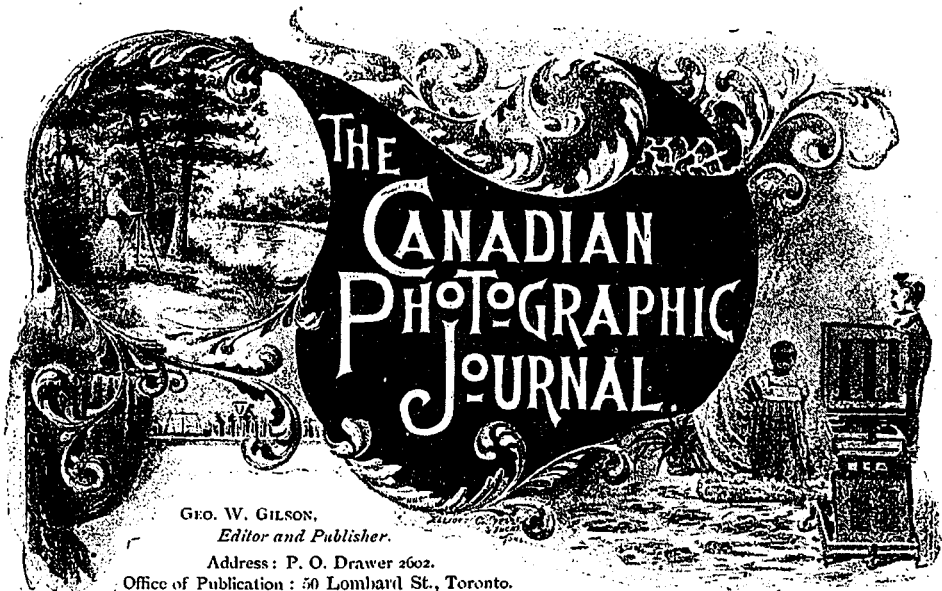




Moss Photo Co.

Halifax, N.S.

ANDERSON, ROBINSON & CO.'S STAR PLATE



GEO. W. GILSON,
Editor and Publisher.

Address: P. O. Drawer 2602.
Office of Publication: 50 Lombard St., Toronto.

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Associate Editor.

Sarnia, Ont.

Devoted to the Interests of the Professional and Amateur Photographer.

VOL. II.

Toronto, September, 1893.

No. 8.

THE LATENESS of the JOURNAL this month is due to the fact that the firm who did our printing failed unexpectedly, and we have had, without a moments' notice, and at a late date, to make other arrangements.

Our Illustration.

THIS month we have the pleasure of presenting to our readers a sample of work done on the popular "White Label" Star plate, made by the Anderson Robinson Co. The pictures are the work of the Moss Photo Co., of Halifax, who enjoy an enviable reputation in that city for good work. They have an interesting account of their manner of working in another column of this issue.

How I Made My Pictures at the World's Fair.

BY W. E. H. MASSEY.

ONE day last summer while out in the country, I was walking along a small village street with my camera in hand ready to make an exposure, when a small boy came running up saying, "Mister, give us a tunc on that, please." I have had some amusing experiences while out picture making, but never before had I been accredited with carrying about a concertina, for which my innocent photographic instrument was evidently mistaken.

However, the World's Fair camera detectives, of whom there are several

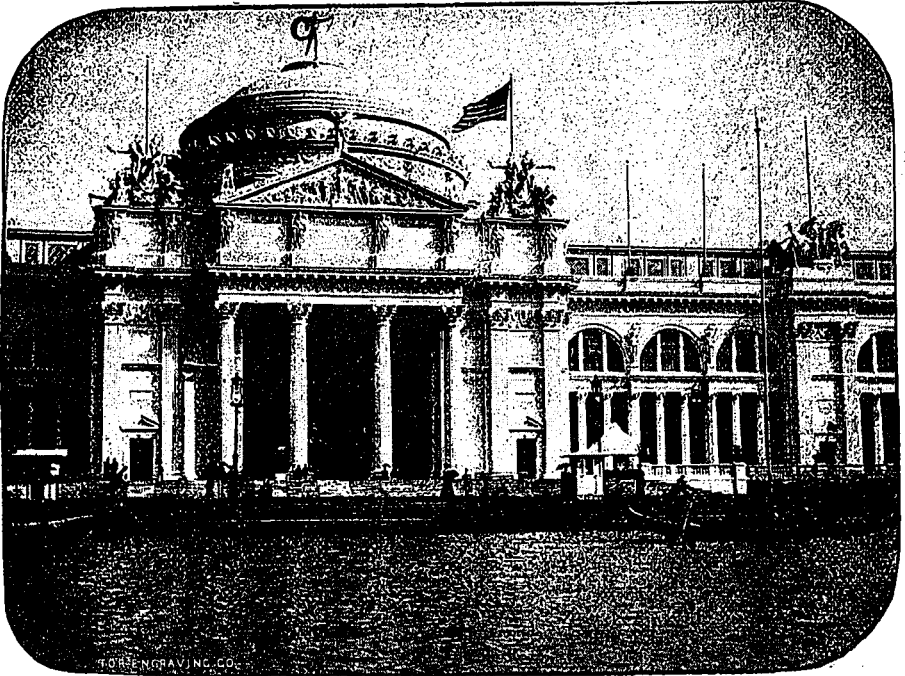


Photo by W. E. H. Massey.

MAGNIFICENT ENTRANCE AND DOME OF THE AGRICULTURAL PALACE.

stationed at every entrance, are not so easily deceived in the outward appearances of cunningly devised and carefully concealed picture-taking apparatus; and though modern cameras scarcely look like photographic instruments at all it is next to impossible to get through the gates with any kind of a camera without being stopped; and many a fellow has had to open his box of lunch to prove that it was not a camera. I had heard that the way of the amateur photographer at the World's Fair was hard, and that he was not held in very high esteem. This I realized to be a fact all too soon. Of course an enthusiastic amateur, such as I must confess I am, would have no more thought of going to the World's Fair without a camera than he would think of start-

ing off without a reasonably well-filled purse. Therefore the morning after my arrival in Chicago, the latter part of May last—it being a delightfully clear and bright day—found me at the World's Columbian Exposition gates with a camera "loaded" and ready for business.

Scarcely had I passed the turnstile when two men, noticing the black case in my hand—at once suspecting it to be a camera—demanded to know if it were. On my answering in the affirmative a fee of \$2.00 was ordered to be paid, this fee entitling me to the use of the camera for one day, and that, too, under rigid restrictions. Amongst other things no camera is allowed which takes a view over 4 x 5 inches (which was the size of the instrument I had with me). No pictures

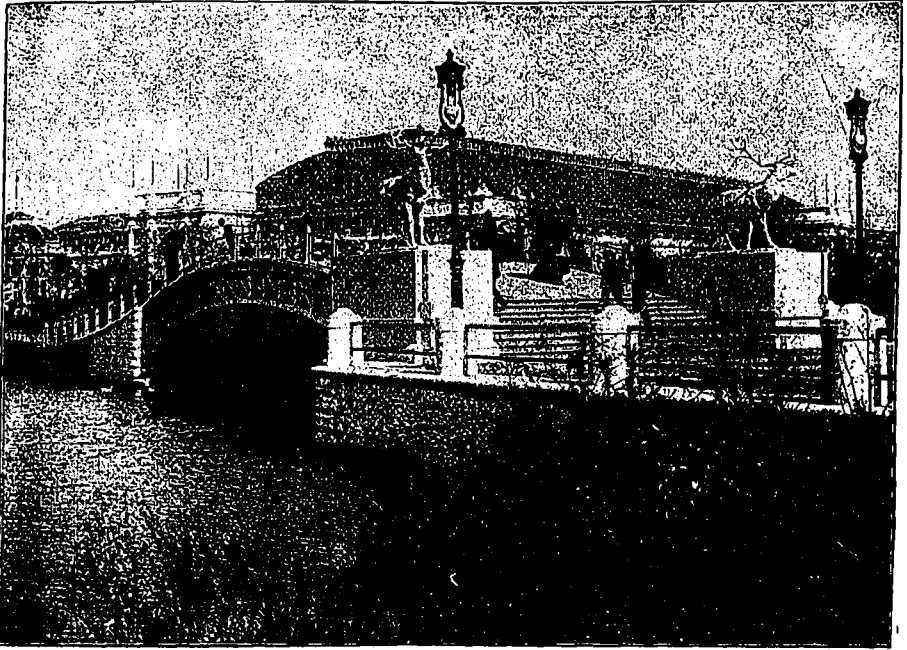


Photo by W. E. H. Massey.

VIEW IN THE PARK LOOKING TOWARDS THE GREAT MANUFACTURERS' BUILDING.

can be taken in the Art Gallery, and none of individual exhibits without the exhibitor's consent, and worst of all, no "tripod" or stand can be used. This last restriction confines the amateur to the use of what is known as the "hand" camera, which practically means that what photographs he does take will be "snap" shots—that is, made instantaneously—for it is not possible to hold a camera sufficiently steady to make "time" exposures. True, one can occasionally find a railing, a chair, or a box to rest the camera upon for the purpose of focusing with greater care and making a longer exposure, but opportunities of this kind are rare, and seldom admit of taking a picture from the most desirable point of view. "Instantaneous" or "snap" shot exposures require the strongest light, hence the photographer who visits the Fair is

really limited to out-of-door work except in a few instances, as the interior of the buildings are not light enough for "snap" shots. Therefore, as the best photographs cannot be produced without the use of a tripod to admit of accurate focusing, and further, as explained, it being possible to photograph only such objects as are in the strongest light without giving lengthened exposures, it will be seen that the amateur photographer at the World's Fair is pretty badly handicapped.

All these restrictions are made by the Exposition authorities to protect a "concession." This concession is an exclusive right to make and sell pictures in and about the Exhibition grounds and buildings, which concession has been sold for a large sum of money. At first it was determined to shut out amateurs altogether and

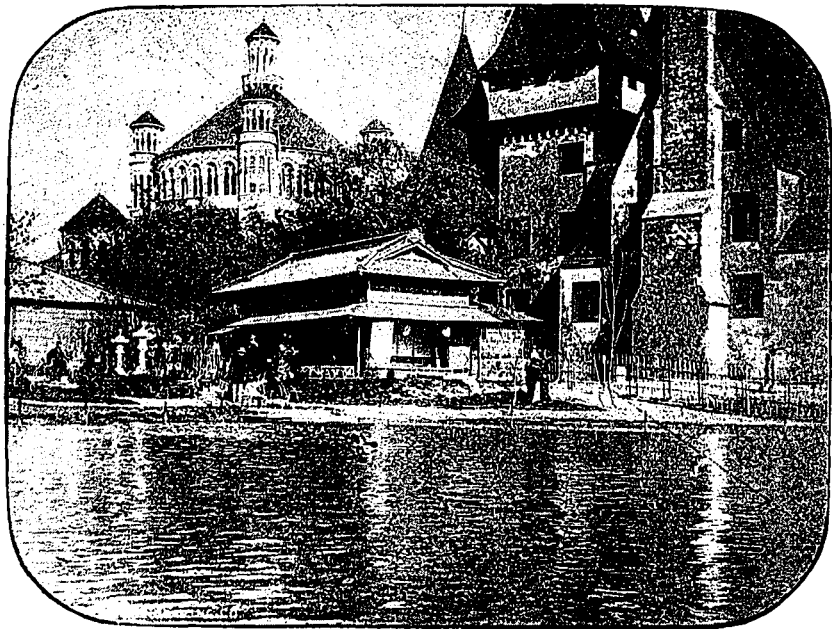


Photo by W. E. H. Massey.

JAPANESE TEA HOUSE, SWEDISH RESTAURANT AND FISHERIES TOWER IN BACK GROUND.

allow no artist within the gates except the official photographers. Such an indignation was awakened, however, from one end of the United States to the other that the restricted privileges mentioned above were finally granted, but were nevertheless so unsatisfactory that the war was waged further, and other privileges were granted, and still further modifications are likely to be made. Meantime, however, the camera "fiends" have had to make the best of the situation.

Most amateurs are more interested in photographing the handsome exteriors of the buildings and the pretty bits of landscape surrounding them, than they are the interiors. While they must forego the much desired opportunity of using a regular view camera with a tripod, it is nevertheless quite possible to obtain passable pictures with a hand camera which

will constitute most interesting souvenirs. The buildings being constructed largely of the white "staff," very readily admits of making instantaneous exposures. Having therefore, obtained my "permit" and signed the pledge of obedience to the rules, I set out to get my two dollars worth of views. Having made one exposure, while focusing for the second I was startled by a tap on the shoulder and a uniformed Columbian guard demanded:—"Is that a camera, sir? Show your permit?" A little surprised I produced the special pass, which being satisfactory we parted company. A little later I started across the Art Gallery, as it was the most convenient route to the point I wanted to reach. When but a short distance inside the entrance a guard very politely offered me free storage for my instrument. I showed the

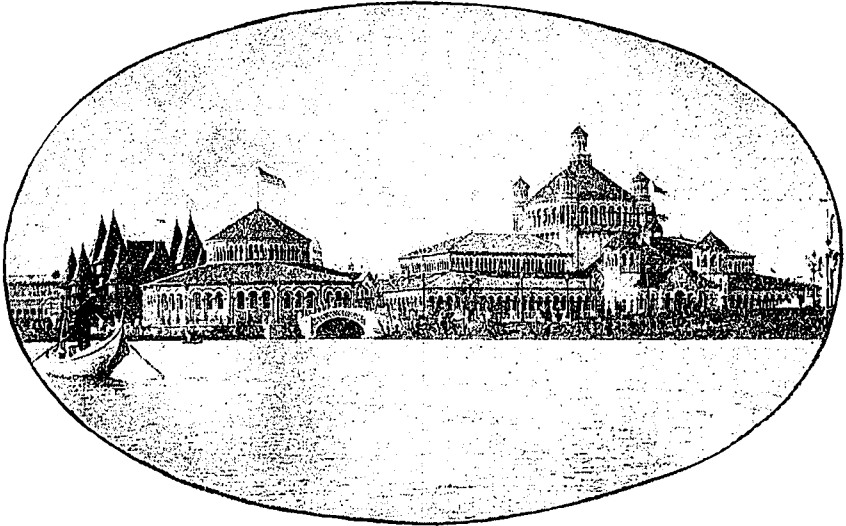


Photo by W. E. H. Massey.
THE FISHERIES BUILDING.

permit. "That don't matter," said he. "No camera allowed here under any circumstances" (of which I was not aware up to this time.) An explanation that I just merely wanted to pass through the building did not satisfy him, but while the argument was in progress we had gotten half way across, so he concluded it was about as well to let me go to the opposite entrance as to make me return to the one I came in at. A few views in the vicinity of the State and foreign buildings were then taken without interruption. Soon, however, another guard, some distance off, espied me in the act of getting the German building on the focusing glass. As he hurried to me in apparent good nature I held up the invaluable permit and shouted to him to stand still and have his picture taken. It worked like magic—the smile depicted in that countenance would have cured a bad case of dyspepsia. His features, though, assumed normal condition when he

learned that his order for one would have to be filled from Toronto and that the picture would not be finished for some weeks.

