NEGATIVE ON STANDARD DRY PLATE

PRINTED ON BRADFISCH & PIERCE ARISTOTYPE PAPER

The Canadian Photographic Journal

DEVOTED TO THE INTERESTS OF THE

Professional and Amateur Photographer

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Our Prize Articles.

WE omitted to say, in laying before our readers this little competition of ours, that the subject given out for May was meant to be written on in May, the accepted paper on the May subject being printed, of course, in the June issue; that on the June subject in July, and so on. Those who have made enquiries please notice. We give the two first subjects again:

May—"The Camera, and How to Use It."

June—"Focusing and the Use of the Diaphragm."

THE JOURNAL will give a five-dollar gold piece for the best and a year's subscription to this journal for the next best article on each subject, and intends doing the same for articles on ten subjects. We will illustrate articles where necessary. We are endeavoring to make THE JOURNAL interesting for you all. Will you help us a little in our first efforts, with a chance, at the same time, of being paid for your trouble?

Another Good Thing from the Eastman Company.

THE Eastman Company have favored us with a number of very excellent views printed on their chloride paper. This paper is certainly the finest of its class that we have yet seen. It prints quickly and with great brilliancy and detail, and does not crack or curl, a very desirable feature. It has been thoroughly tested by the Eastman Company, and is now being used exclusively in their printing works. It will be put on the general market about the 1st of June, under the name of Eastman's Solio paper. We predict for "Solio paper" an immediate popularity that will bring it into general use. We hope at an early date to bring it more closely before our readers as one of "our pictures" in THE JOURNAL, with full directions for working it.

Will You!

WE want to add one hundred new names to our subscription list each month for *several months.* We have had a great many professions of friendship from subscribers, and also from those who are not subscribers. Will they please give us some *substantial* evidence of it by trying to get us one or more subscribers? Anyone sending us one paid subscription will receive a useful paper cutter, made of the new metal, aluminum; or send us five dollars for three subscribers, retaining one dollar for your trouble, and get the paper cutter besides. Remember, the more subscribers we have the better this journal—our journal, your journal—will be.

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A New Book.

MANUAL OF PHOTOGRAPHY. By C. H. Bothamley. London: The Britannia Works Company.

"The Ilford Manual of Photography," which comes to us from Messrs. Ramsay & Co., proves to be the equal of anything in instructive photographic literature which we have lately read. It is written in a manner easily understood, and carries the reader from the initial chapter, "Apparatus," through all the different principles of the art in a thoroughly practical way. The new book is attractively bound and illustrated, and every camerist should possess a copy.

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The Pittsburg Amateur Photographic Association will hold its annual exhibition this month. Several gold medals, cash prizes and cameras will be competed for.

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The annual Joint Exhibition of the Boston Camera Club, which takes place this month, will be held in the Art Building in Boston, where the prints exhibited will have the advantage of ample space and exceptionally good lighting. A New Zealand club is found among those competing.

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Flash-Light Photography.*

DR. N. A. POWELL.

THE making of pictures by the aid of the magnesium flash-light has been undergoing a process of evolution for the past five or six years. The journals have contained many papers upon the subject; chapters discussing it are to be found in a large number of manuals, and at least two books dealing entirely with it have already been published. It is no part of my present purpose to sift this extensive literature for you. Instead, I shall content myself with demonstrating certain methods which, having tested, I have found to be at once simple and satisfactory. For the needs of a surgeon these procedures are particularly well suited, and it is to one of my own craft, Dr. Piffard, of New York, that we are all indebted for the introduction here of photography by artificial illumination. In this connection it is worthy of remark that, for the production of the most accurate and life-like pictures of skin diseases and other morbid conditions, Dr. Piffard prefers artificial to sun light. He has recently brought out a work illustrated by such photography, and surpassing in many particulars any previous publication on the subject.

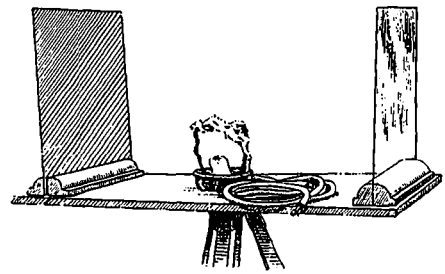
It is within my knowledge that many amateurs who do creditable work out of doors have with magnesium failed to obtain any results which they cared to exhibit to their friends. Deep shadows, hard, chalky, high lights, staring eyeballs, burns, dirt and disappointment have been their reward,

* Remarks made during a demonstration before the Toronto Camera Club.

instead of the artistic results they had hoped for.

At the risk of going over what is perfectly well known to many, if not most, of those present, let me mention some of the essentials for success in this line of work. The lens, preferably one of the "R.R." type, must not be stopped down below *f*/11; the plates used must be fast ones, such as the Cramer "C" or the Seed 26[x]; the background must not be too near the sitter or it will show direct shadows, and its tint should be lighter than for use with daylight. The correct focus is most easily and rapidly obtained by the use of a lamp, a newspaper and a focusing glass. Let the light of the lamp fall on the newspaper, held upside down and raised, lowered or carried out to the sides, in order to determine just what will and what will not come upon the plate. As a general rule, the gas or lamp lights should be turned up, so long as they do not shine into the lens, and they should light up that side of the face which will not be lit by the flash. In this way its shadows are softened and hard lines avoided. It is a good plan to have the sitter look directly at one of the gas jets or lamps. He will thus not be so much disturbed by the sudden increase of light when the flash is made, and will not be so apt to have a startled or staring look or to close his eyes suddenly.

I think the advice often given to place the flash apparatus over the camera is an error. It is better to have it placed higher than the lens and to one side or the other of it. An exception to this is seen where a fire-side or camp-fire group is to be taken and the object is to make it appear as though their faces were lit up only by the fire around which they are placed. Even in photographing a cavity like the back part of the throat, I have found the detail brought out best when the light came from a position slightly to one side of the lens. For diffusing the light, and so obtaining soft instead of hard negatives, a sheet of ground glass is excellent, and a sheet of bright tin makes as good a reflector as need be desired. I have used for more than two years the convenient arrangement now shown, and consisting of a piece



of board fifteen to twenty inches long by one foot wide, with a plate fixed to the middle of its under surface, so that it may be secured upon any tripod stand. At each end of its upper surface a pair of parallel wooden strips are nailed so as to form slots to support, in up-right positions, the tin reflector and the ground-glass diffuser. Between these two the flash lamp is placed. After trying a number of the patented articles, I have reached the conclusion that the simple one which I devised, and described in the *Beacon*, gives as good results as any other, and has the advantage of being easily made by any-one with skill enough to press a button. A flower-pot saucer has a hole bored through its rim to allow of the passage of the stem of a clay tobacco pipe. The bowl of the pipe is to be fixed upright in the middle of the saucer by means of plaster of Paris. A rubber tube, ending on a mouth-piece, is fitted over the stem of the pipe. Next a wire ring, supported at a height of three or four inches, is placed so as to surround the pipe bowl, and upon this ring asbestos wicking is twisted.

