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## IMPROVEMENTS IN ALBUMEN PRINTING PAPER.

Herr Gustav Koppmann, the patentee of this process, says :

“ It is a well-known fact that the albumenized papers used for photographic positives lose their beautiful rose or bluish tint after a short time. Hitherto the proceeding consisted in mixing the corresponding color solution with the albumen, covering the paper with this mixture. The colors used are the little light-proof aniline colors, mixing perfectly with the albumen.

“ The above proceeding will be replaced by the following one of my invention, obviating the above-mentioned inconvenience by a more intimate combination of the dyeing material with the paper.”

According to the proceeding of the applicant it is not any longer the solution of albumen which is colored, the paper to be used being, on the contrary, evenly dyed with a layer of color by an ordinary printing procedure. Hence the color is brought into direct contact with the superficies of the paper, wherein precisely consists the innovation, and thus a possibility is given to employ a color known as indifferent to light, thus, as, for instance, cobalt blue.

It is only after submitting the paper to this printing process that it is covered with albumen, and afterwards treated in the known manner, and then it is ready for being sensitized with the solution of nitrate of silver.

The above proceeding need not be limited to albumenized paper, but may be adopted wherever a constant ground color is desirable for photographic positives.

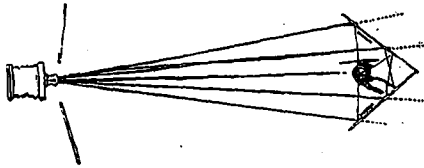
The innovation of the proceeding consists consequently in the separation of the colored solution, for the production of which a light-proof metallic color, or any other as light-proof known suitable color is made use of, from the albumen layer proper and its previous appliance.

The claim is for a colored positive paper, wherein the colored tint is produced by a light-proof colored raw paper.

### DUPLICATED SITTERS.

Though the methods here described are well known to most people, they are evidently new to many, since inquiries re photographic "doubles" and similar matters frequently reach us. The fact that a duplication of a sitter or sitters may be used with artistic effect, and become a power in the hands of the picture-maker by photography, has been shown by some very fine examples of work by Mr. Moreno.

Mirrors form one of the simplest methods of increasing the number of views of a sitter taken at one time, and a single mirror, arranged so that a full face and a side face of the sitter are presented in the same portrait, has often been used with admirable artistic effect. It is also used in our gaols, when photographing prisoners for identification. With two mirrors of large size, the number of effects obtainable is very great. By placing them face to face, and the sitter between, reflection and re-reflection can be so arranged that the sitter in each of the mirrors appears as a series of copies of himself arranged in a row, side by side. Placing the



mirrors so that their edges meet at an angle of  $75^\circ$  (see fig.), and letting the sitter face the angle, five different views of the same subject are obtained, all giving essentially different views of the face. In some of the American cities this class of picture has been made a specialty by one or two photographers, with the result that a considerable business has been done for awhile. This method has very distinct advantages as a style of portraiture, and gives great scope for ability in posing and lighting, so that we wonder that it has never been taken up by a first-class photographer and developed to the full extent of which it is capable.

It will be seen from the diagram that the camera is arranged to point between two plain backgrounds on stretchers, or plain screens, to prevent any part of the room near the camera coming into reflection.

The making of "doubles," whereby one is able to represent a man boxing with himself, wheeling himself in a barrow, etc., is quite a different matter, but there are many simple ways in which it can be done.

Any arrangement that will provide for the exposure of one-half the plate first and the other half later, can be used to produce "doubles." A simple method, and one which, we believe, has never been published, although it has been used for some time, is to fit the shutter of the dark-slide with a flexible extension in the form of a roller-blind. This is made adjustable, so that the distance between the end of the shutter and the front of the blind may be equal to half, one-third, one-quarter, or less of the length of the plate. If set for a quarter, the first exposure is made by pulling out the shutter a quarter of its length. By pulling it forward another quarter, a fresh surface of plate is uncovered, while that which has been exposed is covered by the blind. An important point is to have the shutter marked so that the quarter, half-way, etc., distances may be accurately seen, which will prevent any necessity of taking the dark-slide out of the camera during a series of exposures.

We need only describe one other method which has the advantage that it can be worked with a cheap camera without reversing back, whereas a reversing back is necessary in the other cases. This can only be satisfactorily used for doubles, and not for three or more exposures. The apparatus needed is a little piece of blackened tin or thin copper, cut to fit inside the lens hood, and then rather less than half of it turned up to form a sort of handle and to allow the light to pass. The disc should cover more than half the lens, and for one exposure will be placed to cover the right-hand side, while for the other it covers the left. On a pinch this may be made of cardboard, or it may be in the form of a lens cap to go over the hood instead of a disc to go inside.

In all these cases, especially with three or more exposures, it is necessary to have the ground-glass very carefully marked to show the successive portions to be exposed; or if the work is being extensively done, to have the background marked well above the sitters.—The Photogram.

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**An Aid to Retouching.**—Mr. E. R. Evesrep, writing in a contemporary, says: "During the long-continued dull weather that characterized the past winter, retouching was often a serious problem. I used an ordinary mirror reflector, but even that was sometimes insufficient, so I had just to do like my neighbor, 'grin and bear it,' and wait for more light, till one day a bright idea struck me, viz., I procured a concave mirror and found that by using it as a reflector at the proper distance to focus the light on a small portion of the ground glass back of my negative, I could have a dazzling brilliancy even in the dullest weather, while by varying the distance I could soften it to any required extent. Retouching is now a pleasure."

## THE CARBON PRINTING PROCESS.



TIRED OUT.

A very considerable revival in favor of this beautiful process has undoubtedly taken place, says G. Gennert, of New York, in an interesting little booklet on this subject. And this, indeed, is not to be wondered at, when the possibilities of the process and its extreme simplicity come to be more fully understood.

To the modern photographer there seems to be an idea that the carbon process is a difficult one, but such is not really the case; it certainly requires some skill and practice to produce the most perfect results, but the same remark applies to every other known photographic process. The development of a carbon print is not a subtle chemical process, but is a purely mechanical one, viz., the dissolving away in warm water of the

parts of the pigmented tissue not acted upon by light.