The Columbian Guards are for the most part a decent lot of young fellows—quite unsophisticated, and many of them from the back country districts—who have been clad in gay uniforms and endowed with sufficient authority to make them feel—some of them, at least—as though a good deal of the World's Fair belonged to them. The poor much-used "permit" (which I at last tied to the camera handle that, if possible, all the world might know I was not a thief and a robber) had to be produced no less than eight or ten times that day, if not more. Sometimes a guard who challenged my right to be making photographs would walk away as though really disappointed at being unable to exercise the full extent of his authority—that is, to make an arrest.

Any person who manages to

smuggle in a camera without paying the regular fee is destined to be "run in," and even some dignitaries and newspaper correspondents who have been given permits (not on the usual forms) granted possibly by letter from the Director-General, or even the president himself, have been given a free ride in a patrol wagon—all for the dreadful crime of taking a few photographs at the World's Fair.

Such are some of the annoyances the poor afflicted amateur photographer has to put up with at the World's Fair.

But if he can only succeed in capturing some of the hundreds of fascinating scenes which win his admiration he will feel repaid for all his trouble. Photographs can be purchased, of course, but there are always some special pictures or particular points of view which we cannot obtain, and which we must make for ourselves; and further, in the very act of taking a photograph of a view we study it and become the more interested in its preservation.

By far the most interesting feature of the World's Fair is the buildings themselves and their charming surroundings. I do not mean to underestimate the magnificent exhibits, which in all the departments I fully believe have never before been excelled (and I have seen many of the great exhibitions of recent years); but the admirable grouping of the splendid structures in which the exhibits are placed and the beauty of the park-surpass anything I have ever been privileged to see. As to the buildings, one hears so much of their enormous size (which is all quite true) that they little think of them as great works of art, which they really are. They are

just as artistic as they are big, and must be seen and studied to be appreciated. These magnificent white buildings have been grouped with the greatest care, and with the surrounding landscape—which is like a fairyland, beautified with artificial lakes and canals, the latter spanned here and there with handsome white bridges—combine to make up a veritable paradise. I was simply charmed with the Exhibition Park, and found my greatest pleasure in wandering about the buildings and studying the beautiful vistas from various points of view. Under the varying conditions of sunshine and shadow, there seemed to be an unending beauty in this marvellous creation of man.

Naturally enough such a place would delight the amateur photographer's heart, and it was with the hope of preserving some of these charming views as souvenirs, that I used my camera while there.

While my pictures are but meagre representations of the beauty of the original, they may perhaps convey an idea at least. Most of the views which accompany this article, and which have been reproduced by the photogravure process, were taken from a gondola or an electric launch going at full speed. It is needless to say that under these circumstances one has to work pretty dexterously and watch very closely to get the picture correctly located on the film or plate. The fact that this can be accomplished even with a measure of success indicates the wonderful strides in advance which the photographic art has made in recent years.

PROFESSIONAL Photographers look out your negatives of pretty children.

Imitation Opals

W. ETHELBERG HENRY

SOME years ago there was published in an English photographic journal a method of so exactly imitating portraits on opal glass as to deceive expert photographers. At the time of the publication of the process, I did not pay much attention to it beyond recording the formula for future experiment; since then I have had occasion to make use of it at a time when I was unable to obtain opal glass of sufficient size.

Briefly the process depends on double decomposition, the directions for which are simple enough. Take one ounce of gelatine, one ounce of barium nitrate, and ten ounces of water, dissolve the barium nitrate in the water by heat, then add the gelatine previously swelled, and dissolve. In another vessel dissolve three hundred grains of zinc sulphate in five ounces of water and pour, with constant stirring, into the gelatine emulsion. Keep the resulting emulsion liquid for four or five hours and then pour it into a flat dish to set. It is then squeezed through coarse canvas and the shreds are washed for half an hour in constant charges of cold water to free them from the excess of zinc nitrate. After re-melting it is ready for application to glass.

Another method, which possesses certain advantages, causes the formation of barium sulphate by a process similar to the sensitizing of a wet plate. For this purpose dissolve by heat one ounce of barium nitrate in a mixture of four ounces of glycerine and ten ounces of water, and then add one ounce of gelatine previously swelled. When dissolved, filter through cotton and apply to glass plates. When thoroughly set (but not dry) immerse the plate in a saturated solution of alum for from ten to thirty minutes, according to the thickness of the gelatine film.

This both forms the barium sulphate by double decomposition, and at the same time renders the film insoluble. The plate must be immersed in the solution in such a manner that the latter flows over its surface in an even wave, a flat brush, or a tuft of cotton being passed over the surface to remove air bubbles. After sufficient immersion the plate is well washed for half an hour and dried.

The emulsion made thus may be applied to glass as a subtraction before coating with emulsions of gelatino-chloride, or gelatino-bromide of silver—which necessitates the preparation of the plate by the operator himself—in fact we strongly recommend this procedure especially in the case of making enlargements. Or if commercial plates are used, the opal emulsion may be applied as a coating *after development of the image*. In the former case an unreversed matt surface image will be obtained on the surface of the opal emulsion, while in the latter the image will be a reversed one backed up with the opal emulsion and protected at the face by the surface of the glass. The latter is of no consequence in enlarging, as the negative may be reversed in its holder, but it is well to bear the fact in mind.

PHOTOGRAPHERS VISITING the World's Fair will be glad to learn that time permits are now being issued at a reduced rate. A week's shooting can be obtained for six dollars, while those who have the time to spare can now photograph for an entire month for fifteen dollars.

"EVERY man is a debtor to his profession, from the which, as men do of course seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help thereunto."—*Lord Bacon*.

Canadian Copyright.

BERTWYN HETHEREL.

I have made many enquiries among professional photographers, and found that as a general rule the first step in proceeding to obtain registration of copyright, has been a formal application to the officers at Ottawa. These officers send by mail an extract of the Copyright Act with a written intimation thereon "For Application. see Form X, (page 38); Fee, \$1.50 including certificate."

This is, to say the least of it, misleading to most men who naturally enough deem it incumbent on them to send this \$1.50 together with their application and two copies of their photogram.

This is not so; all that is really necessary is to send two prints, together with a money order for \$1.00 and a written application as follows, addressed to "The Minister of Agriculture, Copyright Department, Ottawa." I....., domiciled in Canada, in the town of..... province of....., hereby declare that I am the proprietor of the photogram called....., and that the said photogram has been published in Canada by..... in the town of....., province of..... and hereby request the registration of the same, and for that purpose herewith forward the fee required by "The Copyright Act," together with two copies of the photogram. In testimony thereof I have signed in the presence of the two undersigned witnesses at the place and date hereunder mentioned.

(Place and date)

Signature of Prop.

Signature of two Wit. {
.....

The application must be written on one side of a sheet of foolscap paper and enclosed in a sealed envelope. It is unnecessary to pay postage on such com-

munication. The Minister sends a formal receipt for the money, and a notice to the effect that the photogram has been duly registered together with the number of the page and book in which the entry is recorded.

The registration of copyright will be no protection unless notice be inserted upon *each copy of the photogram* to this effect; "Entered according to Act of the Parliament of Canada, in the year...., by.... at the Department of Agriculture.

By following these simple instructions photographers may secure registration of copyright at a cost of \$1.00 instead of \$1.50; but even \$1.00 is an exorbitant charge and one that should be speedily reduced to that of 25 cents, as charged in England.

Personal Mention.

Mr. H. F. Sharpe, of Mulholland & Sharpe, has returned from Port Sanfield, Muskoka, where he has been spending several weeks with his family. Mr. Sharp reports having had a very enjoyable outing. Mr. Mulholland spent his holidays at the World's Fair, and at the time of our going to press, it is a tie between Mr. Sharpe's Muskoka fish stories and Mr. Mulholland's stories of the Fair.

Mr. E. Burke, the well known photo stock dealer, of London, Ont., was in Toronto, on business, for a few days lately. Mr. Burke is very popular among the photographers of the west, with whom he has a large trade.

Mrs. I Henry, the wife of the associate editor of this journal, W. Ethelbert Henry, of Sarnia, is spending several weeks with friends in Toronto.

THE CORRESPONDENCE columns of *The British Journal of Photography* are still open to the wordy war "Professionals *versus* Amateurs." Periodically the same useless discussion arises, drags its weary length over several columns of valuable space each week, and finally dies, without any practical suggestions being advanced by the writers.

Editorial Chat.

MR. J. GUARDIA, read a paper before the British convention in which he ridiculed the idea of picturesque portrayals of life and motion prior to the advent of the hand camera. We are glad to see the *British Journal* has a leading article bearing upon the subject and maintaining the fact (of which all old workers are well aware) that some of the very finest instantaneous views extant were taken many years ago in the wet collodion days when photography was far from the simple matter it now is. Well done! B. J. P.

BEFORE the same assembly of skilled photographers, Mr. Guardia attempted to decry the use of plate sunk mounts, but we are glad to know they had at least *one* good champion in our old friend Richard Keene. There was nothing particularly edifying or instructive in Mr. Guardia's paper.

THE SEPTEMBER issue of *The Practical Photographer* bears two editorial names, Mrs. Ward having assumed the duties of co-editor.

WITH THE July number of *The Developer* is commenced a new volume, and a new dress is assumed. The old cover of rough brown paper has been discarded, and its place is taken by a white enamelled paper bearing a handsome design in black. The cover is quite an advanced work of art, and the numerous illustrations contained in this number are a great credit to the producers.

PROFESSOR E. E. BARNARD, while on his recent visit to Europe, created quite a sensation in scientific circles with his wonderful photograms of the Milky Way, which were taken at the Lick Observatory with a lens of six inches aperture and thirty-one inches focus.

WRITING IN AN European Journal, Mr. M. L. Mathet suggests the use of the fluorides of sodium and potassium as excellent substitutes (in stripping processes) for hydrofluoric acid, the corrosive nature of which is well known to our readers.

To strip the film from an ordinary gelatine negative without causing undue expansion, Mr. Mathet first soaks it for about an hour in a five per cent. solution of chrome alum, and then thoroughly washes it. He next places the plate in a solution of alkaline fluoride, leaving it therein for three or four minutes, then without washing, immerses it in a ten per cent. solution of sulphuric acid, when the film soon becomes detached. This method is, of course, equally available for cleaning off old negatives.

THE FOLLOWING FORMULA is given by *Science Illustrée* for a flexible substance as transparent as glass. Dissolve four to eight parts of pyroxiline in alcohol and ether in the proportion of a one per cent. solution. Then add two to four per cent of oil of rice, or any non-siccative oil, and four to ten per cent. of Canada balsam. Coat a plate of glass and dry in a warm current of air at 50 deg. C. This will give a sheet of a durable, unbreakable, transparent substance, impervious to acids and alkalies, and less inflammable than ordinary collodion, and of any desired thickness or color, with zinc oxide it has the appearance of ivory.

AN ARTICLE on the simplest method of preparing a Collodio-Bromide emulsion for lantern slides will appear in an early issue. Look out for it—it will be worth considerable money to some of our readers.

Next month: Gelatino-chloride emulsion for lantern slides and enlargements by development.

IN THE COURSE of an article on exhibition awards, *The Photographic Times* says: If ten bandy-legged men were to hold a race together, and one, being a little better than the rest, won the race, would he be entitled to a medal as a racer? a similar question may be asked in the case of exhibitions held by the small societies, consisting of a number of poor workers. Those a little above the average get the reward and become medallists. What honor is attached?

FOR CONSUMMATE assurance commend us to the following: A discharged operator, formerly engaged by Mr. G. P. Cartland, of Windsor (Eng.), having possessed himself of a photogram of Prince and Princess Henry of Battenberg taken at Windsor Castle by his employer, had the impudence to send a colored copy thereof to a lady of the Queen's household for presentation to Her Majesty. At the same time he intimated he would be glad to undertake enlargements from it upon receipt of Her Majesty's order! Needless to say Her Majesty is not addicted to such round about ways of doing business, so she promptly ordered that the photogram and letter should be handed to Mr. Cartland, to take such action as he should deem proper.

WRITING IN an American contemporary, Mr. James Reuel Smith offers a valuable suggestion to users of the croton water. The benefit bestowed upon photographers lies in the simple formula he gives, whereby "if filtered through cotton," all sediment will be precipitated and the water will be "crystal clear."

We fancy the use of the filter will prove more efficacious than the formula recommended, which we give to our readers to test in connection with the Toronto water:—

To each *gallon* of water add

Powdered alum	2 grs.
Carbonate of potash.....	6 grs.

There that is the complete formula, and we venture to impress upon our readers the absolute necessity of adding the two grains of alum in powder—not in lumps.

Look out your baby negatives.

IN ITS AUGUST double number *The Practical Photographer* contains several half-tone supplement illustrations of women's work. "Cinderella," by Mrs. Ward, and "Jilted" by Mrs. Clarke, are undoubtedly the gems of the collection. The latter contains a wealth of feeling, difficult to realize in a photogram, which stamps its author a true artist. The ink used upon the blocks is of exquisite tone and is the most *apropos* to the work that we have yet seen.

WE WOULD call the attention of our readers to the advertisement of Messrs. Watson & Sons, of London, Eng., on the inside of front cover of this JOURNAL. Messrs Watson & Sons are manufacturers of, and dealers in, the finest of photographic goods, and any one intending purchasing an outfit should at least write for their catalogue, which is sent free, before doing so.

IT IS with much sorrow we have received the news of the death of Mr. Frederick Hart Wilson, son of our esteemed friend, Dr. Edward Wilson, of New York. We extend our heartfelt sympathy to the bereaved father in his hour of deep affliction.

THE sympathy of the JOURNAL is extended to Mr. Fred Mulholland, of Mulholland & Sharpe, in the loss of his mother, whose death occurred on Wednesday, September 16th, after a short illness.

Shutters Theoretically and Practically Considered.

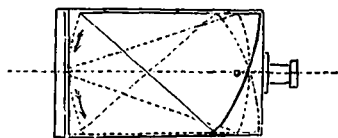
BY SANFORD ROBINSON, PH. B.

(Continued from August number).

IV.

THE GRAVITY OR "ALLIGATOR JAW" SHUTTER

Is practically a focal plane shutter, although its slot is slightly farther from the plate at the top and bottom than at the middle. This might make a slight diffusion of rays at these points, but so small as to have no effect. It is a wedged-shaped box, having a slot at its smaller end and working on pivots or trunnions at its larger end, these forming a central axis, around which the box revolves through an arc of a circle having a radius equal to the distance from the trunnions to the slot. The rays from the lens pass through this box and through the slot to the plate, all rays except those that pass through the slot being cut off by the box as they are cut off by the curtain of the focal plane shutter. See Diagram No. 12.



