a very pleasant afternoon at the vicarage and its charming grounds we returned, taking with us a packet of the plates for further trial and experiment. With these we have obtained excellent results both in landscape work and portraiture, and have tried a variety of developers. Exposing by the aid of Watkins' exposure meter and calculating the speed of the plates as 15, we developed with ferrous oxalate, and also with pyro-soda (Ilford formula modified). These were, however, a trifle under-exposed, though not much,

so in our next experiments we took 10 as the speed number of the plate—*i. e.*, a trifle less than the Ilford ordinary—and this proved to be about right, good portraits in diffused light at $f/11$ being secured with two seconds' exposure. In these cases we again developed with pyro-soda, also developing other plates with pyro-ammonia in ten per cent. solutions, with Edward's two-solution pyro developer, with Tylar's "our own" developer, and with developer sent out by Fallowfield for use with Nievsky's ferrotype dry plates. Although Mr. Tylar had told us he was informed that pyro-ammonia would necessitate greatly prolonging the exposure, we did not find it so when using ten per cent. solutions, although in the Edward's preparation this was the case, and a weak image resulted. The best results were obtained with pyro-soda, pyro-ammonia, and with the Tylar developer (a compound, we believe, of hydroquinone and eikonogen), whilst with the Nievsky developer a very fine positive effect was obtained when the negative was placed against a dark background, this effect also being apparent, though not to so great a degree in the other cases. The negatives obtained do not, we think, show quite so great a range of gradation as a gelatine plate. The film is, of course, very tender, and will not bear the rough treatment that a gelatine film will stand, consequently, great care should be exercised against touching the sensitive surface whilst wet. By the use of cyanide as a fixing agent the dreaded hypo can be abolished, and as when cyanide is used the fixing is complete in a few seconds and the negative can be briefly washed and dried immediately—by heat if necessary—a decided advantage is apparent here over gelatine. In development, too, the action

is quick, very little time being taken to develop the image, and bring it up to full density. The plates are made, we understand, in three rapidities, the ones we used being of the medium quality, and as to their keeping qualities we were told those used had been made seven months. The delay in placing them on the market has been chiefly due to unforeseen difficulties in coating, special machinery having to be devised and constructed for the purpose, the peculiar nature of collodion precluding the use of the ordinary emulsion plate-coating machines. The works at Yardly—Yardly Fields Laboratories—are now in full swing, and the plates being manufactured by the company, which will trade as the Birmingham Dry Collodion Plate and Film Co., Ltd.—*Photography*.

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“Bromide Enlarging.”

BY FREDERICK PARK.

[Newcastle-on-Tyne and Northern Counties Photographic Association.]

THIS apparatus can be bought very cheap already made of any size up to 15 x 12, and is, I think, very convenient.

A rigid box can be used instead, when the lens is inserted at one end and the other end left open, in which case an easel is made to slide in at the back for focusing, and on which the bromide paper is pinned, and a piece of cloth hung over the back of the box to exclude any extraneous light. In each case a piece of ground glass is substituted when focusing, and in the case of the rigid box a mark must be made, so that the easel can be placed in the same position. But a camera with bellows has many advantages, as it is more easily worked for focusing and can readily be made, and a dark slide for holding the paper could be bought and

fitted to it. The dark slide can be had fitted with carriers for holding any size of paper, in which the paper will easily stand upright when supported at the corners, like a plate, especially if the thick paper be used; if not, it can be held between two pieces of plain glass without harm.

The best way to fix the negative for illuminating it is to fix it in the camera in which it was taken, either by having a holder to fit in position of the ground glass, or place it in a dark slide and open both slides; then place the camera with the negative toward the light and the lens-hole pointing inwards, the lens having been removed and inserted in the larger camera.

The lens used in taking the negative answers admirably; but if a short exposure is preferred, then a portrait lens can be used.

It is better to have a long board to hold the two cameras, so that the larger one, containing the bromide paper, is at one end, and the smaller one, containing the negative, upon a small table at the other end, so that the lens-hole of the small camera will be on a level with the lens in the large camera, each of these sliding between beads at either side, so as to keep them parallel. This saves a lot of time in centring, as when once they are set, then at whatever distance they may be removed for focusing they are always centred.

