NEGATIVE BY RICHARD WETHERILL.

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THE

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DEVOTED TO THE INTERESTS OF THE PROFESSIONAL AND AMATEUR PHOTOGRAPHER.

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GEORGE W. GILSON, - - EDITOR.

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Answers to Correspondents.—Questions to the EDITOR on any subject pertaining to photography are invited, and will be answered as fully as possible through the columns of the JOURNAL.

We want Agents in every city in Canada and the United States to *push* this JOURNAL, with whom *satisfactory* arrangements will be made. We would esteem it a great favor to hear from, or be placed in communication with, persons desirous of *making money*.

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TORONTO.

EDITORIAL CHAT.

ON what little things sometimes hangs a change of fashion. A photographic friend was lately commenting on the style, now much in vogue, of taking a lady's bust picture lengthwise the plate, saying it was gotten up by one of the leading photographers of Chicago. Now, the real facts of the case are these: A lady entered a New York studio to sit for a cabinet bust. The immense sleeves of the lady projected so as to make it impossible to get the face larger than a five-cent piece and get both sleeves on the plate. Now, the sleeves had cost the lady many good shekels, and were to be the crowning glory of the pictures. The face, she insisted, must be a "good second." The operator, retiring to the dark room for a few moments of silent but deep thought on the ways of the new woman that passeth all understanding, was suddenly struck with a brilliant idea, and with a smile of satisfaction he simply turned the plate sideways in the holder, and lo! the problem of the sleeves was solved—and a new style created.

THE successful operator must be full of ideas—quick to see the best way out of difficult demands made upon him by sitters who want certain things done *their* way, whether or no. If the demand made is at variance with good results, either through defects in face or figure of the proposed sitter, or for technical reasons, he must say it *cannot* be done that way, in a manner that will impress the fact that he is master of the situation, and yet in a way that will not provoke the customer, softening the decision by suggesting a pose or arrangement of drapery or lighting that will bring out the features or costume to the best advantage, first ascertaining, if possible, which is to be taken, the *costume* or the *face*. Remember that nine women out of ten like to be dictated to—if it's done the *right way*.

THE *Photogram* is making a commendable effort to revive the interest in ceramic enamel work, suggesting it to be a good specialty for photographers. We trust its efforts may prove successful, as the work is certainly very pleasing when *well executed*. But there's the trouble. To produce a perfect picture by this burnt-in process requires an amount of skill and carefulness that is possessed by few, to say nothing of the difficulty of obtaining the proper materials, the expense of the materials, and the necessary furnace for firing. However, Mr. Ward has decided to publish full and reliable instructions for working the process, and to find a dealer who will keep in stock all the requisites necessary. This, with the fact that there are now firms who will undertake "trade firing," the *Photogram* thinks will open up the field sufficiently to allow of ceramic photography being successfully followed by photographers in a commercial way. We hope the movement may prove successful, as our interests are with any move that will result beneficially to the photographer.

IT is time that those of us who intend exhibiting at the Convention this fall began preparing for it. It is so much easier to get the negatives we want to use for exhibition purposes if we start early than if we wait until the last week or so, and have to hurriedly select and print what is wanted. By the latter course the best work of the year is generally left on the shelves, and late work that is easier to find is used. By beginning early, a specially good thing obtained may be laid aside, or memo. made for Convention use. Again, by beginning early, and having the idea in one's mind of getting something good for the Convention, the entire studio work is very apt to be improved in style, at least.

WE understand that the Convention is to be held earlier this year than last—the last week of the Toronto Fair. This will undoubtedly mean a larger attendance, as many photographers who attend the Fair do not feel able to visit Toronto again a few weeks later. We hope to have some early news from the Secretary for our readers.

SPEAKING of the Fair recalls the fact that the photographic department, both in the professional and amateur classes, has been sadly deficient, the last year or two, in entries. We hope this year to see more interest taken in the photographic department of our great Fair. The directors make considerable effort to have the department attractive, and it is to be hoped that the photographers of Ontario will show their appreciation this year by seeing that the entries are well filled.

DAINTY PHOTOGRAPH FRAMES.—Pretty silk or brocade photograph frames may be made as gifts for friends, or brothers, sisters or cousins who are at college, utilizing the college colors when selecting the covering.

RAY FILTERS IN NATURAL COLOR WORK.

MACFARLANE ANDERSON.

The experience obtained by me in the use of color filters in connection with natural color work in the field, the results of some hundreds of exposures made in color photography last season, may be of some interest to those engaged in this work at the present time. Self-constituted authorities on such subjects have sprung up with mushroom-like rapidity of late, complicating and falsifying the scientific accuracy of the stand taken by our leaders in this science. Perceiving the incorrectness of much of this meteoric literature and the harmful influence it may exercise by its utter falseness, I opine it a service rendered to the furtherance and advancement of our profession, in trying to extricate some mystified and bewildered worker from this state of color blindness.

Nothing of a theoretical nature have I to offer, but simple unvarnished truths arrived at by patient working and investigating study in my beloved art, science. What I offer is not the laboratory nursling bolstered up and heralded forth for achievements it can never attain, but the honest yard of cloth measuring all of the thirty-six inches and having no guarantee of elasticity, to meet any or every requirement.

Standard colors and standard color filters have been repeatedly spoken of by writers lately on this subject. The first may be possible, the second never will be. A painting copied in direct sunlight with a so-called true set of color ray filters will be found to give entirely different color values in the resultant reproduction when photographed through the same color screens, this being done in the evening or the morning of any of the three hundred and sixty-five days of the year, normal or studio light illuming the painting in the latter case, of course.

Certain color value effects secured by me in some of my negatives, made at a certain hour one day, I have found wholly impossible to secure the next, although the conditions were as near being similar as time, light, plates, developer, etc., could well be.

The same scene when photographed near even fall, gave such a dissimilarity of color values from negatives that were made in the morning that I have often been dazed at the magic transformation.

It was this wonderful diversity of results secured with the same color filters, plates, etc., that determined me to try sundry experiments on the so-called ortho and ordinary plates, the following being given as corroborative of Schumann's investigations, the same proving the fallaciousness of the Vogel theory.

Placing a finely ruled screen grating in front of a sensitive plate, I made an exposure on a view at noon, negative being the red sensation. At 6.30 p.m. of the same evening I made another exposure under similar conditions. Results were:

Plate exposed at noon showed a perceptible sensitiveness to the violet of the spectrum. Before the red values gained their proper density the parts of the plate representing the blues, and which should have been clear glass, commenced to veil over, this greying extending into the protecting lines, the necessary long exposure for the red giving the light sufficient time to spread around the lines.

The plate exposed in the evening with the same color filter gave full printing density and values in the red with not one sign of action from the blue values. Absolutely clear glass was seen where the blues had acted upon the morning's plate.

This one experiment in itself came as an irrefutable testimony, pregnant with

deep conviction, and in beautiful corroboration of the words of that honest, conscientious investigator, Victor Schumann: "Heavy flint glass like that of the Amici prism (used by Vogel) should be excluded. These glasses are impenetrable to ultra-violet. Violet even, and not less indigo and blue, are held back with energy, while the luminous rays—yellow and red—are allowed to pass through freely without any hindrance. . . . Plates found to be highly sensitive for yellow and red in the spectroscope will fail to show the same properties with objective exposures."

Let us now hear what another countryman of the learned professor has to say in reference to this work: "Vogel made his spectrum photographs with a spectrograph furnished with an Amici prism. Vogel's prism has swallowed up the ultra-violet so completely that not a trace of it is discernible; how much the action of the indigo and the blue has been suppressed may be judged of the high intensity of the yellow, according to Vogel's own calculations, of six or even ten times force. No erythrosine plate has this high sensitiveness for yellow unless it be exposed under abnormal conditions. When color sensitive plates are exposed in the gloom of an Amici prism, and the sombre light filtered through the terrestrial atmosphere of a January day, and when the sun is at its lowest altitude, it is quite easy to demonstrate at ocular a high sensitiveness for yellow that under no other conditions it is possible to obtain. Furthermore are the ideas of intensity and sensitiveness sadly confused—ostensibly with a purpose—that of shedding lustre upon the eoside-silver plate for a long time to come." (David & Scolik.)