12

This shutter, as designed, works by gravity, the slot traversing the plate the same as the slot of the focal plane shutter. It must work vertically, of course. As in the former case, its operation is most easily explained by an example. Take, as before, a 5x7 plate. The slot being, as before, a quarter of an inch in width, in dropping across the five inches of plate would make twenty consecutive exposures of a quarter inch each.

Although this shutter is in its action somewhat in the nature of a pendulum, it may, from its position with reference to its centre of oscillation, and, as compared with its length, the short vertical distance that it falls, be treated simply as a falling body.

Applying the formula for calculating the velocity of falling bodies,

$$t = \sqrt{\frac{2h}{g}}$$

in which "t" = time in seconds.

"h" = fall in feet.

"g" = acceleration due to gravity in one second = 32 1/12 = 32.0833 feet, and substituting the value of "h," which is 5 inches or .4166 feet, and the value of "g," we have

$$t = \sqrt{\frac{2 \times .4166}{32.0833}} = \sqrt{.02597} = .16115 \text{ seconds,}$$

which would be the time occupied by the slot in falling the whole 5 inches, being an *average* for each quarter inch, and consequently for the whole plate, of one-twentieth of this time, or about 1/125 of a second. Applying the same formula, we find the time occupied in falling through various distances to be as follows:

First quarter inch . . . . .	.0360 secs.
First half of plate, or 2½ in. . . . .	.1138 "
4¾ inches . . . . .	.1570 "
Whole plate, or 5 inches . . . . .	.1611 "

Taking the difference between the times of falling 4¾ and 5 inches and the times of falling 2½ and 5 inches, we have the following results:

First quarter inch . . . . .	.0360 sec.
Last " " . . . . .	.0041 "
First half of plate . . . . .	.1138 "
Last " " . . . . .	.0473 "

By comparing the above it will be seen that the last quarter inch is traversed in about one-ninth of the time required to traverse the first quarter, and that the last half of the

plate is traversed in about four-tenths of the time required to traverse the first half.

Therefore, the slot travels nine times as fast over the last quarter inch, as an *average*, as over the first quarter, and about two and one half times as fast, as an *average*, over the last half as over the first half of the plate. I say *average* because the speed is constantly accelerated, and the slot is travelling faster at the bottom of any quarter inch than at the top of it. As the average time of exposure of the whole plate was found to be about $1\frac{1}{3}$ of a second, it is seen that the real time varies considerably from this, being in the first quarter inch about $4\frac{1}{2}$ times and in the last quarter inch about $\frac{1}{2}$ this average.

This shows that a shutter actuated by gravity gives great unevenness of exposure, and is consequently very incorrect in principle. In addition to this unevenness the gravity shutter has the distorting effect of the focal plane. If the former be actuated by other force than gravity it will simply be accelerated. The *difference* of time in exposure between the top and bottom of the plate would remain the same, although the proportions would be reduced. If this extraneous force were very great, so as to greatly increase the velocity of the shutter, the disproportion of top and bottom exposure would be reduced, but at such a velocity as would make this disproportion of neglectable value, the velocity of the shutter would be so great as to make it impracticable. It would then become a focal plane shutter of such velocity as to be useless. Another objection to the Gravity shutter is that it cannot be worked on its side without the addition of springs,

and it then becomes a focal plane shutter in a very clumsy form. I have taken no account of the retarding effect on the box of air resistance or of friction at the trunnions. This would be very small, but would have the effect of increasing the disproportion. It is evident that the Gravity is the very worst form of shutter that can be devised, possessing all the disadvantages of others besides many of its own. It occupies space and adds much to the weight of the camera. It can only be worked in one direction unless provided with extra power. Its speed can only be increased by extra power or retarded by friction. I think it may be dismissed from further consideration (as it has probably already been dismissed from use), as the Arkansas legislator dismissed the charges of an adversary by saying, "I deny the allegation and defy the allegator."

Summarizing the results already obtained, we have the following table of comparative illuminations for different forms of shutter, the diameter of lens and the total duration of opening being the same in all cases; the shutter opening to the full diameter of the lens; the Prosch form being taken as a basis for comparison of percentages.

TYPE.	Illumination.	Percentages as compared with				
		A	B	C	D	E
A. Opening from middle, like Prosch, etc. . . . .	.4506	100				
B. Focal Plane Sq. Drop and Rad. Revolver . . . .	.3927	87				
C. Opening from middle, with circular orifice, Segmental Shutter. . . . .	.3342	74	85			
D. Circular Drop and Circular Revolver . . . . .	.3256	72	83	97		
E. Opening from centre, with square opening like Gregg. . . . .	.3021	67	77	90	93	
F. Opening from centre, with circular opening, like Bausch and Lomb. . . . .	.2651	59	68	79	81	88

It must be understood that the Focal Plane comparison is for times of exposure not greater than that obtainable with the other form.

For instance, Gregg shows 67 per cent. of Prosch, 77 per cent. of Square Drop and 93 per cent. of the Circular Drop; Bausch and Lomb shows 88 per cent. of Gregg and so on.

At very high velocities or extremely short exposures the Focal Plane changes the conditions, and its illumination may be represented by the highest attainable, that is to say .7854.

In the same nominal time the above types will compare as follows:

TYPE	Illumination	Percentage.
Focal Plane Square Drop and Radial Revolver .....	.7854	100
Circular Drop and Revolver ..	.6513	83
Prosch, etc. ....	.4506	57
Segmental .....	.3342	42½
Gregg .....	.3021	38
Bausch and Lomb.....	.2651	34

Showing that what I hinted at in the introduction to this article is true, namely: That the *apparent or nominal time* of a shutter is not always its *real or effective time*.

It must be understood that the above figures are approximate only, though very closely so. The method that I have adopted for calculating the quantities of illumination does not give perfectly exact results, which could only be obtained by a much more elaborate mathematical process. The figures do not represent absolute quantities, but are comparative only. Being based on the same theory, they are correct *with reference to each other*, and for the purposes of comparison. The percentages found are sufficiently near for all practical purposes. By

any other method of calculation involving higher mathematics, the illumination could probably be varied only by insignificant fractions and the percentages would not be affected.

From the foregoing, it would appear that in comparing times of different exposures, especially if short ones, consideration should be given to the kind of shutter used. This and other points will be illustrated by the following example, which I think will prove interesting, and show that there is more difference in shutters than is ordinarily supposed.

Nancy Hanks travels a mile in 2 minutes and 5 seconds. I believe there is some infinitesimal fraction more or less, but not being as much interested in the speed of horses as I am in that of shutters, I must confess my ignorance of the exact fraction, and at the risk of exciting the contempt of horsemen, I will assume her speed as that above given.

It is required to take two photographs of her in motion, one with a drop shutter with square orifice and the other with a Prosch, it being understood that both allow a full opening of the lens, the same lens to be used in both cases, its focal length being 7 inches. The conditions are that the illumination on effective exposure of the plate shall be the same in both cases, and that the displacement of the image on the plate shall be 1-100 of an inch. The nominal time of the drop to be 1-200 of a second or .005. The mare travels 5280 feet in 225 seconds, or 5 inches in 1-100 or 2½ inches in 1-200 of a second. (This is at the rate of 28.8 miles per hour, so we have railway speed to deal with.) The drop will expose the object for a duration of time equal to twice the

nominal time of the shutter, that is for 1-100 of a second. In this time the mare will travel 5 inches. .01:7::5:3500 inches or 292 feet which is the distance that the lens must be from the object to make a displacement of .01 inch. The Prosch exposes the object for a duration of time equal to the nominal time, or taking the time as the same as that of the drop, 1-200 of a second. In this time the mare will move a distance of 2½ inches. .01:7::2½:1750 inches or 146 feet, which is the distance that the lens must be from the object in order to make a displacement of .01 inch.

Therefore the Prosch may be set at one half the distance of the Drop and get no more displacement on the plate. Assume the length of the mare to be 6 feet, the length of the image on the plate will be :

For the Drop 292 : 6 :: 7 : .144
 For the Prosch 146 : 6 :: 7 : .288

Therefore the Prosch gives an image twice the length of the image given by the Drop. This is equivalent to

second, which is the time that must be given to the Prosch to obtain the same illumination as that of the Drop. In this time Nancy will move a distance of 4.35 inches. .01:7::4.35:3045 inches or 220 feet, which is the distance that the lens must be from the object to make a displacement of .01 inch.

The length of the image will be 220 : 6 :: 7 : .19. The percentage of displacement will be as follows for the two pictures :

Drop — length of image, .14 displ. .01 = 7 p.c.
 Porsch — “ “ .19 “ .01 = 5½ p.c.

The size of the image made by the Prosch will be 1 84-100 times that of the image made by the Drop.

Result : The Prosch has with the same lens obtained a picture of Nancy Hanks 84 per cent. larger than that obtained by the Drop, and has given the plate the same illumination or effective exposure with 25 per cent. less comparative displacement of the image.

The following table will further

SHUTTER	Illumination.	Required Illumination.	Duration.	Distance, feet.	Length of Image, inch.	Comp. Size.	Displacement.	
							Actual	Comp. Pr. Ct.
Bausch and Lomb .....	.2651	.4506	.0085	248	.17	1.00	.01	5.9
Gregg .....	.3021	.4506	.0074	216	.19	1.25	.01	5.3
Circular Drop, etc. ....	.3256	.4506	.0069	201	.21	1.53	.01	4.8
Segmental .....	.3342	.4506	.0067	195	.22	1.60	.01	4.5
Square Drop, etc. ....	.3927	.4506	.0057	166	.25	2.16	.01	4.0
Prosch .....	.4506	.4506	.0050	146	.29	2.91	.01	3.4

4 times the area. Therefore the Prosch gives the image 4 times the size of the Drop.

But a condition of the problem is that the illumination or effective exposure shall be the same. The illumination of the Drop has been found to be .7854 and that of the Prosch .4506. We must therefore extend the time of the Prosch. .4506 : .7854 :: .005 : .0087

illustrate the difference in shutters. It is based on the same Nancy Hanks problem as to speed of object, etc. In this case the Porsch is taken as a basis of comparison, its duration of opening being taken at 1-200 of a second. The requirements is that all the shutters shall give an illumination equal to the Prosch or .4506. The displacement as before shall be 1-100 of an

inch. The duration of opening of each shutter which shall give an illumination of .4506 is found in the column "Duration." From this is calculated the distance of the lens from the object found in column "Distance." From this again the length of the image and from that the comparative sizes, the size of the Bausch & Lomb image being taken as 1. The last column gives the displacement *as compared with the length of the image.* The *actual* displacement is in all cases .01. The drop shutters are given one half their nominal illumination because their duration of opening is twice the time of exposure as previously explained.

Comparing the highest in the above table with the lowest, that is the Prosch with the Bausch & Lomb, it will be seen that the former with the same lens and same effective exposure of the plate, has given an image of Nancy Hanks nearly three times as large as the later, the *actual* displacement being the same and the *comparative* displacement being only a little more than half. *From this it would seem to be as essential to compare shutters as to compare lenses.*

If in the above case we use a focal plane shutter, giving a nominal exposure of 1-200 of a second, the result will be the same as that with the square drop. If we make the nominal exposure 1-1000 of a second, the displacement will correspond to one half of this time, or 1-500 of a second. This will give a distance from lens to object, for a displacement of 1-100 of an inch, of 58 feet. The length of the image will be 72 inch and the comparative displacement 1 4-10 per cent. The nominal illumination will be .7854. The illumination as compared with

the comparative displacement may be roughly calculated at .7750. As this comparative displacement decreases the comparative illumination will increase until, when we arrive at a theoretical displacement of 0, the illumination will be .7854 or the utmost attainable. For a velocity of object equal to that of Nancy Hanks in the example, it will be seen that we approach this figure very rapidly as the nominal time of exposure decreases below 1-1000 second, and that for all practical purposes the displacement may be neglected after passing that point.

(To be continued.)

Our Notice Board.

THE Ilotype paper, receipt of which was acknowledged last month, has turned out excellently. Easily printed, easily toned, no cockling, and no necessity for hot water, it certainly has many recommendations in its favor.

We have tested a sample of Glycin-Hauff recently submitted to us. It is energetic in action and gives a very plucky negative.

The formula we used was,

Glycin	75 grains
Carbonate of potassium.....	385 "
Sulphite of soda (pure crystals)	385 "
Water.....	3½ oz.

Diluted for use to three times its volume.

It is a very pleasant developer to use, but is not, in our opinion, any advance upon metol.

WE have received from Mulholland & Sharpe, of Toronto, samples of the Ilford Opal Plates and N. Y. Aristotype paper, full report of which will appear in next issue.

Portraiture.*

BY SHAPOOR N. BHEDWAR.

"We behold all about us with the eyes of those penetrating observers whose works we contemplate; and our minds, accustomed to think the thoughts of the noblest and brightest intellects are prepared for the discovery and selection of all that is great and noble in nature."—SIR JOSHUA REYNOLDS.

STUDIO.—Previous to my speaking about the subject of portraiture in general, I would like to give expression to my own convictions as to what a perfect studio with its surroundings should be. It is now the opinion of many that an ordinary room, with a high side-light streaming in from the north, is the studio of the future. The advantages of such a construction are many and evident. The studio being an ordinary room, it could be made infinitely more comfortable and pleasing in design, and should be so furnished as to help to remove from the minds of the sitters any impression of restraint or stiffness. The artist must never have in his studio any furniture but such as is simple and genuine. It should be of the best make, and elegant in design, without sacrificing in the least the appearance of comfort to mere outward show and form. The divisions of the glass should be made as few as possible. The blinds, also, should be few in number, of a suitable material, and simple in construction.

BACKGROUND.—The background should also hold a very important place in the studio of a photographic artist. It plays a very prominent part in the composition and harmonious arrangement of light and shade in a picture. A plain background, without any variation of correctly-distributed light and shade, makes the picture before it quite flat.

*Read before the World's Photographers' Congress, at Chicago, Ill., August, 1893.

