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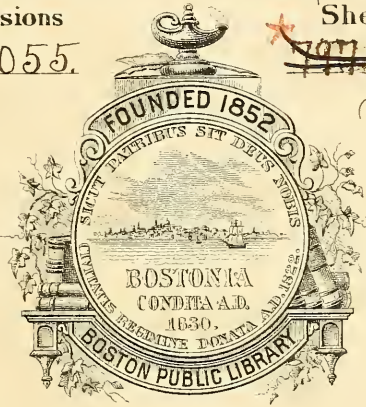
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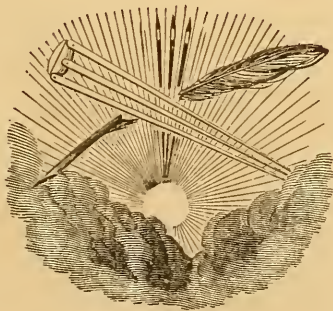
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DEVOTED TO PHOTOGRAPHY.

EDITED BY EDWARD L. WILSON.

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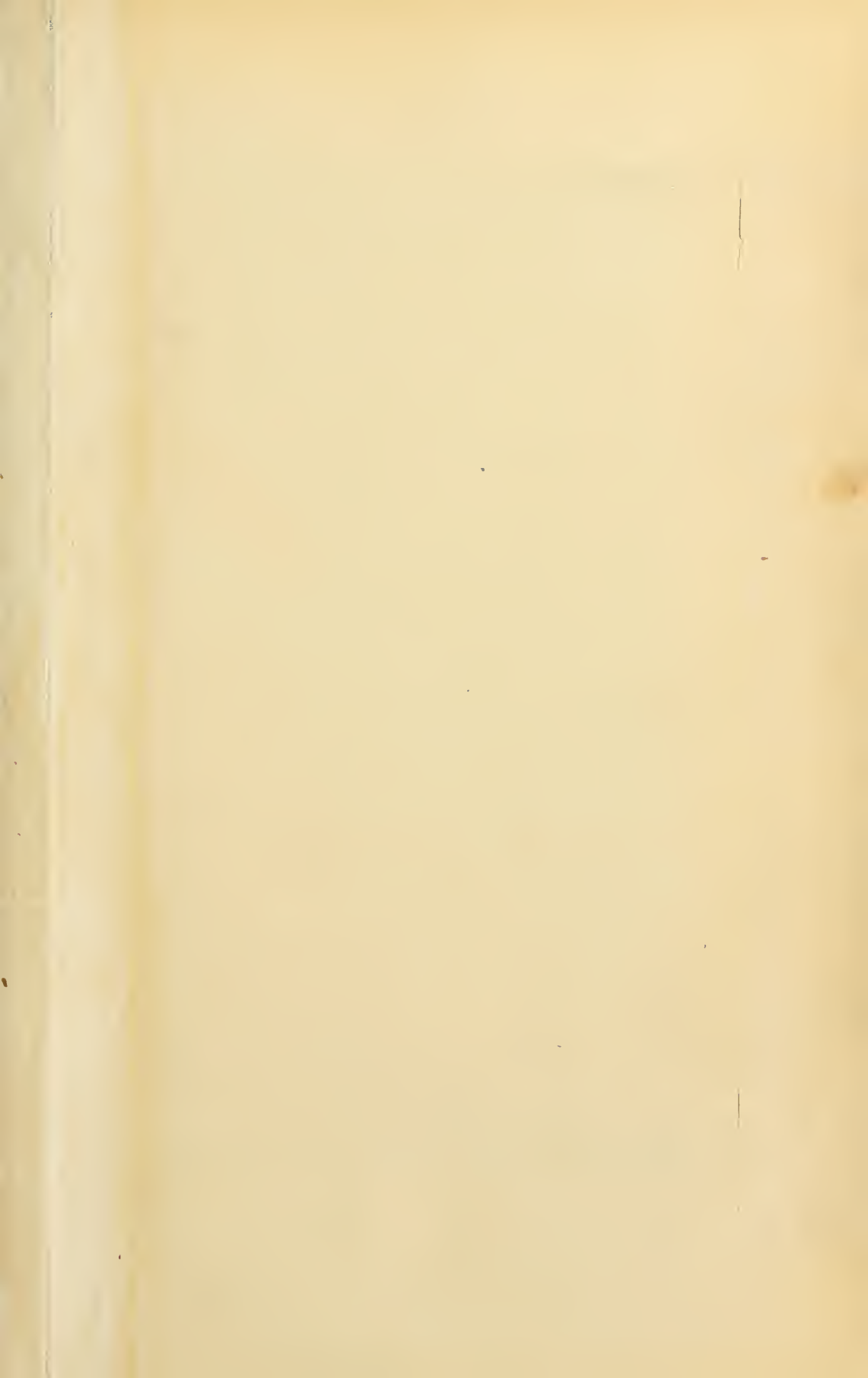
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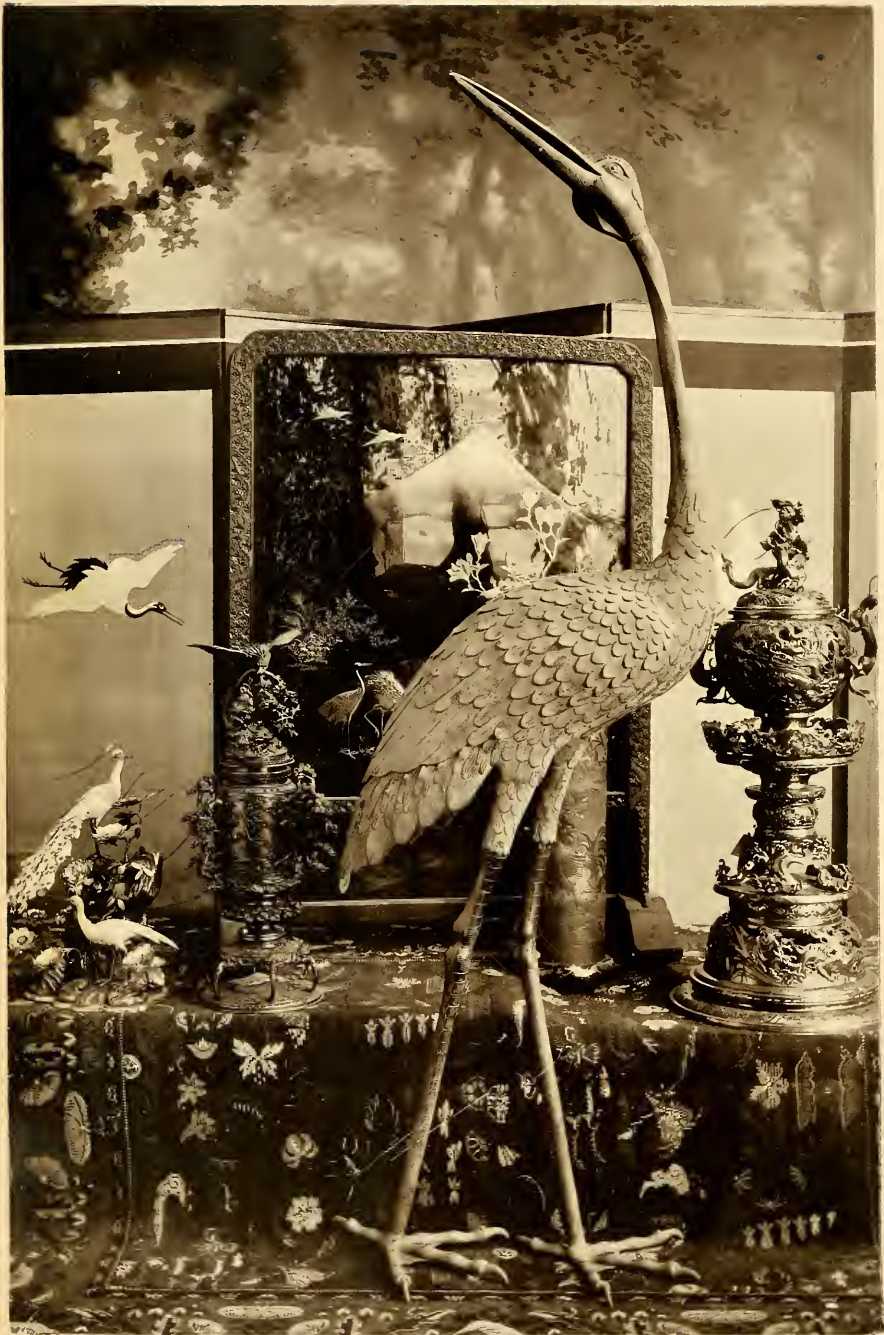
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- January.*—Horticultural Grounds, Fairmount Park, Philadelphia. By EDWARD L. WILSON, Philadelphia.
- February.*—Japanese Curios. Heliograph print. By JOHN CARBUTT, Philadelphia.
- March.*—Cabinet Portrait. By R. E. ATKINSON, Troy, N. Y.
- April.*—Prize Portrait Etching. By GILBERT & BACON, Philadelphia.
- May.*—Portrait of a Child. By JAMES LANDY, Cincinnati, O.
- June.*—Cabinet Portrait. By MORA, New York.
- July.*—"Little Ladies." By G. M. ELTON, Palmyra, N. Y.
- August.*—Cabinet Portrait. By E. D. ROGERS, Hamilton, O.
- September.*—Cabinet Portrait. By E. D. ORMSBY, San Francisco, Cal.
- October.*—"The Village Photographer." From a painting by ANTON SEITZ, Munich.
- November.*—"The Wash House." From a Plaque, by L. SALON.
- December.*—"Accessories Thrown In." By SAMUEL V. ALLEN, Freeport, Ills.

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OUR SIXTEENTH YEAR.

WE are upon it. And although we are grown gray in the service, we began young, and are, therefore, still in the humor of going on with one more year, at least, of hard experience.

The pleasures and delights of editorial labor usually compensate those who put some heart in their work, for all the drawbacks; and no one could advocate a more fascinating branch of the world's work than photography. We should enjoy it with more genuine artistic fervor and zeal could we separate our labor from our necessities. As we cannot, we must ask our readers to bear with us until we can, and we promise them that although we do have to win our daily bread by these duties, we shall ever consider it our duty to them to apprise them of all attempted wrongs against them, and supply them with every good and right thing that comes up for their help, ignoring our own personal welfare to accomplish the working out of such a policy.

American photographers (bless them, and yet shame be upon them) have shown themselves, for the few years last past, so very willing to be gulled, that a regular "ring," including dealers and photographers, has been formed, to press upon them antiquated and useless, or otherwise valueless processes. We have taken it upon us to oppose this ring. Much personal abuse has been thus

brought down upon us. For this we care not. We only want to know if our course is doing good, and is approved, and we go on.

Only this week a duo-victim of this conspiracy called to see us, and when the *third* bait was offered him, he first came and asked advice before biting. Advice is always gladly given and taken.

A few vigorous thrusts will drive this element from us, as it was done once before. Shall we do it together? *We* are ready; and besides wishing you a happy new year, offer you many other good things, for a list of which see circular sent you, and the *prospectus for our sixteenth year.*

HOW TO BECOME A COLLOGRAPHIC PRINTER.

IN concluding an article on the preparation and use of a neutral silver bath which you were so kind as to lay before the readers of your last year's *Mosaics*, I promised to give you one on lichtdruck for your next one. Having had one year more experience in this, here in America, comparatively unknown process, I would especially urge my young friends to invest a few dollars in the few necessary implements to practice, and to perfect themselves in this new style of picture making.

There are now over twenty-five lichtdruck

establishments in Germany, several in England, Russia, and France, and consequently many persons make their living thereby; while here in America, of the hundreds of applicants for work in a photographic gallery, I have not found a single one yet who knew anything about it. Now, we must not stay behind, and if I should succeed in inducing, through this article, some of our young talent to take up the fascinating lichtdruck business, thereby bettering their condition, I will feel amply repaid for the little trouble it gives me to write these lines.