When it is desired to make a flash, from five to twenty grains of pure magnesia powder is to be placed in the bowl, and the wicking is to be saturated with alcohol. Lighting the alcohol, and then blowing through the tube, forces the powder into the long axis of the flame, and perfect combustion takes place. By a number of experiments, I have demonstrated that a sudden, strong blast which lifts the powder in a mass out of the pipe does not give as good result as a gentle, promptly followed by a forcible, blowing. This latter method loosens up

the powder and then sends it through the flame in balloon form, giving a maximum of illumination with a minimum of magnesium oxide, falling as a dust cloud after the flash has been made. Asbestos is much better than candle wick, as it does not burn, gives off no smell, and the flame on it can be easily blown out.

In some particulars, the diffusing apparatus above described resembles a patented article sold in the United States; but mine was in use before that came out, and the cost of the entire outfit need not exceed a dollar. Anyone can make it, it comes apart for packing, and the results obtained by its use in the hands of my friends, as well as in my own, are not discouraging.

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Colors.—Good versus Bad Taste.

To the Editor of THE JOURNAL.

SIR,—Knowing that we are powerless to enter the arena of your magazine with a rush, a brilliant somersault and a "here we are again" style, we shall commence by simply repeating a question which is frequently put to us with startling, not to say vulgar, abruptness. "What constitutes good taste?" If color has not been mentioned, we can assume an hypercritical air and evade the question by, "What do you mean? If you mean your deportment upon entering a ball room, or the mannerisms which you should adopt to reach the footlights of a concert room before singing a comic song, or if it is the newest style of making love you are after, you must rid yourself of all whack-fa-loor-a-la-di-ti airs, and we would advise you to adopt a sincere and—" "Hold on, hold on; we know all about that. I mean what is good taste in colors or in coloring." "Oh, I see. Why on earth didn't you say so at first?" I may, if he is of a poetic turn or an appreciative nature, whisper in a confidential manner the words of the immortal: * * *

> "Oh what a funny world we have,
> I often times philosophize;
> For some by wilful blindness seem
> To suffer from a loss of eyes,"

and politely inform him that good taste in colors is almost an "unknown quantity," for among those who should be technically conversant with color in all its changes and ramifications there is an astounding and unacountable deficiency, even among artists (amateur and professional), architects, painters, dressmakers, milliners and among those actually who deal in and sell colors it may be every day in their lives, and I may as we get warmer on the subject inform him that "color is born," but may ultimately be acquired by a severe and continuous course of observation and comparison upon every available occasion.

Observe the firmament and by looking eastward you will find the cool greys of the early morn which are not dispelled gilded or illumined with an accentuation which cannot fail to entrance the ardent student. It is a gratification to find that even in the summer under the fierce glare of a noonday sun it is balanced by corresponding breadths of shade and shadow.

Then, when looking westward, we find the fiery rays of the setting sun filling up the vistas with a marvelous halo of warmth, which redeems and subdues the whole into one harmonious scene.

But before leaving nature in one of her grandest moods, I might venture to remind the student, or those interested in our subject, that colors are most distinct in nature when the sun is not far above or below the horizon, caused by the light falling obliquely on the earth's surface, or, rather, on the earth's atmosphere, the light at this time undergoing a partial decomposition; proving to my mind that the varying beauty of sunrise and sunset is entirely due to refraction, at which time the best of painters' palettes can but faintly render an idea of the gorgeousness of nature. Nevertheless, at this date I can vividly recall, while an art student in the Royal Institute of Edinburgh, the reverential awe with which I stood before "The Quarrel and the Reconciliation of Oberon and Titania" in Sir Noel Paton's portrayal of "A Midsummer Night's Dream," and hardly daring to breathe while witnessing the triumphal achievements of my youthful villiage deity and

mentor "Tom Faed"; but, after all, feel partly reconciled when I contemplate the difficulty of extracting sunbeams from cucumbers.

Under the guise of enthusiasm, I trust, Mr. Editor, that you will kindly accept the foregoing as an introduction to the more practical phases of our subject.

Having taken up all the ether we consider requisite to carry us to the end of our subject, we shall accordingly drop from the ethereal with a good solid thud, strong enough to crack "a chestnut" familiar to many, though still unopened by all, viz.: There are but three colors—the red, the blue and the yellow—which are recognized as the primaries; the admixture of which in the following order constitutes the secondaries: Blue and yellow furnish green; red and yellow produce orange; and lastly, red and blue produce purple. Consequently, green, orange and purple are the secondaries. The tertiaries are brown, broken-green and grey. Still, if not encroaching too much on your valuable space, it might tend to the edification of your readers if you would arrange the colors mentioned in the following order, as it would enable me to furnish a few effective and almost exhaustive remarks upon harmony and contrast, or, more correctly speaking, full contrast and subdued contrast. But, before enumerating them, it must be borne in mind that the secondaries harmonize in full contrast with the primaries and in subdued contrast with the tertiaries, or, in fact, forming compound harmony:

Orange full contrast with blue, subdued contrast with grey.

Green full contrast with red, subdued contrast with brown.

Purple full contrast with yellow, subdued contrast with broken-green.

Colors, as used in the fine arts or in the industrial arts, are used under the seldom-mentioned terms of chromatic and monochromatic, the chromatic taking all the colors of the rainbow and the monochromatic simply taking one color, composed of shades. Before leaving the chromatic, I might remark that there is another remove in colors, which is so seldom officially recognized, that I fancy it also is an "unknown quantity," and that is the admixture of the tertiaries, forming the fourth remove; the dark colors furnishing us with russets and the light colors forming citerines, not recognized and reproduced so frequently and faithfully by the manufacturers of textile fabrics as they should be. But, far from being overlooked by the designers and manufacturers of wall paper, etc., we can recall the lingering ease with which our eyes fondly rested upon many designs of the past, especially while sitting upon a dreamy lounge, with an admiring witness of our reveries.