The board with the whole arrangement can then be rested on the window-sill and a good slope should be given, as this is very desirable, and if used with artificial light, is simply placed upon a table.

When a dark room can be used, then the window is first blocked up, leaving an aperture of the size of the negative to be enlarged. The ordinary camera or an enlarging camera con-

taining the negative is fixed up against the aperture, with the lens pointing inward, so that no light can enter the room except that which comes through the negative. Of course, the ground glass is removed and the negative inserted in its place, and an easel for holding the bromide paper placed at the required distance from the lens. The camera must, in this instance, be able to extend to twice the distance of the the focus of the lens used.

A window facing the north is to be preferred, or wait until the sun's rays do not fall direct upon the negative, as direct sunshine is not desirable. It is also better to be as high as possible, and to have an open view, so as to avoid houses opposite, as chimneys, etc., obstruct the light and often cast a shadow over the negative, which will show in the enlargement. In this case a mirror or sheet of cardboard at an angle of 45 degrees, outside the window, so as to reflect the skylight on the negative, will greatly help to overcome these difficulties.

When artificial light is used, then a condenser is necessary. It is placed between the light and the negative so as to collect the light, in order to render the rays parallel, which enter it, so as to cause equal illumination of the negative. In this case the same apparatus can be used as described for daylight, so that an open light can be utilized if a large camera be used; but if not not, then the light must be enclosed, and the enlargement thrown on an easel, as in the dark-room arrangement. A good Agrand burner answers admirably in place of the lime or electric light.

With regard to the exposure, it will depend upon the nature of the light and size of stop used, and will best be found by trying on a small piece of paper

first, and when the correct exposure is found for a certain size of enlargement and a certain stop used, then other exposures can be calculated by the ordinary tables of exposure, and the density of the negative taken into account. In the case of daylight, the light varies considerably, but when a correct exposure is found by experiment on a small piece of paper, allowance can be made for the weather the same as in taking negatives, and pretty accurate results obtained.

It is as well to fix upon a good developer for ordinary negatives, and try to expose to suit it, and if a thin or flat negative is used, then a little more bromide added to the developer, so as to give contrast, and the exposure made to suit that developer; while a negative with great contrast should be given an exposure suitable for a developer with less bromide, so as to avoid exaggerating the contrast, so that exposure and development should be suited to each other. The exposure for artificial light will depend a great deal on the source of light used; but for daylight, and what I find is correct for this time of year (April), using stop $f/24$, at three in the afternoon, and slow paper, from quarter-plate to 10 x 8, as I have here to-night, I give three or four minutes, and develop with eikonogen, as follows:

A

Eikonogen	1 ounce.
Sulphite of soda	4 ounces.
Bromide of potassium.....	10 grains.
Distilled water	60 ounces.

B.

Carbonate of soda.....	3 ounces.
Distilled water	20 ounces.

Use three parts of A, one part of B, two parts of water, and one drop of ten per cent. solution of bromide of potassium to each ounce of mixed developer.

From four to six prints may be developed in this developer in succession with ease, and the following fixing solution used after :

Hypo 4 ounces.
 Bisulphite of soda 1 ounce.
 Water 20 ounces.

This fixing solution remains quite colorless if any of the developing solution should be carried into it by the prints, and prevents the possibility of any stains from the developer.

Ferrous oxalate is a very suitable developer, but is more troublesome to make and work with, having to have a clearing solution; and it has the disadvantage of becoming muddy when used with tap water by precipitating the lime, unless distilled water is used, and is, moreover, expensive.

Hydroquinone would be very suitable if it could be used with caustic soda or potash, but when these are used they are very injurious to the paper, as even a weak solution will rot the paper in a short time, so that it will not lift without falling to pieces, and if carbonate is used it is too slow. The above eikonogen developer is also excellent for plates, if used without the extra water, giving clean and brilliant negatives; but if one keeps to one developer, better results are likely to be obtained than when one is tried at one time and another at another; and the best way is, when you find a good developer, stick to it.

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Unrevealed Stars.

Professor Pickering expects to reveal forty-five times more stars than have yet been made known to astronomers by the aid of the photographing telescope that has been set up at Harvard Observatory, the gift of Miss Caroline W. Bruce, of New York.