Well, what is lichtdruck? Lichtdruck is a German name, adopted in England also for collographic printing, which means printing pictures from a gelatin film on a press similar to a lithographic press, or, as in the Edwards process (heliotype), in a press with vertical pressure, especially constructed for this kind of work. There are other names for it, viz., heliograph and Albertype. The French call it phototypie, and recently a new name was given to the child, viz., "Artotype," a name which is in no way descriptive of the process, which is in fact none other than the process given to the world by Prof. Husnik, of Prague (see his work on "Lichtdruck"), and published in a good many periodicals, among others in the January number of Anthony's *Bulletin* for the year 1876, to which I would refer my friends for a very clear and intelligible description of it. With these works in hand, and the implements which I shall presently enumerate, it will not even be necessary to have the process demonstrated *ad oculos*, though I admit, and even advise, to witness the working of it, when it can be had at not too great a cost of time and money.

Now, as to the apparatus. The first thing is the press. A common lithographic press, price according to size, etc., \$100 to \$150, or more, may be used, or one made expressly, "pour la phototypie," by Mons. Poirier, in Paris, or a Biedermann's autographic press, now made by his successor, Mr. Murat, St. Louis, Mo. I am using the latter kind, and though my recommending a St. Louis make may be misconstrued, I cannot help saying that for convenience, efficacy, and cheapness (a size to print on paper 11 x 14 inches for \$60), it is as good as any. I intended

to send for a French press, but after giving this one a fair trial, and after having the maker to make a slight alteration as my experience with it suggested, I changed my mind, and am using it now to my entire satisfaction.

Next should be provided two rollers, one made of leather and the other of composition. The former I bought of Mr. Robert Meyer, New York city; the latter I got here in St. Louis. The price of the two is about \$16.

Then a marble slab, or a piece of heavy plate glass, to roll the ink on; then some lithographic printers' ink, costing, if I remember right, about \$2 a pound; and also some lithographic varnish, spirits of turpentine, a little oxgall, a couple of fine sponges, and a roller covered with old linen, for drying the plate after sponging.

The drying-box I constructed myself out of a good sized dry-goods box. It is large enough to dry four plates at one time. The box cost me fifty cents; the twelve screws for supporting the plates cost seventy-five cents.

The next thing is the printing-frame, which is very similar to an ordinary box printing-frame, only in place of the springs eight wooden wedges are used. All the balance of the implements, such as funnels, bottles, etc., can be found in any photographic gallery. Almost any kind of paper can be used for printing on, though the heavier kinds give less trouble in printing, as very thin paper will have to be dampened before printing, otherwise it will expand too quickly while pulling it through the press.

To protect the margins of the pictures I now use very thin sheet-brass, and find it to work a great deal better than paper which I formerly used.

The last thing to procure is some plate glass cut, for convenience sake, to one size, and what not everybody has or can get now, viz., old daguerreotype plates. A lot left on hand from the days of daguerreotyping have yet come into good use, though I think smooth, even copper plates would answer as well. A slight bending of the plate does not hurt, as the Husnik process does not require levelling of the plates in the drying-box.

In addition to the ordinary chemicals used in a photographic establishment, some bichromate of ammonium and Magdeburg gelatin are required. The bichromate of ammonium I buy of Cooper in New York, the gelatin here in St. Louis at eighty-five cents per pound. I have discarded the use of Russian isinglass, being very expensive, and, I think, not any better than the cheaper gelatin.

It was not my intention to describe the *modus operandi* of collographic printing here, time and space not permitting it. But I say any photographer who will study carefully Husnik's work on "Lichtdruck," or the extracts from it found at different times in our periodicals, and endowed with a good *deal of perseverance*, and say a hundred dollars cash to spare, can become, in the course of time, an expert in lichtdruck printing, *the process of the future!*

I should be sorry if experimenters should feel discouraged, and give up this beautiful process, for not attaining the hoped-for success after one week's practice, deluded by the pretentious promises of certain "process peddlers."

THE THEORY OF PHOTOGRAPHY.

BY HENRY M. M'INTIRE, M.E.

PHOTOGRAPHY, like many other things, may be viewed from many standpoints. It may be viewed artistically, theoretically, practically, or historically. Each and all of these ways would, doubtless, be of interest, but let us look at it theoretically; let us glance at the theory of photography. Chemistry has taken unto itself optics, and from these two has sprung another science—photography—combining the characteristics of its progenitors. We have two ways to treat of the theory of photography, then—chemical and physical. Let us take the former. But while chemistry may boast, while physics may boast, of having endowed photography with many things, it cannot be denied that she has taken to herself many things that neither chemistry nor physics can boast. Springing thus from an earth of exact mathematical science, photography has grown upward until she spreads her branches in the heavens of art. It would probably be a

pleasant task to trace the entire growth of the theory up to its present state, beginning with the knowledge of the fact that chloride of silver darkens in the light; smiling, almost, at the many efforts to utilize this knowledge; seeing it finally utilized permanently; applauding the discovery of developing an invisible image; rejoicing in the application of the collodion film. Thus we might run on, until we arrived with the theory of photography in its present state of perfection. Although this might be interesting, it is evidently out of time and place here. It certainly would be trespassing on the domains of history. So we will consider photography to be just what it is, with no reference to what it has been, and will see, first, if we cannot explain what takes place in the present photographic process, from a chemical point of view. If this can be accomplished without delay, "without let or hindrance," we will have ample opportunity to turn our attention to the rest of the theory—the optical part. It is a matter worthy of notice, and may be mentioned here, that when photography was in its infancy it was nurtured by scientific men, but as soon as it became practical it was at once taken by practical men, and deserted by the others. It is worthy of remark how little scientific investigation and work has been done upon photography, or rather, how few scientific men have sought to fathom its depths. It is also noticeable how little use has been made of it in the scientific world. But this day is fast passing away. More interest is being daily taken in it by scientists, so that photochemistry will rank side by side with its sister spectrum analysis in a short time.

From the standpoint of photography one may stand and look down through the corridors of photography and optics, covering the whole field of each, but such is not the intention of these articles. It is intended to glance at chemistry only so far as, intersecting optics, it lies in the field of photography, and the like of optics. Photography will be considered only as it exists at the present time, without any reference to its past. Light shall first be treated of as a chemical agent, and its various actions glanced at. The theory shall commence

with the plate in the dark-room, accompany it through the bath into the dark-slide, and consequently the camera, back to the dark-room, under the developer, under the intensifier, and in the fixing solution; and then it will leave the negative and turn to the positive print, commencing with the albumenized paper; watch it floating in the positive bath, and in the fuming-box; go with it beneath the negative, in the toning-bath, and in the fixing. A subject interesting and worthy of study.

(To be continued.)

ON THE FADING OF PHOTOGRAPHS AND ITS REMEDY.*

BY A. HESLER.

A SHORT time ago, I was looking over a lot of my old photographs that were printed eighteen and twenty years ago; some were in albums, others laid away in bundles among clothing, and in trunks and drawers, and was surprised at their remarkable preservation, the deep blacks and half-tones being as clear and perfect as when first made; whereas some of a quite recent date showed unmistakable signs of yellow fading. Upon investigating the matter, I find that the old perfect prints were toned with platinum and gold (two parts platinum to one of gold), and cleared in fresh hypo, made fresh each day. The washing was done as follows: The rose of a common sprinkling-pot was attached to the hydrant-faucet that was placed over the sink; under this a large sheet of double-thick glass was placed, on which the sheets of prints were placed (at that time we did not trim cards or cabinet cards until after washing and drying), the water let on, which fell in a gentle shower over the entire surface. While this was going on, a broad bristle brush was then passed gently over each side of the print, which was then passed to a tray of clean water. Thus in twenty minutes to half an hour, twenty to forty sheets of prints were passed through four to six changes of water, and ready to hang up and dry. I believe this, for all prints larger than cards, to be the most thorough and rapid way of

* Written for Mosaics, but received too late.

washing prints; only for the brush I would substitute a roller similar to that used by the printers for inking type (unless hot water is used, the same composition used by printers would answer very well); or at the rubber stores, a piece of small, thick, rubber hose could be got, through which a hard, round stick could be crowded, and a frame attached. This can be handled in one hand while the prints are changed with the other. Now while this thorough and short washing had its good effect, I believe the permanence of the prints more due to the platinum toning than anything else. I used it at the time because I thought it improved the tones of the pictures, but am now satisfied it has the good effect of preventing fading. At that time the chloride of platinum was not kept by the dealers, and I had to make it for my own use, and supplied it to a few, who thought it of advantage to use it. The metal dissolves in *aqua regia*, the same as gold, but much slower, and requires some considerable heat to dissolve, but otherwise treat the same as gold.

UNDERTIMED.

BY I. B. WEBSTER.

UNDERTIMED photographs are to be seen everywhere, and from all places, nearly. It seems to be a common disease among photographers; *stopping off the light just a little too soon*, thereby spoiling what would have been a good production. Every photographer should examine every photograph he comes across, his own work as well as the work of others, with an eye of inquiry; if it is good, find the cause of its being good; if "better," why it is better; if "best," there is certainly a reason for its being so, and an examination by an experienced eye will soon determine wherein it is better, and why it is better. Short exposures in most cases produce startling effects, especially where the head is taken comparatively large upon the plate, and by some people admired. As a general thing, however, there is a lack of detail which nearly ruins the work for a likeness; it is on the order of a sketch, and while the likeness may be quickly recognized, there is such a lack of

detail in it, that it is worthless as a general portrait; a little more time given the exposure would have produced a first-class photograph. On the other hand, too long an exposure produces a flat, low tone, worthless print. Too much or too little are equally bad, but the failure in the latter is much more frequent than in the former.

The best work has been fully exposed; the introduction of so much lightning has produced a corresponding amount of thunder, and yet the photographer is "not happy." Why? Just because he cannot annihilate time altogether, so as to pick negatives out of his camera-box, like berries off the bush, without reference to time. A great many results show that no respect whatever was paid to time. Just turn a new leaf over now, and forget all about this lightning business, and hereafter give your exposures full time. What matter if you require a few seconds longer than some fellow-photographer said he needed; that's nothing. Perhaps he did not time to a nicety, while you did; maybe he has a quicker light than you, or a "short-focus" tube, or, what is probably the most likely to be the case, he keeps his bath, collodion, developer, and in fact all the "working gear" of his dark-room, in better condition than you do. If this last suggestion is true, you need not call in the aid of the "process-vender" to sell you bottled lightning! Subscribe for the *Philadelphia Photographer*, and buy the *Mosaics*, and you will then have the remedy in hand, and if you apply yourself properly, you can shorten your sittings, and make better work than the great "vender's" process can do; besides, you will have something you can depend upon at all times, so that when you take a prepared plate from the dark-room, you are absolutely certain of getting a good chemical result. Not so with "bottled lightning;" good one time, bad two or three times, and then good one time, and then bad all day. This we do not want. *Let vendors and their goods alone*; get a good process of your own, study it, and learn all of its peculiar habits, so as to know what remedies to prepare; have all of these remedies at hand, so as to administer them at the proper time, and when you have learned just how much time to give the exposure,

do not spoil all by stopping off the light too soon.

THE STÉRÉOGRAPHE.

A NEW PORTABLE CAMERA.

THE stéréographe, by Dubroni, of Paris, has no equal for economy and compactness. The cost is so extremely moderate, that it is scarcely to be imagined that when reading the advertisement you are contemplating the purchase of anything more than a toy.