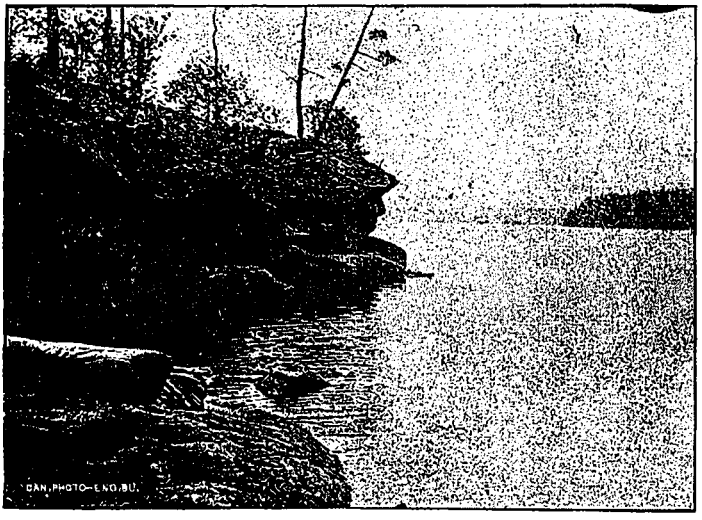
And now, in conclusion, we shall deal with tints and shadows, which, in my estimation, is the most severe and crucial test of color knowledge.

Without drawing upon our imagination, we can any Sunday find painfully unpleasant evidences of this lack in color by casting our eyes around in any of our fashionable cathedrals. We may wander from our devotions while vainly endeavoring to reconcile the incongruities of an emerald and a chrome green, or two colors of the same name, but fearfully and wonderfully different. This violation of good taste never would or never could occur if it were made apparent to the transgressor that a tint is a specific color. But a shade—which is the synonym for shadow—has no color until a color is selected, from which color only lighter and darker shades are procurable. If this knowledge were made universal through the means of the long-sought-for schools of technology so common in Germany and France, we could then "ride upon the rail" without seeing pure white houses with brown cornice and trimmings; for the owner, or the country mechanic, would then know enough to put a dash of his cornice brown into his clapboard white, which would thereby form a simple and agreeable harmony.

Trusting the foregoing remarks will not encroach too much on your valuable space, and that they may not be beneath the notice of your many intelligent readers,

Yours truly,

J. CAMPBELL.



"FACE IN THE ROCK."—HUGH NEILSON.

"SHADOWS," LAC DU FOND.—G. BETHUNE.

"Face in the Rock" and "Shadows."

Our two reproductions this month are from negatives by Mr. Hugh Neilson and Mr. G. Bethune, members of the Toronto Camera Club, and are fully up to the high standard of work done by members of this club.

James Esson

AN ENTERPRISING PHOTOGRAPHER OF PRESTON, ONT.

ABOUT 1852, a gentleman named Esson opened in Preston, Ont., what was then called a daguerreotype gallery. To-day his son owns and operates in the same city probably the finest photographic studio in Canada or the States.

Mr. James Esson, whose picture we take pleasure in placing before our readers, certainly deserves great praise for pluck in creating the establishment he has, in a place the size of Preston. A short description of his atelier will serve to show our readers some of its elegance.

The building is 36 x 67; three storeys high, built of red brick, trimmed with Credit Valley brown stone, and presents a striking and handsome appearance, the front being profusely decorated with terra cotta ornaments.

Large plate glass windows are on the first flat. Coming in at the main entrance, the visitor enters first the office, a cosy, cheerful-looking room, 14 x 20. The counter, desk, screen and wainscoting, all of which are of quartered oak, are beautifully carved from special designs. Passing from the office through the hall-way, with its massive oak stairway leading up to the different departments above, the operating room is found, the largest of its kind on the continent, being 22 x 45, with a skylight of *ground* glass 18 x 22, the iron frames holding the glass weighing over two tons. Everything used in the operating room is of the very latest and best. Next is the ladies' dressing room, finished in sycamore and furnished with everything desired by the fair sex, not the least of which is an immense plate mirror. And then the reception room, 22 x 25, also finished in sycamore, with an artistic over-mantel and brass grate, and luxuriantly furnished. These rooms both have the finest of velvet carpet. This all goes to make up the most elegant and complete establishment of its kind in this country, and by far the most costly.

Mr. Esson has a wide reputation as an artist photographer, not only in portraiture, but also in scene taking, his views of Canadian scenery being in the hands of dwellers in all parts of the globe. Among others, Mr. Esson has among his patrons the Marquis of Lorne and the Princess Louise, leading members of the Senate, of the Dominion Government and Local Legislature, and many others of rank and title.

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Silver Prints Thirty-seven Years Old.

There is now open at the London Photographic Society's rooms an exhibition of silver prints made many years ago. The state of preservation in which these prints are said to be would prove the permanency of silver prints when treated rightly, some of them being thirty-seven years old. A member of the club, speaking of them, said: "They are about as good as those of the present day," which speaks well of "ye olden day" photographer, as most of them were taken with a single lens on wet plates, and none of them retouched, retouching at that time being unknown. It would be interesting to know what toning bath was used on the exhibited prints.

Photo-Engraving.

In this period of progress great advances have been made in the illustrative art, and in no department has this been more marked than in that known as photo-engraving. While the wood engraver has given us work that has been artistic, many of the finer tones and shadings have been lost, and it remained for the photo-engraver to reproduce, in all its delicacy and beauty, the wonderful results of the camera's development. In this respect Toronto is no whit behind the rest of the world, and the excellent reproduction of a photo by Simpson by the *Grip* Printing and Publishing Company, which appears on this page, is an evidence of this fact. The *Grip* Company, as the title is abbreviated, are maintaining a high standard for photo-engravings which are both artistic and clear printing. They have all the latest and most perfect appliances, and are in a position to turn out work second to none in America. Any information regarding the various kinds of work done or estimates will be furnished on application to the *Grip* Printing and Publishing Company, 28 Front street west, Toronto.

The History of a Photograph.

BY SMITH WARNER.

I AM only a photograph—a gilt and bevelled-edge cabinet—but I'm a picture with a history.

I first saw the light of day in a photograph gallery kept by a German who wore glasses, and was always scratching his nose. His conversation was always about bust pictures, soft tints, and profiles. He had an assistant, a red-headed girl, who mounted the pictures and burnished them. She was always singing, but never in tune, and her favorite air was "Save One Little Kiss for Me."