I need not dwell further upon this feature. Enough has been spoken, and if the worker desires results, he will perceive more than ever before that proper color screens alone will give him this desired quality of true color values in his resultant reproductions. The lustre of Vogel's eoside plate will do nothing to bring bread into the mouth of the practical workman. The honest testimony of unselfish and conscientious investigators should outweigh all minor considerations of nationality or empty mantle of laboratory professorship.

THE PRACTICE OF PHOTOGRAPHY.

(Continued from our April number.)

BY THOMAS F. HOWE.

SERIES I.—ELEMENTARY PAPERS.

THE USE OF THE APPARATUS.

It is advisable for a beginner to spend some time in learning to handle his apparatus neatly and quickly. Practise setting up the tripod, and attaching the camera to it by means of the tripod-screw which comes with the tripod. Then lower and clamp the back, and extend the bellows. When the camera is folded, the front-board, with the lens attached to it, is usually turned inside. Reverse this, putting the lens facing out; then attach the plate-holder to the back, being careful that the handles of the slides are always on the right. Then re-pack the apparatus. By doing this a few times you will rid yourself of any clumsiness and be able to set up the apparatus easily and quickly.

The next step will be to take your apparatus, excepting the plate-holder, to some place which you wish to photograph. Let us suppose this to be a view of your house and the grounds surrounding it, as this is usually one of the first things of which a picture is desired. The first step to be considered in taking a picture is the point of view, and here you must begin to

think. Just as much thought and earnest effort are necessary in successful photography as in anything else that is to be successful. In selecting your point of view you must remember that a photograph does not reproduce the colors that you see, but merely their values in light and shade, and that it is the combinations of lights and shadows which are the colors that give us our pictures in black and white. The success of your pictures depends very fully on the point of view and the direction of the light. You cannot secure a good landscape lighting with the sun directly in front of or behind you. In the first case, our picture would present a mass of strong contrasts, due to the direct shadows; and, in the latter case, would be too flat, having no shadows at all. We cannot secure a good picture, usually, with the sun directly overhead. The best direction for the light is from the side and a little behind the camera, and between eight and eleven o'clock in the morning and two and five in the afternoon will be found the best time in summer.

Having selected the point of view, set up the camera at the spot chosen, being careful that the camera is perfectly level. It is a good idea to have a small spirit-level attached to the swing-back of the camera for this purpose. See that the largest stop is in the lens, as it admits more light for focussing; then cover the head and camera with the focussing-cloth. At first you will probably see little; at most a confused blending of color. You are probably too close to the focussing screen and cannot see clearly; but by drawing the head back under the focussing-cloth you will soon see it and note that it is inverted—that is, turned upside down. As soon as you perceive the image you can move the bellows backward or forward from the lens until the image is clearly defined. This is what is called focussing. If you have a focussing glass, place it against the ground glass, with your eye at the small end, and you will be able to secure the "focus" very finely. This is in no way essential, however, as by a little practice you can do sufficiently well without it.

Having your camera slightly loose on the tripod, turn it from side to side to obtain exactly what you want in the picture. You will notice, in doing this, that what is on your left is on the right side of the ground glass, and *vice versa*. It may be that you do not secure as wide a view as you want. In this case move the camera further away, focussing over again. You will also probably find that you have not all of your house on the ground glass, and you use your sliding-front, raising it until it is all on and a piece of sky as well. And here it is fitting to advise you to leave a fair margin all around the sides, for while your ground glass is the full size of your plate, your finished picture will not be, as it will have to be trimmed in the printing, and a small portion will be "cut off" in the plate-holder. Be sure to fasten the clamp of your sliding-front when you have it adjusted.

Now, again focus the image which you have arranged on the plate. A picture is usually divided visually into three sections: foreground, middle distance, and distance. In this case the lawn in front of your house will be the foreground, your house the middle distance, and all back of that the distance. In landscapes, focus in the centre of the picture on some object near where the foreground verges into the middle distance, though in case you have prominent objects of any kind in the foreground you will have to focus on a point forward of this, about the middle of the foreground. Now, after focussing the centre sharply, you will notice that the sides and foreground are probably not sharp. This brings in the use of the stops in your lens. Try the next smallest stop

and see if it will give the required sharpness; if not, use the next. The smaller the stop used the greater the sharpness we obtain and the longer is the exposure required; so that in cases where our exposures must be short we cannot use a small stop. In using the stops, always use the largest one that will give you the required sharpness, both that your exposure may be shorter and because your resulting picture will be more clear, crisp and brilliant.

You will sometimes find that your picture includes some objects in the near foreground which, when the glass is focussed for the more prominent objects in the picture, will not be sufficiently sharp even when a very small stop is used. You can correct this by setting back the top of the swing-back which removes the foreground focus farther from the lens. You will doubtless have learned by this time that the nearer you are to the object you are photographing, the greater will be the distance of the ground-glass from the lens, so you can probably understand the reason for the use of the swing-back.

Filling the Plate-holder.

Many brands of dry plates are made by many different manufacturers, and of greatly varying degrees of rapidity. Some are intended for instantaneous work, some for all-round work of varying kinds, and others—the slowest—for landscape and view work when the exposure can be prolonged. The beginner will find it best to buy the slowest plate of any good manufacturer, as they have greater latitude in exposure and development. All are packed, a dozen in a box, and face to face—that is, with the side on which is the sensitive coating next to the same side of the next plate, the top plate being back up.

To fill your plate-holder light your ruby light, place your holder, dusting brush and plates in a convenient place in your dark-room, and then carefully close and bolt your dark-room door. Be careful to see that no white light enters from any source whatever, and that the only light you have is that coming from your ruby lamp or ruby window. If you use a window with sliding screens, as previously suggested, slide your ruby screen over the light before opening the plates. Be sure your plate-holder is clean. It should be thoroughly dusted and cleaned previous to use.

There are many differing kinds of plate-holders, and you will find it well to try placing in, and taking out of it, an ordinary sheet of glass the size of your plate, before you attempt to use the plates. The most common holder is that in which you place the plate by pressing it against a spring at one end of the holder, and then allowing it to spring back under a projecting ledge at the other end.

After retiring to your dark-room partially withdraw the slides of your holder, then carefully take the box of plates, and open it by removing the various covers; then carefully turn back to each side the paper covering the plates. Remove the first plate from the box, remembering that it is face down. Always handle plates by the edges; any placing of the fingers on the face will show in the resulting negative. Be careful to let nothing touch the face of the plate. Also be careful in handling the plates by the edges, not to run the fingers along the edge, as that will generally result in cut fingers. The face of a plate can always be told by holding it so that the ruby light will shine on it, the face always being dull, while the back shows a glassy reflection.

After removing the plate from the box, turn it face up, and carefully dust it by passing the camel's-hair brush *very lightly*

over its face. Then place it face up in the holder. Close the slide on that side, and place a plate in the same manner in the other side. Then replace all the covers on your plate-box, carefully tie it with cord, and place it in a dark corner of your dark-room until you again want it. After placing your slides in the holder secure them with the catches for that purpose.

Keep your filled holder where no inquiring friend may find it, as by no chance must a ray of ordinary light be allowed at the plates, except that which comes through the lens at exposure, until they are developed and fixed.

(To be continued.)

INCANDESCENT GAS LIGHT AS APPLIED TO PHOTOGRAPHY.

We well remember when we first saw the Welsbach incandescent gas light—it must be some ten years ago—and our admiration when the delicate "mantle," placed over a Bunsen flame almost without luminosity, gave forth its beautiful glow. Here, we thought, is something that has a great future before it, and, naturally, our thoughts turned to its possible uses in photography. It was only necessary to note the color to know that the light must be highly actinic. Incandescent electric lights looked yellow beside it, gas flames of the ordinary kind almost brown.

For some reason unknown to us, the light attracted little or no attention for some years. We have been told that difficulties were met with in manufacturing the mantles other than being so fragile that they were of but little practical use. What truth there may have been in this we do not know, but it is the present fact that the light is now in a thoroughly practical form, that it is a light of very great beauty, and that it is probably the only illuminant that can compete in any serious degree with the electric light.

We hear, now and then, of the application of the incandescent gas light to photography, but have heard much less than we expected to.

The contribution we are about to make on the subject is small—nay, perhaps, even trifling—but descriptions of actual experience are often of some value, even if the ground covered be small.

We had long been desirous of making trial of the capacity of the incandescent gas light, especially for portraiture, and therefore seized with alacrity the offer of the agent of a branch of the Austrian Company of his show room, where we could made use of twenty lights.