Practical beyond a doubt, successful, as experience has proven, and not burdensome; for the whole apparatus, exclusive of the tripod, will not weigh over three-quarters of a pound. It is composed of the following pieces: The box, which is constructed of a heavy felt cloth, cased in unpolished walnut, as little of the latter as can be used to answer the purpose, hinged and hooked so as to fold up into a very flat surface, probably not over three inches in height, eight inches long, and about seven inches wide. The lens, by Darlot, fits into the camera, and by its telescopic movement the focus is obtained—it has three stops, and works very sharp and rapidly (I exposed a plate prepared of American emulsion, and obtained a negative equally as good as with Ross' rapid rectilinear); two dry holders, double backs; tripod of ash, and a leather satchel to hold the camera and holders; the total cost, fifty francs, equal to ten dollars. The cut will explain more thoroughly than I can describe it.*

Mr. John C. Browne has been experimenting with this instrument, and returns it to me with the result of his trial. To use his own expression, "It is as good as any I ever used, and I can obtain all that can be desired. I consider it useless and extravagant for a man to use a costly apparatus when he can, for so little money, fit himself out with one of these stéréographes."

Mr. Browne's pictures speak for themselves, and are as sharp as any ordinary print from a much finer instrument.

I shall be glad to give any information

* For some reason the cuts have been delayed in reaching us.—Ed.

which may lead to the growth and improvement of photography, and assist any who may so desire, in getting the instrument, and, if possible, having them made in our own country; the lens can, of course, be imported for a very slight advance on the price asked by the maker.

Very truly yours,
JOHN STRUTHERS.

HOW I SUCCEEDED.*

BY M. P. BROWN.

I WISH to say a few words to the "beginner," as I review the past since I began in photography. After five years' experience, I feel that with so much unlearned I am only a beginner myself. A kind friend who stands high in the profession, said to me as I was about to start in business, "*Do not get discouraged if you fail to make such work as others who have had more experience; and yet you must never feel quite satisfied with your work.*" Those few words, spoken in such a kind way, and by one who had worked his way up through the difficulties we all encounter, have been worth so much to me, that I feel it may do good to others to repeat them.

Our business is one that something new in its workings may occur daily, and to the beginner the first days are full of discouragements. The pictures do not suit us; they are not like those we made when with our instructor; but where is the trouble? that's the question. A new bath, new collodion, new developer, all carefully made; surely they ought to work; but they did not for me, and I often wonder how I kept from getting discouraged. Patience, perseverance, and a constant application to my business soon began to tell. I secured a copy of Anderson's *Skylight and Dark-room*, and studied it carefully. I invited a friend who had plenty of leisure time to sit for me to experiment, and with an aim to make each negative more perfect than the preceding one, I found it a great help. I did not say in the local paper, "For the best photographs in town go to Brown's." I was candid with my customer; if the work

* Written for Mosaics, but received too late.

could be improved under more favorable circumstances, I told him so. I admitted I was a beginner, but was anxious to do the very best I knew how; and I can say that *I think* "that this plan has done more towards my success than any other thing."

It is not always the superior work that brings you custom. See that you make your customer feel at home, and do not feel it any humiliation to allow him to dictate how he wants the picture. If your ideas are different, it will pay to make one his way, and then one yours, and in the end you gain a friend.

Do not expect to build up a business in one year. If you study to improve in your work, and treat your customers properly, your business is sure to increase. *It has paid me tenfold* to secure, as fast as my means admitted of it, the *Philadelphia Photographer*, Hearn's *Practical Printer*, Robinson's *Pictorial Effect in Photography*, and others of their class.

I began with a limited capital in a small town, with only a few months' previous instructions; all theory and little practice. I kept out of debt. I kept my word, and while my experience has not been as brilliant as many, I have succeeded to that extent (that all young men may and should aspire to), that I am my own employer; I depend upon none but my own exertions; I am not fostering in my heart a brood of extravagant desires; and as I am quite contented, I am comfortably rich. In the words of my friend, I repeat: "Do not get discouraged, and do not feel fully satisfied with your work." Read all you can of what is published about the business. Be industrious, be a gentleman, and you will be successful.

EMPLOYERS vs. EMPLOYEES— SHORT EXPOSURE.*

BY GARVEY DONALDSON.

WE read an article some years since, in a photographic journal, in which a German photographer thought it would be a good plan for employers to require of employees seeking employment, a letter from

* Written for Mosaics, but received too late.

last employer, showing that proper notice had been given before leaving, as much inconvenience was often caused by trained operators leaving situations without any notice.

We think it would be a good plan also if something could be done to insure proper notice to employees when a change is to be made, as the best of operators are often discharged without any previous notice, and often at the most unfortunate moment, and, perhaps, for some trivial reason.

No doubt there is reform needed on both sides. But we know there are honest and upright men among photographic operators as well as among those to whom operators must go for employment.

Again, operators sometimes find, after travelling some distance to a promised situation, that employers, as well as others, do not always confine themselves strictly to the facts of the case. We have had some experience in that direction quite recently.

Now, in these times of short exposures, we have seen the exposure reduced one-fourth or one-third by simply using a collodion made with the double iodides and bromides instead of the ordinary salts. Here is the formula for such a collodion.

Alcohol and Ether, . . .	equal parts.
Iodide of Ammonium, . . .	2 grains.
Double Iodide of Cadmium and Potassium, . . .	3 "
Double Bromide of Cadmium and Potassium, . . .	2½ "
Gun-cotton,	5 "

to the ounce. Grind the salts, put them into a bottle, and pour the alcohol in, then add the ether gradually, filter, and add the gun-cotton.

A FEW SUGGESTIONS.*

BY E. WILBUR.

I WOULD like to offer a suggestion that perhaps you may think worthy of notice, viz., to give the addresses of the contributors to *Mosaics*, as it often happens that there are sometimes questions which we would like to ask each other about some item given therein, but we do not know where to address them.

* Written for *Mosaics*, but received too late.

Vignettes.—I have a way of making vignetting papers that I have never seen in print, and perhaps it may help somebody. Take a piece of inch pine board, about (5 x 7) five wide by seven long, and hollow it out, making the size of opening about the size of a trimming-glass; bevel the opening and make a die to exactly fit the mould, and you have an apparatus to make countless vignetting papers.

To make, take a cabinet card, and soak until perfectly limber. Lay over the opening, and lay on the die, and put into a vise, or lay on the table, and set a heavy weight on it until dry. Remove, and cut an opening the size desired, and you have a handy, light, easily managed, cheap vignetter.

The size and depth can be varied at will. I have a cabinet and *carte de visite* size mould. I have used this a long time, and given the "formula" to others, who like them first rate.

Here is another which emanated from Mr. G. Frank E. Pearsall, of Brooklyn. Make two light frames ($\frac{1}{2} \times \frac{1}{2}$ inch), and hinge them together at one side. Make them just the size of the printing-frame they are to be used upon. Make two wire hooks from each frame, to fasten them on to the printing-frame. Drive two tacks into each side of the printing-frame, lay the vignetting-frame on, and hook it on to the printing-frame. Then take cardboard just the size of the frames, and with proper sized opening; lay it on to the first frame, and shut down the outer frame, and fasten by hooking to the printing-frame, and it is ready for use.

Tissue paper can be pasted on the outer frame if it is necessary to use it. It is a good plan to have several different cards with different sized openings, and they can be changed, or the whole apparatus removed, in less time than it takes to change a print. They are excellent.

If a varnished negative is too weak, remove the varnish with equal parts of alcohol and liquid ammonia, and strengthen by flowing with a solution of corrosive sublimate, and then by solution of iodide of potassium. If too intense (to take out), flow with cyanide of potassium (sol.), into which has been dropped a little tincture of iodine.

BLISTERS.

BY JOHN R. CLEMONS.

MY old friend, A. Hesler, in *Mosaics*, page 121, 1878, says, "Blisters, did I hear you say? Well, I give it up." Then again, in the *Philadelphia Photographer* for September, he again pitches in and blows his blister horn, and condemns the albumenizers, and therefore, according to him, all the trouble for "those dam-aging blisters lies at" our doors (the albumenizers). What a grand mistake *theory* makes, as it generally does! *Practical results* are always the best animals to trot out. I have some old Rives paper, which is stamped or water-lined 1864. I have had it since 1865. The paper I albumenized at that date did not blister; at least, I never heard of it. But one year after that date the Rives make began to blister, and some of it very badly; in fact, I have seen blisters on it three inches across, and sometimes they could be counted by the thousand upon a single sheet. This was when we used single albumen, and dear above knows what it would have done if we used concentrated albumen as we do at this day. I have taken the trouble to wash off the albumen from a few sheets of the old paper (1864), and realbumenize them and test them as to blisters when laid upon concentrated albumen, and that old enough to vote—it has stood so long that it became gray-headed all over with fungus growth—and some upon albumen that was used daily in albumenizing. When this paper was printed, toned, fixed, and washed, there were no blisters (some of the sheets were but a very short time upon the albumen, and others were on a long time). Now, my theory is that the sizing at the paper manufactory is not made as it used to be; perhaps made in such large quantities that it is lumpy, and these lumps are of various sizes, and they become the nucleus, turn sour, and then enter into the pulp, and all passes through the rollers, when they are spread out, small and large. Then the poor albumenizer gets it; from him it passes to the printer, and the printer pours a big lot of cussedness upon the very spot where it don't belong. Now we will look at this in another light. If it was the fault of the

albumen, why do not all the albumen prints leave the sheet, and not blow up in spots by the gases engendered in the sour sizing? I may be wrong, but I think I am as near right on *that* blister as any one else who has guessed.

CHILDREN'S PICTURES.

IN taking children's pictures, my experience is that with a bath in good order and slightly acid, good common collodion (not too old), and a tolerably strong developer, a large light (unscreened), a quick-working lens like the Voigtlander (unstopped), with your subject dressed in white or light clothes, and set well out under the edge of the skylight, close to the side-light, with a white screen opposite, you can take a good negative as quick as you can possibly uncover and cover the lens by hand (say the eighth of a second). I send you a picture of my boy, that I happen to have with me, taken that way. I have no trouble to get babies sharp. The only trouble is position and expression. I have had people say a hundred times, when I would start for the dark-room: "Why you have not taken it 'a ready.'" Yours truly,

E. H. TRAIN.

A GOOD BACKGROUND FRAME.

WE all know the confusion and the loss of time, etc., of swinging round a background on an 8 x 10 frame (the popular size), in order to use the *other side*, having to move *rests, chairs, head-screens*, etc. One frame, with a ground on each side, is the extent of grounds in some rooms, for *lack of space*. To avoid this, have, say three frames of inch board, three inches wide, eight feet high (which is high and wide enough for a standing cabinet). Stretch cloth on each side, and you have six different designs or grounds, which are hinged together in *book form*, so to speak, and can be opened to any *page* or *ground* without any trouble or *moving a thing*. You say how can you make a group on a ground six feet wide? In this way: Have two sides painted in the same tint, a different design

on each end you open, and have a ground twelve feet long, which will do for any group; and you have six or more grounds, taking up no more space, nor so much as an 8 x 10 ground with feet.

The above style requires no feet. When open a little, they stand on their *own bottom*. In order to work easy, have a small caster at each of the ends, resting on the floor.

A gentleman like Mr. Seavey could introduce these grounds in *series*, with good results among photographers.

Yours truly,

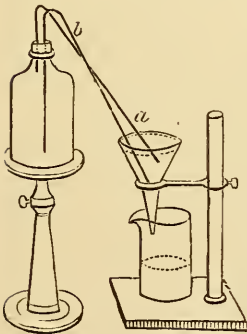
THE HOMELIEST MAN.

A SELF-FEEDING AND SELF-REGULATING FILTER.

BY REV. CLARENCE A. WOODMAN.

AS it is usually a matter of some importance in filtering a liquid, that the filter should be kept full, and as it is very tedious to be continually attending and feeding during the operation, the following simple device will, I hope, be found of great service. By its use, any desired amount can be filtered, and the filtration once begun, it will continue without any personal attention, until the operation is complete. The accompanying figure shows the use of the apparatus.