Briefly, the process may be described thus: Emulsion consisting of gelatine and carefully ground pigment (such as is used in the manufacture of the finest colors) is evenly spread over paper; this emulsion is treated, either before coating or afterwards, with bichromate of potash, which salt possesses the peculiar property of causing gelatine to become insoluble—in hot water—when exposed to actinic light. When the tissue (as it is technically called) is dry, it is ready for printing in an ordinary printing-frame in the same way as for other processes; but here the difference between the carbon process and any of the other processes depending on silver, etc., at once becomes apparent. The action of the light on the carbon tissue only produces a hardening effect—there is no visible difference to the eye. The carbon tissue is of about the same degree of sensitiveness as ordinary albumenized paper, and if a negative of about the same printing quality were put out in a printing-frame with a strip of ordinary silver paper, side by side with the frame containing the carbon tissue, the latter may be considered sufficiently printed when the light has penetrated through the highest lights to the silver paper. The plan, however, generally in use by professional carbon printers is to

employ a little apparatus called Johnson's actinograph. This consists of a small tin box about  $1\frac{1}{4}$  inch cube, containing a small roll of sensitized albumen silver paper; this paper is pulled through a small slit, and a space adjoining the slit is painted a deep chocolate color, the light acting on the sensitized paper, causing it to assume a color similar to that painted on the box; this is called one tint. The roll of paper is drawn forward about a quarter of an inch, and when darkened to the same color as on the box, this registers another tint, and so on for as many tints as from experience it is judged the negatives will require for printing. When the tissue is considered to be sufficiently printed, the next step is to develop it, and, as we have before stated, this is done by dissolving away the unaltered gelatine and pigment; but before this is done it is necessary to place the tissue in intimate contact with a support of some kind, so that the tissue may be developed from the back, as the light coming through the negative has commenced to act on the surface of the tissue, so that in the higher lights the hardening action has only penetrated very slightly into the film, and, therefore, the pigment between this and the paper on which it is spread is soluble, and will dissolve away as soon as it is placed in warm water. It will, therefore, readily be seen that if the tissue were placed in warm water just as it left the printing-frame, the insoluble film acted upon by light, being on the surface, would float off as soon as the soluble gelatine was dissolved. This necessity for transferring the tissue to a support, and stripping off the paper on which the pigment was spread, so as to allow development to take place from the back, is the reason why a carbon print gives a reversed image unless it is transferred a second time.

**Instructions for the Use of Carbon Papers by the Single-Transfer Process.**

Those taking up carbon work for the first time, we would recommend to purchase cut sizes of tissue, and to commence with the single-transfer process on to opal, for although the picture will be reversed—i.e., objects that should be on the right hand will appear on the left, and vice versa—yet the manipulation is so simple that failure to produce satisfactory results, can hardly take place if the following simple instructions are adhered to. Pictures can be produced in this way without any special apparatus; all that is required is four dishes—one for sensitizer, one for cold water, one for alum, and one for hot water; each of the four dishes should be large enough to hold the opal to which the print is transferred, but the larger the hot water dish the better. Black varnish and a small brush, powdered alum, a few pieces of ground opal a little larger than the cut tissue, a squeegee, and

a flat board to lay the opal on whilst the print is being squeegeed into contact with it.

#### **Sensitizing the Tissue.**

The tissue must be made sensitive by immersing in the following solution, but during this manipulation we cannot advise too strongly the use of finger cots of rubber or rubber gloves so that the solution does not touch the hands: Bichromate of potass, "Walpole," 3 to 5 parts; Water, 100 parts.

When dissolved and filtered, pour this solution into a deep zinc or porcelain tray and immerse the tissue, pigment side upwards, taking great care to prevent air cells on the surface. Allow the tissue to remain about three minutes in the solution, then hang up to dry in a warm, dry room at not less than 70°. If the tissue dries too slowly it will become insoluble. The tissue is not very sensitive in the wet state, but becomes so as it dries. In winter the bichromatic solution should be stronger than in summer.

[To be Continued.]

### **FAULTY NEGATIVES.**

Richard Penlake, in a contribution to Photographic Scraps, entitled, "My Faulty Negatives and How I Got Good Prints from Them," has something interesting to say. His advice is: Learn the theory of exposure and development, and practise it, and your failures will gradually diminish. Keep to one make of plate and developer, learn their characteristics, and you will have a power in your hands like that of a brush to the artist or a chisel to the sculptor. . . . A good negative will give a good print, but if I estimate correctly, not fifty per cent. of amateurs' negatives come from the fixing bath perfect. With such a fact as this before us, it clearly shows that some remedy is needed, and remedies are met with in the form of intensifiers and reducers. . . . When intensified negatives become too dense and take a very long time to print, it is because the negative is an unsuitable one to intensify. A thin, clear negative, full of detail, is the most suitable one for the purpose; not one that possesses a slight veil or fog, because it is only natural that if the high lights of a negative be intensified, existing fog in the shadows would be correspondingly increased at the same time. It may be gathered from the above statement that under-developed rather than under-exposed negatives are the most suitable for intensification. Many workers, too, are troubled with a fine crop of pinholes; these unwelcome visitors may be prevented by using distilled water for the bleaching solution and filtering each time after use; brushing the plate, while under the

mercury solution, with a fine camel's hair brush is also advisable. Non-chemical methods of improving negatives are strongly advocated by some, and there is much to be said in their favor, the chief point perhaps being that the film is not tampered with; this, indeed, is desirable, especially if the negative be a valuable one. The simplest and most effective method is by means of tissue paper and ordinary household blacklead. These tools, I believe, may be found in every household. Cut a piece of tissue paper (the coarse quality does not serve so well, as the grain prints through) the size of the negative, and damp it and stick it lightly by the edges to the glass side of the negative; the previous dampening causes it to dry as tight as the proverbial drum. When dry it may be worked upon with blacklead by a stump or the finger tip. The sky may perhaps print too dark; if so, rub the blacklead over the sky portion where it is intended to print lighter. At frequent intervals in the sky extra dabs may be put in the form of clouds; these if skilfully done show up very effectively in the finished print. In fact, any part of the negative that prints too dark may be held back by working over the desired part with the blacklead or a blue pencil. The latter is exceedingly handy, especially if in a group the faces print too dark; the same can be regulated to a nicety if the tissue paper is carefully marked with the pencil. A simple method of blocking out a thin sky is to hold the negative glass side down over the smoke from a burning piece of camphor. A piece, the size of a small nut, will send forth volumes of black soot-forming smoke. The glass will soon become black, when the surplus upon the landscape portion may be wiped away with a soft rag. Great care in afterwards handling the negative is necessary, as the blocking is very fragile and easily damaged. If a permanent blocking out is desired, black varnish or an opaque (red or yellow) water or oil color may be used. Negatives that contain a large expanse of sky can be quickly done by going round the fine parts on the film side to a depth of, say, a quarter of an inch with a fine camel's hair brush charged with thick vermilion water color, and then pasting on the glass side a piece of non-actinic paper which will cover the paint on the film; this of course can be ascertained by looking through the negative. If the thin parts are all in one portion of the negative, a better plan, after they have been printed to the proper depth, is to protect them with a piece of card or brown paper laid upon the outside of the frame, or with a pocket handkerchief, which can be roughly adapted to the outline between the dense and thinner portions, and allowing the printing to proceed through the uncovered portions for a farther period. If, on the other hand, parts of a negative take a long time to print, or are exceedingly harsh, they may be made to print quicker by dabbing a little vaseline or oil upon