I mentally concluded that anyone that would kiss such a homely girl must certainly be a candidate for a retreat for the insane. I suppose my hatred for her was caused by her treatment of me, which was cruel in the extreme. She placed me between two hot rollers and, while chewing gum, proceeded to try to squeeze the life out me. She almost accomplished her object, but instead of showing remorse for her action she picked me up and said I looked pretty.

I already knew that, but it is not the place of a cabinet photograph to praise itself, and, besides, I am too modest.

Imprinted on my face is the bust picture of a very pretty girl—on her face a sweet smile, the lips slightly parted, eyes looking upward, imparting a saintly expression to the entire countenance. I do not do her justice, I am fully persuaded. As soon as I looked in her soulful eyes, I became convinced that no camera on earth, no sun in heaven, could reproduce them with fidelity.

Her name was Agnes Harlow, but she expected soon to change it, for she was going to be married. Her affianced was a noble-looking man, who was employed in a bank. I know she loved him, and I know her love was returned. She would look up in his face with such a sweet, affectionate expression that no one would doubt her love, or its lasting quality. He would call her pet names, stroke her hair, and, all in all, made a model lover.

They say, however, "the course of true love never did run smooth," and their case was no exception to the general rule. It was a great pity they quarreled, for it lasted a long time, caused sorrow and misery to both, and it all might have been averted by merely examining me.

When she carried me home, in company with eleven of my brothers, I could feel her heart beat against me, and I was proud to be owned by so beautiful and lovable a lady. But I was doomed to be seperated from her before long, for that evening, when her gallant and handsome lover called, she gave me to him. He carried me home in his coat pocket, and then carefully placed me on the mantel. For a time all went well, and I was happy. Each night, before retiring, he would press his lips to my face, and call me (or her) pretty names.

But one night everything was changed. He frowned as he entered his room, and striding over to me picked me up violently and looked upon me with such a strange expression. I actually believe he would have torn me to pieces to satisfy his rage without regard to the pain it would cause me—actually acted as if cabinet photographs had no feelings.

I tried to discover what was the trouble for a long time, but in vain. He would come home, press his hands to his head and weep. Then, taking me from my place on the mantel, he would passionately kiss me, uttering at the same time the most endearing expressions. At last it all came out. The quarrel had been over a breast-pin, with her initials upon it. It was a present from him, given as a token of remembrance of her birthday. He, in asking why it was not worn, chided her with never having used it. This she denied, claiming that she had displayed it upon her dress a number of times. The same old story. First an argument in soft tones, that gradually grew loud and harsh. First "dear" and "darling," then "sir!" and "miss!" Then a storm that ended by the slamming of the front door and a severance of all tender ties.

Both suffered, I know that, for she afterwards confessed it to him when

they finally made up. I heard the confession, for even photographs have ears, although few people know it.

For some time he carried on awfully. I actually believe he had been drinking one night, for, when he drew near to kiss me, his breath smelt of liquor and he acted very funny, staggering about until he fell on the floor. The jar was so great that it knocked me from my accustomed place against the clock, which made the venerable time-piece quite indignant.

But at last a happy change came. My master had decided to have a larger picture taken from me, and, so placing me in his pocket, carried me to another photographer. He looked at me closely and said he thought I would do nicely. For a few days I lay in a drawer, and then he took me out, pinned me against a board and levelled a big camera at me. When my master came the photographer called his attention to myself and asked the question: "What are those initials?" he said, pointing to the breast-pin in the picture.

My master picked me up and silently examined me. And then like a flash came over him the consciousness of his error. She was right, he was wrong. She must have worn the pin, or I could not reveal it, for the sun cannot but tell the truth.

My master, I am proud to say, acted in every way becoming a man. He knew he was wrong, and did not hesitate to own it. Away he sped to her side and acknowledged his fault.

What did she do? Exactly as a woman who loved a man would do—forgave him, and never referred to the matter again. How did it turn out? Why, they are married now, and as happy as can be. They did not forget me, for I am placed in a big album in the parlor and exhibited to all visitors. My mistress calls me the "peacemaker."

Oh! I forgot to say that there are two little girls that romp around the house, and who look exactly like the lady on my face—eyes, noses, lips, chins, just the same. They sometimes open the album and stick pins in me but they are so happy I don't mind it. They call my master "papa."

Photography and Photo-Mechanical Printing.*

BY PAUL L. WATERLOW.

I.

FOR the purposes of my paper on photo-mechanical printing processes it is not necessary for me to go very deeply into matters connected with the discovery and general history of photography, neither will it be necessary for me to attempt to go into detail on the elaborate chemical changes which occur in the processes I shall describe, and by the study of which, step by step, the present exact knowledge has been attained of the wonderful action of light on various organic salts. It will be sufficient for my present purpose if I give you a short *resume* of the first researches made as to the chemical action of light on some of the substances employed in photography, briefly explaining as I go along what these chemical changes are and their effect, so that you will better understand the phenomena of the experiments I shall show you. For details of the photo-mechanical printing processes I shall introduce to you I cannot do better than advise you to study one or other of the special text books published on the subject. Those amongst you who desire to make a scientific study of the art will do well to obtain the excellent works of Hardwich & Dawson, Captain Abney, R.E., W. K. Burton, and others, whose researches into the cause and effect of light action have been most exhausting and most interesting.

Action of Light on Silver Salts.

I suppose you all know, except the little boy in the corner, for whom my paper is intended as well as your scientifics selves, that the word photography means literally *writing by means of light*, and it includes all processes by which any kind of a picture may be obtained by the chemical agency of light. The ancients knew hardly anything about the subject except, perhaps, that a substance which they called

*Lectures delivered before the Officers of the Royal Engineers at the Military School, Chatham.

"horn of silver" blackened when exposed to light. In 1777 a clever Swedish chemist called Scheele made some researches as to the decomposing action of light on compounds of silver, and he found that this decomposing action was greatest in the violet end of the spectrum; he also attributed the blackening of chloride of silver to the liberation of chlorine and the formation of hydrochloric acid, which theories were quite correct, but very little notice was taken of the discoveries at the time, they were looked upon as mere curiosities. About thirty years later, in 1802, Wedgwood and Davy attempted to utilize silver salts for picture-making purposes, and, curiously enough, they practically employed the very methods in use to-day in their experiments. They soaked sheets of paper in nitrate of silver, and projected a shadow of the object they wished to copy upon it. The parts of the paper upon which the shadow fell remained white, whilst the parts exposed to the sun's rays gradually turned dark, the result being a negative image of the object shadowed or photographed.