The bottle containing the liquid to be filtered is placed on a shelf or stand above the level of the filter. Through the cork (which must fit airtight; it is better to put varnish around the top) pass two bent tubes; one end of *b* dips far enough down into the liquid to draw off just the amount you wish, the other end descending deep into the filter. The tube, *a*, at one end, reaches just below the cork of the bottle, the other end being fixed at the height in the filter at which you wish to keep the solution.



Start the apparatus by sucking the liquid into the tube, *b*; it will flow steadily until it reaches and closes the lower end of the tube, *a*, when by cutting off the ingress of air into the bottle, it stops any further flow till the liquid in the filter again sinks below the end of *a*. The minute *a* is clear, the flow will again commence, to be stopped as before, when *a* is covered. When the liquid in the bottle sinks below the end of *b*, the whole operation ceases.

This apparatus is easily made, and is a wonderful saving of time and patience. All you have to do is to determine beforehand how much of your solution you wish to filter, set *b* accordingly, start the thing working, and then leave it to itself, until you have need of the filtrate. If any one tries this method once, they will never filter in any other way.

GERMAN CORRESPONDENCE.

Awards of the International Exhibition of Paris, 1878—New Rapid Processes—New Photographic Apparatus—Tent Camera—Progress in Photographic Lenses—Death of Dr. E. Steinheil.

THE Exhibition is closed, and the list of awards was finally published about a fortnight before. Notwithstanding the immense quantity of awards, the general sentiment is an unsatisfactory one (of two hundred French exhibitors, one hundred and seventy obtained an award of merit, as also every one of thirty-three Austrian exhibitors). The disappointment has its reasons. Mr. Levitzky, Vice-president of the photograph jury, relates that still in the month of October decisions were made by a non-authorized jury, changing the decisions of the regular jury. Three more gold medals were awarded, and one of them by special influence of the Grand Duke Constantine, of Russia.

Mr. Seavey, the first background painter of the world, is not among the fortunate. He had to be contented with a bronze medal, although his work and qualities justified the expectation of the highest reward.

After the excitement caused by the Exhibition, the rapid processes are the prin-

incipal subject of attention. First of all was the lightning process of Boissonas and Klary, which has proved to be a failure; then came M. Richard, whose process has carefully been tried in Berlin, with his own chemicals, and found to be not a particle more sensitive than my own chemicals. There is also Mr. Schwerg and Mr. Fricke. All these processes are kept secret, and are offered for sale.

At a meeting of the Society for the Advancement of Photography, M. Ball has described a method with which he thinks to reduce the exposure one-half. He connects two silver corners of the plate-holder with the two ends of a galvanic element so that a stream goes in the diagonal direction of the plate. He has shown proof plates, one half of which was exposed in the usual manner forty seconds, and the other half only twenty seconds by the application of a galvanic stream, which spoke well for the usefulness of his method. I have tried it, but not with entire satisfaction, which may, however, be due to the insufficiency of my stream. His ideas are certainly worth a trial. We had, therefore, in all five rapid processes, and the search for the same is still so decided that it is not at all astonishing that one of our members asked at the end of the meeting, if, during the same, "no other new processes were invented!"

The principal object of this investigation is the abridgment of exposure. Parallel with it go the experiments with gelatin emulsion. The gelatin emulsion plates by Bennet and Kennett are exceedingly sensitive, and surpass the wet plate in regard to rapidity. At present photographers are not in favor of this proceeding, as the preparation of gelatin emulsion plates is a very inconvenient thing. However, they have the advantage to allow preparation beforehand, and keep their sensitiveness for a long time. It would be possible to manufacture the plates on a large scale and put them in the market, which would save to photographers the inconvenience of preparing the plates. The general use of a process is not only depending on the rapidity with which it allows to work, but principally on the quality of the work turned out; and I must say in regard to this, that the proportions

in shading are inferior to those of wet plates.

Four new photographic patents have recently been granted, as a proof of our assiduousness. There is one for a method of making enlargements on linen; one for a portable photographic outfit; one for photographic transfer paper, and finally, one for transferring. Two applications for other patents have been made, one on a hot burnishing machine, and one for a photo-chemical printing process. That everything is not new does not need to be mentioned. The portable outfit, for instance, resembles much a construction known under the name of "tent camera." Especially fresh to my mind is a construction which Davis exhibited in London in 1862. The improvement of the apparatus is the combination of tent and camera, which seems to be very practical and compendious as long as you look at it; however, as soon as you are going to work the thing changes its appearance. In landscaping, for instance, where there is the camera to be transported, lowered, and inclined in all directions, it will be a very inconvenient thing to move all the bottles and dishes with it. It is a very unhandy whole, which does not promise much of a future.

Another progress, not patented yet, is an improvement on portrait lenses, operated by Voigtlander. In consideration of the progress optics has made during the last thirty years, it is astonishing how much the portrait lens has kept its old form, originally introduced by Petzval. The sole change ever made on it has been operated by Dallmeyer, who simply turned the back lens and added a construction, by means of which the two lenses which compose the back lens may be put in different positions. He thus hopes to obtain the depth of the focus. The efforts made in Germany for the improvement of the Petzval lens were equally visible. A fault with the same is, that the two back lenses have to be separated, and are thus the cause of many optical faults, loss of light by reflection, etc., caused by a disadvantageous position of the same. I have worked with lenses which gave a bad picture, especially with regard to sharpness of outlines; I improved them by changing the thickness of

the paper put between the two lenses in question, and found thus, in an experimental way, what distance was the best. Several opticians have tried to introduce lenses in which the two back lenses were cemented together. Busch exhibited one of these in Vienna in 1873. It worked very nice, but has never been put in the market. Steinheil made similar trials. Voigtlander has sent me recently a portrait lens with a two and three-quarter opening; it was a portrait lens of an old construction, for *carte de visite* and cabinet size, of ten inch focus. At the same time he sent me a back lens, with the prescription to replace with it the back lens of the objective in operation. The effect was wonderful. The focus was reduced to seven and a half inches, and the light on the plate proportionately strengthened. I found that a plate required twenty seconds exposure with the new lens, whilst the old one required thirty-five. Sharpness and depth of focus were satisfactory. Whoever possesses a Voigtlander lens needs only to buy a new back lens in order to shorten the focus considerably. This may be of some value to practical photographers. The new back lens is composed of two lenses cemented together, and nearly symmetric to the front lens; the consequence will be that the new instrument will give much more correct drawings than the old one. It is still a question if this improvement is applicable for larger instruments, as I tried until now only a small size. Another lens recently tried by me, which is not manufactured for the trade, is especially designed for the reproduction of drawings, and for the taking of landscapes. It has a peculiar construction. It is composed of two systems of lenses two inches apart, each one of which is composed of two lenses. The component parts of every system are a nearly plano-convex crown-glass lens, which has four and a half inch radius on the convex side, and a nearly plano-convex flint-glass lens of six inch radius on the convex side; both lenses are not cemented together. The concave side of the flint-glass lens is facing the nearly plane side of the crown-glass lens. I obtained some very good results with it, which prove that in the line of lenses, still

more important improvements are possible.

We have to regret the death of another celebrity of photographic art. Dr. E. Steinheil, member of the firm of E. & A. Steinheil, of Munich, died on the 11th of October, on board of the steamer Silesia, on his way to St. Thomas. He died of apoplexy, though the journals called him a victim of the yellow fever. He intended to go to South America for the sake of his health, and in order to apply himself to the study of butterflies (an old passion of his). Dr. Steinheil had made this trip several times. He is buried in the churchyard of St. Thomas. The optical institute is carried on by A. Steinheil, brother of the late E. Steinheil.

Truly yours,

H. VOGEL.

BERLIN, November 28th.

GIHON'S GATHERINGS.

COMPILED BY THE LATE JOHN L. GIHON.

I.

Hints, wrinkles and dodges, and miscellaneous items. A collection of essays, etc., all pertaining to photography, but difficult to classify.

Photography on Silk.—“Pour 20 ounces of boiling water on 100 grains of chloride of ammonium and 60 grains of Iceland moss. When nearly cold, filter, and immerse the silk in it for fifteen minutes. To *sensitize*, immerse the silk in a 20-grain solution of nitrate of silver for sixteen minutes. Let the nitrate bath be rather acid. When dry, prepare for printing by attaching the silk to a piece of cardboard a little smaller than itself, by turning the edges over and fastening with small bits of gummed paper; slightly overprint. Wash in two or three changes of water, and tone in a gold bath, thus:

Water,	. . . . .	20 ounces.
Acetate of Soda,	. . . . .	2 drachms.
Chloride of Gold,	. . . . .	4 grains.
and a few grains of Common Whiting.		

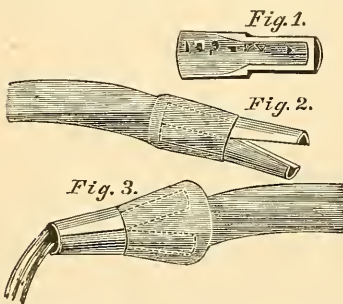
“Filter, and keep for twenty-four hours before using. Let the prints be toned slightly bluer than required to be when finished. Rinse them in water, and fix in a solution of hypo, four ounces to the pint of water. Twenty minutes is ample time for fixing. Wash well.”

Keeping Plates before Development.—“Plates can be kept very long between sensitizing and development, by using a collodion containing a full proportion of bromide, say two and a half grains to the ounce, and by keeping the plate the shortest possible time in the nitrate bath, abridging the time as much as possible by keeping the plate constantly in motion from the first, so as to get rid of the greasy lines as quickly as possible. As soon as this is effected, the plate is to be removed.

“It is well known that bromides in the collodion are converted into bromide of silver much more slowly than iodides. If, then, the time in the bath is shortened as much as possible, continued only till the film takes the bath smoothly, there can be little doubt that unaltered bromide (say of cadmium and ammonium), remains in the film. Now, whilst the plate awaits, the nitrate solution, instead of concentrating by the evaporation, is losing silver to the bromide continually. Acting on this principle, photographers often succeed in exposing wet plates on interior views for periods of time extending over two hours.”

Valve-tap for Dark-tent.—“A very simple but ingenious contrivance for the terminus of your water-pipe in the dark-tent will be comprehended immediately upon inspection of the diagrams.

“Figs. 1 and 2 represent pieces of wood hollowed out inside, and rounded outside, made to fit together. Fig. 3 shows them fitted together in the india-rubber tube from a water-tank. By pressing the wood out-



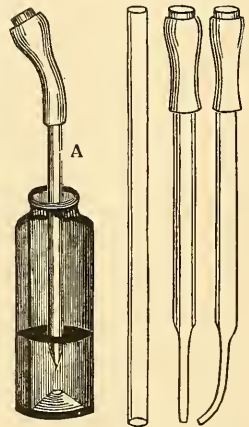
side the tube, between the finger and thumb, the valve opens, and a thin stream of water,

suitable for washing the plate, flows steadily, and ceases when the pressure is removed. With a penknife for a tool, and a piece of wood for material, such a valve can be easily constructed.”

Pipettes for Photographic Use.—“The photographer is daily wanting to measure a few drops of acid, silver solution, or other liquids. Dropping such from a bottle is difficult and uncertain. These little contrivances answer admirably, and are easy to make.

“They are five or six inches in length, and about three-eighths of an inch in diameter.