the tissue paper or by cutting away that part over the required portion. In the latter case the paper may be stuck wholly upon the glass. The light, of course, penetrates more rapidly through the parts cut away, thereby helping the denser portions on before the parts covered with the paper have time to go beyond their proper depth. Another easy method is to cover the negative with white blotting paper, instead of the tissue; by means of a moistened finger tip parts may then be rubbed in the blotting paper as thin as is necessary to regulate the printing of the denser portions. Another simple way of increasing the density of any portion of a negative is to mix some of Judson's yellow or orange dye with half an ounce of gum senegal, and apply thinly with a camel's hair brush, moistened with water. It adds enough density to parts of the negative required without shutting out the detail. A marked improvement may also be made in a print by printing under green glass or green tissue paper. The chief drawback of this method is the very long time it takes to print, especially if the negative be one developed by means of pyro-soda, and is very yellow. A little thought, however, on the operator's part will help to greatly diminish the time required for printing. Green glass is used for the sole purpose of getting a green light to the paper, and students of color know well that blue and yellow form green, therefore if the negative be very yellow, a blue, instead of a green, glass is required; the result underneath is the same, i.e., a green light to the paper. If a negative be denser at one end than the other, through unseen development or coating, the printing-frame may be placed at the bottom of a deep lidless box, one end of the frame resting against the side, the thinner portion being at the bottom. Transparent spots, or pinholes are often found in a negative; as these will appear ugly black spots upon the print they should be spotted out when the negative is dry. For this purpose some Prussian blue water color and a very fine camel's hair brush will be required. The paint should be applied with an almost dry brush, after the manner of stippling, and on no account should it be laid on in washes. Err on the side of making the spot more opaque than the surrounding parts, rather than the reverse, as it will print white, and the spot may be evened up on the finished print. A friend of mine who produced what he called "pictorial" work regarded a few pinholes in the sky as welcome visitors, as he would add wings to them on the print and call them birds. Chalkiness is a common fault, and to remedy this a very suitable plan is to rub the dense parts of the film with a piece of wash-leather strained over the finger tip, and soaked in methylated spirit. The rubbing should be continued until the wash-leather becomes black, when a fresh piece should be substituted. A little very fine emery powder will greatly facilitate the operation if the negative be very dense.



Photo by J. F. RYDER,  
Cleveland, Ohio.

EASTER LILIES.

This plan will improve chalky or hard negatives in a manner little short of miraculous. For interiors it is specially valuable, as it will often remove halation. Here is a chemical method for improving hard negatives, which I can confidently recommend. Make up the following solution: Potassium bichromate thirty grains, alum one hundred and fifty grains, hydrochloric acid two drams, water eight ounces. Place the negative in this solution until whitened through, then after well washing for about half an hour, redevelop in daylight with any developer until the shadows are blackened through (not the high lights), then wash and fix as usual. This method does away with much undue harshness; if the negative be not then dense enough it may be intensified. However careful one is, it is almost impossible to get along without sometimes cracking a negative. When this happens, get a piece of clean glass the same size as the negative, and carefully bind the two together with a lantern-slide binding strip. When printing from this the frame must be continually shifted, and not allowed to remain in one portion for a minute's duration. A meat-jack comes in handy here. A flat board may be suspended in place of the meat, the frame laid thereon, and the whole set going in a shady place; the print will then leave the frame without the slightest trace of the crack showing.

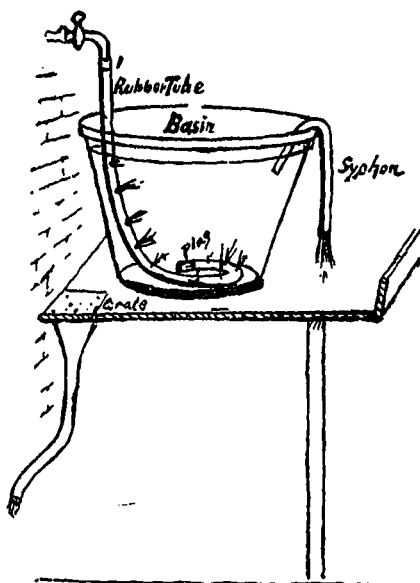
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### A HOME-MADE PRINT-WASHER—TRIED.

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I enclose a sketch which will readily explain itself, but a few observations may be useful. Many amateurs in these economic days do not care to go in for a guinea or half-guinea washer, but are often puzzled as to the best means of effecting "many changes" in the washing process, so as to clear the prints of every atom of hypo in a reasonably short time and without constant attention. Here is another clue to the difficulty:—Get two feet of india-rubber tubing of sufficient diameter to fit your water tap tightly. It must grip tightly for reasons given presently. Pierce this tube with small holes (such as would be made by a knitting needle) in the lower half of its length; the number of holes may be varied according to the force of water used. Plug the lower end of the tube tightly with a cork, wooden, or india-rubber stopper; if the stopper be forced out by the water, replace it and secure it with string wrapped around both tube and stopper. If the two ends of the tube be not adequately secured the force of the water will be liable to dislocate the upper end, or throw out the plug from the lower end. Our aim must be to obtain strong force of water through the tube punctures. An ordinary slop basin twelve inches in depth is the vessel required. The

basin is half filled with water, the prints are inserted—thirty to forty quarter-plates—and the tap is turned with a force of water exactly at the command of the operator. The general agitation of the water leaves no doubt as to the prints being kept moving. But we do not want the prints washing "overboard"; we therefore get a piece of glass tubing about twelve inches in length,



dry it well, and bend it gently over a gas flame with limbs of three and nine inches respectively. Place this tube on the side of the basin with the long limb outside, so as to obtain an outlet for water within three inches of the rim. This syphon is not likely to be required unless the water force is very strong. This washing apparatus is surely "within the reach of all"; the tubes come well within the modest shilling, and the basin is a household fixture. Time occupied in washing— one hour.—"Grapho" in *The Photographic News*.