The Eastman Company Wins its Suit against Reichenbach, Passavant and Mitburn.

FEW cases of the kind have equalled, in the public interest attaching to them, that of the Eastman Company against Henry M. Reichenbach and others. The parties to the suit are well known, and upon the issue of the case great interests depended because the Eastman Company has practically the monopoly of the field in the valuable specialties it offers to the trade. In a general way also the case is one of interest because it puts to legal test the question whether persons can use secrets gained while in the employ of another for the purpose of conducting a rival establishment, although the secrets may not be patented. Justice Adams, before whom the case was tried, in the April Equity Term, decided that this cannot be done, and in a decision perpetually enjoins the defendants from using the processes which Justice Adams finds were discovered by or disclosed to them while in the plaintiff's employ. Justice Adam's decision is accompanied by findings of fact and conclusions of law, and an opinion.

The findings enumerate sixteen formulæ, machines, methods and manipulations, which Justice Adams holds are the exclusive property of the Eastman Company. Among these are formulas for bromide paper, a machine for washing emulsions, methods for the handling of film and a new distillate, which was discovered by Passavant while in the employ of the Eastman Company, and which he refuses to disclose.

The conclusions of law are :

1. That the plaintiff is entitled to a permanent injunction enjoining and restraining the defendants and each of them, and their and each of their agents, attorneys and ser-

vants, from using or in any manner, either by word, writing, representation or otherwise disclosing, divulging or imparting to any person or corporation any knowledge or information as to either or any of the processes, formulæ or appliances mentioned or referred to in the foregoing seventeenth finding of fact.

2. That plaintiff recover of defendants its cost of this action to be adjusted.

The accompanying opinion treats in an elaborate way of the equitable rights of individuals or corporations in secret processes which are not patented. Justice Adams is clearly convinced that the Eastman Company was the possessor of valuable trade secrets which were confidentially known to the defendants. Reichenbach and Passavant were chemists of skill and experience, and employed with the view of making discoveries for the purpose of developing new results, which their employer was entitled to the sole enjoyment of.

The opinion does not uphold the contention of the defendants that these results were not in the nature of discoveries, because the agencies employed to produce them were already known to the scientific mind. To uphold his position Justice Adams cites the Bell Telephone as an instance where the agency, electricity, was known, but where it remained for the inventor to apply it for the purpose of transmitting sound. Mr. Reichenbach's own discovery of the use of saponin in washing plates and bromide paper is also cited.

Continuing, the opinion says :

"To briefly summarize, then, the established facts of this case, it appears that the plaintiff is the owner of valuable trade secrets which were discovered by one or more of the defendants, or necessarily disclosed to them while occupying a confidential relation towards the plaintiff; that as to such trade secrets as were discovered by either Reichenbach or Passavant, they have undertaken and agreed to give plaintiff the exclusive property in and control over the same; and that, in violation of this agreement, they are now proposing to

make use of them, or some of them, in such manner as to materially injure the plaintiff's business."

As to the application of the legal principles which must govern the disposition of the case, Justice Adams is of the opinion that the plaintiff's remedy resides in Court of Equity and not in law. Numerous authorities, English and American, are cited to prove the right of Court of Equity to interfere by injunctive processes for the protection of those who own a secret, even if it is not patented. This applies not to a fair discovery in an open field of processes which are secret, but to those who have learned the same while in the employ of the concern owning the secrets. The action, or proposed action, of Reichenbach, Passavant and Milburn is a breach of trust and "*contra bonos mores*."

.....
 "That Camera o' Mine."