Here is a piece of paper treated as above, showing approximately the effect of Wedgwood and Davy's researches. Up to this time, however, and for perhaps thirty years later, no method of fixing these light pictures was discovered; consequently, they could only be examined in a dull light, and, unless kept in the dark, soon disappeared altogether. In 1821 Herschell announced that hyposulphite of soda would dissolve the haloid salts of silver, but the fact seems to have been overlooked until Fox-Talbot's investigations brought the matter to a practical application in 1839 in his Talbotype process. Talbot made great advances in photographic science, and found how to make pictures in the camera, the images of which were invisible when made, but were capable of development afterwards. Contemporaneously with the experiments of the Englishmen named, Daguerre and Niepce in France were making successful researches in photographic picture-making, one by the well-known and beautiful process bearing the name of daguerreotype, the basis of which was a plate of silver, having upon its surface a thin film of iodine, which substance, combining with the metallic silver of the plate, produced iodide of silver (a salt highly sensitive to light). The plate thus prepared was exposed in the camera, and the image obtained though invisible at this stage, appeared on the plate on its being submitted to the fumes of mercury. This production of a latent image capable of development was of the first importance, as it reduced the exposure in the camera from hours to minutes and, in conjunction with Fox-Talbot's process, opened the door to a whole range of discoveries, the mere naming of which would occupy the whole time at my disposal this evening,

Mr. Fox-Talbot was the first experimentalist who succeeded in making what is technically known as a negative, and in 1850 Mr. Archer discovered our present collodion process for making negatives.

Collodion is a thin, syrupy solution of pyroxyline or gun cotton, dissolved in ether and alcohol, and it is used as a vehicle to carry the haloid salts of silver on the glass negative. We will dissolve a little cotton in ether and alcohol to show you how rapidly the prepared vegetable fibres are dissolved by the solvents. To this solution is added bromide and iodide salts, and it is then poured over a glass plate, and the plate is dipped for a few minutes into a bath containing about thirty-five grains of nitrate of silver to each ounce of water. The silver in the water combines with the bromides and iodides in the collodion, and forms double salts which are sensitive to light. The plate in this stage is ready for exposure in the camera, and is what is generally known as the "wet-plate" or "collodion" process in contradistinction to the now better-known gelatine or dry plate.

A negative is a transparent picture having the lights and shades reversed. Here is a negative, and you see that those parts corresponding to the dark portion of the original are transparent, whereas those parts which correspond to the lights of the original are opaque.

Here, on the other hand, is a positive or transparency of the same subject as the negative which you have just seen, the lights and shades of this being the same as the object represented. A negative from nature should show the reverse of all those gradations of light and shade which characterize natural objects, while a negative taken from a line engraving should show only two gradations, complete opacity and clear transparency. Here is a negative such as is in use for all classes of photo-mechanical processes in line.

The Bichromate Processes.

The discovery by Mungo Ponton in 1839 that birchromate of potash could be used for making paper sensitive to light was of immediate importance. There is scarcely a photo-mechanical process in existence which is not more or less dependent on the action of one or other of the bichromates in combination with an organic substance, such as albumen, gelatine, and starch.

Were it not for the curious action light exerts on organic substances charged with a small proportion of bichromate, a whole range of beautiful processes now in every-day use would be impossible. Pigment printing by means of a carbon process, photo-lithography, photo-zincography, photo-etching and engraving, woodburytype, collotype, and a host of lesser processes, are one and all entirely based on the effects imparted by salts of chromium to organic matters, such, for instance, as gum glue, gelatine, isinglass, starch, dextrine, etc. To explain to you the action of light on any one of these substances when treated with bichromate, we have prepared some sheets of paper with a coating of ordinary gelatine. This sheet of gelatine paper has not been treated with bichromate, and it can be exposed to light indefinitely without affecting its nature. This sheet has acquired the property of becoming sensitive to light by being soaked for a few minutes in a three per. cent. solution of bichromate of potassium in water, and dried. The light acts in two definite ways on bichromated gelatine prepared as described—first, by rendering it insoluble; second, by causing it to lose its property of absorbing water or swelling; and these peculiar properties are seized upon by the scientific photographer, and utilized by him in the making of many wonderful picture-producing surfaces. Now, this piece of bichromatized gelatine paper has been exposed to daylight under this negative for five minutes this afternoon, and if you examine it you will find a faint image of the lines of the picture. If I dip the piece of paper in water, and let it soak a few moments, a marked effect is produced. The unused bichromate in the paper dissolves out into the water, and the unacted-upon gelatine swells, but the parts represented by the clear lines of the negative, and oxidized by light, remain unswollen, non-absorbent, and sunk; that is to say, if this piece of paper were laid on a flat surface, and plaster of Paris poured upon it, we should get a cast in relief showing every line of the original drawing, from which, by recasting in metal, we might obtain, by this means alone, a stereotype plate for printing with type. Many excellent processes for type-block making are worked on this principle. Now, another valuable property of this same gelatine, when sentitized and printed, is its affinity for taking greasy ink where light has acted, and refusing to take ink where light has not acted. Sapper Royall will take a printing roller charged with ink, and coat a similar piece of exposed gelatine paper with ink all over—when dry, it can be inked all over—and Mr. Geddes will afterwards soak the paper in water, when you will observe that with a slight rubbing the ink will leave the gelatined paper everywhere, except on the parts acted upon by light.

I will now take another similar sheet of transfer paper which has been already washed and inked up, and will pass it through the transfer press so that you may see the exact method of treating these transfers. I, however, will not use a stone, but a sheet of zinc, which possesses the same properties as lithographic stone, but is more convenient for the purpose this evening. You will see that the ink leaves the gelatine surface of the paper, and attaches itself to the metal or stone. If the transfer

is successful, we will pull a few copies to show the complete process.

I mentioned in the historical notes that Niepce had discovered the fact that bitumen or ordinary asphalt was sensitive to light. As I still have some time, I will make a short *resume* of this process.

The process is extremely simple, ordinary bitumen or asphalt is dissolved in benzol, and a metal plate is covered with a thin varnish of the substance.

Niepce employed this method for the purpose of making pictures on glass, but we use the bitumen now entirely for obtaining an acid-resisting image on metal for etching or engraving purposes.