Procure a glass tube ten or twelve inches long, and of the proper size. Heat it in the middle, by gradually lowering it in the flame of a spirit-lamp, keeping it constantly turning, so as not to expand the glass unevenly, thereby causing it to break. When it

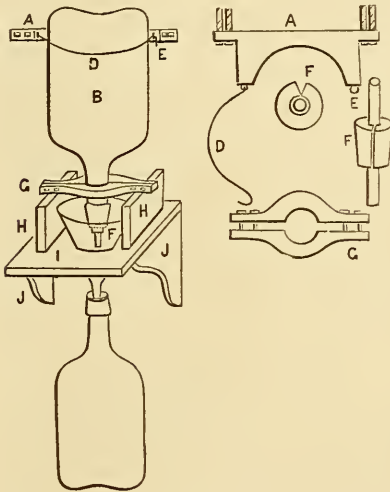


has become very soft and pliable, it must be pulled suddenly apart, thus causing the separated parts to be drawn out into very fine points; break off one of these points, and you will have a tube with a fine aperture. Procure a piece of elastic-rubber tube, two or three inches long, having an inside diameter a little smaller than the outside diameter of the glass tube; close one end with a cork, and slip the other end on to the glass tube, and your instrument is complete. If you want a larger hole in the end, you have only to break off more of the point. It will be found very convenient to have on hand three or four of these instruments, of differently sized holes, and with the ends bent, as shown in the engraving. Any roughness of the points can be removed by holding them in the edge of the flame of a lamp.

“The proper method of using the pipette is

to press together the rubber tube, with the thumb and finger between the cork and the end of the glass. Put the point into the liquid in the bottle; take the pressure from off the rubber, and the liquid will instantly rush into the tube. By again applying pressure to the rubber, the contents of the pipette will be discharged."

Kurtz's Filtering Apparatus.—"Let A represent a piece of wood about one inch thick, and a half disk sawed out half the circumference of the demijohn, B. There is also a piece of soft wire, D, fastened at one end of the piece of wood, A; at the other end it is bent so as to hook into the



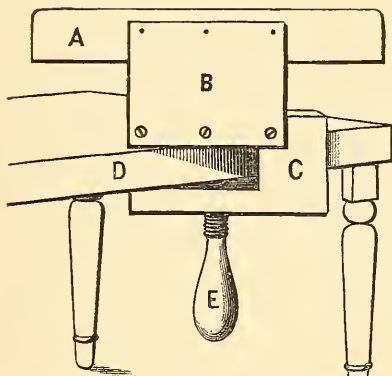
screw-eye, E, and thus keeps the inverted demijohn, B, in its place. This piece of wood is fastened at the proper height to any convenient wall of the apartment. The demijohn, B, capable of containing the entire solution of the bath, is provided with a cork, through which passes a glass tube about three or four inches long, and a quarter of an inch in diameter; a portion of the cork is also cut out, as represented in the drawing, F.

"Around the neck of the demijohn are two pieces of wood joined together, which inclose the neck, G. The demijohn, being charged with solution and corked, is inverted over a funnel containing the filter. The uprights, H H, support the piece, G,

and keep it from resting on the funnel. This funnel rests in a hole cut out of the shelf, I, which latter is supported by the brackets, J J, which are, like the piece A, fastened to the wall. The lip of the funnel either dips into another similar demijohn, or, if you prefer, into the bath-holder. You will observe that the instant the demijohn, A, is inverted, the solution commences running out, and the air-bubbles in, and the solution would eventually all run out, were it not for the fact that *the mouth of the demijohn dips below the top of the funnel*, consequently as soon as the solution reaches the cork in the demijohn, the atmosphere is cut off from entering the hole in the cork, and thus matters come to a standstill, until sufficient solution has run through the filter to again allow the air to enter the demijohn, when the solution runs out as before, etc. Should your bath consist of three or four gallons of solution, which would require many hours to filter, you have merely to start this simple piece of work at night when you go home, and in the morning the work is done."

On the Utilization of Old Negative Baths for Printing.—"Take any old negative bath, no matter if it fogs or has been overworked. If acid, neutralize either with carbonate of soda or liquor ammonia, a slight excess of alkali does not matter, and set in the sun for an hour or so; if there is no sun, keep it in the light as long as you can. The object of this is to precipitate all organic and other impurities, while retaining the alcohol in the solution. When sufficiently sunned, add one drachm of a solution of citric acid (sixteen grains to the ounce of water) to every eight ounces of bath solution. The object of this is to precipitate the iodide of silver in the bath. Filter and add fresh silver until the solution contains thirty-five grains to the ounce. Now, to every half gallon add half an ounce of muriatic acid, shake well, then add enough liquor ammonia to make it slightly alkaline; again shake well, filter, and save the filtering-paper for subsequent use as long as you can. Every time you strengthen add a little acid and ammonia. Float the paper from thirty to forty seconds; no more. Fume as usual."

Save the Negatives.—"A great many good negatives are ruined, after considerable use, by scratches from the finger-nails, when removing prints from the pressure-frames, and from the ragged, horny edges of the albumen paper as it passes over them. Messrs. Kilburn Brothers, of Littleton, N. H., have adopted a plan which prevents injury to the negative from such a cause. A is a strip of steel, the upper edge very smoothly ground, fastened firmly in the block B, and to the table D, by means of



the hand-clip, C. This strip may be, say, a foot long. The sensitized paper is cut to size for use, and then drawn, plain side down, from end to end over the steel edge, holding it in the same manner (*i. e.*, by each end) as you would when ironing a ribbon over a stovepipe. In this manner all the rough, ragged edges are removed and rendered perfectly harmless."

Reversed Negatives (T. C. ROCHE).—"The simplest mode to make the above, direct in the camera, is by the following plan:

"1st. Dispense with the regular ground-glass and use the plate-holder in its place.

"2d. Take any glass, without regard to thickness, provided it is flat, that you wish to make a negative on, place it in the holder, *the side intended to be coated with collodion toward you*, then place on it a fine ground-glass, and focus.

"3d. Now coat the plate as usual, but on withdrawal from the bath, *clean or wipe off the back of it with Joseph paper*; then slip over the top and bottom of the plate, say half an inch, two small rubber bands; place

in the holder, *coated side out*, then put in a plain glass of same size, which will rest on the bands (this prevents the springs on back of holder from spoiling the plate); after exposure, *don't forget to take the bands off before developing*. As a rule, the exposure in the camera will have to be a trifle longer than usual."

How to Fuse the Bath (E. ANDERSON).—"Pour the bath into one-fourth its volume of water, and filter out the precipitated iodide; place the solution into an evaporating-dish on the stove, and evaporate to dryness, *without neutralizing with ammonia or any other agent*. As the solution becomes dry, a series of phenomena takes place; minute bubbles commence forming in the centre of the dish and gradually spread out to the sides. They increase in size and become violent in action, finally breaking open and emitting masses of vapor. When this has all ceased, scrape the mass into the centre of the dish, where it will commence to liquefy again; or, in other words, to melt. It will soon have the appearance of a heavy oil or syrup, and may be considered *fused*. When cool it can be dissolved in pure water, diluted to any extent, and used as required."

PHOTOGRAPHIC NEWS.

TWO photographic wagons, with needful apparatus, have already been sent to Cyprus with the other necessities of life. Natural condensed lightning is plenty there, we suppose.

A VARNISH FOR LICHTDRUCK, OR ARTOTYPE PRINTS.—A mixture of copal varnish and two parts of benzine has proven to be a good varnish for lichtdrucks. The lichtdrucks are first gelatinized; when dry, they are spread on a soft surface, and varnished with the edge of a velvet brush. The latter is made with two rulers, between which is a piece of felt covered with velvet. The pictures are to be dried immediately over a gas-stove. Certain negative varnishes, properly mixed, answer also.

It appears that Mr. Ducos du Hauron, by using the oxalate of iron, has succeeded in diminishing considerably the time of

exposure required for each of the three monochrome negatives which form the base in color printing. Besides, it results from experiments undertaken by one of the masters in the art of printing with fatty inks, that instead of being printed on pigment paper, the colored positive prints may be obtained upon gelatin and printed in the press. These are important improvements, for which Mr. Ducos du Hauron has every reason to congratulate himself, as they must lend an important aid to the practical development of his interesting process.—*Moniteur*.

CANON FARRAR'S PHOTOGRAPH.—Considerable amusement, and not a little scandal, has been caused in London by the sale of a photograph in which Canon Farrar, author of the *Life of Christ*, appeared to be posing in the act of prayer with hands clasped before him, surplice flowing behind him, and eyes devoutly uplifted. The Canon's admirers were inclined to weep over so reckless an attempt to attract popularity. They were, therefore, inexpressively relieved to find one afternoon a public disclaimer from the Canon, that he ever sat for such a portrait. He would regard it, he said, as "inexcusably foolish and disgracefully profane."

HOW THINGS ARE SEEN.—It is stated in the *London Times*, that Dr. Boll has discovered that the phenomenon of vision is a case of veritable photography, and that subsequently Dr. Rühne has discovered the organ by which a purple pigment in the last retinal layer of the eye is regularly deposited. Without in any way discrediting these discoveries, *The Athenæum* calls attention to the passage in a paper by Sir John Herschel, printed in the Royal Society's *Transactions*, in 1842, in which he stated, drawing conclusions from some remarkable photographic effects which he was then studying, that the phenomenon of vision was of photographic origin, the images of external objects being printed by the solar rays on the retina or the choroid coat of the eye.

MR. BROOKS has succeeded perfectly in reproducing the interior of certain subterranean caves, interesting, in a geological

point of view. What is curious, is that he has used neither electric, magnesium, nor any of the highly actinic sources of light which to-day are so well known to photographers. He simply used a considerable number of paraffin lamps, which he distributed in such a manner as to perfectly light the dark interior. In order not to keep his collodion wet during a rather long exposure, he dispensed with it entirely, and used instead dry plates, with a gelatin emulsion. The plates are extremely sensitive. The time of exposure varied from one hour to five hours, with a compound stereoscopic lens of Dallmeyer, three and a half inch focus. The prints obtained leave nothing to be desired.

MR. E. DUNMORE has remarked that the alkaline toning-bath works much better if it is either very slightly acid or perfectly neutral. The toning baths neutralized with lime, and which are so frequently used, have been called, since a long time, alkaline toning baths; but in order that the baths should act in an entirely satisfactory manner, they must have no alkaline reaction, but should very slightly redden litmus paper.

The same author gives a word of advice to young photographers who do outside work. He calls attention to the fact that in the very great majority of cases, it is entirely useless to attempt the reproduction of any landscape unless the sun is shining. "This is especially true," says he, "in the exposure of dry plates which are a little slow. Such plates should never be exposed in dark or heavy weather. One of the principal conditions of success in landscape photography, is fine weather with a cloudless sun."

SOME attention is being paid at present, to discovering the best methods for trying photographic paper, especially the transfer paper used in carbon printing. In general, an idea may be formed of the quality of paper by submitting a certain quantity of it to calcination, and carefully weighing the quantity of ash remaining. Pure paper, containing but traces of mineral substances, leaves but a small residue when it undergoes complete combustion. The ordinary

blue letter-paper, containing a trace of ultramarine or Prussian blue, generally gives three-eighths of one per cent. of its weight in ashes, when the blue color is very pale; but the darker kinds yield as much as from one and a half to two per cent.

Good photographic paper, as well as the filtering paper used in chemical laboratories, yields a still less quantity of ash; whilst yellow or gray papers give from three-quarters to two and a half per cent. It sometimes happens that the white glacé papers often found in the shops, owe their white color and their opacity, in a great measure, to zinc or white lead, which may be hurtful in photographic operations. The presence of the last is easily recognized by exposing the dampened paper to a jet of sulphydric acid, which, in that case, would render it black.—DR. PHIPSON.

DR. PHIPSON, in his correspondence in the *Moniteur*, says: "It appears that the nature of anilin black is known at last. This black, which resists the action of acids, etc., was obtained by the oxidation of a solution of anilin, by means of a copper salt and chlorate of potash, or else by aid of very small quantities of vanadic acid. It is now asserted that this black is obtained whenever we cause to act on an acid solution of an anilin salt, either a metallic salt or an oxide, provided that these last two should be of a nature to give up easily oxygen to the anilin compound. Blacks of a different composition are obtained, but all of the same type, as they are formed of anilin in which one or several atoms of hydrogen are replaced by an equivalent quantity of the metal used. It is probable that one day these compounds will be utilized in photography."