Up to 17 Portsmouth Ave., the other evenin', I was a-sittin' in my bow-dwa in me big chair a-smokin' of my pipe and a-readin' of the *Telegram*, when Mrs. Jason says to me, "Jason," says she, "I'm-a-thinkin' it's about time ye quit your foolin' 'round the country with that machine o' yours, and tend to your business, moreover," says she, "what'er you makin' out of it anyway? Ain't the very soul and body worried out a-me by your goin's on? Here ye're neglectin' me and the children, and atween you and me, stop right now," says she. Having relieved her feelings in this way, she takes off'n her specs, leans back in her chair, an' waits for me to say somethin', which I did. Says I, "Maria, I'm more'n surprised, more'n surprised, that the wife of my busom should a-developed such a negative; one as what won't make a picture under no circum-

stances." "There ye goes again," says she, "I can't never say a word a-warnin' relatin' to your behavins' but ye rings in somethin' about your developin'. It's a-crazy, I'm thinkin', ye're gettin'." Having so said she takes up her knittin', and I sits a-puffin' and a-puffin', and a-wonderin' if maybe she's right, and say, perhaps, Jason, you and those felloes up to the Camera Club over to Yonge St. are just a wee bit off'n, sometimes. Says I, all softly like to my inner self, "Eh, there, what's yure got to say for yourself? Guilty or not guilty?" an' thinkin' to aise my conscience, and by way of divarsion, I speaks up, and I says in my sweetest accents of vocalization, "Maria, did ye see the picturs up to the exhibition? I mean the photos by some of our felloes, when ye and Mary Ann and Jabez was up. I forgot to ask ye what ye thought o' them along a-the ones I does." Says she, "Jason, I've been thinkin' powerful right along there, 'cause I recollected what advice ye gave before it comed off, so let me tell you; when we gets off the 'lectric car, says I to Mary Ann, Let's find the photo gallery, an' alter huntin' all over the show, an' axin' more'n a score o' those chaps with white caps on, who didn't have nothin' to do and seemed tired a-doin' it, where the photos was, we found 'em clear up by the roof in a little room all by themselves, where the lightin' was so bad that 'twas only after I'd rubbed and rubbed me specs on corner of my 'kerchief that I was able to make out the best o' them. There wasn't much of a show, that's takin' 'em as a quantity, but I guess the judges didn't see more'n a few o' them even as that goes, for I was amazed to find 'twas here just as ye said 'twas when you tryed that time up to Hamilton, and when ye wasn't in it, as ye said yourself." "Mary

Ann," says I, givin' full expression to my feelins', "if it don't beat all creation how pinions differ. Why, what'n I'm a-thinkin' best o' the whole caboodle ain't gotin' anythin', and others what has—well, glad I ain't one of the judges, 'caus I wouldn't have as easy a conscience I know, and," says I, "Mary Ann, me and Jason's a-got to see this thing together, so if 'taint puttin' you to too much inconvenience, I'll leave the childer in your company one of these times, and him an' me'll look at 'em afore I speaks me mind to the chap as runs the show as to these goins' on." "Maria," says I, speakin' slow and solemn as becomed the occasion, "so long as Jason runs this establishment I 'aint a-goin' to have no wife o' mine a-meddlin' in other people's doin's noways. Why, it's allus the same. 'Taint every chap what enters what gets there. Oftener it's him what's got the shortest rope an' pulls the strongest as wins. Maybe they'll take Jason's counsel 'nother time. I mean the felloes what got nothin'." "Well, Jason," says she, "maybe ye knows better'n me, but if I could a-see the heditor as prints for ye, I'd a give him a few o' my reasons along that line for the benefit of somebody, so there."

Now, Mr. Editor, ye see how I a-shunted her off'n in havin' me as a subject, and blevin' as how Mariar's feelin's ain't so far out, I gives 'em to ye just as she said em, for she's sound, and when she's a-speakin' there's never a whisper to be heard from

UNCLE JASON.


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Personal Mention.

Mr. R. E. Hodges, of Dunnville, has sold his gallery and will spend the winter in Waterford, Ont.

Mr. Gauvin, of Gauvin & Gentzel, Halifax, N. S., was married last week. We extend to Mr. and Mrs. Gauvin our heartiest congratulations.

The Montreal Camera Club.

E have received the very neatly printed constitution and by-laws of the Montreal Camera Club. It shows the club was established in 1890 and incorporated 1892, the object of the club being to promote the art and science of photography in all its branches. The club has about sixty members, and handsomely appointed club rooms in the new Y.M.C.A. building. The officers are: President, Prof. D. P. Penhallon, F.R.S.C., F.R.M.S.; vice-president, Albert Holden; secretary-treasurer, Charles F. Dawson. The club shows a courteous spirit towards the fair sex, ladies being eligible to membership and also to hold office.