These twenty lights were arranged in one long row, extending in length about fifteen feet. It need scarcely be stated that this arrangement was not one made specially with a view to photography, and that it was not a particularly favorable one, at least as regarded length of exposure. The sitter had to be placed a few feet from one end of the row, the lights at the other end having but little effect. How little will be understood when we state that, on extinguishing ten of them, the exposure was increased by only 20 per cent.

The lights were within a foot or so of a wall of a highly non-actinic yellowish tinge. For reasons that we cannot enter into here, it was not practicable to whiten this wall, except by pinning up a sheet at such a height that it did very little to help the exposures. If the wall had been white—or if the right shade of blue—the exposures would probably have been reduced to about two-thirds of those actually found necessary.

A sheet was used as a reflector to relieve the shadows on the side of the sitter

remote from the light, and screens were used to shade direct light from the lens.

The plates used were very sensitive, but not so rapid as the rapidest of several brands available at the present day.

A number of exposures were made, but the net result is stated when we say that four seconds was found to be ample, using an extra-rapid rectilinear working at full aperture, f 5.6.

This would make the light, even as we had it, ample for small work, with which a portrait lens full aperture could be used, as the exposures would vary from one to two seconds, according to the lens used. For large work, however, the full aperture of a portrait lens can scarcely be used—in many cases not, indeed, the f/5.6 mentioned above. For such cases, the exposure with the lights, arranged as we had them, would undoubtedly be considered too long for the present day, but we are quite confident that, with the twenty lamps we had specially arranged for photography, and with properly adjusted reflectors, the exposure might be reduced to one-third, or even one-fourth that mentioned. This would make it one available for all but very special work. But the photographer is by no means tied down to twenty lamps. The lamps we used were said to be giving from sixty to one hundred candles each, and to be consuming two and a half cubic feet of gas per hour each. We have no reason to doubt the candle power, and a test made with a standard gas meter showed that the consumption of gas was less than that stated. It averaged more nearly two and a quarter than two and a half cubic feet per burner. Taking this last quantity per burner, however, the consumption would be only fifty cubic feet per hour, at a cost of fourpence, taking gas at the high rate of three shillings and fourpence per thousand cubic feet. A professional photographer could very well afford to burn fifty lamps. The additional cost per negative would be a mere trifle.

An advantage that it seems the incandescent gas light should have over the arc electric light is that, in the hands of a skilful photographer, it should be possible indefinitely to alter the lighting, using the former, by modifying the grouping of the lamps.

A few experiments were tried to test the efficiency of the light for photographing interiors. These experiments are not worth detailing, as particulars of interior photography are practically useless unless details of the interiors themselves, such as it is almost impossible to give in a written description, are provided. It is sufficient to say that the experiments proved the light to be a thoroughly practical one for interior photography. As in most cases of interior photography, two essentials are to shade the direct light out of the lens, and to give a sufficient exposure.

Another application of the incandescent gas light is to the optical lantern—one that we saw mentioned in the photographic press some time ago. The intensity of the light is, ot course, not nearly that of a good lime light, nor has it the advantage of being concentrated in a very small area, but the color, we unhesitatingly state, is *better* than that of a lime light. It is incomparably better than that of the best oil lamp. It is necessary to try the two side by side to get any idea of the beauty of the pure white of the incandescent gas light as compared with an oil light. There is, moreover, none of the trouble in preventing smell and smoke that appears to be inseparable from the oil lamp.

It might at first sight appear that the shape of the incandescent gas light would be against it for lantern purposes. The mantle certainly is of a long, nearly conical figure, but if the light be closely examined, it will be seen that all the most

intense glow is confined to a comparatively short length of this mantle, so that the light is really concentrated enough for lantern purposes.

It would be a great boon to such lanternists as have to work where no gas can be had, or where it is troublesome to make connection with the existing gas fittings, if the inventor would design some simple form of alcoholic lamp for use with the mantles. It is surely the case that a "spirit lamp" with a suitable burner will give heat enough to render the mantles incandescent.—W. K. B., in *Photography*.

THE CAMERA IN THE MISSION FIELD.

British Columbia.

BY REV. P. L. SPENCER.

Before the "fire-waggon" reaches the approach to those dizzy heights which characterize the Mountain Province, we do well to change to the humble buckboard, in order to visit some of the Indian reserves that lie scattered over the immense area of the western territory of Alberta. Four miles from the railway station of Gleichen we find ourselves among those once wild, roving tribesmen of the Blackfoot nation, now settled on a tract of land 36 miles long by 15 broad, and engaged in the peaceful pursuit of agriculture. We make the acquaintance of Rev. J. W. Tims, the Anglican missionary stationed on the reserve. We go with him to various points in his great mission, and see the Indians in their summer teepès and at their work. We learn from him that when he took charge of his strange flock he knew not a word of the difficult Blackfoot language, and could find no person able to act as interpreter. Now he talks in Blackfoot as readily as in English, having mastered its intricacies and prepared for the use of other missionaries a grammar and lexicon. We are unfortunate in not finding Old Sun, the chief, at home; but we have the pleasure of meeting his wife, who is amused by our inquiring whether she is not Old Moon. We take views of the new boarding-school for boys and girls, the old school-church, a shack used temporarily as a school, ten miles from headquarters, and the interior of a class-room with a group of twenty boys—some heathen, others Christian—all busily employed in learning to read English.

The last of this list has proved a particularly entertaining picture. The flash-light did its work admirably, bringing into view every member of the class and all details in form and feature. The long braided locks of the heathen and the neatly-cut hair of the Christians are clearly observable. The look of intense interest on the faces of the boys is almost amusing. The picture has never failed to excite a degree of enthusiasm among observers at missionary meetings.

A day with Rev. H. W. G. Stocken at his Indian school on the Sarcee Reserve, ten miles from Calgary, is profitably spent. As an evidence of the intellectual power of the red man, I may mention that a member of this small tribe, Mike Shootclose, is able to converse in English, Sarcee, Cree and Blackfoot. The chief, Bull's Head, is a fine, tall and attractive-looking Indian, but, like many others of his race, is impressed with an exaggerated notion of his own worth and importance. As an illustration of this trait of character, I may relate my experience with this gentleman of the prairie. Being very desirous of obtaining a likeness of the dark-faced patriarch, I asked Mr. Stocken to be good enough to introduce me to him and to ascertain whether he would consent to the ordeal. Accompanied by

two tourists from the United States, who happened to arrive in a carriage at that moment, we paid a visit to Bull's Head as he was protecting himself from the mid-day sun in the seclusion of his royal teepè.

The object of the party having been explained by the missionary to the august ruler of a few hundreds, we were informed that our desire could be gratified upon the payment of $5, of which amount the sum of $3 was the price of the monarch's portrait, and $2 that of a picture of his summer residence, the two subjects being inseparably connected for photographic purposes. In vain did we three travellers, acting through our obliging interpreter, endeavor to convince the great man that $1 from each was all that we could afford to present him for the desired privilege. Supported in his claim by one of his courtiers or "headmen," who chanced to be in the royal presence, he calmly but firmly declined to reduce the demand. Independently of the greatness of the privilege to be accorded, there was, he affirmed, the possibility of harm occurring to his person through the unseen and mysterious influence of bad medicine which the cameras might contain. The price asked was, therefore, little enough. The result of our interview was that, as we retired from the immediate vicinity of the imperial residence, constructed of discolored canvas and poplar poles, we allowed the instruments to take one final, instantaneous look. The picture thus secured we got free of cost, although we were obliged so to take aim with our suspected implements as not to get the interior of the wigwam and the distinguished occupants within. An hour afterwards Bull's Head perambulated the encampment dressed in his government uniform, and was good enough to say that he would accept the sum offered by his visitors if they still desired a memento of their visit. Alas! the gentlemen from the great republic had by this time departed, and I, unaided, felt unable to entertain the proposal. Accordingly, although the chief and I parted as good friends, there was no exchange of values between us. If, however, I failed to get such a likeness of Bull's Head as I hoped for, I did not come away completely defeated, for in taking a general view of the mission buildings, I was able to include his figure as he was walking between the residence and the church.

A striking example of the value and usefulness of photography was afforded during my brief mission to the Sarcee Mission by my ability to make pictures of the furnishings and general arrangement of two rooms of the mission house, in order that the sorrow-stricken missionary might send to the mother of his recently-deceased partner in life and work proofs of his having done what he could to make his loved and lost one as comfortable during her final sickness as circumstances would allow. More than one properly finished photograph from each negative his relatives and friends in England have received.