Here is one of these plates ready for use. Exposure to light has the effect of rendering the bitumen varnish insoluble in certain essential oils in which, previous to its exposure to light, it was quite soluble. This singular property is utilized in our modern processes for producing the delicate images on metal of drawings in line, which are afterwards etched by acids either for typographic blocks or intaglio plates. The plate which I handed round to you just now has been exposed to the action of light under a negative of a line drawing, and, though there is no image visible, I will now show you the effect of a little common turpentine over a portion of the plate. Here is the drawing and the negative made from it, under which the plate has been exposed. You see that turpentine at once dissolves and removes the portion of bitumen which was protected from light by the negative, but it has no effect upon the parts acted on by light, and represented by the clear portion of the negative and by corresponding lines on the metal plate. Tomorrow I shall have the pleasure of describing to you how by etching such a plate as Niepce's we convert it into a block for printing with type in a printing press.

(To be continued.)

. . . . . .

Old fellow: "What! in evening dress at this time of day? Why, it's only one o'clock."

Chappie: "Aw, but it is six in London, doncher know."

Photographing on Wood for Engraving Purposes.

AS photographing on wood is my subject for this evening, perhaps a few words will not be out of place on the art of drawing and engraving on wood. It is generally understood that for illustrating any journal, catalogue, etc., for printing type-high in the ordinary press, engraving must be resorted to in some way or another, either by wood-engraving, photo-zincography, or what is termed the half-tone relief process, the latter being very much used of late for illustrating, principally pictorial or portrait work, but there is no process yet to equal first-class wood-engraving for mechanical and kindred subjects.

To produce an engraving for this purpose you must either draw or photograph the subject on the wood, the material used being box-wood, cut end way of the grain, and finished to a true and smooth surface. To draw upon this, it must first receive a preparation of either zinc or flake white to facilitate the drawing. When drawn, it is given to the engraver to cut; then from him it is passed to the electrotyper, who takes as many electros as required, and from these the actual printing is done.

When the artist makes a drawing upon the wood, he does not trouble to draw every line by which degrees of shadow are represented in the engraving; he merely shows the light and shade, and leaves the engraver to translate these shades into lines or stipple, according to which would be most effective.

In most of the periodicals of the day we know that many of the engravings have been photographed on the block from the original design or drawing, thus eliminating any chance of error on the part of the artist in making his reversed drawing on the wood. The application of photographing on wood has become so successful in facilitating the work of the engraver that it has come into general use of late, but all photographs on wood are not altogether satisfactory to the engraver, there being

ofttimes a film left which sadly interferes with the cutting of fine work.

Photography was applied to wood-engraving purposes by a Mr. Sperge in 1859, and his process was published in the *Photographic News* of December 16 of that year. It consisted of giving the wood a coating of albumen and then of gelatine; when dry, sensitizing with a solution of silver nitrate, and the printing operation performed as for paper. It was then fixed in a hot solution of hyposulphite of soda to remove the gelatinous matter, which would otherwise cause great inconvenience to the engraver in cutting.

Coming to the process I am now using, and which I will demonstrate before you this evening, I can state that in no case does it stain the wood, and can make more certain of obtaining a good image than by any other printing-out process.

In the first place the block must be prepared in such a way as to give it a uniform color, and to fill up the pores of the wood to prevent staining, this being effected by sprinkling a small quantity of zinc white, and adding sufficient albumen, spreading with the ball of the hand until the coating is even and smooth, and finally finishing with a camel-hair's brush. This operation requires some practice to perform successfully. If rightly coated, it will not give any trouble to the engraver, not even with the finest tints. All blocks will not require the same amount of albumen and zinc white, as some are more porous than others. The right proportion can only be obtained by experience. When perfectly dry, sensitize by coating as you would for a collodion plate with the following solution:

Ether	5 ozs.
Alcohol	5 "
Pyroxyline	20 grains.

When the pyroxyline is dissolved, add seventy-five grains silver nitrate, dissolved in the smallest possible quantity of water. It is best to keep the above in the dark room. This solution gives a slight film, which must be removed from the block before printing. To do this, use cotton wool, saturated with the following solution:

Ether	5 ozs.
Alcohol	5 "

Dry, and coat again with the sensitizing solution before quoted, and apply cotton wool, saturated as before. By giving the block a double coating of collodion, the image prints more rapidly and to a better color. The block is now absolutely left without any film, and is ready for printing under a reversed negative.

The most simple and quickest method I have found for fixing the negatives and blocks together for printing is by brass clips made for the purpose. These work very well up to whole-plate size, but for larger blocks I have an apparatus of my own invention.

The time required for printing varies according to the intensity of the light and the density of the negative. With a bright day at this time of the year, with an average negative, one half to three-quarters of an hour will be found sufficient; with magnesium ribbon, about six or eight feet, burnt at a distance from six to twelve inches away from the negative, will be found ample.

The negative is now removed, and a print is fixed for two or three minutes in a strong solution of hyposulphite of soda, the block then being washed for about half a minute, or even less, when it is placed on its edge to dry, which will take some few minutes. Blocks treated by this process can be produced ready for the engraver under the hour. —*W. J. Rawlings to the London and Provincial Photographic Association.*

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Answers to Correspondents.

A. G., St. John, N.B.—The trouble is with your *lens.* In using the sliding front, if you raise or lower the lens, all the parts of the plate will be equally sharp *to the extent of the field of the lens,* as if the lens were in the centre of the front; but you cannot stretch the field of your lens. If it just covers your plate, and you raise the front to get more sky, you must, of course, lose in foreground, and *vice versa.* Get a larger-size lens and you will have no trouble.

Do We Get the Best Results Possible?