The club evidently intends to make the winter of 1892-3 very interesting, as it announces a prize winter exhibition to be held about January 1st for members on the various kinds of work, and also a prize competition for amateurs under 20 years of age, open to either sex. A good clause is inserted under the conditions governing each competition, which states that all work exhibited must be the result of work performed in 1892. This should be one of the conditions governing all exhibitions. It is also well stated that all prize pictures shall belong to the club and will remain on permanent exhibition.

Another feature instituted by this club for the winter, and one well worthy of note by other clubs, is worded as follows: "Demonstrations, open to all beginners, will be given by members of the Montreal club upon various elementary processes in photography. These demonstrations are particularly designed to meet the needs of those who are just entering upon this very attrac-

tive field, and who may require a little guidance. The classes will be held in the club rooms fortnightly, and are free. Admission may be secured by obtaining a ticket from the secretary."

Interest in the meeting of the club will be still furthered by the reading of the following papers on the dates given. We hope to be able to publish these papers as read for the benefit of our readers. They are all by practical men and will be interesting, we are sure:

October 3rd—Light.—Prof. John Cox.

November 7th—Cameras: Their Adaption to Different Classes of Work.—Mr. Alex. Henderson.

December 5th—The Lens: Its Construction, Defects and Uses.—Prof. D. P. Penhallon.

January 5th—Lenses of Various Kinds.—Mr. Alex. Henderson.

February 6th—Exposures, Interior and Exterior.—Mr. Charles F. Dawson.


March 6th—Plates: Their Kinds and Special Uses.—Mr. J. J. Macintosh.

April 3rd—Development of Negatives.—Mr. Albert Holden.

May 4th—Intensifying and Reducing.—Mr. Geo. R. Prowse.

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Toronto Camera Club.

T a recent meeting the officers of the club decided to hold an exhibition in the club rooms during the latter part of November. The annual meeting will be held on Monday, the 7th November.

Club night, Monday, 10th October, was a grand success and largely attended. Some very good work was shown in the way of slides, and a generally pleasant time spent.

The secretary informs us that he has received a very tastefully gotten up copy of the by-laws of the Montreal Camera Club, which club is now incorporated and in a flourishing condition.

It is now in order for the Toronto Camera Club to bestir themselves and see that the Montreal Club does not outstrip them.

The Color Screen in Landscape Photography.*

BY CHARLES L. MITCHELL, M.D.

The value and use of orthochromatized emulsions in landscape photography is now fully recognized; but, as yet, there still appears to be considerable difference of opinion in regard to the necessity of the coincident employment of the color screen. It is stated by many of the manufacturers, who at present supply the market with iso or orthochromatic plates, that the use of this valuable adjunct is by no means necessary, and that equally good results can be obtained without it. Having, during the past two years, made extended trials for landscape purposes of orthochromatized emulsions, coated on both glass and celluloid films, and during these experiments made frequent use of the color screen, a few notes on the principles and methods of its employment may perhaps be of interest. The class of subjects selected was almost exclusively landscapes, and the large majority extended landscapes in the mountainous regions of Switzerland, Norway, and Northern Italy, involving distances ranging from ten to one hundred miles. The first year the color screen was used sparingly, but the results obtained with it were so satisfactory that in the following year it was used whenever possible, and the success attending its use was so marked, and the quality of the work so far superior to the portion in which the screen was omitted, that I now am fully convinced that the color screen is an indispensable adjunct for any extended or comprehensive landscape work. The reasons for this opinion are not hard to find. It is a well-known fact that, when an open landscape is photographed on an ordinary gelatine emulsion, two serious difficulties are always encountered. These difficulties bear such a relation to each other that the means employed to prevent the one always increase the evil effects of the other. I allude to the difficulty of obtaining even and harmonious exposures for both near foreground and extreme distance. The rapidly vibrating blue rays coming from the more distant portions of the landscape produce, in an extremely short time, a very powerful reducing effect upon the emulsified silver salts, and that long before the more slowly vibrating rays coming from the nearer

and generally darker foreground have had time to properly act on the plate. The consequence is that, when proper definition, detail, and color value have been obtained in the foreground, the distance has been so over-exposed as to solarize to a greater or less degree that portion of the image. On the other hand, should the exposure be so shortened in time as to obtain proper values for the distance, the foreground is so hopelessly under-exposed as to be but an unmeaning smear of black, devoid of all detail.