In treating of British Columbia, I must refrain from attempting to describe the stupendous features of nature as they are comprised in mountain and valley, partly because others have depicted them before me, and partly because my main purpose was rather to note the wonders of grace than portray the charms of the landscape.

At Lytton I had the satisfaction of spending a Sunday with Rev. R. Small, missionary to a large band of Indians settled in a district through which flows the famous Fraser River. The results of persevering spiritual labor among these hill tribes are manifest. The village compares favorably with the Indian settlement on the Red River in Manitoba. The services in the church were attended

by men, women and children, who showed by their earnest attention and hearty responses that they appreciated their privileges and realized their position as that of "children of the heavenly King." Their dress and general appearance witnessed to the truth of the common adage, "Cleanliness is next to godliness." An attractive picture was formed for my benefit after service in the afternoon by grouping old and young together in front of the white-painted church, which, standing on the side of a lofty hill, was well contrasted with the natural background.

At Yale, I made more extensive explorations, first interviewing some Christian Indian women, who were engaged in cleaning salmon, and who very willingly submitted to the scrutiny of the camera, thus showing a marked contrast to their heathen sisters of Swift Current. I obtained an excellent negative of a general view of the village, which, although a place of departed commercial glory, is one of the most beautiful mountain settlements that one sees in the course of this truly enjoyable and almost inspiring journey. I here witnessed the two ordinary hand methods of washing gold—that in which the sluice is used, and that wherein the cradle is employed. In each case a Chinaman was the operator. In answer to the inquiry whether success was rewarding labor, one of these immigrants from the "flowery kingdom" said, "Not muchee gold." I was told, however, that these men make a very fair living, although no white man would be satisfied with their earnings. The truth is that they can subsist on what white men would scorn to use as food; and so, although their daily income is small, they can still lay by something for the future.

After taking the image of each of these gold-seekers, I paid a visit to the village joss-house which they frequent. As no person was within, I was able to take a view of the altar and the idol placed upon it. I noticed on the altar a large number of tapers ready to be lighted by intending worshippers, and several small cups of liquid tea arranged before the idol as offerings. Thus the lines of Heber are sadly true, even in this Christian land:

> "The heathen in his blindness
> Bows down to wood and stone."

(To be continued.)

DARK-ROOM HINTS.

A photographer will often speak of his dark-room as his *den*, and in many cases the word is very happily chosen, for its want of sufficient area, light and ventilation will sometimes make it a fitter abode for a wild beast than for a civilized being. It is really astonishing that men who will spend a large sum on apparatus, should be content with a mere cupboard in which to develop their plates. Of course, some are so circumstanced that they are obliged to put up with very limited room for their photographic operations, or give up the pursuit altogether; but even these would find it better to have a temporary lodging in a room—such as a bath-room—than enjoy undisputed possession of a place as big as a sentry-box. It is not simply a question of convenience, but one of health, for these little poky dark-rooms are almost impossible of ventilation.

A bath-room can be transformed into a temporary dark-room with very little trouble. It must be fitted with a black blind, with a little window of ruby medium let into its lower part. To the framing of the window should be tacked on each side wings of the same black material, about a foot in width, and, by suitable attachments—hooks and eyes, or buttons and loops—these can be fastened to the blind when it is unrolled. A somewhat

similar arrangement at the bottom of the window will help to keep out the white light. A shelf, to hold a few bottles, and a wooden grid to go half over the bath, to hold dishes, etc., will complete the arrangements. If we want to be very luxurious, we can furnish the water-tap with an India-rubber pipe and a rose, and can then wash our plates without stooping down to do so.

But although a bath-room or any other room will do as a make-shift, the man who is doing plenty of work should have an apartment to himself, which he can fit up with those comforts and conveniences which are so conducive to success. And the two most important things to see to, in fitting up such a room, are efficient light and good ventilation.

A good gas-stove, so constructed that it will draw fresh air from outside the premises, and deliver it warmed into the room, is naturally one of the best ventilators which can be used, but is only applicable in the winter-time. Such gas-stoves, shut in so that no trace of white light can make its escape, are now made for the use of photographers, and we can from experience highly recommend them. They are not only good for general warming, but are of special use in drying gelatine plates, carbon tissue, or any coated material which requires slow desiccation.

As a rule the dark-room is far too dark to be comfortable. Many think that a single red lamp of some kind or other is all that is necessary, forgetting that the room, if of any size, should have some kind of general illumination, so that the occupier has no need to grope about in darkness for anything he may wish to find. Anyone who has visited a plate factory will be astonished at the ease with which he can find his way about the premises when once his eyes have become accustomed to the red light. The light is of course safe—as far as any red light can be said to be safe—but it comes from so many sources that there is plenty of it. There are no dead-black shadows, such as we find in most dark-rooms, shadows for which there is really no necessity.

The best kind of light for the photographic dark-room is undoubtedly that given by the electric glow lamp. It is so small that it can readily be fitted into any kind of lantern, or its glass can be dipped in a colored medium. Those who have their houses lit by electricity will thus be relieved of all difficulty in lighting their dark-rooms, but let them have sufficient of the little lamps to light the room well.

With regard to the all-important light by which development is conducted much has been said and written. The medium, whatever it is, must stand the test of the spectroscope, and may be considered "safe" if, when held up to the sky and examined with that instrument, it shows no trace of blue. For development we prefer a gas lamp, held in a somewhat large lantern, with the tap within easy reach, so that the height of the flame can be regulated according to circumstances. We also like to have the use of yellow glass at will, so that, when dealing with plates or papers of no great sensitiveness, we can have plenty of light. One important matter is more often neglected than not in the construction of dark-room lamps, and that is a suitable shade. The duty of the lamp should be to throw a good light down on the developing dish, and nothing else. The eyes have quite enough strain put upon them in working under unnatural conditions without being wearied by the glare of the light itself. One other point which is often lost sight of is the provision in the dark-room of a suitable cover for the developing dish. A cardboard box lid will do, but a better appliance is a cover made for the purpose, and covered inside with black velvet.

This can be put over the dish directly we are quite certain that the developer covers the plate, and there are no air-bells to reckon with. It may remain on a minute, when it should be raised to see how matters are progressing, and in this cautious manner the plate is protected from even red light until the image is so far visible that it is safe to turn the gas up to its maximum. This may be thought a trivial matter, but it means clean negatives and absence of fog, and we all know that such a negative is a pleasure to see, and a happiness to print from. The cover to the developing dish is also of great advantage sometimes, when it may become necessary to turn on white light for a moment—if only to light one's pipe.—*Photographic News.*

EXAMINATION OF PHOTOGRAPHIC LENSES.

(Continued.)

I wish now to show you another method of obtaining the exact focus, the principle of which rests upon the fact that an image on the ground glass remains steady, though the lens is rotated on the vertical axis of its posterior nodal point.

This is demonstrated by Moessard's "Tourniquet" which I have here, and which has been kindly lent me by the Royal Photographic Society.

Here we have an arrangement by which the vertical axis, going through the principal point from which focus is measured, can be found by adjusting the lens carrier through the means of a screw rod. When this is found, the image of an object in the axis is perfectly steady; any movement will indicate that the lens is not in the right position.

When the lens is too far out, the nodal point in front of the axis A, R, the image will move in the contrary direction of the handle C, by which the lens is rotated; when the image moves in the same direction the nodal point is behind the axis A, R, and the lens has to be racked out until the image is steady, when the lens is rotated.

This instrument, of which slide gives the diagram, is useful not only for finding the focus, which can be read on the scale behind screen, but also for most of the other tests to which I shall refer later on.

We have now ascertained the exact focus, and gone through the principles governing it, and that if you find that I have been a little more explicit about it than some thought was necessary, I have done so because I have seldom found an amateur who would exactly measure the focus of his lens, nor a professional photographer who did so by a scientific method. Without wishing to say anything disparaging of the club I would venture to say that if I brought a lens down here and asked, say, six of you to ascertain its focus by next Wednesday, probably half a dozen different results would be given.

Having now dealt with the matter of focus, we next take the

Angular aperture.—We have seen that in the pinhole camera the aperture must of necessity be small. With the insertion of the lens, we shall in a degree gain that quality essential to our purpose—light.

The amount of light admitted and refracted through a system of lenses is measured by the angular aperture. Generally speaking, the angular aperture is understood to be an angle, the apex of which is the focus on the axis, the base the diameter of the front lens admitting the light.