The breadth, the effect, and the richness of it are lost. The light and shade of a background should be well graduated; otherwise it becomes inappropriate and unnatural. The proper arrangement of it should not be lost sight of, and it should be so placed as to act as a sort of "*repoussoir*," or setting off, to the whole figure. The whole should be made to appear in relief against it, and should be so supported as to give to the whole combination a pleasing and picturesque effect. All accessories which savor in the least of artificiality in a photograph should be discarded. Many a time even good accessories are so misplaced that pictures, which are perfect in every other respect, are ruined for want of correct judgment in the artistic combinations of such accessories. In the selection of his accessories the artist must bear in mind the dictum of Ruskin that "truth is the first consideration in art; harmony and beauty will follow." Unnatural backgrounds in the hands of a photographer, and more so in those of one ignorant of the very rudiments of art and composition of a simple picture, would lead him to commit unpardonable blunders, and would make his sitters look like fish out of water. The photographer has not the same advantages as a painter in the choice of his backgrounds. The latter is free to select and paint one that is most truthful in effect and in keeping with the subject he paints. His brush helps him to adapt and vary it according to the promptings of his artistic sense at the time. But in the case of the former he is obliged to use a few backgrounds for all conditions and classes of men—from a peer down to a peasant. They should therefore be so devised as to present no special characteristics, but to suit and adjust themselves to any kind of subject that may be placed

before them. Supposing, then, the background to represent a wall, or portion of a wall, with well-graduated shadows, and so contrived as to seem, with a little judicious change of the surroundings and an appropriate addition of furniture and draperies, to indicate an interior of a study, a drawing-room or a palace; or, if called upon to depict the interior of a cottage, the same background could be made equally to suit by removing therefrom such articles and accessories as would jar with the harmony and truth of the picture to be taken. Thus a carefully thought-out background proves a valuable helpmeet in the hands of an ingenious artist, as he knows the correct uses it could be put to, in case of the various classes of sitters that may come to him. Then much would depend upon the arrangement of the whole picture. The arrangement should be such as to give relief to the figure and add to the effect of breadth presented by the whole picture.

There is a widely prevalent objection to dark backgrounds of one uniform tint unrelieved by any kind of graduated light and shade. No doubt such a background greatly intensifies the light. It also helps to enhance the effect of contrast by throwing out into bold relief especially large busts draped with a thin, white gauzy fabric. This effect of relief appears more pleasing and charming as the white drapery is vignettted off in the dark. Mr. Simpson has remarked "that contrast, when skillfully managed, is a legitimate source of brilliancy, and the purity and the intensity of a light can any time be forced by placing it in juxtaposition with deep shadows or dark masses."

COSTUME.—There is very little noteworthy to be said in regard to the dress in which the sitters generally come to be

photographed. This remark applies more to male than to female sitters. But for all that, this element must not be left out of sight, and it is of the utmost consequence that gentlemen should present themselves in their every-day costume, one in which they are more familiar to their friends and relations. For want of attention to this detail it frequently happens that sitters are led to conclude that there is something in their portraits which is either not striking and life-like or lacking in truthfulness to the original. This absence of truth is often caused by the neglect of sitters to present themselves in their every-day dress or one in which they are habitually seen. Greater variety in dress is, however, observed in the case of lady-sitters. Hence there is very little to be said on this point except that the dress should be simple and flexible. The Indian costume, especially of the women of India, is well known for its flexibility, and it can with the greatest ease be moulded into most graceful folds, and what may be called its transparency allows effect to be secured by play of limb. Hence the fitness of the dress for art lies in the ease with which it may be modified, manipulated, and rendered expressive. It requires the nicest judgment to so dispose the drapery that the folds shall have an easy communication and gracefully follow one another with such natural negligence as to look like the effect of chance and at the same time show the figure under it to the utmost advantage.

COMPOSITION.—The first and most important thing an artist should be acquainted with is the construction of a picture. By a harmonious arrangement of the details of lines, and light and shade or, in other words, what is called composition, the artist is enabled to express his idea intelligibly. Hence many have likened

the pictorial art to language, to "the speech of one man intended to be read by another." His mind becomes a sort of filter through which his idea and imagination work and help him to put forth his very inmost soul before others in a clearer light.

TRUTH TO NATURE.—The mind of an artist derives its food from nature, and the more it is in conformity with the lessons she inculcates to a keen observer and student, the more will it be truthful. It thus becomes the aim of the artist to represent such as may not be irritating to the eye. A real work of art is capable of giving us the utmost pleasure in proportion to the amount of truth which it is capable of expressing. The sense of agreeableness and pleasure produced by a picture is in a great measure dependent on the skill and knowledge with which that truth is made evident in the artist's work. Photography is thus made to express the exact truth which it is capable of rendering, by a perfect blending of light and shade in keeping with the truthful effect of the whole. Thus a clever photographer feels it imperative on him to avoid that which is base and ugly, and attempts to elevate his subject by rejecting all the awkward forms and the jarring notes in his picture. The highest aim of art, therefore, is "to render nature with the greatest truth, but in its most pleasing aspect." It must not be left out of sight that nature is not equally beautiful in all her aspects. In consequence, it becomes the duty of an artist to represent it in the most beautiful manner possible, and the nearer he approaches, what Mrs. Browning calls, "the truest truth, the fairest beauty," the closer he is to nature. Hence an eminent critic has defined truth in art to be "the faithful statement either to the mind or the senses of any fact in nature," or, as Car-

lyle epigrammatically expressed it, as "the disimprisoned soul of fact."

EXPRESSION AND VITALITY.—The mood and condition of mind in which a sitter would present himself to an eminent painter would be caught with facility and delineated with truth. The expression would be quite commensurate with the skill and genius of the artist, with the insight he possesses into the reading of human mind and character. A painter's mind and fingers act in unison in accomplishing the desired effect. Of course the best artists have failed sometimes, nay often, in bringing out the requisite expression and the inmost soul of the subject in their hands, though they have put forth their best efforts into them. The case becomes much more difficult of realization in photography, where "an evanescent expression is to be suddenly caught hold of, noted, and preserved." When royal sitters and personages of high rank and distinction are concerned, it becomes the special duty of the artist to convey in his pictures the idea of princely rank and dignity. The distinct intention of the artist becomes at once apparent to the observer, and he feels as if he were in the presence of the royal person or a dignified personality. In such cases only the dignified portrait may be both consistent with nature and with fact. The case becomes altered when the representation of "noted men of high emprise" and of men of action and of high calling in life is to be preserved. Here it would be difficult to see the true man unless he were seen in his own vocation in life. Such an idea was most successfully and admirably carried out by Mr. R. W. Robinson, of Red Hill, in the long series of photographs of the Royal Academicians and Associates of England. Every artist in this collection is associated either with his own professional work or with some favorite

pursuit, each in his own studio with his own surroundings. All the distinguished sitters in this series have the most varied attitudes and expressions, and no one is consciously posed to be photographed. Each thinks and feels as if absorbed in the work he has at heart—some with suspended animation intently talking, some interrupted in the abstraction of work by a casual interference—but all inspiring a sense of utter self-forgetfulness and absorption in their work. The vitality in this series of portraits is shown in the variety of character. All of them look intelligent and as full of life, action, and energy as such a distinguished body of men might be expected to be. This self-same variety of character displays also differences of temper and feeling. No less should it be noted that when persons from the lower ranks of society, such as artisans, farmers, mechanics and laborers are to be dealt with, it would be a vain attempt to pose them in graceful attitudes or in such positions as would be appropriate only to the more distinguished classes of society. The results then become always stiff and unnatural, and wanting in that consistency and truth by which alone they should be marked and perpetuated.

The interest that a work of art creates in us is entirely dependent on the measure of its expressiveness. It is naturally capable of being brought to perfection, and is attained with variable success. Its value then would rest on the degree of human sympathies to which it appeals. In this then lies its power of representing to the spectator the skill and application, the refinement and the spirit with which the artist has worked upon it. Expression is thus defined to be "the significant intimation of characteristic power—of power that is of well-defined self-consistency relatively to a particular mental

disposition, function or purpose." It would be called the highest success in portraiture to be able "to convey a distinct impression of a self-consistent character, and this is most perfectly achieved by a combined inter-play of all resources resulting in a definite harmony of elements—vital, intellectual and emotional." It would be exceedingly hard to state, and difficult to judge of, the character of an individual whom a photographer sees for the first time. Although the most expressive types and exponents of human character may be stated to be the head and the features, still it would be a hard problem for the artist to present the portrait in the most favorable aspect of the face as to be at once faithful, attractive and true.

A well-proportioned face and beautiful features are generally taken by us to be, in a corresponding harmony, both intellectual and moral. But upon a closer examination it will be found that all objects presented to our view by nature are characterized by their blemishes and defects, and the most beautiful forms have their weaknesses and imperfections. It is these accidental deficiencies, excrescences, and deformities of things from their general figures that constitute the principal characteristic of attraction pregnant with the individuality of the objects delineated. But it has not been given to every one to discern these defects. Only those who have been long accustomed to the contemplation and comparison of such sets of forms can acquire a just idea of the beautiful in nature. Every artist, hence, is careful to select the best and finest according to the standard and dignity of his own conceptions. It may be that the ordinary intellect fails to recognize the excellence and the lofty aim of the artist. Yet for all that the greatest artists always make it the concern of

their life to appeal to the finest ideas, regardless of the possibility of their being misunderstood, and they will take care to be true to their ideal standard of excellence and perfection in spite of being misapprehended by the uneducated, for the object of art is not to change nature, but to interpret her aright. Hume Nisbet has made a very valuable observation which is especially worth attention, and more so in India, where the days of white pictures are not unfortunately yet over. "Give to the public faces ugly as Rembrandt's portraits, yet pregnant with character. I want to see seams and wrinkles and warts as the great Creator left them—indexes to the wearer's character, and not doll faces, which simpler and mean nothing. I want noses in all varieties with their own individuality intensified, cheek-bones standing out as they may be in the originals. I want men and women sent down to posterity as they are and not as they would like to be."

The photographic artist who would wish to produce a work of real merit must study closely, with a readily perceptive eye, all the defects and beauties of the sitter before him. He must reject what would not harmonize with the merits of his subject. He must endeavor to give such appropriate expression to his sitters by being affable and bland in his manners and pleasing in his conversation. The photographer must be possessed of a fine perception and a keen insight into human character ere he can determine at a glance what is best to be done. Indeed much would depend on the mood in which the sitter at the time is found. If he or she comes in hurriedly, a good result is hardly to be expected. The temporary excitement of the mind drives away evenness of temper and disturbs the equanimity of the mind, thereby destroy-

ing the characteristic expression of the face. In the words of my friend, Mr. H. P. Robinson, "in fact a true photographer must be a reader of faces, a close scrutinizer of the minor workings of the mind of the subject before him, catch with an eagle glance the peculiarities of gait, the tricks of motion, and be gifted with the rare discrimination which can separate the natural habits from the society affectations." Besides, close observation will show that two sides of every face differ, and that one side is always found to be better than the other. It becomes then the duty of the artist to select and present the picture in the best aspect, thus preserving the action and expression most common to, and quite characteristic of, the sitter. In short, the artist "must throw into his work all his strength, and all his mind, and all his heart, and all his soul."

To make a picture of the subject before the artist, as much would depend upon the inspiration of the moment as upon his own individual feelings. A photograph may be a likeness, yet it may not be a picture. To make a picture it should have unity of light and shade, expression and truth, balance and repose, and variety and tone, by which alone the representation becomes perfect.

CHIAROSCURO.—Shadows are said to be the natural attendants of light, and every student of nature must have observed how one balances the other. In art extensive shades contribute in a great measure to the beauty and effect of a production. Shades help, by a harmonious blending with the light, to give brilliancy, richness, and animation to the subject. No less do they serve to give a sort of pause to the eye, exercising an alternating influence which prevents the sight from being fatigued by a constant staring at the illuminated parts of the

picture. With such an end in view the masses of light should be so arranged as to be in harmonious dependence. Without, therefore, a well-balanced arrangement of light and shade, pictures lose their breadth, roundness, expression and sentiment, and would become quite flat and insipid. The end and aim of arranging the masses of light and shade are to give a pictorial effect to the whole and make it look striking and beautiful. This knowledge of the way in which light and shade, with their respective intermediate gradations, are arranged, and to which the name of Chiaroscuro is given, is of supreme importance for an art student to acquire. A perfect acquaintance with this subject could only be attained by a close and careful study of those masters who have excelled in this branch of art. Mr. H. P. Robinson, while speaking on this subject remarks: "The objects of Chiaroscuro are first to give a pleasing general effect by dividing the space into masses of light and shade, giving breadth of effect and preventing that confusion and perplexity incident to the eye being attracted by numerous parts of equal importance. Secondly, to so arrange and light the principal object that the eye may see at first, and be gradually and insensibly led over the whole picture; to keep parts in obscurity and relieve others according to their pictorial value. And, thirdly to aid the sentiment and expression of the picture."

UNITY.—Of the primary necessities of composition, unity has been defined to be "the key-stone of nature, and expresses the harmony of the Divine mind as rendered in Creation." This is considered an essential element, for it is nothing less than the due relation of the whole to its parts, which alone can give to objects their true and touching character. It is thus, by the delineation of

such a picture, where unity combines and harmonises in the formation of one whole that the hand of a master becomes perceptible. Unity preserves the expression of the chief characteristic and does not dissipate the attention and draw it away from the main point. Besides it brings all the secondary and minor qualities in the picture to a focus. The breadth of light and shade is also maintained, thereby giving a tone of solidity to the whole. If the picture contains two or more episodes, unity helps to combine them in such a manner as not to convey to the beholder any sense of dissimilarity, but to produce a complete impression of all that the mind demands in the subject before the eyes. Hence the skill and excellence of the artist would depend on his power of extending the attention to one whole, without which the best of pictures are ruined. This sense of *oneness* must prevail, not only in the massing of light and shade, in the arrangement of figures and different objects in the group to be portrayed, but must be felt in everything else which the picture may come to be made up of. The success of the artist would then depend upon his skill in producing this general effect. This is particularly to be observed in the delineation of portraits where the likeness, the character and countenance depend more upon the general effect produced by the artist than upon the exact expression of the peculiarities or minute discrimination of parts. In such a case it is unity that combines and produces that sense of satisfactoriness in the spectator which is akin to pleasure. It often happens that figures are scattered without any definite connection with the theme of the picture by the introduction of persons clad in the most incongruous manner, jarring with the tenor of the whole subject and without bearing any

reference to the other parts of the picture. Such incongruity tends to destroy the effectiveness of the whole. The more the lines are left scattered and unbalanced, the more the central idea of the picture is kept apart, and the whole becomes disconnected and produces an effect most irritating to the eye. It may, however, occur that objects are scattered throughout the picture, but, in spite of that, they may be so grouped together that, though each object has its own characteristic, and light and shade, they are all so disposed as to give a unity of effect to the whole. This unity of light and shade is obtained by the concentrating of the lights on the chief points in the picture, that the eye may rest and look at it with an undisturbed sense of satisfaction and pleasure. It necessarily follows that the closer the assimilation of idea with the different parts, the greater is the sense of oneness it imparts. In order that the work should approach nature in all its truthfulness, it must constitute one whole and harmonize and maintain its meaning throughout. The artistic arrangement of objects gives truth and vigor to the assemblage of lines and shades in a picture. Hence the greatest pleasure and gratification of the beholder arise from the unity of the whole arrangement, for on unity depends the intention meant to be expressed in a picture.