### INTENSIFICATION.

The method employed and recommended by Mr. J. B. B. Wellington in a foreign exchange has many advantages. For instance, intensification can be carried out immediately after fixing, a preliminary rinse under the tap for a couple of minutes being all the preparation required, instead of the usual necessity for totally removing the hypo. A mere ghost of an image can be built up to

any extent at one operation, intensification going steadily on without interruption, and the resulting image is composed of silver, having the appearance of a properly developed negative.

A stock solution must first be prepared as follows :

Stock Solution.

Silver nitrate .....	100 gr.
Distilled water .....	2 oz.

When dissolved, add

Ammonium sulphocyanide .....	240 gr.
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This will form a precipitate which will become dissolved. The solution must now be diluted to 10 ounces with distilled water, when another precipitate will be thrown out. To this solution add a saturated solution of hypo sufficient to dissolve the precipitate ; this forms the stock solution.

To intensify, take

Stock solution ..	1 oz.
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and add

Pyro .....	3 gr.
Sodium sulphite .....	12 gr.
Ammonia .....	6 minims.
Ammonium bromide .....	2 gr.

Immerse the negative and rock the solution until the necessary degree of intensification is acquired, from five to ten minutes usually being sufficient to produce a dense negative from a very thin one without the slightest staining.

More ammonia may be added from time to time if the action is not sufficiently energetic. After treatment the negative must be well washed.

**Reducing Bromide Prints.**—Saturated solution of chloride of lime, filtered and perfectly clear, 1 part, water 4 to 8 parts. Apply it to the cleared and washed print, either in bath or by flowing ; when sufficiently reduced wash well. The solution can be used a number of times, and it does not discolor the print or stain the paper. Immerse over-developed prints in a mixed ferrous oxalate to 20 of hypo solution (3-16). **Blue Prints**—Dip into a weak solution of liquor ammonia, and then into a weak solution of hydrochloric acid or ferric oxalate, 4 grains dissolved into 1 oz. of ordinary hypo solution. Immerse the print till sufficiently reduced.

### AN ACID FIXING BATH.



An acid fixing bath that is said by a writer in the Times to have stood the test of experience for several years, is as follows:

Water .....	3 pints.
Sulphuric acid.....	3 drams.
Sulphite of soda, cryst....	4 ounces.
Hypo.....	16 ounces.

Make it up to two quarts.

In making up, the acid is added to the water with stirring, preferably in a granite kettle. The sulphite and hypo are weighed out and ready at hand. The sulphite and hypo are more convenient if of the "new process" kind, otherwise the sulphite, at least, should be powdered. Add the sulphite all at once to the acid water and stir for half a minute. This will give rise to the "sulphur" smell of sulphurous acid. Add the hypo now, all at

once, not waiting for the sulphite to dissolve entirely, and stir. The rapid addition of the hypo answers a double purpose. It cools the solution so that it retains the acid gas better, and it adds the bulk of liquid, helping toward the same end. The solution may turn slightly yellow on adding the hypo, and will look turbid from the air introduced with the hypo, but this all passes away and leaves a clear, colorless solution without sediment, barring slight impurities contained in the chemicals. Filtering is hardly necessary.

If found necessary or desirable one-half ounce of chrome alum can be dissolved in about half a pint of water, and is to be added to the finished solution. This amount of water had better be deducted from the original three pints, and it will be necessary to grind the chrome alum quite fine in the mortar, preferably with the water, to induce solution. Some recommend twice as much chrome alum for summer use. This addition hardens the plates very considerably, but the writer has had little occasion to use it. Such a bath will not keep so clear as without the alum; a considerable precipitate will occur in time. The lasting quality of this acid fixing bath is extraordinary. It can be used off and on for a year,

always returned to the bottle after use and remain practically clear. It keeps so long, indeed, there will be a firm black deposit of sulphide of silver coating the bottle, but the solution itself will be clear.

As the bath becomes exhausted it fixes slower, and in time wants replacing, and as a guide I might say that one ounce of bath will fix two 4 x 5 plates, or the two quarts about five dozen plates. If, with an ordinary plate, the bath requires more than five minutes to clear the negative, it is time to renew it.

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### RED PRINTS.

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There are four distinct processes, says Dr. John H. Janeway, by which these can be produced. A large photograph of a strong red tone looks rather pretty, more so than would at first be imagined. First method is by pigment (carbon), printing red chalk or something of like nature being the pigment employed instead of carbon. Second method: A silver print cleared without having been toned. On removing it from the printing frame place it first in water and then in dilute acetic acid, which must be entirely destroyed or removed by carbonate of soda solution, washing or otherwise, before being placed in the hypo bath. Third: By collodion transfer. After a transparency is made and is cleared, treat it with a solution of bichromate of potash, to which has been added a few drops of hydrochloric acid. This causes the image to become a white color, which may be dyed to a very strong scarlet red color by treatment with a weak solution of sulphantimoniate of sodium. Fourth: A saturated solution of nitrate of uranium—about forty-five grains per ounce by solution. This solution is aided by the addition of a few drops of glacial acetic acid. Filter through a sponge placed in the neck of a funnel into a flat dish. Float plates on this for one or two minutes in the dark and when dry expose under a negative from ten to twenty minutes. Develop with a solution of red prussiate of potash (four grains to one ounce of water). Wash and eventually transfer to water containing a trace of nitric acid; to clean up the lights finally after washing, clear in a solution of alum. The print will be a strong red color. Here is another: Prepare paper with a saturated solution of bichromate of ammonia and add a small quantity of grape sugar. When dry print until the surface becomes gray, then wash and develop with nitrate of silver and acetic acid. The result is a beautiful red print. After exposure to light and the application of a greatly diluted solution of hydrosulphite of ammonia it turns dark brown. This is called Litchpau's process positive, because with it positives are obtained from positives.

### BROKEN NEGATIVES.

Now and then a negative will get broken in even the most careful hands, and, by a strange perversity of fate, it is always the best that gets broken.