All kinds of devices have been suggested for remedying these difficulties. Sky shades, shutters having apertures of different shapes fancied to diminish to a certain degree the exposure of the sky and distance, etc., have at different times been suggested, but none of these have proved of sufficient value to become popular.

The difficulties, as above noted, are particularly noticeable in the case of Alpine landscapes. Here, then, is often a foreground of rocks and dark pines, abounding in dark greens and browns, and opposed to it a distance composed of brilliant snow-white peaks and glaciers, standing out against a deep blue sky, varied, perhaps, with floating clouds. With an ordinary emulsion it is almost impossible to render properly such a landscape, as the foreground will be under-timed and lacking in detail, or else the peaks and sky will be so over-exposed or "burnt out" on the negative as to render the demarcation line between snow and sky almost indistinguishable. When, however, certain coloring agents are added to the ordinary emulsion, as is done in the process of orthochromatizing, an entirely new condition of affairs is brought about. I will not attempt to explain this in detail, for it has and will be done by much more able and qualified hands than mine. Suffice it to say, briefly, that while the emulsion is now, in its altered character, a little less sensitive to the action of the blue rays of the spectrum, it is more sensitive to the yellow, green, and red rays coming from the opposite end of the spectrum. A plate of this character, when exposed to the same Alpine landscape as previously tried, would exhibit much more detail in the foreground, and the distance would be in much better tone. But, although the sensitiveness of the plate, as orthochromatized, is of a much less degree as far as the blue rays are concerned, they are so powerful that they still act too rapidly on the emulsion,

* Read at Edinburgh Convention.

and it is desirable to limit still more their effect. This is accomplished by the color screen. A suitable colored medium, in this case yellow, is interposed between the object and the sensitized plate. This medium intercepts the passage of the blue rays to a certain extent, or diminishes the rapidity of their vibrations, and, while prolonging thus the exposure, allows the reds, greens, yellows, etc., to pass through without hindrance and impress themselves fully upon the plate. The resulting image will now represent in much more accurate color tone, as expressed in black and white, the different values of the landscape, giving full detail and softness to the foreground, and showing in the distance white peaks against a darker sky.

For purposes of landscape photography the color screen employed should generally be of a light yellow shade, except in some special few instances, when, to obtain particular effects in a landscape, colored screens of more or less of a red or reddish orange may be found to be desirable.

From this brief explanation the principles which govern the employment of the color screen may be made apparent, and on its very face the theory of its action would seem to be correct and of sound value. And I unhesitatingly assert that, when the color screen is *properly* used, the result will, in every instance, bear out the sound principles of the theory. Landscapes when, while full justice is given to atmosphere, the distant ranges of hills are as clearly defined as they would be to the eye; water which looks like water and not an expanse of snow; foliage and verdure which show the varied shades of greens with which nature bedecks herself; or the varied tints in an autumn landscape, and clouds of white or pale grey floating on a darker sky, as we see them daily in the heavens. But a color screen should be used with judgment, as should every other photographic adjunct, if good results are to be secured; not for every subject, or for instantaneous work, or generally for objects close at hand, but for the special work for which its usefulness has been explained. Let us for a moment consider this and its practical features a little more in detail.

The first point to be considered is the color screen itself. This should be of glass, perfectly flattened and ground to a true surface, or else it will produce such an amount of distortion as to render it totally unfit for use. In England, I have been informed, one or two firms offer

for sale color screens made of yellow pot glass, ground and polished to a true surface. The only one of these I have been able to see was of so light a color, and that more of a brown than a yellow, that I should feel afraid to use it. The quality of others may be better. It is very easy, however, for any photographer to prepare his own screens, and of whatever color he may desire, by a process which I shall now describe.