VARIETY.—In every pictorial composition variety always plays an important part, for without it the arrangement would not be complete. It is an essential quality and is a source of great picturesqueness and beauty in every art-production and may therefore be considered a necessity. Too much of it must, however, be guarded against, or it will become tedious. With variety in form comes variety in light and shade. Alison has observed: "Beautiful forms must necessarily be

composed both of uniformity and variety; and this union will be perfect when the proportion of uniformity does not encroach upon the beauty of unity." Variety should, therefore, be carefully studied by every student of art for the sake of contrast. When a greater number of objects, irregular and varied, is introduced in a picture, the repetition of some of the objects will tend to increase variety and add effect to the whole. The true end of variety is to give relief to the eye. It helps to re-animate the attention, which is otherwise apt to languish under a continual sameness. It is frequently employed to recreate and relieve.

TONE.—"Tone," according to Ruskin, "is the exact relief and relation of objects against and to each other in substance and darkness as they are nearer and more distant, and the perfect relation of the shades of all of them to the chief light of the picture, whether that be a sky, water, or anything else." Thus, a photographer can give tone to his pictures by so balancing his time of exposure and controlling the development as to bring his result most nearly to the truth of nature.

JUDGING A PICTURE.—"Photography," as has been remarked by Wilson in his *Quarter Century*, "has had to bear a great deal of unjust criticism simply because critics are ignorant of what it means to produce a photograph—what is involved in making a photographic picture. A person who attempts art should be well versed, not only in the principles of art, but should thoroughly understand the technique. And so should the photographic critic not only understand the principles of art but the photographer's methods of producing the technical excellences of his work should also be understood. Otherwise the critic can have no 'feeling' for his work, and without

feeling one may as well get 'out of the focus'—diffuse—"at once." Constable has also emphasized the same truth in art in the following words: "Every truly original picture is a separate study and is governed by laws of its own, so that what is right in one would be entirely wrong transferred to another." Mr. Brock Arnold, commenting upon the above principle, according to which a picture should always be judged, takes occasion to remark as follows:

"This is, of course, applicable to the details of art, the grand principles of which are invariably associated and co-existent with true genius; uprightness, earnestness, generosity, sensibility, imagination and taste, we may be certain of finding in the nature of every man of genius that the world has ever produced. These qualities, so far as they are present in the productions of such men, may best be considered and judged by their individual intrinsic worth. When we commence to compare men of genius one with another, we may very easily lose that nice sense of discrimination necessary for the proper appreciation of different degrees and sorts of merit, for, though all have some things in common, the productions of each one must be judged separately, and each production considered as a complete whole." On this principle in art, a picture, in order to be judged, should be approached as much as possible in the artist's own mood, and seen from his own point of view. Nay, due allowance should also be made for the artist's individual characteristic.

STUDY OF ART.—In concluding my humble remarks on the subject of portraiture, I cannot help quoting from the celebrated discourses of Reynolds on the course of training and study that should be pursued by every student of art in relation to photography: "It is indispu-

tably evident that a great part of every man's life must be employed in collecting materials for the exercise of genius. Invention, strictly speaking, is little more than a new combination of those images which have been previously gathered and deposited in the memory; nothing can come of nothing; he who has laid up no materials can produce no combinations. The more extensive, therefore, our acquaintance is with the works of those who have excelled, the more extensive will be our powers of invention; and what may appear still more like a paradox, the more original will be our productions. The works of those who have stood the test of ages have a claim to that respect and veneration to which no modern can pretend. The duration and stability of their fame are sufficient to evince that it has not been suspended upon the slender thread of caprice and fashion, but bound to the human heart by every tie of sympathetic approbation. On the whole, it seems to me that there is but one presiding principle which regulates and gives stability to every art. The works—whether of poets, painters, moralists, or historians—which are built upon general nature live forever; while those which depend for their existence on particular customs and habits, a partial view of nature, or the fluctuation of fashion, can only be coeval with that which first raised them from obscurity." "A life passed among pictures, in the study and the love of art, is a happy, noiseless dream; or rather it is to dream and be awake at the same time; for it has all 'the sober certainty of waking bliss,' with the romantic voluptuousness of a visionary and abstracted being. They are the bright consummate essences of things, and 'he, who knows of these delights to taste and interpose them oft, is not unwise.'"

On the Amounts of Silver and Hypo Left in Albumenised Paper at Different Stages of Washing.

[London and Provincial Photographic Association.]

ANY one studying the literature of photography must be struck with the diversity of opinion expressed by different workers on the important points of fixing and washing prints, some recommending neutral and others alkaline hypo, and the strength of the fixing solution varying from five to thirty per cent., the length of time the print should be washed varying from one to twenty-four hours.

The danger of an acid fixing bath and its tendency to yellow the whites of a print, and in addition its doubtful fixing power, was first pointed out by Mr. J. Spiller in a paper he read before the Photographic Society of Great Britain on January 14, 1868. Mr. Spiller in his paper says that "a hint was thrown out by Messrs. Davanne & Girard to the effect that the so-called 'pure whites' of the albumen prints still retained a small proportion of silver in an insoluble condition, and most probably in the form of sulphide."

Further on, the author says: "My experiments went to prove that the metal was retained in the whites of the albumen print, and indeed in all parts of the coating, in the form of an argentic organic compound, colorless, unalterable by light, and comparatively insoluble in hypo-sulphites and other fixing agents. It could not be a simple sulphide, for the test by which I discovered its existence in the paper was the production of a brown stain upon moistening the white surface with sulphide of am-

monium." In a paper in the *Photographic News* for October, 1862, Mr. Spiller recommended the addition of carbonate of ammonia to the ordinary hyposulphite fixing solution, for the double purpose of preventing by its alkalinity any chemical change or decomposition of the double hyposulphite; and, secondly, of directly aiding by its special solvent properties in the removal of this organic compound of silver.

In carrying out this research, we had two objects in view: firstly, to determine the time the print should be washed; and, secondly to endeavor to determine the cause of the fading of the finished print.

Three sheets of albumenised paper from the same quire were sensitised on a fifty-grain neutral solution of nitrate of silver and allowed to dry in the dark. These were then cut into pieces $5\frac{1}{2}$ in. x $8\frac{1}{2}$ in. The pieces from one sheet were marked A, from the next B, and from the third C.

The paper thus cut up and marked was washed for ten minutes in running water till all free silver had been removed.

Two of these pieces, taken from different sheets, which could be easily recognized from the letters on the back, were placed on one side, in order to determine the amount of sulphur originally present in the paper and also the amount of silver that had to be removed by the fixing agent.

The remainder of the paper was placed in a pint and a half of a twenty per cent. hypo bath; and, as this gave a little more than two ounces of hypo per sheet of paper, we consider we were on the safe side, as Captain Abney says that one ounce of hypo will fix three sheets of paper.

The hypo bath was tested before and after use, and was found to be slightly alkaline to litmus. The temperature was 22.4° C.

The prints were kept in the bath with constant changing for fifteen minutes. Two pieces (again from different sheets) were then taken and allowed to drain for five minutes, and the total sulphur and the remaining silver to be removed by washing determined. The remaining pieces were then placed in a large vessel filled with water and into which water was constantly flowing. The temperature of the water was 13° C. During the first hour the pieces of paper in the water were constantly turned over in order to prevent them sticking.

Two pieces were removed at the end of 5, 10, 15, 25, 40, 60, 90, and 120 minutes, and 19 hours, and the amounts of silver and sulphur remaining in them determined.

The estimation of the sulphur and silver in the papers was carried out as follows:—In each case the two pieces of paper were allowed to drain for five minutes, and then torn up into small pieces and placed in a large beaker, with a mixture of 100 c.c. of nitric acid and 200 c.c. of strong hydrochloric acid (free from sulphur), covered with a dark glass, and heated on a sand bath till the paper was completely destroyed. The solution was then taken down to dryness, and 250 c.c. of pure distilled water and three drops of hydrochloric acid added, and the whole heated to boiling, allowed to cool and filtered, and the filter paper and beaker washed with boiling water. The filtrate was heated to boiling, and chloride of barium added, which precipitated all the sulphate present as barium sulphate. This was then col-

lected on a filter, dried, and weighed in the usual way, and from this the amount of sulphur present in the paper calculated.

The chloride of silver on the filter was then dissolved out with ammonia, and precipitated by means of nitric acid, filtered off and treated in the usual manner.

The figures obtained are as follows:

1. Weight of sulphur in original paper.....	.0050 gr.
2. Weight of sulphur in water adhering to paper.....	·000032 "
3. Weight of sulphur in paper fixed but not washed	·2248 "
4. Weight of sulphur after 5 min. washing	·0063 "
5. Weight of sulphur after 10 min. washing	·0045 "
6. Weight of sulphur after 15 min. washing	·0048 "
7. Weight of sulphur after 25 min. washing	·0044 "
8. Weight of sulphur after 40 min. washing	·0043 "
9. Weight of sulphur after 60 min. washing	·0046 "
10. Weight of sulphur after 90 min. washing	·0047 "
11. Weight of sulphur after 120 min. washing	·0045 "
12. Washing of sulphur after 19 hrs. washing	·0047 "

The amount of sulphur in original paper has been subtracted from results 4 to 12 inclusive.

1. Weight of silver in paper unfixed, ..	.0784 grs.
2. " " fixed but not washed ..	·0086 "
3. " " after 5 mts. washing ..	·0051 "
4. " " after 10 mts. washing,	·0085 "
5. Weight of silver after 15 mts. washing	·0037 "
6. Weight of silver after 25 mts. washing	·0037 "
7. Weight of silver after 40 mts. washing	·0033 "
8. Weight of silver after 60 mts. washing	·0036 "
9. Weight of silver after 90 mts. washing	·0038 "

10. Weight of silver after 120 mts. washing	'0040 "
11. Weight of silver after 19 hours washing	'0089 "

From these figures it will be seen that after five minutes' washing 97·2 per cent. of the sulphur originally present has been removed, after ten minutes 98 per cent., and that, however long-continued the washing, no more of the sulphur can be eliminated. Turning to the silver, we find that as the paper comes from the fixing bath it has lost 88·3 per cent. of its silver; after washing for five minutes, 93·1 per cent.; and, after 10 minutes, 95·3 per cent. After ten minutes' washing the amounts of silver and sulphur remain constant.

It is evident from these figures that the permanency of a print does not depend so much on the washing it receives as on its thorough fixing; and we are strongly of opinion that the best way of removing all the silver is not by using two baths of hypo in succession, but by washing for about five minutes after the first bath, and then soaking in a second fresh bath of hypo.

In what form the silver occurs in the paper, whether as the insoluble AgNaS_2O_6 , or the soluble $\text{Ag}_2\text{Na}_4\text{S}_2\text{O}_6$, held in a sort of "loose combination" with the films of the paper, we are unable to state. However, the fact remains that, after a more thorough washing and fixing than prints generally get, '246 of a grain of silver remains in each 22x17 in. sheet of paper; and this, which is probably in the form of hyposulphite in the presence of light and organic matter, is reduced to silver sulphide, and will easily account for the yellowing of the whites of prints after a time.

We had hoped to determine the

silver and sulphur in gelatino-chloride paper, and the silver in paper that has been treated to several baths of different composition; but, owing to the length of time required to carry out these experiments, we have been obliged to defer the investigation of those points for a future occasion.

F. B. GRUNDY AND A. HADDON.

Seventh Annual Exhibition.

ANNOUNCEMENT.

THE Seventh Annual Exhibition under agreement between The Society of Amateur Photographers of New York, The Photographic Society of Philadelphia, and the Boston Camera Club, open to all photographers, will be held by the Society of Amateur Photographers of New York, at the galleries of The American Fine Arts Society, 57th Street, near Broadway, New York, from the 16th to the 28th of April, 1894. Entry forms can be had by applying to the committee. Address: 113 West 38th St., New York. Exhibition Committee: T. J. Burton, R. A. B. Dayton, and R. L. Bracklow.

The committee has been fortunate in securing the well-arranged galleries of the American Fine Arts Society for the next Joint Exhibition, and is now actively engaged sending out notices. The committee confidently expects to make this exhibition the finest yet held in this country. While a large contribution is expected from the English amateurs, a special effort is to be made to secure a good exhibit from France, Germany and other countries. A very fine catalogue is to be issued, and as a large part of the receipts is to be derived therefrom, any aid the members can give the committee in securing advertisements will be appreciated.

Amateur Photography.*

*Read at the World's Congress of Photographers,
August 2, 1893.

BY CATHARINE WEED WARD.

THE countless economic forces of the world, already great, are constantly receiving fresh accessions, while many of the old ones are becoming so blended as to seem new. From small beginnings, apparently unimportant, discoveries in the arts and sciences have been evolved what have proved powerful factors in the world's progress. Among the forces which can interest, educate and elevate humankind, helping to train the brain, the eye and the hand to uses heretofore unknown, let me place amateur photography. It has passed the stages of infancy and childhood and is rapidly attaining the strength of maturity, possessing a depth of reserved energy for future growth which cannot be estimated. We are all familiar with the professional side of the art-science, but the amateur one is not so well-known, and the funny column in the daily press would be shorn of much which passes for humor if jokes on the "camera fiend" were to be stricken out. There is, however, a growing tendency to give the amateur proper consideration, and in this paper I wish the term professional to be understood as applying to those photographers who make the profession a means of livelihood, and amateur to those who reap no pecuniary benefit from the work. In many amateur camera societies the line, as excluding professionals, is very closely drawn, far more so than I think wise or necessary; while, on the other hand, though the liberal-minded men in the profession are ready to extend the right hand of fellowship to earnest amateur workers, a large number of professionals seem afraid that their business will be

seriously injured by what can only prove, in a money point of view, an exceedingly limited competition. Very few amateurs accept pay for their work, and the professional who betrays jealousy of the former only reveals his own incapacity.

The two paths should converge and not diverge. The professional and amateur interests are not necessarily antagonistic; and if the amateur looks down on the professional because of the latter's accepting money for his work, he shows himself unworthy the name he claims. An amateur is, so the word implies, a lover of the pursuit he follows; but can he be justly so entitled when he makes a plaything of the work to which many a professional devotes his life faithfully and seriously.

Amateurs are inclined to be a trifle illiberal in their conception of the work as a profession, though at the Photographic Convention of the United Kingdom, in Edinburgh last year, which consisted of professionals and amateurs, they apparently agreed to differ very much as if they had held separate sessions. We amateurs should always be ready to give a reason for the faith that is in us, realizing that our branch of photography, but lately in leading-strings, can now lend a helping hand to its elder sister, the professional branch. The art-science is a dual entity, bound by a tie as close as the Siamese twins, and those who pursue it, whether they belong to one or the other branch of the service, all march under the same banner.