The break may be of the glass only, and the two or more pieces hang together as if joined by a hinge, in which case restoration is comparatively simple; or it may include both glass and film, and even be varnished, and then restoration is both complicated and unsatisfactory, or at least uncertain.

In the first case passable prints may be made by laying the broken negative face down, and rubbing into the crack a little lampblack; then laying it face up on a plate of glass the same size, and binding the two together round the edges with thin, tough paper. But the prints from a negative so treated will contain a more or less pronounced indication of the crack and need a little touching up; and, therefore, the following method is much better and, although apparently a little complicated, is perfectly simple and certain.

For convenience of operating, the broken negative should be laid face up on a plate of glass the same size or a little larger, placed in a tray and covered with a 1 to 8 solution of the formalin. After about ten minutes in this solution, it should be removed and allowed to dry, and then coated with enamel collodion—plain collodion to which has been added a trace of castor oil. When this is dry the plates should be placed on a perfectly level stand and coated with gelatine, nearly but not quite so thick as it can be poured on. The following formula answers well with the average samples of gelatine:

Gelatine.....	75 parts
Water.. ..	500 "
Glycerine .....	10 "

This should be filtered through flannel or other suitable material, and employed while warm. The plate must be left on the levelling stand till thoroughly dry, and then again coated with the collodion; and when it is dry, and the film cut through with a sharp knife round the edges, the negative, now a stout, flexible film that may be printed from on either side, will be easily stripped from the glass.

In the case of a complete break, the edges should be dulled by a thin, more or less opaque varnish, and the two or more pieces laid in close contact on a piece of glass the same size, and bound together as already suggested. Where, from the nature of the



break, that is impossible, the plate on which they are to be laid should be supported on a levelling stand and warmed with a spirit lamp, so that a few drops of Canada balsam may be easily spread over the whole surface. When that is accomplished, the pieces should be gently and carefully laid down in close contact and kept under sufficient pressure till the balsam sets. Care must be taken not to put on too much balsam, otherwise it would exude between the pieces and be difficult to remove without injuring the film.—  
Am. Am. Photographer.

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### MY METHOD OF MAKING LANTERN SLIDES.

By T. MORLEY BROOK.

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A month ago I was requested to demonstrate before you my method of producing lantern slides, so when I got home I got out my note-book and fountain pen, thinking I could make a really good paper out of the subject; but whilst I was wondering where to begin, I remembered that there were three others to follow me—and far better slide-makers than I could pretend to be—and then, again, I bethought me that possibly they might come before me, and so all the wind would be taken out of my sails, and my grand paper might sound like an old, old story. And, again, as most successful slide-makers work on much the same lines, it would perhaps be better not to write anything very elaborate, so I just jotted down a few stray thoughts, and will leave the demonstration to speak for itself.

The first thought that came was a remark that I once heard or read, that “in the making and exhibition of lantern slides is more promise of practical use and pleasure to the greatest number than in any other photographic process whatever,” a remark with which I entirely agree, for an ordinary print or transparency may give pleasure to a select few, but a good lantern slide may give pleasure to hundreds, or even thousands, at one and the same time.

I have heard it said that there are no pictorial possibilities in lantern slides, that when projected on the screen they are altogether too ephemeral to be classed with prints on paper. Of course they cannot—that I acknowledge—but they form a class of their own, and I confess that many slides that I have seen live in my memory, and always will live, and are a constant source of pleasure to me, such as no print I have ever seen.

The quality of the slide depends in a very great measure on the excellence or otherwise of the negative, both technically and artistically, from which it is made. It is difficult, if not impossible,

to make a good slide from a poor negative. What is the best kind of negative for this purpose? I should say, from my own experience, one that will give a good print in cold bath platinotype will give equally good lantern slides—that is to say, one that is correctly exposed and developed, so as not to give excess of density in any one spot, and is at the same time fairly sharp and full of half-tones and detail.

At the present time—owing, no doubt, to the extensive use of gelatino-chloride papers—there is a tendency to produce rather thin, weak negatives; and though that kind of negative is not the best for lantern-slide work, a great deal may be done by altering the exposure and developer.

For thin, fully-exposed negatives, cutting down the exposure somewhat and using a strongish developer will help to produce a crisp result; or from a somewhat hard negative a better result will be obtained if a full exposure nearer to the light is given to the plate and a little weaker developer is used.

I cannot tell you anything new in slide-making; in fact, I do not think there is anything new to be told. My method is, I believe, almost identical to that of many of our friends; but, as I have never had the pleasure of seeing anyone else make a lantern-slide, perhaps my method may be different in some minor points.

I may say, that although I have been fairly successful, I am not a very prolific producer of lantern slides, for the reason that almost all my slides are produced by reduction in the camera by daylight, and I have very little spare time whilst that light is available; but I must say that I firmly believe that by reduction we get better results than by contact printing, for this reason: in all negatives there is always a certain amount of granularity, more especially in negatives produced on very rapid plates; so, of course, this granularity must, of necessity, be transferred to the lantern plate when printed by contact; whereas, by reducing the size of the picture, you also reduce the size of the grain in the negative.

I have brought my very primitive, home-made apparatus with me, to show you that you need not spend much money in that direction. It consists, as you see, of a wooden box, with the ends taken out, fixed on one end of a board, and at the other end is an old quarter-plate camera. It is attached to the board by an ordinary mill-headed screw, which moves backward or forward in a slit cut for the purpose in the board; so you see that if you have time while there is daylight to make your slides, the expense need not be great. Lantern plates are cheap, the apparatus is cheap, and the chemicals amount to a mere trifle.

I occasionally make slides by contact, as it does sometimes happen that a small portion of a negative is better than the whole, and for this process I find a special printing frame is advisable.



Photo by C. M. HAYES,  
Detroit, Mich.

LOOK PLEASANT.

The one I use is made by Middlemiss, and cost 3s. It is well worth the money, as by its use I can most accurately centre the part I wish to reproduce, and have no fear of the light creeping in round the edges of the plate, and so causing fog, as it will do when an ordinary printing frame is used ; and another advantage I find is that there is no danger of scratching and so utterly ruining what may be a very valuable negative.