A NEW application of photography to the science of meteorology is now exciting attention. It appears that rainy or dry weather depends a great deal on the *height* and the *shape* of the different kinds of clouds. The elevation of the clouds in the atmosphere is a subject which had not, up to the present time, fixed the attention of observers; and it is now asserted that the determination of this elevation at frequent

intervals would prove of great utility in meteorological observations, especially in the prognostications of the weather, a sudden visit of storms, of rain or dry weather, etc. From one station alone, it is not possible to determine with exactness the height or the velocity of clouds; but from two stations, a half a league apart, this problem becomes less difficult. According to Prof. Piazzi Smyth, the learned Scottish astronomer and highly distinguished photographer, it has been perfectly realized, by means of an ingenious photographic apparatus fixed at each station. The fact is, we often meet farmers, and those who live in the open air, who can foresee changes of weather with great accuracy by the simple inspection of the clouds, of their direction, and of the velocity with which they move.

WE copy the following from the list of patents lately granted, as given in the November 12th issue of the *Official Gazette* of the United States Patent Office:

209,880. PROCESS OF COLORING PHOTOGRAPHIC PICTURES. Douglas F. Frink, New York, N. Y. Filed July 22, 1878.

Claim.—1. The process of fixing or producing photographic pictures on glass, which consists in treating an unmounted photograph to a bath in a compound of sulphuric ether, alum, and water, in about the proportions specified, and then securing it, face downward, to a plate of glass by means of a paste composed of rice-powder, sulphate of quinine, and water, in substantially the proportions specified, for the purposes set forth.

2. The process of producing colored photographic pictures on glass, which consists in mounting the picture, face downward, on the glass, and treating it with a compound of castor oil or vaseline, nux vomica, tincture of capsicum, and oil of sassafras, mixed in substantially the proportions named, and applying color either to the paper of the picture or to a glass behind it, substantially as set forth.

What must such a picture look like after such homeoallopathic, or it may be eclectic, treatment. A solution of ether, etc., produces fever; rice-powder and quinine are good remedies, but then blisters are sure to follow. Then castor oil and vaseline come in good with nux vomica and sassafras—all *natural* enough, after all.

ABOUT "ARTOTYPE."

WHAT we promised to say to our readers in this matter has very unexpectedly, but happily, been already partly said in the communications of Messrs. Benecke and Carbutt, on other pages.

As in our last number we announced would be the case, Anthony's *Bulletin* and the St. Louis *Practical Photographer* each contained in their last issue a four-page advertisement of the Artotype Company, and although offered to us at our own price, we declined to insert it, on the ground that we believed many of the statements made were extravagant and could not be verified by the facts, and we preferred not to mislead our readers. Moreover, we did not believe the patent granted Mr. Obernetter could be sustained. On this latter point, Mr. Carbutt, who is excellent authority, gives an opinion in which, at present, we coincide.

If, then, our readers purchase licenses under this patent, they should be guaranteed absolute protection by responsible parties, or expect to have trouble to protect themselves from infringements, for doubtless they will arise.

We are not prepared to go into such details, but give some few hints as to the authorities, which may be found useful to those interested in hunting up the matter. Presently we shall have more, though there may be no need for them.

Husnik, in October, 1875, published a process which is in all details similar to Obernetter's. It was republished in the *Photographic News*, November 26th, 1875, and, as Mr. Benecke states, in Anthony's *Bulletin* still later. We, in our November issue, gave a synopsis of Mr. Obernetter's claims, and by comparing the two, there is enough to be found to at least cast a shadow of doubt upon the worth of Mr. Obernetter's claim to what Mr. Husnik described before him, darker than that which would make it a mere matter of opinion. It may be that the gentlemen of the Artotype Company were unaware of this when they negotiated with Mr. Obernetter.

We have in our possession the whole facts concerning the discovery, approach, posses-

sion, and purchase of the process by the gentlemen named, the formation of the company, and so on, and they are quite interesting; but for the present we consider them unimportant. There is already war in the camp, and we do not wish to give pain, but simply to lay before our readers such facts as they naturally desire whenever their interests are concerned.

The visit which we promised to make to the establishment of the Artotype Company was duly accomplished. We were courteously received by Mr. W. A. Cooper, and we saw Mr. T. Sarony Lambert busied at his desk, and Mr. Mueller at printing, which latter process we witnessed. We are free to confess that with the printing we were well pleased. We had previously loaned Mr. Cooper one of our negatives of an interior of Horticultural Hall, and one of Mr. Ely's negatives of the "Little Faggot Gatherer," which appeared in our November number, that we might see prints from familiar subjects. We believe that copies of these are sent around by the Company freely, without our consent. From these we saw prints made of excellent quality for mechanical prints, with which we were much pleased. Many other results were shown us, varying as the negatives did in quality. The method of printing was substantially the same as that described by Mr. Benecke, and is undoubtedly the most difficult part of the process. One can soon learn it in principle, but long and careful practice is needed to become perfect in the art.

The preparation of the plate for printing, and the printing and development, are in practice similar to the ordinary photographic processes, though the materials used, of course, are different. *The negatives must be reversed*, which entails a transfer of the film, or a secondary—reversed—plate must be made with a prism, which requires the exposure to be lengthened three or four times. After the prints are made, a varnish is applied to them, to give them a glacé surface, when desired.

In all these things this process is not singular or novel. They have been done many years in this country, under various patents—Osborne's, Albert's, Edwards's, Rehn's, and others—but no licenses to prac-

tice them were ever offered for sale at large. Items of practice concerning them have been often given in our pages, and enough to enable our readers to produce prints, as Messrs. Benecke, Carbutt, and others do, without infringing upon any patent.

The peculiar part of the Artotype process, if any, is in the preparation of the plate, and, as we have said, the originality of that is not beyond question the property of the Company exclusively to use or sell.

Now as to the costs of production and the ease with which the process may be acquired. On the latter point, we found at 519 Broadway, on the occasion of our visit, as a learner, one of our eminently clear-headed and practical photographers, Mr. W. J. Baker, Buffalo, New York. He had found it necessary to remain about *two weeks* as a student (seemed pleased and sanguine), and thought there was yet much to learn, which practice only could teach. So one cannot become "a perfect artotype printer in a few days."

As to the cost of producing prints, the estimate given in the advertisement—"three and a half cents for a dozen Cabinet artotypes," is absolutely absurd as an average cost. There is no provision made for trial prints, failures, bad impressions, or cost of producing the plate, or the time of the printer. It may be possible for a smart, practiced printer, printing four or six on a plate, to get "five or six hundred prints per day;" but don't be misled to think you can do this in the ordinary practice of a portrait business. If you could, woe be to the future of our art. Watching Mr. Mueller carefully, it was our impression that each print he "pulled" cost, on an average, about five minutes' time. The statements made then of the "comparative cost of the artotype" are calculated to mislead, being far lower than the average cost must be in actual practice.

In speaking of the "advantages" of artotypes, they are compared with silver and carbon, the latter particularly getting a most audacious (though hardly consistent, think you, carbon licensees of Messrs. Cooper and Lambert?) slap in the face, when it is said "Artotypes, unlike carbon prints, are free from breaking, cracking, and bending under

the influence of heat, and not subject to atmospheric changes." And so, all through they are very "unlike silver and carbon," many times over.

Now we have said enough, and we have tried to be fair and to hide nothing. If you want to print lichtdruck pictures you can, as has often been intimated in these pages, do so without cost for a license; and instruction can be had for a small sum, or freely from time to time in our pages.

The Artotype Company is composed of Messrs. B. F. Powelson, Adolph Mueller, William A. Cooper, William E. Lindop, and T. Sarony Lambert, who are, if we are correctly informed, under written obligations to Messrs. E. & H. T. Anthony & Co. that the latter shall supply all the materials needed by licensees.

Licenses are granted on pink paper, under Joseph Albert's patents (Edward Bierstadt assignee) of November 30th, 1869, and April 11th, 1871 (which patents are, we believe, valid), together with those on blue paper, under a patent granted J. B. Obernetter (assignor to the gents named as the Artotype Company, except Lambert, to whom one-fifth was afterwards assigned), September 17th, 1878, which patent, it is claimed, is Husnik's invention. Carbon is kicked overboard, and "lightning" is allowed to drop for this new love.

"Photographers are crazy about it all over the country," and we should judge so, when wise men from the West and the Southwest visit us for advice on their pilgrimage to see the new (?) born child, and telegraph us even from California to know *what to do*.

Do you remember Punch's advice about getting married? —D—t! *Wait*—Weigh—it in your mind well first.

Dr. Vogel will doubtless illuminate us further next month on this subject.

OXALIC ACID is one of the strongest acids, its solution in 2000 parts of water still exhibiting a marked acid reaction. It is capable of displacing most acids from their combinations; and even the strongest mineral acids are, under certain circumstances, liberated from their salts by it.

FRENCH CORRESPONDENCE.

The French Society—Vidal's Photochromes—Actinometres—Hearn's Practical Printer.

THE Photographic Society of France held their general meeting last night, the 6th instant, Mons. Davanne in the chair. A letter was read from Mons. Fabre, of Toulouse, in which he claims to be the first who recommended the employment of nitro-glucose in emulsions. It may be remembered that this gentleman was the unsuccessful competitor with Mons. Chardon to obtain the prize for emulsions. He draws attention to his communication at that time as a proof of his assertion, and speaks highly in praise of the formula of Chardon for the manufacture of emulsions.

Mons. Castellino presented three beautiful landscapes obtained by emulsions (Chardon's system).

Mons. Pinard sent some very fine anatomic studies, showing the value of photography, and what service it can render to that branch of science.

In the "Order de Jour," distributed beforehand to the members, it was stated that Mons. Vidal would make a presentation of his works, and read a paper on photochromic and phototypic printing. We were disappointed. The President read a letter from Mons. Vidal, in which he informed the Society that ill health prevented him from keeping his word. Several albums were passed around, and their contents very much admired by all. The news was received with great satisfaction that Mons. Vidal had at last found a gentleman to take the direction of the great establishment he had founded on the Quai Voltaire, which will, as he informed the Society, give him leisure to devote himself to experimentation and divers photographic publications. Knowing the indefatigable energy of Mons. Vidal, I am certain that photography will be a gainer, and that his promise will not be *une lettre morte*.

Mons. Ferrier, the well-known stereoscopic artist, presented the Society with a great number of negatives and positives made by the ancient Taupenot's system; for sharpness of outline, depth of shadow, and harmony of tint, they are unrivalled. It is

well known to some that this process requires two sensitizings; at first a bromo-iodized collodion is poured upon the plate, which is sensitized immediately in the silver bath; it is then well washed, and a solution of albumen containing iodide or bromide is poured over the plate, which renders it perfectly inert to light. The iodide contained in the albumen has destroyed the sensibility which the silver bath imparted to it. The plate can now be kept for years. Mons. Ferrier said that the negatives shown were prepared in 1863, and resensitized a few weeks ago. In order to resensitize said plates they are plunged for thirty seconds into a bath of aceto-nitrate of silver, and then washed and dried. After having worked, I may say, all kinds of dry plates, baths, emulsions, etc., I am convinced that none can compete with this ancient process in beauty of results. If it were not appearing to be going backward instead of forward, I would give all instructions and formula for their preparation. The time it takes up, the great, and I may say excessive, care in the manipulations, will deter many from trying it, and the few who will do so will be discouraged by failures, only surmounted by practice and perseverance, whereas those who master it will be rewarded by the possession of negatives of such beauty difficult to be found and obtained by the modern processes of emulsions.