The hobby, fad, or whatever one may term it, has already won a far higher position than is generally understood to be the case, through the aid it is giving in effecting the growth of human enlightenment. Its value is being recognized in literature, medical research, astronomy and a long series of mental labors and, as professionals usually, besides giving the bulk of their time to portraiture, *per se*, are also too pressed by the exigencies of daily routine work to deal much with experiment and research, credit for the most valuable discoveries may be claimed by amateurs. Such labor can best be done by men, who, not bound by the necessity of earning a livelihood, are struggling to wrest from nature the secrets which govern her onward-impelling forces and balancing one agency against another, can fully measure and weigh in their mental scales the value of each and every one to the world.

Can we name in the same breath with these amateurs those who look upon photography

merely as a means to kill time, and who, by no accident even, apply the slightest modicum of mental effort to understand the reasons of success or failure?

The list of the strictly scientific workers is a long and brilliant one, but it is being supplemented by a number of amateurs, who, not having scientific training, are forced to advance slowly. These are utter unbelievers in luck, and their knowledge is won by patient, thoughtful application of cause to effect. Such knowledge is not merely theoretical, it is theory wedded to practice, translated into the world's language. The word amateur is like a certain robe which is said to cover a multitude of sins, and the veriest tyro in photography can in one sense rank with the most advanced worker, not at all to the advantage of the art science as regards its position in the eyes of the world. There is so much poor work done, technically and artistically, by amateurs that the general judgment as to the work of all is greatly affected, and photography, which can be made to mean so much, is often forced into a lower place than is its just due. The Chicago Exposition has lent valuable aid in changing this status, and if those who follow the work for the work's sake will, taking advantage of this fact, demand for it from others unprejudiced judgment, and the same respect they themselves give it, the cause of general education will have made a great gain.

Artists, or I prefer the term painters, are greatly indebted in many cases to photography for valuable assistance, and many of such eminence as Alma Tadema, are broad minded enough to acknowledge the fact. But there is an intimate blending of art and science in the work, and not all its followers are liberal enough to recognize the relative value of each.

The photographic camp is every once in a while, therefore, turned into a modern tilt-yard, wherein artists and scientists fight each with long names, laboring to prove what is unprovable, which is the higher, art or science. It is the old story of the two knights fighting to show whether the shield was of gold or silver, to find at last that it had two sides, of which each knight had only seen one. If the advancement of photography as a means of education and culture is desired, why not agree that while the scientific side can exist in a measure without the artistic the latter is of no value by itself, as its work must be done by scientific means, while the best results are attained by a judicious admixture of both. To many workers, however keen may be their artistic

sense, the conquering of some obstinate point in chemistry or optics is fully as great a pleasure and evolving a new one makes them supremely blest! There is a deep sense of triumphing over apparently insurmountable difficulties which to an eager searcher for knowledge gives an abiding satisfaction. The great value of such discoveries in photography lies, however, in their subsequent application as a means of enhancing the artistic beauty of a picture. In view of the vast growth of discovery during the latter part of this present century we are in danger of forgetting that the ideal, as well as the real, imagination as well as fact, needs development in a well rounded, thoroughly balanced mind.

Artists, as well as scientists, are to blame for this misunderstanding, for however great may be the mental altitude of the latter there is no scorn greater than that with which one who claims to have artistic gifts can look down upon those who in his eyes are less endowed. Hood might well lament the "rarity of Christian charity under the sun," the lack of it is apparent in almost every field of human effort.

Amateurs are partly to blame for the idea which many people hold that amateur photography is a mere amusement; a sort of jack-in-the-box performance. A camera, very often a cheap one with a single-view lens, is bought, and the owner starts out immediately to take portraits, make studies of animals, or, with almost sublime assurance, to photograph a dimly lighted interior, with no attention whatever to the disposition of furniture, color of the walls, light, etc. These first attempts, naturally enough, proving failures, people say that photography, unless one is a professional, is of no real value; thus the art itself suffers loss of credit. If by any chance the aforesaid beginner scores a success, his camera is immediately looked upon as a sort of reservoir, from which pictures *ad libitum* can be drawn, without money and without price. Very few, except the initiated, know the actual cost of a finished photograph, and I am constantly hearing the complaint that the amateur is underselling the professional. My own way of dealing with this question is to do all but the printing myself, and then let my sitters, or those for whom the view is taken, order the prints from some professional. This is, of course, when a number is desired, though, personally, it is much more preferable to do all the work myself, even if very few of the recipients understand the labor involved, or that individuality is possible in printing as in taking a picture. Not one person in ten knows that for all the various print-

ing methods used by amateurs but one negative is required, or that its technical quality has anything to do with its usefulness.

The complaint once reached my ears that if a professional, whom I knew, would take as much pains with a certain amateur's printing as with the complainant's, the latter might prove to be more successful at exhibitions. Such amateurs believe that what they are pleased to call genius atones for what they undervalue as mere technical excellence, but which is simply, in this case, being too lazy or ignorant to do well the scientific part of the work. There are paintings and statues which really offend the eyesight, but for some inscrutable reason a poor photograph is ranked far lower in the scale of demerit. No one lens can be as capable of variety, no matter who uses it, as one brush in the hands of a skilful painter; but supposing the amateur can only afford one lens, ought the work itself to lose in credit on that account? The more careful his selection of lenses the better and more varied will be his results. As painters, therefore, adopted marines, landscapes or figures as a special line of work, let the amateur photographer do the same, and select carefully the lens which will best suit it. Only a very few amateurs understand wherein consists the difference between lenses or their extremely delicate mechanism, failing utterly to comprehend the strength which always resides in accurate knowledge of the power with which we labor. The lens and the brush are both products of human workmanship, and their true value lies in the brain that guides them. The question of color is, we are told, to be eventually in the power of the photographer as well as the painter; but, setting that aside, the trained artist in either branch can always have the delight of form, as regards beauty and strength, which is a far subtler, keener pleasure than the enjoyment of color. Those only who love their work can begin to realize its possibilities. We smile indulgently in this prosaic century at the idea of Fra Angelico painting, on bended knees, his conception of Heaven and the Saints. We cannot reconcile reverence with analysis, preferring not to witness the play from in front, but to go behind the scenes and see the wires pulled. In so doing we are apt to forget that the great discoveries of science should not make us consider the human brain as merely a useful tool, but, in its wonderful ability to design and invent, as being closely allied to the Great Creator of the world.

Let the amateur understand the instrument he uses from one end to the other, and be able, if

necessary, to improve its capabilities; let him study the genesis and development of both wet and dry plates and all the wonderful agencies which result in the finished print, constantly varying as they are, and then dare to look upon photography as a toy. Aside from its scientific, artistic, mechanical or any other side, its great and abiding value lies in a combination of them all, and its application to any and all of the arts and sciences as a means of the truest culture. There is a grand, noble power in the amateur's hands if he looks on his work as a means of education, and it could be most effectively utilized by keen-witted educators as a means of teaching young people. If the rising generation could be persuaded to use their eyes as a means of absorbing into their mental consciousness a keener sense of the beautiful world in which they live, instead of seeing life in a far less worthy sense, camera work will have won a right to high honor. It should have a place in every college course, notwithstanding the clamor which such a proceeding might cause. Some one must suffer by every progressive step in the world's education; but, after all, it is the greatest good of the greatest number which should be considered.

Only where attention is especially turned to the subject can it be realized what a place in our literature the camera is making for itself. Besides the various magazines devoted to its interest, the others and the daily press are according to it increasing notice. Travel, biography and a host of other subjects are effectively illustrated by its aid, both on paper and by means of lantern slides, giving pleasure and instruction to thousands. The question of societies in this connection is an important one, but I will allude to it briefly. It is a part of my editorial work to print notices of society meetings, and hardly a week passes without some new organization being formed. When these are used to advance the general growth of the art, and not for personal credit, they can wield a very positive influence, and there is a place for them in the world.

As in other societies, the hardest work falls on a small number of members, but they have the true repayment of that deep satisfaction which only comes to those who work not for general praise but genuine self-improvement.

Amateur photography has the great advantage that its followers are confined to no age, sex, or condition of servitude.

The question of sex especially is rapidly becoming a past issue. It never should have been raised at all, and those who persist in clinging

to it will at no late day find themselves far in the rear of the great army of civilization.

There are altogether too few women who cannot only do the work, but tell how they do it in clear, comprehensible speech, many because they have never tried to do so; and let me urge upon them the thorough study of photography from start to finish as a far more satisfying occupation than most of what are called feminine accomplishments. As a mental and moral tonic, and a strong aid to general, broad culture, it is invaluable to those who have learned its power. There is no effort wasted, and everything the amateur does to advance his progress in the pursuit is generously returned to him.

In closing, let me state what is perhaps the greatest value of amateur photography: its universality, its international character. It is a society whose members are of every nation, and such meetings as this present one go far to bind workers together. Let each compare his work and methods with others; avoid their faults but learn from their success, conceding to others the same devoted interest he gives to the work.

Amateur photography has a promising future, an ever widening horizon, and the deeper one explores its mysteries, the stronger grows its hold upon him. It will only be a toy to those who look upon it as a toy, but of broad, high and deeply absorbing value to those who appreciate it.

Believe in your work; honor it with faithful service, ever ready to see your faults and to correct them, remembering always the words of Longfellow, at once a reproof and an inspiration: "We judge ourselves by what we feel capable of doing, while others judge us by what we have already done."

Dodges.*

BY C. O. GREGORY.

THE subject of "Dodges," which it is my privilege to bring before you this evening, is one that should be of great interest to the amateur photographer. In fact, it goes a long way to complete his photographic education. To the profession, I presume, it is impossible to mention anything under this head that is not in their every-day prac-

*Read before the North Middlesex Photographic Society, June 12th, 1893.

tice, but the beginner in the art regards anything outside the elementary instructions of procedure as dodges—at least I do. That the best workers among us indulge in dodging is admitted. One will tell you he is obliged to dodge all his negatives; another that good negatives are the exception with him rather than the rule, or another that he has no good negatives, and so on. Of course, a good deal of this is modesty, but it leads one to the conclusion that the production of superior work is, as of course it must be, the result of careful manipulation at every stage of the process, and knowing the means by which to avoid or overcome defects of every description as they arise—and to many of us they arise often enough—it is my intention, therefore, with your permission to refer to a few rough and ready dodges that in my own limited practice of photography have been found useful, and I will also offer you a suggestion or two which I trust will be worthy of your consideration, but I would add that my remarks (coming as they do from rather a raw recruit) are intended for the less advanced workers chiefly.

The most interesting part of dodging refers, no doubt, to work on the negative, but before we come to that I purpose mentioning a few other items, and will commence with development and the use of a brush. I first saw a brush used in this room for the purpose, as I understood, of preventing air bells and keeping the developer in motion. I tried it for the latter purpose, and soon accustomed myself to use it in literally painting out under-exposed parts (after pouring off the developer), and by this method worked up detail in the weak parts without causing undue density in the lights, to me a most important point. With usual development when a plate was any way under-exposed or the contrasts great, I was always liable to get the high lights developed right through to the back of the plate (when they begin to spread and cause halation) before sufficient detail was obtained in the shadows. On the other hand, with a brush, when I find the

high-lights progressing favorably, I pour off the developer and work out all detail, then pour on the whole of developer, again rocking the dish until sufficient density is obtained, stopping development when the high-lights are quite through the plate, and before they have time to spread. The negative I pass, round for your inspection was produced in this way. The white garments of the cricketers and the tent came up at once, and were fully out when the lower part of the plate was bare, the black coat in central figure was also bare glass without detail, but by pouring off developer, except a small quantity, and tilting the tray so that the developer only covered the bottom part, with the brush I was enabled to get out all detail of grass and black coat, without losing detail in the high-lights. With the ordinary mode of development I think the result would have been far different. As a curiosity I also show you another negative of the same subject worked up in the same way, but over-exposed, the exposure being in the proportion of three to seven. The developer was, of course, very different; you will notice there is a difference in color of the film; but the printing quality is the same, and in this case I think the developer *has* modified the action of exposure, for I doubt if you can tell which is the over-exposed plate. I also pass round two other negatives, exposed and developed with the idea that development with the brush will go a long way to prevent halation. In the first the distance came up at once, but the near buildings were certainly under-exposed, being in heavy shadow; it took twenty minutes to get out detail, but the distance or central part was only a minute or so under the developer, irregularity being avoided by occasionally sweeping the wet brush over the whole of the plate. The other negative was an instantaneous exposure, treated in the same way, but you may observe that the edge of the trees are perfectly sharp, and the negative with a little other dodging gives a fair print.

Another advantage of the brush and local development is that clouds can be saved in the negative if there are any in the landscape, or in other cases it may be desirable to keep the sky thin and work clouds on the back in the manner to be presently described, and I feel confident after twelve months' trial that the brush gives great power over the quality of the negative, and I mention it to you as a most useful dodge.

Before I leave development I would also mention the use of the warm finger in more energetically bringing out particular parts. In lantern

slides this is very useful, but it can very easily be overdone. Gently move the second finger over the part you wish to bring out stronger, when the second finger gets cold use the third finger on the place, and by the time the third is cold the second will be again warm enough to continue the operation, and so on until the desired effect is obtained.

Intensification is, I think, almost outside our subject, especially as the matter has been so ably dealt with on other occasions. I am tempted, however, to say my own opinion is that if thin negatives are cases of vexation, intensification, unless performed with great judgment, is nine times out of ten quite as bad. But there is a dodge or two in connection with it worth mentioning. The first is, dry your negatives quickly, and in a strong light; it gives (or prevents them losing) density. I fancy the latter. You will be surprised at the difference in a negative dried in a strong light or even in the sun *if the negative has previously been through the alum bath*, and one dried in the dark in a cold situation; the first will be of a rich brown color, the other of a greyish tone and of less printing density. Another dodge is slight intensification by the clearing bath, but it must be a clearing bath containing iron. The iron immediately changes the color of the film, darkens the high-lights, and at same time clears the shadows, and so gives a crispness not possessed by the negative before. A weak solution of plain iron, or the usual iron developer will also intensify by changing the color of the film.

In some instances it becomes a necessity to reduce parts of a negative; a strong light through the branches of trees, or a bright ray of light through a window or an archway generally causes halation, to the detriment of the negative. In most of these cases it is possible to considerably modify the evil or even entirely overcome it by chemical or mechanical means. I recommend methylated spirit (it must be neat, not spirit and water), and must be used after the negative is dry, by applying a little to the part to be treated, until it softens (don't be in a hurry about it), then with a piece of chamois leather rub the part until it comes off on the leather, changing the leather when it gets black, and continue until the desired effect is obtained. I only recommend this treatment for small patches, say not exceeding the size of a sixpence. For larger surfaces the remedy is often worse than the disease, as the result often appears unpleasantly smeary. It is effective on faces when too dense, also to

bring detail out in the folds of a white dress, but, like all remedies of this description, it must be used with caution and patience. Another method I have tried, rubbing down with brick dust, and find it effective on thick films. The way to use it is to rub your finger on a piece of bath brick until the ribs on the skin are worn down and the finger quite smooth, the finger will then have adhering to it sufficient of the fine dust to reduce density on the face, etc. This will not do for thin films.