Having selected the negative I wish to print from, I next consider whether the slide is to be made by contact or reduction. If I wish to include all that is on the negative, there is no alternative, it must be made by reduction, whether the negative be a quarter-plate or a 12 by 10 one ; but if only a small portion of the subject is wanted, then I may decide on making it by contact. Supposing that I decide on the latter, I carefully spot out any pinholes there may be with Indian ink, and when that is dry, as carefully dust with a flat camel's hair brush, and then adjust it in the frame ; and after dusting the lantern plate also, just drop it in position, turn up the gas, and expose at a distance of twelve inches from the light for from thirty seconds to three or four minutes, according to the density or color of the negative. I then proceed to develop, having previously made up the following solutions :

1.	
Hydroquinone .....	160 grs.
Sulphite soda .....	4 ozs.
Citric acid .....	80 grs.
Bromide potash .....	40 grs.
Water to .....	20 ozs.

2.	
Hydrate soda .....	190 grs.
Water to .....	30 ozs.

3.	
Ammonium carb .....	1 oz.
Water to .....	10 ozs.

4.	
Potassium bromide .....	1 oz.
Water to .....	10 ozs.

If I wish the slide to be brown I now take of

No. 1 .....	½ oz.
“ 2 .....	½ oz.
“ 3 .....	30 mms.
“ 4 .....	30 mms.
Water to .....	2 ozs.

But to produce black tones I only take of

No. 1 .....	½ oz.
“ 2 .....	½ oz.
Water to .....	2 ozs.

I now see that my dishes, etc., are perfectly clean, and then take out the lantern plate and again carefully dust it, place it in the developing dish and pour over it the solution, seeing that every portion of the plate is covered by it as quickly as possible, and rock the dish gently.

And now that most difficult problem faces me, when to stop development, and I am sorry to say all I know about it is that I stop when I think the density is about right (no infallible rule can be laid down); but I would advise all who are without experience to beg, borrow, buy, or st—hem! at least, by some means get a really good technical slide and keep it by them for comparison. I generally develop until it appears to be a trifle more dense by transmitted light than the finished slide ought to be; in fact I develop until the high lights just begin to show signs of veiling over, as it loses somewhat in the fixing bath. If the high lights veil over before density be obtained, it is a sure sign of over-exposure. When the critical time has arrived I give it a good rinse in water before placing it in the usual hypo bath, as, if this be not done, stains are very liable to result. The slides remain in the fixing bath (4 ozs. or 6 ozs. hypo to 20 ozs. water) for at least ten to fifteen minutes, and I then wash in a syphon tank in constantly running water for about an hour, and finish off with a good swill under the tap. At the risk of appearing wearisome, I would emphatically repeat that to be sure of getting permanent results the fixing and washing must be thoroughly well done.—Read before the Manchester Photographic Society.

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### EXPERT TESTIMONY.

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Within comparatively recent years there has arisen in our judicial system an apparent need for evidence bearing upon scientific questions requiring a knowledge not ordinarily possessed by the lay witness, and which is gradually being more and more supplied by the so-called "expert." He is paid to testify on behalf of one side or the other, and not infrequently is retained (says the *Electrical World*) to appear as often as cases arise in which his opinions are desired. That the most flagrant abuses in expert testimony have made themselves most prominent in criminal cases is perhaps to be attributed merely to the notoriety which these cases have attained. Whether it be the fault of our patent system or of our judicial system, the expert has become a prominent factor in all recent cases pertaining to patent litigation. It is not uncommon to find several experts on one side arrayed against perhaps as many more on the other, and, if each side has

been able to retain men of practically equal prominence, that side having the greater number frequently produces no little effect in influencing the judicial decision. That men devoted to the interest of science should be willing to sell their opinions indiscriminately to either contending party, often being obliged to so modify their views as to make them harmonize with the unscientific but legal opinions of the counsel by whom they are employed, has become an evil which has justly brought forth criticism, must be acknowledged, and, unless modified or changed in some form, calls for future condemnation also.

In a contribution to the October number of the *Atlantic Monthly*, Professor John Trowbridge calls attention to the imperilled dignity of science and the law if the practice of indiscriminate scientific testifying is to continue. He points out the difficulty in which a Judge is placed when required to carefully weigh statements on scientific points; his attitude toward the scientific expert and the little regard he frequently holds for his opinions. He is therefore tempted to entirely ignore expert testimony, and rely upon his own common sense for framing his decision. The consequence has been that Judges may be classified under several headings, a classification based simply upon their legal decisions in the past, some being known as patent breakers and others the most strenuous advocates of broad patent claims. It is for this reason that suits are carried from court to court with the ultimate hope that a former decision will be reversed.

The result of this method has been well illustrated and can be vouched for by several of the larger manufacturing companies who have invested millions in this way during the past few years, with no immediate prospects of any material return on the investment. The chief benefit has been derived by patent lawyers and patent experts, while the stockholder has been forced to respond with the shekels. Professor Trowbridge does not, however, raise his criticisms without suggesting a remedy. It is to the effect that a Judge may call to his assistance any well-known professor of science not retained by the parties in dispute. The State should provide, and the Judge should appeal to the State for, such assistance, so that he might be aided in rendering a decision based upon scientific facts.

By this method both the standing of the Bench and that of the professor would "gain in dignity, and the pursuit of truth will again be considered one of the chief characteristics of a scientific life." Whether the method suggested by Professor Trowbridge could be put in practice, and would be effective even if adopted, can only be determined by an actual trial. It is, however, well to call attention to these points, so that those who are tempted,

merely from a pecuniary standpoint, to offer evidence on scientific questions, when such evidence would not be in entire accord with their best belief, may stop to consider the effective gain to be derived by so modifying their convictions as to make them harmonize with those of the contending counsel. It is not improbable that the day of the expert will soon be waning, and that the costly litigations of the past will not be duplicated in the future.—British Journal of Photography.

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### THE ROYAL PHOTOGRAPHIC SOCIETY'S PROGRESS MEDAL.

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The Council of the Society (says the Society's Journal) have made the following regulations concerning the award of the progress medal :

1. The Council of the Royal Photographic Society shall consider the award of one progress medal annually.

2. The progress medal of the Society may be awarded in recognition of any invention, research, or other publication which shall in the opinion of the Council have resulted in any important advance in the scientific or artistic development of photography.

3. The award shall be conducted in the following manner :

(a) At the November Council meeting the names of nominees shall be duly proposed and seconded ; the nominators handing in, in writing, a statement of the special work for consideration.

(b) At the December Council meeting the work of the nominees as already stated shall be discussed, and their names balloted out until only one remains.

(c) At their January meeting the Council shall, without discussion, vote openly as to whether the medal shall be awarded. Votes received in writing from absent members are to be accepted. The medal shall not be awarded unless two-thirds or a larger proportion of the recorded votes are in favor of its bestowal.