Mons. Lamy presented the Society with an actinometre for carbon printing; he bases his calculation upon the coloration obtained on exposing a piece of albumenized paper in the shade on a fine day, about noon, for five minutes; this shade obtained, he prepares a certain quantity of enamel powder of the same color, which he spreads over the surface of a sheet of paper. This serves as a base for his calculation, and he constructs his actinometer as in diagram 1 and 2. It consists of a little mahogany box three inches long by one inch square; in the upper part or lid is a square hole, A, in which is inlaid a piece of glass upon which is pasted the colored paper having a round hole, B, in the middle.

Diagram 2 represents the same box when opened; C is the prepared paper rolled

temperature of the solution, a point of comparison is now made with the silver paper, and thus many errors are avoided.

I have simplified an actinometre with which I work every day, and find practically very few errors occur. I think this subject on actinometres very apropos to give my American readers the description; I took one of the autotype actinometres, made the round hole much larger, and upon the glass I pasted a piece of paper of the same color that I should obtain if I were to expose to full sunlight for one minute a piece of bichromated paper. See Fig. 3.

Strips of paper are sensitized every morning by plunging them into a large necked bottle containing a saturated solution of bichromate of potash, and leaving them there two minutes, and then drying rapidly. The paper is then rolled in the actinometre, and the printing-frames turned out, each marked the number of tints required; as soon as the first tint is obtained the paper is only drawn out half way. The operator has now two means offered to his judgment; first, the colored tint, B; second, the zigzag teeth on the sensitized paper, for when this is melted or dissolved into the general tint, the paper can be pulled on half way again, and so on until all the proofs are finished. Tally can be kept by tearing notches in the end hanging out of the box.

I received last week a very well written and got up book, entitled *The Practical Printer*, by C. W. Hearn. This little book ought to be in the hands of every photographer; the wrinkles they will learn will soon repay the cost of purchase. The subjects are ably treated, and put in a clear and comprehensive manner. I wish every success both to the purchaser and the author.

PROF. E. STEBBING.

27 RUE DES APENNINS, PARIS, December 7th, 1878.

WHAT NOW TRANSPIRETH?

A DOLEFUL WAIL FROM A SYNONYMOUS CORRESPONDENT.

AND it came to pass, in the land of the Photii, that there was very much wrangling and vexation of spirit among the brethren, and some among the craft-y did

bitter-ly complain, raising their voices, crying out with a loud voice, saying: "This fellah stealeth mine ideas, and with a stylus transcribes he them on papyrus, and thus persuadeth the innocent (and photographers) to believe that these conceits are his'n and not Hearn." And this was one High-flyer,* who spake the word by Way (of) mouth in his papyrus.

And in former times was a good woman, and-her-son did write a book; a book did he write, and he did call the Book Wholly "The Skylark and the Daft-room," and all those who did read thereof suddenly became daft, which were otherwise quite sane. And verily I say unto you, that not one among the ideas or conceits were his own, for he did copy all this from such great scribes as Hardtack, and Towser's Sun-day book, and the practices of the Devine, and the book brought him in very much moneys; for one thousand dollahs were given him for it by the Willing sons of the cities of Philadelphia, and thus did this fellah rejoice greatly within himself, and made he merry, and part-took of the festive cocktail. But this fellah knew his business well, did he; Aye, and he sleepeth not yet among you, and don't you forget it. And now I extort you to hear me. No sooner did this book come out, than another scribe "saw it" and pondered within himself, marvelling greatly, saying: "Behold, let us copy this Skylark and Daft-room! Heigh! why not? and also maketh talents thereby?" and he did so, and verily I say unto you, he copied so well that he transcribed even the errors of language and chymestry the other had committed. And this was a case of dreadful Heighway robbery, and yet the book and his name grew in-fame throughout the land of the Blarsted.

And yet again there comes another from the cities of the Kick-a-go, and offers great temptations, for thus he spoke: "A first premium will be awarded," by a see-dy Musser.† He offereth from four to six hundred, which is a mean five hundred golden marks (about ten dollahs a week of our moneys),

* Flyer, in German, means Vogeler.

† See page 359, Philadelphia Photographer, December number, 1878.

an ordinary porter's wages; for a fellah who will make negatives in sich perfection of shadders, and no de-fishency of mixture of the skin (game) and softness of head to point out each singular hare. "Such negatives are in great demand to-day" (Great Allah preserve us!) "and they need no re-touching." Go to, go to —, *for such are the only kind that dough kneed retouching.* Now this Moschelma offers *ten dollars* to a man who will save him *twenty-five dollars.* Go to, go two better!

And yet another fellah arises out of the background,* and he writing, sayeth: "I send you MY design for a background-holder." Nay, we will raise "Old Harry" if he maketh sut ter mistake. He should have written: "I send you A design of a background-holder;" he having beheld the selfsame thing at Rocher's gallery, even he stealeth ideas, and appeareth unto the eyes of men as a Cock-Rocher.

I say unto you, most of the ideas and inventions are but copies of one great man among you (shame on you), but he careth not a Kurtz for ye! Another asketh, † "Shall we sleep or awake?" But I say unto you, "In Mercy's sake, *sleep*, and awaketh not again."

Thou art, indeed, a queer fellah, Wilson, for thou exudiate a picture of the photographer of the period, "*Over the hill to the Poor-house.*" Go to; thou art a sly joker, and hideth thy cunning.

Beware of the Art-ful-type. "A singed moth evadeth the illumination, but the novice fly goeth to his infernal combustion." Again I say unto you, "Mount-Gum-mery offers his collodion for sale." I will purchase a bottle, *provided Montgum-mery goeth with the bottle.*

I have the original viol of Pag-a-ninny, and will sell the same (and the buyer thereof) cheap, for of course he who buyeth it can play as well on it as the said Pag-a-ninny. Oh, go to, go to, ye of much (too much) faith. And now, dear brethren, give us ideas of your own; thus: Why is a postage-stamp like a dull school-boy?

* See page 360, Philadelphia Photographer, December number, 1878.

† Page 365, same number.

Because you must licketh him to make him to stick unto his letters. And this is *original* of me, as I heard it in mine early childhood.

THE HORSE IN MOTION.

BUT few of our readers have failed to hear of the wonderful feats in *horse-photography*, accomplished last summer on the Palo Alto Trotting Course at San Francisco, by Mr. Edward J. Muybridge. How it was done has been described by us, and we now confine ourselves to our impressions of the results, though some time after many others have spoken.

Before us are the following photographs, mounted on cards in various attitudes as taken, viz.:

1. "Abe Edgington," trotting at a 15-minute gait; six positions.
2. "Mahomet," trotting at an 8-minute gait; six positions.
3. "Abe Edgington," trotting at an 8-minute gait; eight positions.
4. "Abe Edgington," trotting at a 2.24-minute gait; twelve positions.
5. "Occident," trotting at a 2.20-minute gait; twelve positions.

There *is* nothing like them, and nothing else *could* be like them.

Looking at them, and giving them the real sober thought they deserve—*going into them*, as it were—as if you were the driver, is enough to turn your brain. The succeeding positions in No. 1 we can get through without much excitement. There is a great deal more apparent "go" in No. 2, and yet more in No. 3, but when we come to Nos. 4 and 5, we get the "poetry of motion" twelve times intensified in every nerve. We imbibe all the energy of the horse. We stretch our imagination to its maximum, and are forced to cry "*stop*," Mr. Muybridge, you have caught more *motion* in your photographs than any previous camera ever dreamed of. They are truly wonderful, and we congratulate you.

Surely Mr. Rulofson could not have given much thought to the subject when he called these pictures "silhouettes" only, and the claims made for them as "bosh." Mr. Muybridge deserves great

credit, and has gained great notoriety for what he has done, and we shall try to induce him some time to tell us more about it. His address is at the Morse Gallery, 417 Montgomery Street, San Francisco. A note addressed to him will bring you a descriptive circular with trade prices, or \$1.50 each will bring you copies of the groups of positions.

FANCY PRINTING WITH WAYMOUTH'S VIGNETTE PAPERS.

AN article by Charles W. Hearn, in the October issue of your journal, describing a process for using Waymouth's Vignette Papers, of which he claims inventorship, although as innocent thereof as is a newly-born infant of highway robbery, fills me with surprise, and calls for a reply, for which I trust you will grant space.

Being in the employ of Mr. H. Rocher for four years and a half, the greater portion of this time was spent in superintending the printing, and about four years have elapsed since my first trials with the Waymouth Vignette Papers. Results at first were quite unsatisfactory, but I continued pondering on the subject. This, together with a suggestion from Mr. Rocher and his brother-in-law, Mr. Platz, soon brought me on the right track, and before long the process described by Mr. Hearn was developed, and the Waymouth papers were introduced in the establishment.

About seven or eight months ago Mr. Hearn was engaged to fill a vacancy, occurring by my leaving the printing department. At his arrival, the former was somewhat surprised at my way of vignetting, and during the conversation following, made the remark that "although I have written an article on Waymouth's Vignette Papers in my *Practical Printer*, I never thought much about them because I did not give them a good trial." Such were his words; and now this gentleman intends to instruct his brethren in the profession on the subject (?). Another proof of Mr. Hearn's false claims is, that one of his former employes informed me that vignette papers were not employed in the Printing Institute.

The fact is, Mr. Hearn, seeing the beauty

of vignettes, began to study the manner in which they were produced, he very minutely questioning me as to the *modus operandi*, as to the employment of the respective sizes, advantages to be derived, etc.; but, nevertheless, it took said person quite a while before becoming perfectly familiar with the idea. According to Mr. Hearn's own admission, he never before saw or heard of anything like this.

In point of argument, the article in question is an exact reproduction of my language used during our conversation, nor does it contain any additional new ideas whatsoever, excepting the suggestion in regard to protecting the Waymouths from breaking by applying waxed paper.

But is this an improvement? Breaks and tears in the tissue-paper only occur when bending the Waymouths under the frame, to keep the first from fluttering in the wind or falling back to its former position, or by rubbing the frame on the rough printing-board; in this latter case, the protecting tissue-paper being on the inside, cannot, of course, protect. Other tears, the result of carelessness, cannot be prevented by a bit of tissue-paper.

Supplementing what has been written, I wish to state that sizes 9, 10, and 15 are also very good for full and three-quarter figure, *carte de visite*; No. 16, for a good-sized bust; No. 18 is best suited for the $6\frac{1}{2} \times 8\frac{1}{2}$ or 8×10 pictures. For busts, though, the old style of vignette will probably be the best, as nearly every negative requires a different vignetting. Keep on hand a sufficient amount of cardboards, with different cut-outs. In vignetting, find the respective size, attach to the frame, and now, after closing the aperture with tissue-paper, take a marking-brush and correct any defects by applying paint to the tissue-paper. Gihon's Opaque, or any other opaque powder, mixed with gum-arabic water or albumen, will answer well. Respectfully yours,

EMIL VOGELER,

Printer with H. ROCHER,

77, 79 & 81 State Street.

CHICAGO, Dec. 11th, 1878.

WAYMOUTH'S VIGNETTE PAPERS are of great value to every vignette printer.

AS TO CARBON.

I AM induced to write you this letter in defence of carbon, from two letters published in your journal of November, one from Cincinnati and the other from Newfoundland, which are both calculated to discourage photographers in practicing, or trying to, one of the greatest and most useful improvements in photography of to-day, notwithstanding all that is written to the contrary. However, if your readers will only peruse the journal carefully through, they will find in Dr. Vogel's letter from Paris, dated September 26th, a complete refutation of the statement made by Van Loo to Gatchel, in which he says "no one was using carbon for portraiture in Paris," and that "Wallery, the leading artist there, had discharged his operator (of carbon work), 'an experienced' one, and gave up all hope of success after a six months' trial."