It is sometimes desirable to use a quarter-plate in a half-plate slide, but it is a nuisance bothering with quarter-plate carriers, in addition to being obliged to get a separate box of plates. Both of these troubles can be avoided by cutting a half-plate in half with one of the cheap glass-cutters, place one-half in centre of dark slide, filling up the side spaces with cardboard the same thickness as plate. In this way two quarter-plates can be used, back to back, or one quarter-plate and one half plate.

The Printing Frame.—A quarter-plate picture can be vignettted into cabinet or half-plate size by using a half-plate printing-frame, with a piece of cardboard the same size, with an aperture cut out for the quarter-plate negative, covering the join with yellow or black paper, as in the example I show you. The same arrangement applies to larger sizes.

Plain and Fancy Borders.—At times you may wish to have a margin round a print, perhaps a plain one round landscape, or a fancy one for a portrait. For that purpose a mask must be provided of opaque paper, cutting out an oval, square, or any other shape desired; place the outer portion on the negative in its proper position, then the sensitised paper, and print. By using a larger frame, and filling up the space round negative with cardboard, a much wider border can be obtained, and a plain white border gives, I think, a neat and bold appearance to a print. It may, on other occasions, be desirable to print a fancy border, and it will be necessary then to make a negative of the design required—marbled paper, or imitation morocco paper will answer the purpose. After printing with the plain border, the part already printed must be covered with the piece of opaque paper cut out of the mask, slightly stick it in its place on the print, and print the border from the border negative provided for the purpose. There are several modifications of this style of double printing, which will no doubt suggest themselves as occasion requires.

The Negative.—I now come to dodges in printing from the negative, and will suppose that on examination of the negative unpleasing defects are observed. There may be shadows too intense, one side thicker than the other, the foreground too thin, etc.; all these matters want attention and correction, and for these and similar faults I prefer simple to more elaborate means, and I don't think there are many faults but what can be corrected by means of semi-transparent material, tissue paper and the like. Use it in this manner; suppose the lens does not cover the plate sufficiently, the corners of the negative are then thin, and print dark; in such a case, gum pieces of paper on the corners of the frame to shade off the corners and so prevent any unpleasant appearance. A road is, perhaps, too dense; cover all except the road with tissue or yellow paper. One side of negative thinner than the other, and so prints quicker; pasté tissue paper over one side. Perhaps a central portion of the negative is thin; cover the whole of the negative with tissue, and a second or third piece over the centre, and so on. In fact, I know nothing more generally useful than tissue paper. It is also invaluable for thin negatives; use one two, or more thicknesses; in fact, any negative is better for printing under it. As an example, I show you a print from a negative of an interior, about the worst I can find, and another print from the same negative, dodged with tissue and yellow paper. I think the superiority of the latter over the former is apparent. Another example is of a workshop; the light at the window is rather strong, consequently, printed as usual it is unsatisfactory, but if, after printing to usual depth, a piece of opaque paper is taken with an aperture, cut the shape of the window, and the window is printed deeper, a great improvement is made.

(To be continued).

“PROFESSIONALS”

Look up a half dozen or so of your prettiest baby negatives! We will have something to say about them shortly, that will interest you.

AMATEURS — Don't forget our Competition.

The Photographic Exhibit at the Toronto Industrial Exhibition

The following are the winners of the prizes offered to Professionals and Amateurs at the Toronto Fair of 1893 :

CLASS 126.—PHOTOGRAPHY—BY PROFESSIONALS

- Sec. 1. Portraits, collection of, plain.
Murray & Son, Brockville, 1st.—\$3.00
Elliott & Son, Toronto and St. Thomas, 2nd.—\$4.00
- Sec. 2. Portraits, collection of, colored
Three entries, no awards, not properly colored.
- Sec. 3. Enlarged portrait, plain.
Murray & Son, Brockville, 1st.—\$4.00
F. W. Micklethwaite, City, 2nd.—\$2.00
- Sec. 4. Landscapes and views, collection.
F. W. Micklethwaite, 1st.—\$6.00
Murray & Son, 2nd.—\$4.00
- Sec. 5. Enlargement, landscape, or interior.
F. W. Micklethwaite, 1st.—\$4.00
Murray & Son, 2nd.—\$2.00
- Sec. 6. Portrait finished in black and white.
F. W. Micklethwaite, 1st.—\$8.00
Murray & Son, 2nd.—\$6.00
- Sec. 7. Portraits on porcelain, china or enamel.
Two entries, no awards.
- Sec. 8. Best collective exhibit of photography.
Murray & Son,—Silver medal.
- Sec. 9. No awards.

The work shown was of a high average. Commendable taste was shown in the mounting and arranging of each exhibit.

Wm. Craig & Son of Owen Sound, showed some most excellent work, the effect of which was enhanced by the tastefulness of its arrangement, we expected to see them carry off some of the honors.

The work of Murray & Son of Brockville is always good, and their display this year was quite up to the high standard which visitors to our Fair now expect of this firm. A number of their pictures have been shown before but have the excuse of being worth looking at a second time. The enterprise of this firm is certainly commendable.

CLASS 127.—PHOTOGRAPHY—BY AMATEURS

- Sec. 1. Best six landscapes.
H. English, City, 1st.—Silver Medal.
W. H. Moss, City, 2nd.—Bronze Medal.
- Sec. 2. Best six marine views.
J. S. Scougall, Kincardine, 1st.—Silver Medal.
H. English, City, 2nd.—Bronze Medal.
- Sec. 3. Best three portraits.
W. H. Moss, 1st.—Silver Medal.
H. English, 2nd.—Bronze Medal.
- Sec. 4. Best three interiors.
W. H. Moss, 1st.—Silver Medal.
H. English, 2nd.—Bronze Medal.
- Sec. 5. Best three genre pictures.
W. B. Bayley, City, 1st.—Silver Medal.
H. English, 2nd.—Bronze Medal.
- Sec. 6. Best three bromide enlargements over 2 diameters.
H. M. R. Glover, City, 1st.—Silver Medal.
W. H. Moss, 2nd.—Bronze Medal.
- Sec. 7. Best six lantern slides.
H. M. R. Glover, 1st.—Silver Medal.
W. H. Moss, 2nd.—Bronze Medal.
- Sec. 8. Best general exhibit of amateur photography.
W. H. Moss,—Gold Medal.

It is worthy of notice that all medals, including the much coveted gold medal, except the silver for marines, were captured by members of the Toronto Camera Club.

Some one said Messrs. Moss and English intended taking baskets with them when making their visit to the sanctum of that greatest of Fair managers Mr. Hill,—well they did

fare pretty well. But where were the rest of the "boys"? We understand there are a *few* other members of the club who have "medal winners."

The exhibit of amateur work as a whole was one to be proud of, and from such a display of good work, it is hard to select the "gems."

We were particularly struck, however, with "By the Giant Willows" by Mr. English, indeed all of this gentleman's landscapes, done in Platinotype, were up to his usual artistic standard.

The "Interior of St. James Cathedral" by W. H. Moss, deserves particular mention, as does also the "Village Smithy" by Mr. Bayley.

Mr. Bayley is particularly good in "Genre" work. In the other classes he seemed somewhat handicapped by the toning of his pictures.

Mr. Moss used Platinotype exclusively.

Dr. E. E. King showed some very good things in lantern slides.

We were in hopes that some of the many good workers of the Hamilton club would exhibit some of their work.

T. C. C. Notes

The Toronto Camera Club is reorganizing for the coming winter season, and arrangements are being made for the usual demonstrations and lantern exhibitions.

W. R. Croil has returned from his second trip to the World's Fair.

W. B. Varley has also paid a visit to the White City.

W. E. H. Massey brings back from the World's Fair, some of the most satisfactory pictures we have yet seen. We have the pleasure of presenting a few of them to our readers this

month, together with an interesting description of Mr. Massey's trip.

Mr. W. Coleman has just returned from a month's business trip to England. He speaks highly of the quality of amateur work shown at the Crystal Palace Exhibition.

To Active Supporters.

We want a few good cabinet photographs of children in winter costume, with wintry surroundings. We know that our Canadian photographers easily beat the world in this particular style of portraiture, and we should be glad to hear from such of our well-wishers who are willing to supply us with one cabinet print.

We should particularly like to have a really good example of a child with a "bob sled," *at as early a date as possible*. Please address all communications on this subject to the associate editor, (Sarnia, Ont.), who will personally acknowledge all favors by mail. We know we are asking a favor, but we feel confident that we have readers who are generous enough to come forward *promptly* and help on the good cause of pictorial portraiture.

"OUR CHRISTMAS NUMBER"

We have a rare treat in store for our readers, and all interested in photography, in the shape of a DOUBLE CHRISTMAS NUMBER, that we intend shall be the finest thing of the kind ever published. Full description of this elegant number of the Canadian Photographic Journal will appear in our next issue. If you are already a subscriber oblige us, and your friends, by telling them about it. If you are not a regular subscriber, send in your subscription now, only \$2.00 for the year, *including* the handsomest Christmas number ever gotten up in the interest of photography.

AN INTERESTING LETTER FROM MOSS & Co.,
HALIFAX, RE THEIR MODE OF WORKING.

Editor CANADIAN PHOTO JOURNAL:

Sir,—Contrary to the usual custom, we purpose giving a brief description of our methods; not that we claim anything out of the common, but is it not strange that, although for the most part we all use the same chemicals and formula and similar instruments, yet how different and varied are our individual results. To prove this assertion we need only to spread before us the illustrations of your popular Journal for the last twelve months past, and note what we may call the personality of the work. For this reason, we think it would be a good idea for those who illustrate your Journal, to give a short description of their favorite processes, or rather, the processes used in producing the illustration. It is a point of much interest, we think, and may possibly be the means of helping some on the road to improvement as well as a caution to avoid the snags that others have foundered on. It would seem most ungrateful to point out anything that any of your readers might consider imperfect, in any of the illustrations. Your readers are under great obligations to those who have helped on the work of your Journal, for it is no small matter to produce the large number of cabinet photos required for each month's illustration, mounted and finished ready to paste in the Journal, and we hope that others will appreciate this and take a turn at the work.

Our picture is on S. & M. paper, sensitized on a 60 gr. silver bath decidedly acid (nitric), we mean acid enough to turn litmus paper a decided red. This, we know, is contrary to usual instructions. An acid bath hardens the albumen and keeps the print well

on the surface, whilst a neutral, or worse still, an alkaline bath, gives your picture a sunk in appearance, a thing to be avoided.* Paper was floated three minutes. Toned with chloride of gold made decidedly alkaline with washing soda and enough common salt to red the work up when first put in the toning bath. Fixed as usual.

The instrument used is a 3 B. Lancaster & Son, Rapid Portrait lens is $3\frac{1}{2}$ inches diameter, stopped down to a $1\frac{1}{2}$ inch aperture. Exposure $\frac{1}{10}$ of a second. Thornton-Pickard Shutter. We do not always use the same toning bath, any alkaline will do. Sal. Soda, Bicarbonate, Borax, the first thing that comes to hand is good enough.

It is not, in our opinion, the composition of the toning bath that controls the tone, it is the quality of the negative. We have often noticed in our repeat orders, that no matter what toning bath we used, the same negative will always produce the same tone, use what alkaline you like. With a good negative you can obtain any tone you like, with a poor negative it is not possible to get good tones. (Of course we may differ in our opinions as to what is a good tone.)

To obtain good negatives you must use good plates and this most essential thing is found in Anderson, Robinson & Co. manufacture. We use their Star plate exclusively, to our entire satisfaction. About three years ago,

*NOTE.—A bit of experience with a silver bath, just occurs to the writer's mind. Some years ago, when we held that a 40 grs. bath was the right thing, I laid a sheet of paper on the bath and the albumen came off and sank like chalk, leaving the paper, when dry, plain and rough. I tested the bath with the actinometer and found it 40 grs. and after doctoring and sunning it, made another attempt when it acted in the same way, and, if possible, worse. I then decided to extract the silver by placing a copper bolt in it, which should throw the silver down in metallic flakes, but it failed to act. I then added muriatic acid to it, which should throw the silver down in the form of a chloride, but there was absolutely no silver in it. Still, I had, a few days previous to this, sensitized and printed with this bath. This is a study for those who claim a fixed strength of bath and proof that the actinometer can't be relied on.

we ordered some of these plates and day after day our work with them proved disappointing. We could not make a negative of printing density with them, so we set them aside as useless. But it happened late one evening, that a baby was brought in for a sitting and, as we were short of the plates we were then using, we determined to make an exposure on an Anderson & Robinson plate, get our advance dollar, and, of course, expecting a failure, would make another appointment; but, to our utter surprise, we got as fine a negative as we could possibly wish for. It was then that we made the discovery that we had been over-exposing. We have taken babies, with a good light, in a seventieth of a second (so the shutter says) with them. There certainly is no need of using imported plates, when we can obtain Canadian plates of such undoubted excellence and rapidity as these we are speaking of. The young lady who kindly sat for the illustration, is Miss Jost of this city. We made twelve sittings, rejected four for bad expression, and printed off eight.

Moss Photo Co.
Halifax, N.S.

In the Studio: "Dear me," cried mamma, "what is the baby crying for?"

"He's angry with me, mamma," said Molly. "The picture man wanted him to look pleasant, so I was trying to make him smile with the glove-stretcher."

"Amateurs" be sure to send in your three best "Landscapes" for our Competition. Full particulars in this issue.

Correspondence.

Editor CANADIAN PHOTO. JOURNAL, Toronto:

Dear Sir,—Enclosed find seventeen (17) new subscribers for JOURNAL. The JOURNAL goes about as well as big Red N. Y. Our sales for this paper increased one-third last month, over any previous month. We feel we have to thank your valuable JOURNAL for a big proportion of the increases. Enclosed find a cheque for last month's account, and including above subscriptions.

Yours truly,
MULHOLLAND & SHARPE.

"Prizes v. Academy."

Editor CANADIAN PHOTO. JOURNAL:

Dear Sir,—I have read with pleasure the able article under the above heading, which appeared in the August number of your valuable JOURNAL, and I feel sure that you voice the opinion of many photographers in this province in your condemnation of the pernicious practice of prize giving.

A Canadian Photo Association to be a successful institution must of necessity be engaged in some work that will not only benefit and assist, but materially advance the interests of the majority of its members. Is it not, Mr. Editor, a fact—a glaring fact, that the prize-giving system is not only not a benefit, but a great injury to the majority of exhibitors, in the interests of a small though often *very favored* minority.