AN "artist's eye" is a good, a very good, thing for the photographer to possess. No matter how good the subject, the instruments, the opportunities, there is and will always be something wanting in the general work of a photographer if he has not the artist's eye, quick to grasp the best points of his sitter, and to turn them to account. How few of us really get the best results possible from a subject. True, not doing so is not always due to lack of ability. It is often, in these days of keen competition and low prices, the result of a lack of enthusiasm, the realizing of the fact that the price obtained is for a photograph, and not an artistic creation. Then, again, one half the people photographed do not themselves create in one any great desire to "immortalize their classic features," as Prof. Baize so aptly put it, but whether it is the fashionable society beauty or the beauty's serving maid who is to be taken, the operator should be able to rise above the mere facts of face or condition in life and in either case strive to create a picture which, in posing and in lighting, will be satisfactory to his "artist's eye." And what a principal part the knowledge of light and shade plays in the perfect photograph. It is a part of photography one should be ever studying. It should be studied in the work of others, in the multitude of engravings and drawings to be seen almost everywhere. Some of the grandest studies of light and shade are to be found in the engravings in old books, and the habit of studying such is one that will well repay for the time it takes. Some of our best photographers of to-day owe their success, to a great extent, to studies of this subject in the paintings of many of the old masters. One in particular has a series of photographic copies of them mounted on one large board which he has devoted years to studying. Sir Joshua Reynolds has truly said: "The great use of studying our predecessors is, to open the mind, to shorten labor, and to give us the results of the selection made by those great minds of what is grand or beautiful in nature. Her rich stores are all spread out before us; but it is an art, and no easy art, to know how or what to choose, and how to obtain and secure the object of our choice." Thus the highest beauty of form must be taken from nature; but it is an art of long deduction and great experience to know how to find it. We must not content ourselves with merely admiring and relishing; we must enter into the principles on which the work is wrought; these do not swim on the superficies, and consequently are not open to superficial observers. The following, a portion of a communication to a journal some time ago, struck me as being good enough to remember: "As in photographic manipulations a photographer should know that certain combinations of chemicals produce certain results not only, but *why they do so*, so, in studying and finding out the beauties of the work of others, he should be able to tell why and how such beauties happen to exist. This taxes his knowledge, his taste, and his inventive genius, and is capital exercise. The true photographer is not content, either, with the quiet acknowledgement of the superiority of the work of others over his own. He finds out by thought and experiment how the perspective is secured, how the composition is arranged, how the light is disposed, and he looks and studies until he has a good, distinct idea of what makes the picture beautiful, and with the means at hand endeavors to imitate the good, to overcome the objectionable.

What is learned by such hard study is not apt to leave one. Always have the management of light uppermost in your mind. A subject ever so gracefully posed is easily spoiled in lighting. Let that part of the picture which is of greatest importance—the face—be the subject of special care. When introduced to a stranger, our attention is first called to his face, and so it is with a picture. Pose your subject with an "artist's eye" to effect, light the face well, then give good exposures, and you will secure effects that will reward you for your care.

GEO.

Does He Need It?

I NOTE the fact that in a number of places in the Old Country photographers have agreed to close at 2 p.m. on Fridays during the warm season. Most every other business closes at one or two o'clock on one day of the six. Why not the photographer? There is hardly another "bread winner" that sticks to business so assiduously as he, and think what he goes through during one day, and perhaps a 90-in-the-shade day at that. Now he is in the 4 x 6 dark room for an hour or two; everything stopped up to shut out light (and air), gas burning, floor wet, generally damp from incessant water running, chemicals blending their lung-destroying fumes, straining his eyes and nerves over some negative which he has probably made at a cut-rate price. Now he jumps out to soothe a ruffled beauty (?) by explaining to her vehement remark that she "won't have the horrid things" that it is only a proof she holds, and that the finished print will indeed be a thing of beauty and really *almost* do her justice. Then as he is going back to the 150° of heat and the delightful odors of the dark room, mamma, enforced by grandma and aunty, enters with the twins. Twins, mamma has been told, resemble nothing if not cherubs, and the angelic features and sweet noses must be fixed for future generations to gaze on with admiration and envy. Mamma knows all about posing them for the operation, and what few points have escaped her are supplied by grandma and aunty, who have come along for that special purpose. The photographer is not supposed to know anything, he is simply to do the *easy* part, which is to get a picture to satisfy the whole family. Twins, already very hot and very cross with having their little bodies swathed in fine raiment stiffly starched, are worried into two red screaching imps that only an isochromatic plate could do justice to. The photographer meanwhile has stepped out of the room a moment to try and persuade a customer wishing a dozen best finish and a 17 x 20 head in a hurry, that he won't be kept waiting but a moment, only to have him smile knowingly and say he will call later. After seeing him safely inside the door of the rival across the street, the photographer goes sadly back to the twins (dollar a dozen, babies' day) to be met with frowns and asked if he intends keeping the little darlings, who have been "in just too lovely positions a dozen times," all day. After an hour's torture, he succeeds in making two exposures, and while twins are fed as an attempt to soothe them down, the now half-crazed operator flies into the welcome solitude of the dark room, where he mops his brow and hastily takes a drink from the glass usually full of filtered water, but now, alas! containing some nice developer he was just going to add when called out. Recovering from this narrow escape, he develops the twins, after carefully removing the negative he had left in the tray and forgotten in his excitement, only to find the twins on both plates in contortions only equalled by a circus double-jointed snake man. It takes a half hour to explain to mamma and her staff of assistants how it happens, and another hour to get a picture that it would be safe to submit to them. It is pronounced "very, very bad, but twins cannot be killed by any man for the sake of a picture and if that is really the best he can do," etc., etc.

It is now verging towards tea-time, and he begins to think of dinner. Reaching for his hat the door opens, and in troops a class of seventeen school girls to whom he has made a rate in order to get the re-orders, and the hat is madly jammed back upon the peg. So it goes. Is it necessary to ask if this mortal needs one small half-day out of the six? GEO.

. . . . . .

We Knew There Was Something Difficult About It.

The *Times* says that in developing a gelatine plate that has been exposed with a pyro-ammonia developer, the following chemical changes take place:

$2AgBr + C_6H_3(HO)_3 + 2NH\ HO =$
Silver *and* Pyrogallol *and* Ammonia *produce*
Sub-bromide

$2Ag_2 + 2NH_4Br + [C_6H_3(HO)_3 + O] + H_2O$
Silver *and* Ammonium *and* Oxidized Pyro *and* Water.
Bromide

The P. A. C.

Keep the date in mind.

It is the first week of Toronto Fair.

Wednesday, Thursday, Friday, September 7, 8 and 9.

The Annual Convention of the P.A.C. Photographic Association of Canada.

The prizes are worth battling for. There is glory to be won. Every photographer should be arranging for *his* "prize winners" at the present moment. He should also encourage his employees to enter the lists for the printing and retouching prizes. It will be a good advertisement to have the prize man in the gallery. It is certainly a banner year in prizes. Let's make it a banner year in attendance, in numbers competing, and in the quality of work submitted.

Mr. E. Poole, St. Catharines, Ont., is the secretary-treasurer of the association, and those intending to compete should notify him early, enclosing annual fee ($2 for proprietors, $1 for employees). We re-print the list of prizes from our April issue.

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$25 ASSOCIATION FUNDS

Best enlargement, not less than 16 x 20, any kind except albumen paper, must be made by exhibitor and a plain print except ordinary spotting.

No person to receive more than one ordinary prize, but the person receiving an ordinary may be entitled to and receive one special.

Those only may compete for prize or prizes who shall so notify the secretary-treasurer on or before July 1st of the intention to compete. Such notification must be accompanied by the annual fee.