Procure plate glass, thin, perfectly flat, ground, and free from all striæ or bubbles. The thin plate glass that is frequently used for making color cells and animaculæ tanks for the gas microscope will be found to be excellent for this purpose. After being cut in small squares of the size desired ($2\frac{1}{2} \times 2\frac{1}{2}$, and $3\frac{1}{3} \times 3\frac{1}{2}$, I have found answer nearly every purpose), a square should be flowed on one side, in the same manner as when coating a plate with collodion, with a solution of the coloring agent in amyl-acetate collodion. The coloring agent may be either "aurine" for orange red, or any other coloring matter desired, provided it is soluble in the varnish. For the yellow screen I am in the habit of using an aniline dye, called "golden yellow," in the proportion of from five to eight grains of the dye to the fluid ounce of varnish, according to the depth of tint desired. It is permanent, does not fade to any extent, and gives a rich lemon-yellow screen. The amyl-acetate collodion, now extensively used in the United States for the purpose of lacquering gas fixtures and brass work of all kinds, is known in trade by a number of different fictitious names, such as "enameline," etc. It is simply a solution of soluble nitro-cellulose in mixtures of amyl-acetate, ether, petroleum benzine, and alcohol, mixed in varying proportions. It can be easily prepared on a small scale by cleaning off the emulsion from a spoiled celluloid film, cutting the film up in small strips (soaking them well in strong alcohol to remove the camphor), and placing these in a bottle with a mixture of one part amyl-acetate, one part petroleum benzine, three parts alcohol, and three parts ether, all by measure. The celluloid swells up and dissolves rather slowly, hence the bottle containing the mixture should be well shaken at intervals for several days. A better collodion is made, however, by dissolving good nitro-cellulose in the above mixture. When the celluloid is all dissolved, the liquid should be filtered through a little absorbent cotton to re-

move any loose flecks of dirt. This varnish gives a tough film, clear and free from transversed stria, and is also an excellent material for varnishing glass negatives or positives, being perfectly waterproof. To resume, the glass square, after having been coated with the colored varnish, is allowed to "set" for a few moments, and then placed aside on a flat surface until the varnish is perfectly hard and dry. Care must be taken to keep it covered while drying, so as to avoid dust and dirt settling on it. The coated plate is now placed on a level surface, film upwards, and sufficient pure Canada balsam (white and free from dirt) poured on the plate to make a pool in the middle of the plate of about one-fourth of its area. A fresh, clean glass square of the same size is next taken, and gently lowered on the balsam and plate in the same manner that a cover glass is placed on a microscopic object, and then a gentle and even pressure applied until all air is forced out, and the two glass surfaces are cemented together with the balsam and are in uniform contact. The cemented plates are now laid aside on a flat surface, and allowed to remain several weeks undisturbed, until the balsam has thoroughly hardened. Then the edges are cleaned off, the exuded balsam being removed with a little benzine or benzole, and the edges bound with some strips of lantern-slide paper. This color screen can be placed either before or behind the lens. If before, a special hood for each lens must be made to hold it. I therefore prefer to use it *behind* the lens, on the inside of the lens board, when it can be placed or removed in a few seconds. This can easily be arranged with two small brass or wooden cleats, secured down on the inside face of the lens board, and adjusted so that the color screen can slide between them.

The next item is the subject. It is hardly necessary to say that moving objects and all instantaneous work are entirely beyond the scope of the color screen, owing to the length of exposure required. Moving clouds may often be satisfactorily photographed when the motion is slow, and the exposure made with the full aperture of the lens, from half to two seconds being generally sufficient. Large masses of annulus clouds, and also the lighter and more graceful forms of the cirrus, can be made, when at rest, to repeat themselves on the photographic plate with rare fidelity by the aid of the color screen. There are many days of the year when these remain almost quiescent in the sky, and as no great stopping down of the lens is needed, a large aperture

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and short exposure will yield excellent results. For ordinary landscape work in close proximity to the subject the use of the color screen is unnecessary. Still-life, fruit and flower subjects, however, are especially fruitful fields for the color screen in conjunction with the orthochromatic plate. Here time is of no importance, absolute sharpness and fidelity of detail can be secured by stopping down the lens, and with a full exposure every feature of the object will be reproduced. The principal use of the color screen in landscape photography, however, is in field work, especially where extended country, and often extreme distance, are concerned. Here the color screen is an *absolute necessity* in order to secure uniform and satisfactory results. I have photographs in my collection taken from the summit of the Furca Pass in Switzerland, where, while the foreground is harmonious and full of detail, the Alps of the Monts Blanc and Rosa group are distinctly visible, although at least sixty miles distant. I have also noticed that the use of the color screen, when photographing in both Switzerland and Norway, has given much more brilliancy to the dull monotone so often noticed in the photographic rendition of long stretches of bare mountain side, it seeming to differentiate and accentuate the different tones of browns, dark greys and greens so prominent in such landscapes. In fact, I have grown to rely so much on the color screen in photographing these extended views that I fear no landscape, no matter how extended, provided it is properly lighted, and I think I