In landscape lenses the diameter of the stop in front of the lens determines the volume of light; in a doublet, the diameter of the front lens—provided, first, that all that light can pass through the

diaphragm fixed in the mount, and that the construction and mount of lens offer no impediment by cutting off some of the marginal waves.

The light in a single lens is not condensed when it reaches the stop. In a doublet the light going through the stop is condensed light, and taking it as the same volume of light as has penetrated the front glass, the aperture of stop will on an average represent a volume of light ten to twelve per cent. greater than its diameter.

The angular aperture, therefore, in a doublet, is not found by measuring the stop, not any more than the focus by simply measuring the distance from the stop to the focal plane.

In order to obtain the exact value of the volume of light admitted, we have recourse to the principle already worked out of the conjugate foci. We simply reverse the logic of it, and turn our focal plane into the "luminous object," and we know that as a luminous object at distance will send parallel waves of light on to the lens, which cross at the principal focus, so will a luminous point at the focus send out parallel rays from the lens forward. We, in fact, use our lens as a condenser.

We proceed as follows:

Over the lens we put—inside cap—a circular disc of bromide paper as large as it will hold; into the focal plane—slide—we insert a piece of cardboard, cut to the size of plate, with a hole in the axis about one-eighth of an inch or smaller. We now, having set camera to focus, burn a few inches of magnesium wire directly behind the hole in the board, and we shall obtain on development of the bromide paper an image representing, by a black disc, the exact volume of light, the diameter of which is the basis of our angular aperture.

The aberrations: Spherical and chromatic.—Having acquired the necessary data of the two principal constant factors, we may now examine our objective for any faults that may be left uncorrected.

Spherical aberration should not exist in any modern lens, and any lens showing it to any extent should be looked upon as a duffer.

Lenses of comparatively long focus do not suffer much from this defect, but spherical aberration is a trouble increasing when the curvature extends over a large spherical surface, the difficulty being to bring the marginal rays to the same focus as the central.

Images will thus be indistinct, because when focussing for the central rays we shall have a disc or halo, formed by the marginal rays which have focus nearer the lens, and are already spreading out again, as shown in diagram.

Test.—In order to detect this fault, we focus sharply on a bright object, such as the one I have brought down, hung up, say, at a distance of twenty to thirty feet.

Should any indistinctness in the image appear, we insert a stop about one-half or one-third of the full aperture. When spherical aberration is present, the halo around the sharp image will diminish, or disappear altogether; this behavior, therefore, will prove to us spherical aberration which may be both positive or negative. Having now got rid of the halo, we rack forward so as to bring our screen into the plane of the focus of outer rays, but, having eliminated them from the image, they will not trouble us, and we shall simply see our image take the form of a slightly larger disc on the screen. Should we see a sharp central image rather smaller than the one in the other plane with halo, it will prove that we have not cleared the marginal rays sufficiently out of the image, and shall, in order to obtain sharp focussing, have to stop down more.

I have here only spoken of axial spherical aberration. It will be understood

that the same fault may or will probably be observable all over the plate, most likely in a greater degree, and, what is worse, will be mixed up with chromatic aberration, astigmatism, and so forth, so that it will be difficult to tell which fault is the prevalent one.

Theoretically, the form of lens having the least spherical aberration is the plano-convex; but spherical aberration has, like chromatic aberration, to be corrected by the superposition of two lenses of opposite character, the fault of the one correcting the other.

This correction is, moreover, bound up with the one for achromatism, for, as you will easily see, the alteration of any curvature in order to correct one aberration will also affect the other.

A system corrected for both spherical and chromatic aberrations is called aplanatic.

Chromatic aberration and chemical focus. —You are, no doubt, all acquainted with the spectrum, and the principles governing the dispersion of light through prisms and lenses. Long after the achromatic telescope had been constructed by Dollond, photography remained in infancy, and lenses were mostly beset with the grave fault of giving colored images in the sense that one color would form one, and another color another image, these overlapping one another and being in different planes from the lens.

They often had, until quite lately, chemical focus, or suffered from chromatic aberration.

The difficulty of achromatizing lenses, say, of two elements perfectly, arises from the difference in their spectra, and as I have shown before, the difference not going in the same proportions as the difference of their densities; that is to say, two glasses, like ordinary flint or crown, have a refraction which stand in the proportion of 1·63 for the one to 1·52 for the other, while their respective dispersion stands about 0·0124 to 0·0066; the proportions of one is five to six, the other nearly three to five. This condition of things is now considerably modified by the introduction of new glasses of more varied dispersive properties in relation to their refractive powers, notably some of the glasses with a high refraction and a comparatively low dispersion.

When we look at the spectrum of flint and crown, we see not only the difference but the impossibility of bringing both into the same proportions all along the line. Having them agree from C to F, they will agree neither at the lower end where the crown has it, nor at the higher end where the flint has it.

If we include the yellow and orange, the red may for most purposes be neglected, as it has little or no effect on the photographic plate except in the case of orthochromatic work, when we have plates sensitive to red; but more trouble arises with the blue and violet light. This we can hardly see on the screen, but it acts most effectively on the plate, and the residue left uncorrected will be most detrimental to our obtaining sharpness in actual work.

In examining a lens for achromatic aberration, we find ourselves confronted with the difficulty that when the fault is small the foci are close together, and flow into one another again, forming a white image; moreover, when lens is under-corrected we easily obtain sharp focus for the visual yellow rays, but the blue and violet are, or may be, hardly visible to the eye, while when we expose our plate it is *they* who do the work, whilst our yellows do nothing, or very little, during the time that exposure lasts for the other.

Over-correction will be the lesser evil, because the blue light is not likely to be so spread as in the case of under-correction, and the whole pencil is closer

together; the error, therefore, not likely so great.

This is shown by slide.

Should a lens show signs of chromatic aberration, it should be returned to the maker for correction, which is obtained by regrinding the inner surfaces, for no degree of stopping down will correct the fault.

(To be continued.)

DRY VS. WET

PLATES FOR PROCESS-WORK IN PRODUCING NEGATIVES WITH THE LINE-SCREEN FOR HALF-TONE ENGRAVING, USING CARBUTT'S NEW PROCESS PLATES.

Since the advent of what is now called the half-tone photo-engraving method the making of the negative has, by the majority of operators, been accomplished by the wet collodion process, as the more rapid gelatino-bromide plate was not amenable to the treatment of clearing and intensifying used in the wet process. It is the purpose of this article to show and prove that by the use of a specially prepared process plate made by the writer, equally as fine half-tone blocks are produced as by the wet-plate process, and have been used for a year or more past by firms who formerly used the wet-plate method, but have laid it aside to the exclusive use of the gelatine process plate. As the gelatine plate is always ready for use, and more sensitive than the bath-plate, and the time taken up in developing, clearing and intensifying being about the same as the wet-plate, much valuable time is saved, besides relieving the operator of preparing collodion, keeping a silver bath in order, etc. The same plates are used in producing negatives of pen drawings, reproduction of wood engravings for transfer to stone, or producing deep etched blocks. The following solutions are required for developing, clearing, fixing, reducing and intensifying the process plates:

DEVELOPING FORMULA FOR HALF-TONE NEGATIVES (SCREEN) AND NEGATIVES OF PEN DRAWINGS.

No. 1.

Neutral Oxalate of Potash	1 lb.
Warm Water (free from Lime Salts)	48 oz.

Add of a strong solution of Citric Acid enough to just turn litmus paper red.

No. 2.

Sulphate of Iron	½ lb.
Warm Water	24 oz.
Sulphuric Acid	15 drops.

No. 3.—Restrainer.

Bromide of Potassium	½ oz.
Water	10 oz.

To develop. To 5 oz. No. 1 add 1 oz. of No. 2 and 10 drops No. 3.

To get an even-developed plate use sufficient developer to well cover the plate, allow to act until, on looking through, the image appears quite dense; then wash and place in clearing bath one or two minutes.

No. 4.—Clearing Bath.

Water	20 oz.
Alum	1 oz.
Citric Acid	¼ oz.

Again wash and immerse in fixing bath.

No. 5.—Fixing Bath.

Water	6 oz.
Sulphite of Soda	2 oz.
Water	2 oz.
Sulphuric Acid	1 dr.
Water	48 oz.
Hyposulphite of Soda	1 lb.
Water	8 oz.
Chrome Alum	1 oz.