. . . . . .

No Joke.

He threw his arms around her neck
And words of love he spoke:
And then went home a total wreck.
He threw his arms around her neck;
It was indeed no joke,
For his suspender broke.

—*Clothier and Furnisher.*

. . . . . .

Photography used to be defined as "justice without mercy, and, like a child, sure to speak the truth when you don't want it to," but since the introduction of the art of retouching it has become, like the precocious society child of to-day, capable of graceful flattery—in some cases, prevarication.

Faces in the Album.

When, amid Life's surging battle,
  Reverie its solace lends,
Sweet it is to scan the faces—
  Picture faces—of old friends:
Friends and loves of days departed
  That have vanished with the days,
Riven from our sides and scattered
  O'er earth's widely devious ways.

Some have passed the mystic portals
  Where the usher Death presides;
Some to distant climes have wandered,
  Borne on Time's relentless tides;
Some, perchance, to paths unholy;
  Some to deeds without a name:
But the faces in the album
  Are for aye and aye the same.

Changeless still amid Life's changes,
  They renew its brighter hours,
Ere our hearts had known its sorrows,
  When our paths were strewn with flowers.
Picture faces! O, what volumes
  Of unwritten life ye hold:
Youthful faces! pure, sweet faces!
  Dearly prized as we grow old.

—M. C. DUNCAN.

Toronto, April.

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To Avoid Fading of Prints.

A PHOTOGRAPHER in the Old Country advises the following as being the correct way of fixing prints to avoid fading. He says: "Most photographers realize the advantage of using fresh hypo for fixing prints. The majority of those that do, however, consider a new solution every day as 'fresh,' putting into the fixing bath as much solution as will fix their whole day's work, which may amount to forty sheets of paper. To fix this amount *thoroughly* would necessitate eight operations, as there should not be more than five sheets of paper fixed at one time, and the bath should contain no more solution than is required for the five sheets, using a *fresh* solution for every batch until they are done. This may seem troublesome and wasteful, but I consider that I have good reasons for so doing. They are these: Suppose ten sheets are put in. Before you have got them all into the bath, the first will have been in five or six minutes, so that if they are left to fix for say twelve minutes after the last was put in, some of those first put in will be very much bleached. Another argument in favor of the fresh bath for every five sheets, is found in the fact that if the solution was the proper strength for fixing the first five, it cannot be of sufficient strength for a second, nor can it be safely made so by having the bath too strong for the first in order to have it strong enough for the second. It should be just the strength required, should be fresh for each batch and the prints should be kept *moving* all the time they are in. Then, if the prints have been well washed before and are well washed after fixation is complete, they will be found permanent in every sense of the word."

. . . . . .

Color Prints on Metal.

A PROCESS WHICH PRODUCES LITHOGRAPHS OF GREAT DURABILITY.

A new process for printing on metal plates, which overcomes the former great obstacle to the full success of this method owing to lack of durability, has been made public in Paris. The inventor first roughens the metal surface to be printed by means of a blast of very fine sand, thereby creating a velvety grain. The plate is then thoroughly cleansed in some alkalious solution. The surface will then take an impression like paper. When printed the plates are brought to a drying chamber and there exposed to a moderate temperature, which causes the litho ink to penetrate into the pores of the metal. The picture will thus not merely adhere to the surface, but becomes, so to speak, part of the metal plate, and the shrinking or expansion of the metal caused by varying temperatures will not affect it. To render these printed metal plates as durable as enamel, they should be twice coated with varnish after having been warmed, and after application of each coat of varnish placed in the drying chamber as before described.

. . . . . .

During the winter the hen may be dilatory, but she generally comes to the scratch when the garden is planted.

THE *Amateur Photographer* for April contains a most readable article, under the heading "Canada Through a Camera's Eye," which we would like very much to copy had we space to do so. It is a description of a trip taken by a camerist in company with two sportsmen to the picturesque regions of the Nepigon valley and river. The illustrations reproduced from negatives made on the trip should influence many an amateur from "the States" to come and partake of that which bounteous nature has so freely bestowed upon our country. There is no finer scenery in the world than can be found in this Canada of ours, and we are proud of it; and not only that, but we are willing to share it with our cousins of the camera who are not so blessed.

.....

Extension of Business.

We are in receipt of a communication from the Blair Camera Company, stating that they have purchased the entire business and interests of R. P. Harley & Co., photo supply dealers, of Chicago, and have combined the business of this firm with the immense establishment already carried on by them in Chicago. Mr. Harley enters the service of the Blair Camera Company and will have charge of several important branches.

The increasing business of this enterprising firm at the Chicago branch has necessitated larger quarters, and to meet the demand they have removed to 245 and 247 State street, where, as an accompanying card informs us, they will be "at home" to their many patrons. The home office of this company is at 471 Tremont street, Boston, and E. & H. T. Anthony, New York, are their trade agents.

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April and May are said to be, photographically, the lightest months of the year, and all difficult subjects you anticipate having should be advised to sit now.

Toronto Camera Club Notes.

With the opening up of the weather have come opportunities for making a few out-of-door excursions, and consequently the taking of more pictures by the indefatigable amateur.

The members of the Toronto Camera Club appear to be doing a rushing business, as we notice the advent of another dark room in their already well-equipped quarters. It was found necessary to put in the extra room on account of the rush of work the members have on hand. The coming exhibition has no doubt caused a considerable portion of this increased work. Messrs. Hammond, Moss and Croil were good enough to give the club the benefit of their time and the material necessary.

The club have had another successful month, and the membership is steadily advancing, and now stands at 93.

A noticeable event of the month was Mr. Langton's demonstration and lecture on "Doubles" (ghosts), many of the old heads even being surprized at the effects produced by Mr. Langton, one of the most interesting of which was a picture of himself standing sword in hand, having just decapitated a double of himself, and showing the severed head rolling on the ground.

A few members of the club took a tramp to High Park and the Humber on Good Friday, and put in a very enjoyable day.

The club will have a general outing on the 24th inst. This has been an annual affair for some years, and has done much toward helping to advance the club.

.....

According to the latest statistics, the total population of the earth is now 1,480,000,000, as follows: Europe, 357,379,000; Asia, 825,954,000; Africa, 163,953,000; America, 121,713,000; Australia and Tasmania, 3,230,000; the Oceanic Islands, 7,420,000; the Polar regions, 80,400.

.....

T. H. Smith, of Galt, was in town attending the horse show.

WANTS

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