4. The above with the names of past recipients of the medal shall be published in the October number of the Journal in each year.

The medals have been awarded as follows: 1878, Captain W. de W. Abney, R.E. ; 1881, W. Willis ; 1882, L. Warnerke ; 1883, W. B. Woodbury ; 1884, Dr. J. M. Eder ; 1890, Captain W. de W. Abney, C.B., R.E., F.R.S. ; 1891, Colonel J. Waterhouse, R.E., I.S.C. ; 1895, P. H. Emerson, B.A., M.B. ; 1896, T. R. Dallmeyer, F.R.A.S.

THE  
CANADIAN PHOTOGRAPHIC JOURNAL

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TORONTO, JANUARY, 1897.

NO. I.

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EDITORIAL.

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It has been our constant aim in publishing this journal to give our readers the best of everything, and we are pleased to announce that arrangements we have made will insure a better journal for 1897 than ever before.

With this issue we have made some radical changes in the appearance of the journal, both inside and out, and have increased the size by eight pages. The great appreciation shown our efforts to make the C. P. J. the best of its kind has made the publishing of it a pleasure to us, and we trust that in its new form we shall be favored with a continuance of that kind support that has been so fully given us in the past.

We sincerely wish our readers a very happy and prosperous new year.

That the coming year will be prosperous, at least to those who are willing to be "up and doing," is admitted by even our chronic grumblers. At least the prospects are all for much better times than for several years past. So let us write on the new pages turned over for 1897 the determination to brace up, to do better work, to keep our place of business clean and inviting, and to take advantage of all legitimate means of increasing business.



## NOTES FROM A TRAVELLER.

DAN R. PRIDHAM, Amherst, is a hustler. By strict attention to business he satisfies his patrons, and the people of Amherst are well pleased with his work.

MR. ROBSON (Lewis Rice & Co.), Windsor, N.S., is "gittin thar." He has jumped out of conventional lines, and is doing a class of work which is a credit to him.

A. R. COGSWELL & Co.'s electric studio, Halifax, is one of the attractions of that city, and is well patronized. Mr. Cogswell is an expert electrician and photographer. He is assisted by Mr. Wheeler, a well-known Halifax photographer.

PERCY CRANDALL, Moncton, is doing a large and lucrative trade in the Railroad City. Mr. Crandall is a painstaking artist; his work is second to none. A frequent and observant visitor at conventions, he has steadily advanced to the position he occupies to-day.

GAUVIN AND GENTZEL, Halifax, are making some beautiful platinotype work from cabinets to 20 x 24. Their studio in Spring Garden Road is replete with the latest appurtenances photographically, and their profitable and increasing trade explains what it means to "keep up with the procession."

LEWIS RICE has lately purchased a studio in Amherst. With his accustomed energy and enterprise he will undoubtedly make it a paying investment. With studios in Windsor, Wolfville, Truro, Amherst, etc., together with a photographic car, he is kept busy. The main studio, Truro, is first-class, being superintended by Mr. Rice himself. He has been before the people of Nova Scotia for a number of years and is well and favorably known.

THOS. COOK, New Glasgow, N.S., is a good illustration of the saying that some men never grow old in photography. The best material is used in his studio. Up to date accessories, and his amiable wife attending the reception room, explains his complete success, photographically and financially.

RUMOR has it that Colonel George Hallett, Sussex, N. B., will shortly enter that state of which man sometimes repenteth. The name of the young lady could not be learned, but Bro. Fairweather and the boys say 'tis truth, for the old haunts know the Colonel no more. The Colonel, when seen last, would neither deny nor affirm.

ONE of the prettiest modern studios is that recently built by R. S. Pridham, Sackville, N.B. It is situated on the principal street, is a "ground floor," and tastefully furnished and decorated throughout. Mr. Pridham was formerly of Amherst, N.S., but at the earnest and oft repeated solicitations of the citizens of Sackville he finally located there. Mr. Pridham is a first-class photographer and a gentleman.

CHARLES A. MACLENNAN, Truro, N.S., when seen last reported business A1. Mr. MacLennan, besides being a first-class photographer, is a first-class chemist, making his own dry plates and demonstrating by chemical analysis many valuable points in photography, etc. Mr. MacLennan is one of Nova Scotia's oldest photographers, though not by any means an old man. His reminiscences of bygone days are very interesting.

RUDOLF AND WALDREN, New Glasgow and Antigonish, although but a few months in business in that city, are "doing a nice trade; both popular young men and good photographers. They are deserving of their success. Mr. Waldren was formerly of Kingston, Ont. Mr. Rudolf has been somewhat of a globe trotter half

his life. He was in Havana in the last Cuban rebellion when the Spaniards lined their unfortunate prisoners up in the public square of that city and shot them down, and were only stopped finally by the British war ships then stationed there.



## REVIEWS.

**Photographic Mosaics.**—An annual record of photographic progress, edited and published by EDWARD L. WILSON, New York.

One of the best annuals for 1897 is the thirty-third edition of *Mosaics*, a publication that is known and loved by all interested in our art. This year Mr. Wilson seems to have taken more than usual care in the selection of pictures reproduced, and the type matter, making a volume that should be owned and read by every true worker.

**The Ferrotyper's Guide**, by an active FERROTYPHER. New York: The Scovill & Adams Co. Price, 75 cents.

The purpose of this work is to give plain and precise directions for the production of ferrotypes, and this purpose is well carried out. He who wishes to thoroughly learn this department of photography will find in this manual the best of teachers. The fact that it has run through seventeen editions speaks its worth, and is the best testimonial as to its practical value.

**The American Annual of Photography and Photographic Times Almanac**, edited by WALTER L. WOODBURY. The Scovill & Adams Company of New York, publishers. Cloth, \$1.25; paper 75 cents.

Mr. Woodbury certainly deserves great praise for the excellent quality of the '97 Annual. It is clearly ahead

of any previous issue, which is about the best praise we can give it. Nearly three hundred illustrations are given, all of which have real merit. The reading matter is of a very interesting nature, the contributors having evidently been selected with the idea of making the Annual this year of actual benefit to photographers, both professional and amateur. Considering the elegant appearance and the exceedingly great instructive value of this volume, we do not wonder at the fact that the first issue of 12,000 copies is already nearly exhausted.