Dissolve in the order given, add the solution of sulphuric acid to the sulphite

PHOTO-ENGRAVED FROM HALF-TONE NEGATIVE ON CARBUTT'S NEW PROCESS PLATE.

See article "Dry vs. Wet Plates," for Half-tone Engraving.

of soda, add this to the hyposulphite, and finally add the solution of chrome alum.

No. 6.—Reducing Solution.

Ferricyanide of Potassium	50 gr.
Water	10 oz.

No. 7.—Bleaching Solution.

No. 1.

Bichloride of Mercury	240 gr.
Chloride of Ammonium	240 gr.
Distilled Water	20 oz.

No. 8.—Cyanide of Silver Solution.

Distilled Water	6 oz.
Cyanide of Potassium, C. P.	60 gr.
Distilled Water	2 oz.
Nitrate of Silver	30 gr.

Pour the silver into the cyanide solution while stirring, and mark the bottle "Poison."

NOTES ON USING THE FOREGOING SOLUTIONS.

Supposing that 6 ounces of developer are mixed, and a number of plates are developed; if bulk is reduced to 4 ounces, add 2 ounces of a fresh mixture and no bromide; also if what is left is placed in a bottle, on using it the next day, mix half of it and half of fresh mixed developer, and it will be found to work more uniformly than developer freshly mixed, the old acting as a restrainer. Always use No. 4 solution after washing off the developer, as its function is to remove any trace of iron left in the film (which, if not removed, will leave an opalescence in the clear spaces), also to harden the film and prevent its swelling up. After a stay of not less than two minutes in No. 4 solution the negative is thoroughly rinsed and placed in No. 5 fixing bath, and when thoroughly cleared, removed. Do not proceed to wash out the hyposulphite as is ordinarily done, but simply pass the negative through water to remove the surplus hypo solution on surface, then examine with a magnifying glass to determine whether any reducing or clearing is required, either as a whole or locally, which I consider is best done at this stage, as the hypo left in the film acts with the reducer, ferricyanide of potash, much better in clearing the transparent places than if a mixture of hypo and ferricyanide had been used after all hypo had been washed out; the 5 grains solution of No. 6 can be used as a bath in a white porcelain dish, and the reducing effect watched closely, then removed and its action immediately stopped by washing. If any part of the negative is found to require local reduction, the No. 6 solution can be applied to the part to be reduced with a tuft of absorbent cotton or large round camel's-hair brush, and then washed to remove all hypo. If intensification is required, it is best done after the negative has been allowed to dry; but as time is of the utmost importance in this class of work, intensification can be done now, the only danger being of any hypo remaining in the film, which would cause a yellow stain after being intensified. To avoid this, place in No. 4 for one minute, then wash and place in the mercury solution until whitened, then wash again, and reduce the chlorized image to black, either with a 10 per cent. solution of sulphite of soda or the cyanide of silver solution; the latter gives the clearest and most dense deposit; wash for a few minutes and dry spontaneously, or, if desired to dry quickly, it may be dried in warm air at a temperature of 90° to 100°. Where electric light is used, if the negative is placed before a small electric fan, it will dry very rapidly, as the film of gelatine on these process plates is very compact and does not swell up to any appreciable extent. I think I have now explained sufficiently the mode of using the process plates for producing half-tone negatives from which blocks can be made that will furnish prints of the

highest quality, and enable those who are tired of the vagaries of the old wet method to realize that time, patience and money are saved by adopting the new. For those who do not use a prism to reverse the image, Carbutt's Stripping Process Plates can be used, and are treated just the same as plain plates; when dry they are placed on a levelling stand, on three points, brought to a level, the plate covered with Carbutt's Stripping Medium, using 2 oz. for 8 x 10 plates; 1½ oz. for 6½ x 8½ plates; ¾ oz. for 5 x 7. In a warm room they will dry in twelve hours or over night.

The illustration accompanying this article is an example of commercial work, produced as described, from my gelatine process plate.

JOHN CARBUTT,
Keystone Dry Plate and Film Works, Philadelphia.

MAXIMS FOR BEGINNERS.

BY DR. HUGO ERICHSEN.

Is it difficult to make photographs? No, it is not. But unless you have patience and love the art-science, you had better let photography alone. If, however, you possess these desirable attributes, you may, with the aid of good apparatus, become a second Eickemeyer or Stieglitz, names of which American amateurs have reason to be proud.

IN order to become proficient, you will have to alternate between study and experiment, and a well-selected photographic library, including a subscription to this and a foreign journal of photography, will do much to advance you in the art-science.

PHOTOGRAPHY is like all other sciences, whether connected with art or not; the more we study it, the more we ascertain that we still have much to learn. Every photographer, whether amateur or professional, must continue to study or be left behind in these days of progress.

A PERUSAL of works on composition, lighting, perspective and other works treating of art, especially in its relation to photography, will also be of advantage to you, as it will enable you to look at things with an artistic eye that you have hitherto passed by unobserved, and to appreciate beauty where you have perceived none before.

As regards a camera, I should advise you to purchase as good a one as you can afford, and one that can be used both on a tripod and as a hand camera. Avoid the purchase of a magazine camera as you would a lethal poison, for it is too heavy to be carried about conveniently, encourages a waste of plates, and is not unfrequently productive of slip-shod habits. Leave the magazine camera to the "press the button and we'll do the rest" idiots, and do not increase their number.

No one is worthy of the name of a photographer who does not do every part of the work himself. A busy man may sometimes delegate part of the work to somebody else, but unless he understands that work as well as the person to whom it is transferred, he does not belong to Daguerre's followers.

THE purchase of a good camera is also advisable on the score of economy, although this may sound contradictory. I had four cameras before I acquired my present outfit, and whereas my first apparatus cost but $5, the value of my present outfit must be expressed in three figures. As I had to sell the four cameras referred to at a loss, it is not difficult to see that I would have gained financially by purchasing my present out-

fit in the beginning. Hence it is prudent to spend as much money as one can afford for a first-class camera.

THE size of a camera is a matter of great importance. One that will take a picture of 5 x 7 or, better yet, 5 x 8 inches, is preferable to a smaller size, as it will permit of the insertion of kits, by means of which photographs from 3¼ x 4¼ to 5 x 8 inches may be made. Four by 5 inches is the popular size just now, especially for hand cameras.

THE selection of a suitable lens, too, is a question of much moment. If possible, the amateur should equip himself with three lenses, a rapid rectilinear for landscapes, a wide angle for interiors and architecture, and a portrait lens. Combination lenses have recently been placed upon the market, but as I have had no experience with them, I care to say nothing about them. A wide-angle lens may be converted into a landscape or long-focus lens by unscrewing one of the lenses of which it is composed, but no lens can take the place of the portrait lens. I know that it is futile to endeavor to prevent the beginner in photography from taking portraits with a landscape lens, for that is precisely the first thing he will attempt to do. As he goes along, he will learn that there is a limit to everything, and that some things cannot be done under any circumstances.

GOOD care should be taken of lenses. When not in use they should be protected from dust and put away in lined cases or little bags of chamois skin. In cleaning, the greatest care should be taken not to scratch them, and only fine, soft linen or chamois skin used for the purpose.

A SHUTTER, provided with a pneumatic release, is also indispensable, for it enables a photographer to expose a plate without jarring the camera.

STOPS or diaphragms give the photographic image sharpness; the smaller the stop is, the sharper becomes the image. Nowadays, indistinct photographs are the fashion and large stops are preferred.

UNLESS the amateur is travelling, he will find glass plates perferable to films. As he advances in the study of photography, he will learn to use orthochromatic plates in order to obtain color values, non-halation plates to prevent fogging in interiors, and the numerous other plates that are used for special purposes. One of the best plates for beginners is undoubtedly the Carbutt "B," as it allows great latitude in exposure.

EXPOSURE is a subject on which little can be said, as it necessarily varies greatly with the lighting and other circumstances. Experience soon teaches the tyro how to expose correctly.

A GOOD lantern is essential to good development. The best is the cheapest in the end, as it will prevent the ruination of many plates. The pocket lanterns that are generally supplied with cheap outfits might as well be consigned to the refuse heap, as far as their usefulness is concerned.

MAINTAIN order in the dark room. Have a place for everything, and everything in its place. Practise the most scrupulous cleanliness, and carefully clean every utensil after use.