The arrangement of the prize list for this year is indeed prize giving gone mad, it degrades the standing of the Institution to the level of the average prize package, no blank concern, seemingly intended to arouse the cupidity not the Art enthusiasm of the competitors.

The ideas that you have so ably advanced re the formation of a photo-

graphic academy should receive the hearty support of all true lovers of our beautiful Art, and if adopted would without doubt be the means of founding a society that would rapidly take its position as one of the most valuable Art educational institutions in the country.

Wishing the movement you have inaugurated every success,

Believe me yours truly,

A. EDWIN LYON,

Guelph, Sept 7th, 1893.

Books, Etc., Received.

WE are in receipt of a report of the World's Congress Auxiliary of the World's Columbian Exposition devoted to Photography, bound in book form. It gives most of the papers presented at the recent Congress of Photography. We shall present our readers with the most interesting of these papers.

The Miniature Quarterly Illustrator is at hand and is a charming little journal. It is of extremely small size and its pages are filled with choice illustrations and descriptive text, reproduced by photography. The subscription price is only twenty-five cents a year and we advise our readers to send this sum with their addresses to the publisher Harry C. Jones, 92 Fifth Avenue, New York City. They will be pleased with their purchase.

WE have to thank the Secretary of the Photographic Society of Great Britain for a very complete catalogue of the Library and Museum of the Society. It is well arranged, and shows the society to possess one of the best photographic libraries in the country. It is supplied gratis to members. To non-members the price is one shilling.

The Grammar of Photo-Engraving. By H. D. Farquhar. Published by The Scovill & Adams Company, 423 Broome Street, New York. Price, in paper covers, \$2.00; in cloth, \$2.50.

This is one of the most practical books that we have seen on this subject, coming as it does from the pen of a man who is a practical every-day worker of the processes of which he writes, makes the book of great help to anyone interested in the subject of photo engraving. Beginning with "Copy" the author goes carefully through each necessary process, giving a quantity of valuable Formulæ and "dodges," the result of years of study and experimenting. The following subjects treated on will go to show the value of the book: The Drawings most suitable for Reproduction; The Chemicals and Apparatus used; The Half-tone Process; Screen; Plates; Zinc; Etching; Etching in Half-tone; Blocking and Finishing; the Swelled Gelatine Process; Lithotype Engraving for Color Work, and Photography on Wood.

Our thanks to Mr. Welford. Mr. Welford of that good journal, *The Photographic Review of Reviews*, England, makes us blush by giving our features to the world in half tone, in the current issue of his valuable journal, as "A Brother Editor." Of course we are exceedingly grateful to Mr. Welford for so doing, for naturally, every one who looks at "us" will know that, being the editor of a photographic journal, we are, of course, rolling in riches and enjoying all the good things of this earth. We believe Mr. Welford intends publishing portraits of all photographic editors, and thus send us all rolling down the ages to posterity. We hope he will not omit his own good looking phiz, for "we" ourselves will object to going down the above said "ages" without him.

ED. C. P. J.

Our Scrap Album

Our Cylist readers will be interested to hear of a simple and ingenious device, patented by Messrs. Beach and Harris, of Fortress Road, Kentish Town, N.W., for enabling the possessor of an ordinary safety bicycle to use his machine on the water. Two pneumatic tubes, constructed of canvas, are fixed one each side of the bicycle by means of light hollow steel stays. The motive power is obtained by the employment of small floats, which are fixed on the spokes of the rear wheel, thereby converting it into a paddle-wheel. The speed of eight miles an hour has been attained under circumstances none too favorable for record breaking. The raft can be packed on the bicycle, after deflation, and occupies no more space than a hand-camera. Its total weight is eighteen pounds. On the water these pneumatic tubes will each support a weight of two and a half cwt. For steering purposes a half disc is slipped on the front wheel, so that the guiding action is the same both on land and water. As combining a novel form of pleasure, with a distinct touch of excitement, we shall expect to hear more of the cycle raft in the future.

All the worthy women who wear brooches made of portraits of departed friends, set in narrow bands of gold, will rejoice to hear that the same affectionate style of adornment has been adopted by the Queen. The number of miniatures with which she testifies to her family affection is no less than thirty-three. They are pictures of her grandchildren, taken in infancy or early youth, and mounted in three bracelets. Each picture is set in a narrow frame of gold, and in one bracelet, set in pearl and coral; the size of the settings varies from one-half to three-quarters of an inch.

A very convenient mucilage can be made of onion juice by anyone who wishes to use it. A good-sized Spanish onion, after being boiled a short time, will yield on being pressed quite a large quantity of very adhesive fluid. This is used quite extensively in various trades for pasting paper onto tin or zinc, or even glass, and the tenacity with which it holds would surprise anyone on making the first attempt. It is the cheapest and best mucilage for such purposes, and answers just as well as many of the more costly patent cements. Some of the cements sold by street fakirs at 10 cents a bottle consist of nothing but onion juice and water, and the bottle and cork cost a great deal more than the contents.

A law has been passed by the Federal Assembly of Switzerland imposing a tax on all commercial travelers in the country. The law places foreign and native travellers on an equal footing. Travelers for commercial houses entitled to national treatment, and trading only with merchants, are exempt from taxation; but those seeking orders from private individuals must pay a fee of £4 for six, and of £6 for twelve months. The licenses can be procured in any canton on production of a certificate that the firm represented is authorized to carry on business in the country in which it is established. This is said to have proved an effectual cure for the Free Portrait fiends.

The Marquis of Salisbury, who is an enthusiastic scientific amateur in electrical matters, possesses a better appointed laboratory than any other amateur, and as good if not a better one than most professional electricians. Lord Kelvin, then Sir William Thomson, at the 1889 dinner of the Electrical Engineers, referring to

Lord Salisbury, said "they all felt the honor which his lordship, who was one of themselves as a scientific electrician, had done them at being present at that the first annual dinner of the Institute." At Hatfield electricity is made serviceable in many ways, including the lighting of the old historic residence, which was visited by the Queen in 1887.

Practical Formulæ for Practical Men.

DISTEMPER FOR BACKGROUNDS. Take whiting, 2 lbs.; lampblack, 3 ounces; damp blue, 4 ounces; glue, 1½ ounces. Dissolve the whiting in two quarts of water, add nearly all the blue, then add the black gradually, trying the tint after each addition by dipping in it a piece of paper and drying at the fire until you get the exact shade required. Then having dissolved the glue in warm water, pour it in to keep the color from falling off, mix thoroughly together, and strain through canvas.

NEGATIVE VARNISH. We have used the following for several years, and have never yet found a varnish to equal it:

Sandarac	4 ounces
Alcohol	28 ounces
Oil of Lavendar	3 ounces
Chloroform	5 drams

When dissolved, filter.

RETOUCHING MEDIUM:

Gum Dammar	12 grains
Camphor	6 grains
Turpentine	1 ounce

To be applied very sparingly, by means of a soft cotton rag, to the parts requiring pencil work. Rub it in with a circular motion and *remove all the surplus medium*. After retouching, heat the negative thoroughly to fix the work.

A NOVEL METHOD of producing enlargements, or strictly speaking, enlarged

negatives, is given as follows, and is most interesting, showing a way of enlarging without enlarging apparatus. The negative after having been exposed, developed, fixed, and washed, is laid in a bath composed of

	By weight.
Hydrofluoric acid	1 part
Citric acid	4 "
Glycerine	1 "
Acetic acid, in crystals	1 "
Water	32 "

In this bath the film will leave its support, and at the same time enlarge itself, and can be fixed to a supporting glass corresponding to its increased size.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION, San Francisco, Cal., an International Exposition will be held at San Francisco, Cal., U.S.A. from January 1st to June 30, 1894. The site of this exposition is located in Golden Gate Park and will cover an area of about 100 acres. There will be five principal buildings for the Midwinter Fair; viz: (a) Manufacturers' and Liberal Arts; (b) Agricultural and Horticultural Hall; (c) Mechanical Arts; (d) Fine Arts and Decorative Art; (f) Administration Building. Applications are being received daily for separate and special Constructions such as State Exhibits, restaurants, reproductions, side-shows, etc. M. H. de Young, Vice-President of the National Commission, World's Columbian Exposition, Chicago, will act as Director-General and President of the Executive Committee of the Winter Fair; the other members of the Administration and Officers are: Irwin C. Stump, Vice-President; P. N. Lilienthal, Treasurer; Col. A.

Andrews; R. B. Mitchell; Hon. Eugene J. Gregory, Sacramento; Jacob H. Neff, Colfax; Fulton G. Berry, Fresno; J. S. Slauson, Los Angeles; Alexander Badlam, Secretary; R. Cornely, Assistant Director-General. Information for intending exhibitors, maps of the grounds, buildings, etc., may be obtained by applying to the Department of Publicity and Promotion, California Midwinter International Exposition, Mills Building, San Francisco, Cal., U.S.A.

Answers to Correspondents.

Arrangements have been made with a photographic expert of acknowledged ability, whereby our readers may have the benefit of his experience, through this column, absolutely free of charge. Queries must be received by the first of the month to ensure their appearance in the current issue.

Correspondents requiring detailed advice by mail, must enclose a fee of One Dollar.

All communications for this column to be addressed

W. ETHELBERT HENRY,
SARNIA, ONTARIO.

G. MARR.—I have not experienced any difficulty with the acid fixing bath, and I cannot understand why you should do so, although, as you say, it is confined to a certain make of plates. Are you sure you mix the bath exactly as directed? Many thanks for your kind wishes and very encouraging remarks re the JOURNAL. The sympathy of our readers is what we most earnestly desire, and each assurance of it received from our readers tends to make our efforts a greater pleasure. I shall be very glad to hear from you as promised, and hope you will be able to send us a short article for the double Christmas Number.

MAC. AND OTHERS.—You misunderstood our competitions. The one for photographers' assistants is especially designed for the benefit of assistants in want of certificates, and is more of the nature

of an examination in special branches. For this reason we established a *standard of proficiency* which must be attained by all who desire to hold our certificates.

In our Amateur Competition.—As no certificates are given, the competition is open to all *amateur* subscribers, and to them only. It is our intention to award all the prizes according to the merit of the competing pictures and if only three people compete we shall still award the three foremost prizes, of course being our first competition of this kind, we do not expect a large number of entries, but still the prizes will certainly be given *no matter how few compete*.

J. A. GILROY.—A cheap and effective way of "frosting" your side light is to apply a strong warm solution of Sodium Sulphate, and when cool, apply a coating of gum water to prevent it being injured.

This will relieve you of the annoyances of your very disagreeable neighbors. For the last paragraph of your letter accept my sincere and hearty thanks.

XANTIPPE.—Surely there is no need to apologize for asking help in this column; we are only too pleased to hear from any reader desirous of availing himself of it. The simplest way to cut a locket glass, is, first to secure as thin a piece as possible and cut it, with a diamond, a little larger than required, then take a pair of scissors and *putting both hands completely under the water*, proceed to snip small pieces from the edges of the glass until it is of the desired size, of course you cannot expect to cut around your mark at once, but by taking small pieces off at each cut you will have no difficulty whatever. I have done this repeatedly.

QUEBEC.—The address of "*The Photo Times*" is 423 Broome St., New York, write them for the information you desire.

Canadian Photographic Journal Competitions.

PRIZES VALUED AT \$150.00.

For Amateurs.

CLASS A., LANDSCAPE, ANY SIZE.

In this competition we offer as a

First Prize,

A Magnificent Casket of Lenses,

now being manufactured for us in the Old Country by an eminent firm of opticians. The contents of this casket (which is lined with velvet and richly covered with morocco) comprises eleven Rapid Rectilinear, eleven wide angle rectilinear, and seven view lenses. With these lenses it is possible to adopt *sixteen different foci, ranging from four to twenty-nine inches*, covering any sized plate from $3\frac{1}{4} \times 4\frac{1}{4}$ to 24×28 inches.

The latest improvement of the well-known "Iris" diaphragm will be fitted throughout.

The *Second Prize* will be a handsome Silver Medal.

The *Third Prize*, a handsome Bronze Medal. These medals will be struck from a special die, now being made for this JOURNAL.

The *Fourth Prize* will consist of a year's subscription to the CANADIAN PHOTOGRAPHIC JOURNAL.*

Pictures for competition must be received *not later than* December 1st, 1893.

Prizes winners will be announced in our elegant Christmas Double Number.

For full rules, the simplest which have ever governed a competition of this sort, see page 194, August issue.

IN THIS COMPETITION *we shall award all the prizes, no matter how few amateurs compete.* Thus:—If only four competitors enter, the four prizes will be awarded.

*The Editors reserve the right to award several extra medals should the pictures possess sufficient merit.

CERTIFICATES OF PROFICIENCY.

For Assistants.

CLASS I.—RE-TOUCHING.

RULES.

1. Open to all subscribers.
2. Each competitor to send in two cabinet prints from the same negative of a head and bust. One of the prints to be taken before and the other after re-touching the negative.
3. Any plate and any printing process may be used at the option of the competitor.
4. Full name and address of the re-toucher to be legibly inscribed on the back of each photograph.
5. All prints sent in will become the property of this journal.
6. Each competitor attaining our standard number of marks will receive a handsome certificate of proficiency in re-touching.
7. All prints must be mounted and must be received at Toronto not later than November 1st, 1893.

The attention of assistants is called to the fact that the possession of our certificates in any branch of photography will entitle the holder to a first consideration at the hands of any one desiring a competent assistant.

Specially designed silver and bronze medals, with subjects and name of winner inscribed thereon, will be awarded to the winners of a specified number of these competitions, should we find that sufficient interest is shown in the present subject. We shall announce these in a future issue.

For further particulars see p. 167, July issue.

All competing prints to be addressed,

THE EDITORS,

CANADIAN PHOTOGRAPHIC JOURNAL.

Toronto, Ont.

P. O. Drawer 2602.

Amateurs' Outfits.



BARGAINS.

- | | |
|---------------------------------|-------------------|
| 1.5 x 8 Anthony Outfit..... | \$5 00 |
| 1.5 x 8 " " | 5 00 |
| 1.6½ x 8½ Scovill R. B. Outfit. | |
| | \$29 00 for 15 00 |
| 1.5 x 8 Irving R. B. Outfit.. | |
| | \$35 00 for 20 00 |
| 1.6½ x 8½ Taylor R. B. Outfit. | |
| | \$30 00 for 12 00 |
| 1.5 x 8 A. O. G. R. B. Outfit. | |
| | 20 00 for 8 00 |
| 1.5 x 8 New Model Imp. | |
| Outfit..... | 5 00 |
| 1.5 x 8 Wonder Outfit Com- | 5 00 |
| 1.4 x 5 A Kodak, New..... | 5 00 |
| 1.B " " | 10 00 |
| 1.C " " | 15 00 |
| 1. Bulls Eye, Leather | 5 00 |
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