can show as satisfactory results for such subjects as it is possible to compress into the limits of a small photographic plate.

A word may also be said just here in favor of the use of celluloid films. Glass is as yet the most perfect medium of support for the photographic emulsion. But it is heavy, liable to break, and for distant landscape work is apt to show halation. This latter, it is true, can be greatly prevented by backing the plate, but it is a tedious process, and involves infinite trouble. Celluloid, as now prepared in the United States, is rapidly taking the place of glass for tourists' work. It is now manufactured almost free from defects, and is so light and portable that a gross of 8 x 10 size will take up no more room and weigh no more than one dozen of the same size of glass plates. It cannot be broken, and, moreover, is almost entirely free from halation, owing to the thinness of the film and the consequent absence of reflecting surfaces. To illustrate its advantages, I may say that last summer I took a three months' trip through Norway, carrying with me, in a small Norwegian trunk, together with my clothing, sufficient material for six hundred 8 x 10 exposures. The weight of these films was about thirty pounds; the same amount of glass plates would have weighed over four hundred pounds—an almost insurmountable burden, unless one travelled with a baggage train.

It remains to say a few words concerning exposure and development. Exposures for orthochromatic plates should *always* be fully

timed to secure soft and harmonious negatives. An under-exposed orthochromatic plate or film is much more inclined to fog on development, and is much more harsh and lacking in detail than an ordinary plate of the same speed would be if subject to the same conditions. On the other hand, the orthochromatic plate, and even more so the film, will bear an amount of over-timing which would simply be ruinous to an ordinary plate. When a color screen is used the exposure should be prolonged eight or ten times, and my friend, Mr. F. E. Ives, who is world-celebrated for his researches in color photography, has assured me that twenty times is none too much. I have no doubt some advocates of rapid exposures will be shocked by this statement, but, when we consider the retarding effect of the color screen, the amount of "leeway" in exposure is in consequence immensely extended. In all such work plenty of time in exposure is necessary to obtain full detail. The distance will take care of itself, so will the clouds, and unless there is a brisk wind blowing they will show up all right in the negative. Furthermore, in overcast and cloudy weather, exposures on orthochromatic emulsions, either with or without a color screen, must be greatly lengthened, much more so than for ordinary emulsions under the same circumstances. For instance, if I give two or three times the exposure (using an ordinary plate) on an overcast day that I would on a bright, clear day for an orthochromatic plate (using no color screen), I should give from *four to eight* times the exposure, and, if I did not do so, I should get an under-timed plate. If a color screen is used in addition, the exposure should be increased proportionately as previously mentioned. Most of my failures with the color screen and orthochromatic film have been from this cause—under-timing on cloudy days. There seems to be, under these circumstances, an absence of certain light rays (yellow perhaps) which ordinarily affect more quickly the orthochromatic emulsion. After I discovered this I have frequently, after making an exposure, the time of which I judged should be ample, made a duplicate exposure, in which for purpose of experiment I doubled the exposure, and almost invariably the longer-timed negative came out the best.

Finally, a word or two may be said regarding the development of the exposed plate or film. The developer used must depend largely upon the purposes for which the negative is to be used. If for bromides, lantern slides or transparencies, my preference is for the mixed developer of eikonogen and hydroquinone, it giving negatives possessing the full detail and quick-printing qualities especially requisite. For platinotype, plain silver and kallitype, I am growing to believe that pyro gives perhaps better results. The steel or blue-grey image produced by the mixed developer gives a density which seems greater than in fact it really is, and in printing processes which tend to diminish contrast it will not give as brilliant and "plucky" a print as will the slightly yellowed pyro-developed negative.

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