CONSTRUCT a dark room in your summer kitchen or shed, and provide it with a ruby or orange glass window, before which a bracket or shelf is made to hold a large kerosene lamp. In this way you can dispense with a lantern and economize space. The dark room should be provided with a lock and key and kept securely closed during the owner's absence so that no person can gain access to the

poisons it contains. There are many amateurs in this country who have to do without the luxury of a dark room, and who are compelled by circumstances to do their developing in bathrooms or by the kitchen sink. To them one of the portable dark rooms or tents in vogue in Great Britain would be a godsend.

FORTUNATELY, unmounted prints are all the rage. The beginner, therefore, is not obliged to make his life miserable by making ineffectual attempts to mount his photographs.

IN conclusion, one word more. Whatever you try to do, do well. If you are in a hurry, postpone photographing or develop some other time. Nothing is so fatal to photographic art as unnecessary haste.—*Anthony's Photographic Bulletin.*

LETTERS TO THE EDITOR.

Editor CANADIAN PHOTO. JOURNAL:

SIR,—Up to a few months ago I could never make up my mind to try and get orders for crayon enlargements, for this reason: when I got any orders I could never get work soon enough, and in a good many cases the work I got did not give good satisfaction. However, I received an order for three 16x20 crayons; I hardly knew what to do with them, until at last I thought of looking in the JOURNAL for an address, and I found the announcement of Mr. H. N. McDonald, of Mount Forest. I at once sent the orders on, and I received them ten days afterwards, and I can't help writing you to say that within the last two months I have taken a large number of orders, and better work and lower prices I have never seen or heard of. I have made up my mind that it pays to have a few samples, and talk the thing up, and I can honestly say, that any photographer that is, or is not, making this a part of his business should write Mr. McDonald for terms and give him a trial order.

I have found the reading in your journal very interesting, and I consider the advertisements of great interest also. I have to thank the JOURNAL for the address which has brought me in quite an income. Very truly yours,

Halifax, N.S. HARRY J. MOSS.

NOTES FROM A TRAVELLER.

ONE of the most charming sights of Canada are the scenes along the St. John river. A steamboat ride of a few hours will open up to one's vison an ever-changing panorama of lovely scenery, now a rugged line of hills or a valley dotted here and there with the white wooden cottages so common in New Brunswick farming districts. To the lover of nature it is a magnificent trip, and on your journey down drop off at Fredericton and see Geo. A. Burkhart, a photographer, who has hundreds of interesting views of New Brunswick and hundreds of friends. You will find him one of nature's gentlemen, and a right, jolly good fellow.

MESSRS. LAPRES & LAVERGNE, St. Denis Street, Montreal, since their late fire have had their studio refitted throughout with some very choice fittings. Their business is increasing every day, due to the untiring efforts of Mr. Lapres.

P. F. PINSONNEAULT, Three Rivers, Que., has just "taken unto himself a wife" in the person of a very estimable young lady of St. John's, Que. Mr. Pinsonneault had dwelt in single blessedness long enough, being now thirty-three years of age, and right in line in photography. His friends in Three Rivers presented him on his departure to St. John's with a very handsome present as a mark of their esteem. Of course the friends' best wishes go with him.

CHAS. JOHNSON has just lately opened up a studio in Sherbrooke. Mr. Johnson, although quite a young man, has been some years in the business, and will undoubtedly meet with success.

W. BURTON FINLEY, Sherbrooke, is doing some beautiful work. Mr. Finley's rise in photography has been rapid, and his success is due to the fact that he is painstaking, and will use nothing but *the best.*

MESSRS. GAUVIN & GENTZEL, Halifax, were interviewed some time ago, and reported business A1. Their phenomenal success in photography aptly illustrates what can be accomplished by energy and keeping up with the times. They use nothing but first-class material, and do a first-class business.

MR. PRESBY, formerly operator for Mr. S. J. Jarvis, Ottawa, has returned to Sherbrooke, where he will enter into business with his father, Col. G. H. Presby, the pioneer photographer of that city. Mr. Presby's many friends in Sherbrooke were glad of the opportunity to welcome him back to his old home.

HAROLD CLIMO, St. John, N.B., is untiring in his efforts in photography. Though quite a young man he has been a great many years in the business. He is artistic and careful, and his success is due mainly to the fact that he has always sought to use the best in everything, which means a lot in producing good pictures.

THOS. H. SMITH, Galt, Ont., says business is very good, but it is never *too good.* This is about the way with all of us. Mr. Smith lately refitted his studio with the latest in photographic accessories, and all the pretty girls in Galt are now calling on him and having their "pictures took." Tom says he can stand it, as long as they don't *stand him off.*

COL. JOHN HARVEY, photographer, Fredericton, N.B., "hustles," not in the helter-skelter, slap-dash style, but quietly makes up his mind, and then goes ahead. He has been in Fredericton now a number of years, and has built up a profitable business. In his studio everything is A1 —cameras, lenses, accessories, etc., etc. To use his own words, "I don't care what things cost, but they must be first-class."

J. S. CLIMO & SON, St. John, N.B. report business first-class now. Mr. J .S. Climo is the oldest photographer in St. John, but there is nothing of the "old fogy" about him. During the many years he has been in St. John he has always held his own. He is a kindly, genial gentleman to meet, and is a constant contributor to the literary columns of the Lower Province papers on various subjects. His son, Mr. Chas. Climo, does the operating, and his two charming daughters attend the reception room.

BOOKS AND PICTURES RECEIVED.

"FOLLOWING THE FLAG," received by us through the courtesy of the Canadian management of Sunlight Soap, contains jottings of a jaunt around the world by W. H. Lever, one of the proprietors. It is profusely illustrated, many of the pictures having been taken by the author during the trip.

"PHOTO NOTES" is the title of a new journal, the first number of which was issued in April at London, Eng. It is a fortnightly journal issued to all photographic societies agreeing to arrange for its distribution among their members at a small cost. The first number just received is made of bright original matter, and we have no doubt this little journal will achieve success.

We have to thank Tom Smith, of Galt, for a pair of "Trilby" feet. They are beauties, and no mistake. The feet are in a photograph, and apparently there wasn't room for anything else but *feet.*

TAYLOR, TAYLOR & HOBSON, have issued the thirteenth edition of their catalogue of lenses, a copy of which is before us. This catalogue is always interesting and useful. It will be sent gratis on application.

From the New Jersey and New York Railway we have received a natty little pamphlet, descriptive of the accommodations for summer tourists along their line. The effect of the booklet is greatly augmented by a number of reproductions of the very artistic works of Mr. Floyd Vail, one of New York's cleverest amateurs.

NOTICE BOARD.

We have been informed that the G. Cramer Dry Plate Works, of St. Louis, Mo., are now making a non-halation plate of superior quality. These plates are the only single-coated non-halation plates on the market, the non-halation effect being secured by means of dyes which are added to the emulsion. All other non-halation plates are produced by double coating, which, of course, increases the time of exposure considerably. We have also been informed by the same firm that they have decided in future to supply their Isochromatic plates direct to the consumer, charging them to any dealer the photographer may designate. By ordering these plates direct from the factory the consumer will be sure of getting perfectly fresh plates, and the Isochromatics especially give the best results while fresh. If any of our readers desire detailed information in regard to the Cramer plates, we would suggest that they correspond with the makers direct, and obtain a copy of their latest catalogue which is sent upon application to any address, and contains many useful hints for working these famous plates, which are gaining in popularity every day.

The International Photographic Exhibition An International Photographic Exhibition will be held, under the distinguished patronage of His Royal and Imperial Highness, the Grand Duke of Toscana, in the famed marble halls of the Mirabell Schloss, Salzburg (Austria), between the 1st August and 15th September, 1895, under the joint auspices of the German and Austrian Alpine Club and the Salzburg Amateur Photographic Society, which promises to be of great importance and unusual interest. The exhibition will be open to amateurs and professionals, and the pictures should be landscapes depicting mountain scenery in all parts of the world, as well as picturesque, local and national costumes, scenes and representations of ethnographic interest. His Royal and Imperial Highness (the illustrious patron) and the German and Austrian Alpine Club have presented gold, silver and bronze medals, which will be awarded to the successful exhibitors. Diplomas will also be given. Full particulars and application forms may be obtained from the Exhibition Committee, Sternbrau, Salzburg, Austria; or at the offices of *The International,* 1 Church Row, Fenchurch Street, London, E.C.