Mr. Henry Troth, one of the most successful amateur photographers in the United States, has written a series of practical articles for **The Ladies' Home Journal**, which will appear in the January, February, March and April issues. These articles will treat of the necessary apparatus, the taking of the picture—developing, printing and mounting—and the photographing of wild flowers. Each article will be profusely illustrated from photographs taken by the author, who is an enthusiastic lover of nature as well as a most skilful and conscientious amateur photographer. Mr. Troth's articles on "Amateur Photography" will be supplemented by one entitled "What a Woman Can Do With a Camera," by Miss Katharine Johnson, of Washington, D.C., whose skill as a photographer is phenomenal, as will be seen in the reproductions of her photographs, pictures she has taken from time to time with her camera, and which will appear for the first time in the pages of *The Ladies' Home Journal*.

**The Ladies' Home Journal for 1897.**—An even excellence makes the good things which *The Ladies' Home Journal* promises unusually interesting and strong. The list is long and sturdy. One series of papers alone would sell the magazine: that is, the three White House articles which ex-President Harrison is to write. No man has ever done what General Harrison will do in these

articles : show us what "A Day With the President at His Desk" means in one article ; in another tell of "The Social Life of the President," and in a third article describe "Upstairs Life in the White House." Each of the articles will be profusely illustrated. Another series equally fascinating is the one called "Great Personal Events," in which some of the greatest enthusiasms which have occurred in America will be revived: those wonderful times when Louis Kossuth rode up Broadway ; when the young Prince of Wales was here ; when Jenny Lind sang in Castle Garden ; when Henry Ward Beecher electrified his congregation by selling slaves in his pulpit ; when Grant went round the world ; when Henry Clay bade farewell to the Senate ; when John Wesley preached in Georgia, of which so few know. All these memorable events and others will be vividly recalled, told more graphically than ever before, and illustrated with pictures which have occupied twelve artists for over a year. A third series is unique and valuable from the fact that it will give women scores of ideas for their homes. It will reveal what there is "Inside of a Hundred American Homes," and carefully reproduce pictures of one hundred completely-furnished rooms in homes in this country—from Maine to California—where taste has gone farther than money. Two new department writers have also been exclusively engaged by the Journal: Mrs. S. T. Rorer, who will hereafter have entire charge of the domestic department and give a series of cooking lessons, and Dwight L. Moody, the famous evangelist, who is to put the result of his life study of the Bible in a department entitled, "Mr. Moody's Bible Class." The artist, Charles Dana Gibson, who created the Gibson girl, will present six full-page pictures showing "The

People of Dickens," while Alice Barber Stephens will alternate with Mr. Gibson and present her idea of "Six Types of American Womanhood," showing the American woman in society, in religion, in business, in summer, in the home and as a mother. Mary E. Wilkins, the New England writer, will revive the old quilting-party, the ancient singing-school, and the apple-paring bee in "The Pleasures of Our Neighborhood." Sir Henry Irving is to tell how to study, read and present "Shakespeare in Small Communities." Tosti, the song writer, will give his first piano composition. Sir Arthur Sullivan is to present the first true and correct copy of "The Lost Chord" ever printed in America. Reginald DeKoven, John Philip Sousa and Jakobowski (who wrote "Erminie") have each written a waltz, while Ira D. Sankey has composed a hymn which he considers greater than his famous "Ninety and Nine." Ian Maclaren will have a story, while Herbert D. Ward's humorous serial, "The Burglar Who Moved Paradise," will run through the year, followed by Hamlin Garland's new novelette, "The Spirit of Sweetwater." Jenny Lind's daughter is to sketch "My Mother as I Recall Her," while George W. Smalley is to show "The Personal Side of Bismarck" and "The Personal Side of the Prince of Wales" in two lavishly illustrated articles. Altogether, no magazine gives a list of attractions so interesting and promising as does The Ladies' Home Journal, and certainly no periodical does it, as does the Journal, for only one dollar per year. If it has become a fad, as it seems, for every girl and woman to take this magazine, it is an excellent one, and, unlike many other fads, a sensible one. The Journal is published by The Curtis Publishing Company, of Philadelphia.

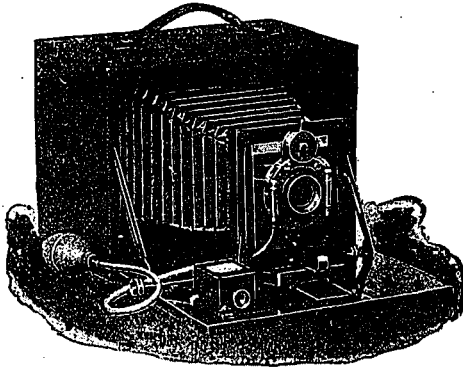


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### CLUB NOTES.

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The St. John, N.B., Camera Club has arranged a fine programme for the winter and it will no doubt be the means of creating an additional interest in the club. The programme is as follows: 1896—December 7th, Reception and smoker, open to members and friends; 1897—January 11th, Canadian Lantern Slide Interchange, set from the Toronto Camera Club; January 25th, Demonstration night; February 8th, Canadian Lantern Slide Interchange, set from the Montreal Camera Club; February 22nd, Canadian Lantern Slide Interchange, set from the Halifax Camera Club; March 8th, Canadian Lantern Slide Interchange, set from the Hamilton Camera Club; March 22nd, Paper, "Photography, Past and Present," J. R. Woodburn; March 29th, Demonstration night; April 12th, Smoking concert; April 26th, Competition night.

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### CLIPPINGS.

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**To Mount Pictures on Linen.**—Coat one side of the linen with a mixture of india-rubber and gutta percha. Lay the picture face downwards and put the coated side of the linen on to it, and then iron the back of the linen with a moderately hot iron. This suffices to fix them together. To remove the picture from the linen it is necessary only to run over the back with a hot iron. As the mixture is water-proof it prevents the picture from damp, particularly if it be rubbed over with a little stearin. —Moniteur.



**Printing Names on Photographs.**—The following is a very good method of printing titles or names in black upon prints: The name or other matter to be printed on the photograph is set up in type and printed on cardboard; from this make an exposure on a transparency plate, developing it strongly. After the print has been made from the regular printing negative it is placed under the dense transparency of the regular negative and the name printed in. The only precaution necessary is to time the transparency negative properly and develop strongly so as to get good contrast. Photographers will find this a much easier and quicker method than the old one of printing on tissue paper and fastening same to the negative by means of varnish; moreover, the result is black instead of white, usually much more pleasing."