We call the attention of our readers to the page announcement of Messrs. W. A. Lyon & Co., which makes its first appearance in our advertising columns this issue. Mr. Lyons is the oldest stock dealer in Canada, as far as business goes; and having been identified with photographic stock for so many years, he has a good idea both of the

wants of the photographer and the way to satisfactorily fill them. The firm have just moved into more commodious quarters, a few doors above the old stand—a move made necessary by increasing business. They carry a full line of things necessary to the professional and amateur at close prices. They have a complete plant for the manufacture of mounts—a line they have been very successful in.

A 17 x 20 folding view camera is quite a rarity. One of this size arrived in town lately, ordered by a gentleman who is going to take a trip to the mountains. It was a Rochester optical company's "Universal," and a beauty it proved to be. When mounted on the tripod, it became the centre of an envious group of admirers. It was made in the same elegant style that characterizes the smaller sizes of this popular camera.

One of the most complete photographic and optical catalogues of the year has just been issued by Messrs. Ross & Co., of London, England. It contains full descriptions of all the well-known lenses made by this noted firm, and of their complete line of cameras, shutters, lanterns, telescopes and microscopes. It is in fact a complete library of photographic and optical appliances and accessories. It can be obtained from Messrs. Ross & Co., post free, for sixpence, and will prove of interest to everyone interested in photography.

Ilo.—Mr. F. S. Noble, Secretary of the Ilotype Company, has just returned from an extensive tour through the States, and reports rapid progress in the sale of Ilo paper; likewise does their Canadian representative, Mr. M. Wertheim, who is at present demonstrating this celebrated paper in the Lower Provinces. Ilo paper seems to be forging ahead, and if it continues on in the same way will soon capture a good portion of the Canadian trade. It is, however, one of the easiest of papers to manipulate, yields the best of results, and we understand that a photographer seldom leaves Ilo after he has once given it a thorough and careful trial.

A Correction.—We find that in our description of the "Stand-pat" Chair, last month, we were in error in saying the style and name was originated by Messrs. Mulholland & Co. The design and name of this chair were gotten up by Messrs. E. & H. T. Anthony & Co., of New York, the name being a combination of the names of two of Messrs. Anthony & Co.'s well-known salesmen—Mr. *Stan*bury and Mr. *Pat*terson.

The Gunlach Optical Company, of Rochester, have secured patents on a new anastigmat lens that is undoubtedly going to prove one of the lenses of the year. We will endeavor to notice this lens more fully next issue.

We have just time before going to press to call the attention of our readers to a number of new announcements made in our advertising pages this month by several of the leading manufacturers of photo goods, namely: C. P. Goerz, The Manhattan Optical Company, The Gundlach Photo-Optical Co., The Prosch Manufacturing Co., Climax Plates and American "Aristo Jr." paper, by Messrs. Anthony & Co.

HAMILTON CAMERA CLUB.

The welcome warble of the feathered songster, the enticing charm of Nature's attractive spring adornment, and the cool breezes perfumed with redolent odors of pine groves and meadows, allure the student of nature to wonder and behold the hidden treasures which to those who

seek them issue forth. "In the spring a young man's fancy lightly turns to thoughts of"—his camera, and what special work to attempt. His past experience has taught him that if he would be successful he must be sure that he is right, then go ahead. Membership in a well-organized camera club is a helpful aid to advance the art of photography.

Five years ago the stray amateurs of Hamilton were gathered into one fold under the guidance and direction of Mr. Wm. White, and secured a permanent place of abode in the Free Library building. The Hamilton Association for the advancement of Science and Art invited these amateurs to form a photographic section. During the five years of the club's existence, much good work has been done.

Outings have been held during the summer months, and frequent entertainments given throughout the winter season, while the yearly reports have shown increased membership, and a satisfactory bank account. At the annual meeting held on May 8th, the following officers were elected: President, Mr. Robert Moodie; 1st Vice-President, Mr. W. J. Grant; 2nd Vice-President, Mr. Alf. H. Baker; Secretary-Treasurer, Mr. J. M. Eastwood; Chairman of Executive, Mr. Wm. White; Chief Consul, Mr. A. M. Cunningham; Hon. Chaplain, Mr. J. G. Y. Burkholder.

The annual report was very encouraging, and showed progress in general club work. The retiring secretary-treasurer, Mr. White, was presented with a bromide photo enlargement as a recognition of the club's appreciation of his faithful services during his term of office. The president-elect was the recipient of a basket of roses, which was gracefully presented on behalf of the club by the Hon. President, Mr. S. H. Briggs.

The first annual exhibit of the members' work was recently held in the museum. The object that the committee had in view was not merely to award prizes for competitive work, but to encourage the younger members to study the relative values of the composition and the artistic merit of the best pictures, and to select from the general exhibit the best specimens to form the nucleus of a permanent collection for the club's album. The quality of the work and technical excellence were highly commended by the judges, Professor S. John Ireland, of the Hamilton Art School, and Mr. A. M. Cunningham, president of the Canadian Photographic Society. The lantern sets of the St. John and Montreal clubs afforded two pleasant evenings' entertainment to the members and friends, and we look forward with interest to view the Toronto club's exchange set.

BOSTON CAMERA CLUB.

Prize Competition.

The Boston Camera Club, representing a gentleman of high standing in matters pertaining to aerial navigation, is authorized to make the following offer of prizes for instantaneous photographs of large soaring birds:

A prize of one hundred dollars ($100) is offered by the Boston Camera Club for the best instantaneous photograph of a large bird in the act of soaring.

An additional prize of fifty dollars ($50) is offered for the greatest number of instantaneous photographs, offered by one photographer, of large birds in the act of soaring.

By "soaring" is meant the attitude of the bird in the air when no wing motion is apparent. The purpose for which the photographs are desired—namely, the study of wing-angles and a possible move-

ment, unappreciable to the eye of the observer—necessitates that the figure of the bird should be at least half an inch long on the print. If the figure is small, but clearly defined in detail, enlargements will be preferable to contact-prints, and will be judged of equal merit with direct prints. Careful notes should be written on the back of each picture, detailing the appearance to the eye, the quickness of the shutter, the angle of camera, etc.; also the full name and address of the contributor. Two prints of each picture should be sent. All contributors must prepay the transportation charges of their exhibits (which may be simply card mounts), and in no case will they be returned. Photographers throughout the world are cordially invited to compete.

This offer remains open until October 1, 1896; but if on that date at least one hundred different photographs have not been received, the limit of time may be extended, of which due notice will be given. The Club freely offers its galleries for the exhibition of the pictures submitted, and pledges its best efforts to select judges fully competent to decide upon their merits and to make the awards. All contributions should be sent to the Boston Camera Club, 50 Bromfield St., Boston, Mass., U.S.A., and marked "Cabot Competition."

For further information apply to Mr. Samuel Cabot, care of Boston Camera Club, at above address.

PERSONAL MENTION.

MR E. POOLE, of St. Catharines, Sec.-Treas. of the P. A. of C., was in Toronto last week attending a convention, and with an eye open for anything new in accessories or styles that would fit St. Kitts. Upon being asked how *long* he was going to be in town, Mr. Poole, with his well-known aptitude for repartee, replied, "About *five feet.*"

MR. J. T. GROVES, also of St. Catharines, and a very enthusiastic amateur who does exceptionally good work, paid Toronto a visit lately. Mr. Groves has been quite ill for some time, but is now well on the way to complete recovery.

ANSWERS TO CORRESPONDENTS.

"REX."—Fill your silverware with cold or ice water. Condensation on the surface of outside will then dull the reflecting surfaces.

J. C.—To remove the silver stains from your negative, clean off the varnish with methylated spirits, wash for thirty minutes, then place in a solution of

Potassium iodide	..120 grs.
Water	20zs.

until stain disappears, then wash thoroughly. (2) The firm you speak of did advertise in our pages some time ago. You will find the American papers just as good. (3) Thanks.

INTENSIFYING SOLUTION.—Correct exposure and development produce the finest results; but if strengthening is necessary, wash negative thoroughly after fixing, and use the following:

No. 1.

Bichloride of mercury...	60 gr.
Bromide of potassium...	60 gr.
Water	6½ oz.

No. 2.

Sulphite of sodium	½ oz.
Water	4 oz.

Place the negative in solution No. 1 until bleached, then rinse and place in solution No. 2 until entirely cleared, after which the plate must be well washed. This operation may be repeated if there is not sufficient intensity gained by first treatment.