It would be impossible for an "*experienced*" operator in carbon to fail in getting out good prints in Paris during six months' work. Van Loo must have seen so many processes of printing in the Paris Exposition that he got slightly mixed up. I would refer your readers to page 339 of your journal for November, in which Dr. Vogel states, "Reutlinger is represented with small and large pictures, all equally well." A *special interest* is excited by some large pictures of his made by the *carbon process*." And again, farther on, the Doctor says, in the same communication, "The carbon printing process has found in France quite a number of admirers. Liebert, formerly in America, works exclusively with this process." What does Van Loo think of that? The Doctor continues: "Reutlinger has exhibited a large carbon print; Rousseau, Provost, Cavette, Frank, Fabre, etc., exhibit carbon pictures; some of them are in life-size, and very good. Braun, of Dornach, is ahead of all," etc., etc. After reading Dr. Vogel's letters, your readers will be convinced that the carbon process is not abandoned in France, nor is it likely to be in this country. In this city, only a few weeks ago, one of the most successful and largest meetings of the Photographic Society of Boston that was ever held, was drawn together by photographers

being interested in witnessing a very successful lecture and demonstration of the working of the carbon process by Mr. Derham, at Allen & Rowell's.

Messrs. Allen & Rowell have been successful workers in carbon for many years, and since 1873 have kept one operator, Mr. Derham, constantly employed at carbon work, and on an average they must use up over two hundred rolls a year of tissue for their own business, besides what they sell to licensees. The display at the entrance to their studio on Winter Street is composed of *carbon prints only*, and they are now prepared to execute any and all orders, from *cartes de visite* up to life-size.

I have printed life-size portraits in carbon in a direct solar printer, using one of Dallmeyer's 1 B lenses, in ten minutes, by using a very strong bichromate solution, and from an intense negative.

In my opinion, one of the principal causes of carbon not being more generally in use, is the apathy and ignorance of the public with regard to carbon, so few knowing anything about it. If it were in demand, Sarony, Kurtz, and others, would put men to work on the process who would get out good prints, but as long as the public are satisfied with silver prints, they are content to let carbon alone. I can name many who have worked it in this country, who have and are making money by working the process, and whose reputation in the future for making prints which do not fade, will be superior to those who adhere to the silver print.

The majority of photographers who have commenced to experiment in carbon printing, have not given it a fair test. They ought to study the nature of bichromate gelatin, so that in their own particular locality it can be successfully worked, for in different parts of the United States a different mode of working is necessary. I should advise all who wish to work carbon, to thoroughly study Dr. Eder's prize article on "The Reactions of Chromic Acid and Chromates upon Substances of Organic Origin, considered with Reference to their Uses in Photography."

No operator in carbon can be successful unless he well understands the "behavior of chromated gelatin with heat and moisture."

If the majority of your readers were to see some of the European journals of photography during the last twelve months, they would be posted with regard to the probability as to the extinction of the use of carbon now and in the future. Never was such scientific discussion brought to bear on the manufacture of albumen paper as is now on the manufacture of carbon tissue. The discussions during the last six months between Dr. Monckhoven and Mr. J. R. Johnson, and also Mr. J. R. Sawyer, of the Autotype Company, cannot help but educate the European photographer with regard to the durability of the colors used in the manufacture of pigment. In London, lectures are given, showing the working of the carbon process, which create great interest, especially one recently given by Thomas Bolas, F. C. S., and demonstrations by Mr. Foxlee, before the Society of Arts, and at which a great quantity of carbon prints were exhibited. One lent by Mr. P. Le Neve Foster, printed by Mr. Pouncey over twenty years ago, showed what was done during the infancy of carbon printing.

At nearly every exhibition in Europe now, carbon takes a most prominent part. Enlargements by the carbon process maintain in every way the well-earned reputation which they deserve, especially those recently exhibited last month by Vernon Heath and the Autotype Company, at the exhibition of the Photographic Society of Great Britain.

A distinguished critic, writing on the English Photographic Exhibition of 1878, says: "The enlargements in carbon of landscapes and interiors are worthy of every commendation, and the same may be said of the charming Woodburytype productions."

In conclusion, I must say a few words about your correspondent from Newfoundland. I cannot see how he is going to get out of paying the balance due Cooper for his permit to use the "exclusive" right to work the process on the island of Newfoundland, as he undoubtedly had the right to sell, he having purchased from Léon Lambert. Mr. Parsons is decidedly mistaken in regard to the diploma he received. The Carbon Society of America, which was formed in New

York last year, of which I am President, have never issued a diploma to any one. The diploma he received was from Mr. T. S. Lambert, who, I imagine, has a right to send one to every photographer in the world if he so wishes. I blame him for not being better posted. Simply having the right to work carbon will not make any one a carbon printer, as many have found out to their cost. That carbon is not as difficult to work as it is to make a good negative, if only proper care and brains are used, I am convinced. I could mention the names of lady amateurs in Boston who are making good carbon work.

Yours,

C. GENTILE.

BOSTON.

ANILINE PROCESS

FOR THE REPRODUCTION OF PLANS AND DRAWINGS.

BY D. TOWNSEND, B. S.

LAST spring, while experimenting with different processes for the reproduction of drawings, with a view to adoption of the best in the works with which I am connected, my attention was called to the "Aniline Process," invented by Mr. Willis in 1864, which is at present commanding so much attention in Germany and France. In my experiments I used ordinary paper, and sensitized by floating it on a bath composed of

Potassium Bichromate,	. 11 grammes.
Water,	. . . . . 110 c.c.
Sulphuric Acid,	. . . . . 7 "

When dry, I exposed it under a tracing to sunlight for one minute, then fumed in a box with aniline oil, and obtained either no picture at all, or so faint an image as to hardly be discernible.

Somewhat discouraged, I concluded to communicate with Dr. Vogel, which I was enabled to do by the kindness of Mr. F. Phillips, his former pupil. After some time Mr. Phillips received in reply to our inquiries the following letter, which is given in full:

The aniline process is a difficult one, being different from all other photographic processes, and which has played to others simi-

lar tricks as to yourself. A good, fast, Saxe paper, preparation by lamplight, and exposure with a photometre (without which it is nearly impossible to obtain anything), are the principal conditions of success. If sulphuric acid has proven to be a failure, try phosphoric acid according to the formula given in my *Handbook*. It must be borne in mind that the picture gets weaker as the exposure is extended, because the paper loses its quality to form aniline colors when exposed to light. There is hidden the whole secret of the process. Engineer Hoppe will shortly publish a full description of the process, and I shall not fail to send you a copy as soon as it comes to my hand. I hope it will be useful to you. Remember also that the picture will be produced on the inside of the paper if the chemicals soak in too far, therefore this must be carefully prevented. You will have to make a large number of experiments before the process will give you any satisfaction. It would only be a matter of twelve hours, however, if you could work once more in my studio, but at this distance it is impossible to describe all the hints and manipulations.

Yours truly,
H. VOGEL.

To Mr. F. PHILIPS.

Encouraged, I proceeded to profit by the hints given by Dr. Vogel, and after much experimenting, have at last been able to produce very tolerable results with the process. The details are as follows:

1. SENSITIZING.

The best paper, Saxe preferred, must be used, as nothing else will give satisfactory results. The sensitizing solution consists of

Bichromate of Potassium,	1 part.
Phosphoric Acid, sp. gr. 1.124,	8-10 parts.
Water,	10-12 "

The paper is cut to size, and then fastened with pins to a clean, flat board. Some of the solution is poured into a dish, and the paper is sensitized by means of a stiff brush about one inch wide, which is dipped into the liquid, and then painted on paper, first lengthways and then across, without removing the liquid in the brush. Finally, a soft camel's-hair duster, three inches wide, is used to remove all superfluous liquid, and

smooth out any streaks left by the first brushing. The solution can also be applied with a soft sponge, but I prefer the first method, as the fingers are then not brought into contact with the bichromate, which is a violent poison.

The sheet is now hung up, and allowed to dry slowly, it being complete in from fifteen to twenty minutes. This operation should be performed in a dark-room, such as is used for wet plates, owing to the extreme sensitiveness of the paper, which is easily spoiled by the least actinic light. When dry, the paper may be exposed at once, or kept in a dark place unaltered for a long time. The brushes should be thoroughly washed and dried after each time they are used.

2. EXPOSING.

The prepared paper is now put in the printing-frame under the tracing, covered with a black cloth, and carried into the sunlight. The time of exposure will vary with the time of the year, in summer being about twenty to twenty-five seconds, and in winter forty to forty-five seconds. The surest method is to use Vogel's photometre, and carry the exposure to sixteen degrees, but if the instrument is not handy, experiments will have to be made to determine the exposure.

Here is the most important part of the whole process, because underexposure will not reduce the bichromate sufficiently, and overexposure renders the paper less liable to form aniline colors. When the paper is rightly prepared, it should be of a yellow color, and after exposure on opening the frame, a faint yellow picture will be observed on a greenish ground.

3. FUMING.

When the exposure is judged sufficient, the cloth is replaced, and the frame carried back into the *dark-room*, where it is opened, the picture removed, and pinned to the lid of a fuming-box. The box is provided with a sheet of glass, on which is blotting-paper soaked with a solution of

Aniline Oil,	1 part,
Benzine,	10 parts,

and which can be lowered or raised at pleas-

ure by means of crosspieces of wood at different heights. It is allowed to remain for thirty minutes, when the picture, if rightly exposed, will be sufficiently developed, and will show dark brown to black on a grayish ground. If the image be rather faint, it should be allowed to remain for two or three hours longer.

4. WASHING.

On taking out the print, it must be washed for some time in at least four changes of clean water, when the colors will be sufficiently fixed, and after drying the picture is finished.

Great care must be taken not to handle the sensitive paper any more than is absolutely necessary, and then only with *perfectly* clean hands; also to perform *all* the operations in absolutely non-actinic light. With these precautions, I think success may be assured.

PHILADELPHIA, Dec. 17th, 1878.

FRIENDS IN COUNCIL.

I.

INTRODUCTORY.

EDITOR PHILADELPHIA PHOTOGRAPHER:

A number of photographic friends frequently meeting together in an informal, social way, where the conversation turns on photography and art as connected therewith, including all collateral matters near or remote, often start lines of thought and inquiry, and elicit items of information that seem to me worth preserving; so, with your permission, I will constitute myself their reporter, and embalm some of their sayings, wise and otherwise, in the enduring repository of your pages.

As I do not pretend to report *verbatim*, and only transcribe from memory, I shall probably only preserve some of the spirit and essential ideas of the conversations in my own language, and colored with my own style, but giving each speaker a fair presentation of his ideas from his own point of view.

As we have no presiding officer, and no stated times of meeting, and no formal rules of procedure, and as two or three often talk

at once when on a specially interesting topic, it is probable that the reports, like the conversations, will be very disconnected and discursive. Sometimes there are a dozen of us together, sometimes only two or three; sometimes one or two do most of the talking, and sometimes all get interested and have their say, from a few interjected words to a stated argument from each; but it seems to me that in this informal way, we get at opinions and ideas that never present themselves before the Presidents and Secretaries of regular societies, and yet have a value of their own as great as many subjects there presented.

If these reports meet your approval, we shall see what value they may have as the time goes on, for I shall expect to send you something about once a month.

Yours respectfully,

E. K. HOUGH.

NEW YORK, Dec. 19th, 1878.

PHOTO-MECHANICAL PRINTING.

I WOULD like to occupy a little space in your journal, to review the statements and claims made by the Artotype Company, as we find them in their advertisement in Anthony's *Bulletin* and the St. Louis *Practical Photographer* for December. If it is asked what my motive is in doing so, I reply, "for the interest of photography in general, and American photographers in particular;" and further, notwithstanding the fullest publication in the pages of the present and past volumes of the *Philadelphia Photographer*, of processes and specifications of patented processes, there seems to be a lamentable lack of knowledge among photographers as to their right to use, and what not to use, of processes so published, judging from repeated inquiries made, both personally and by letter, to me on matters pertaining to photo-mechanical printing.

First, then, what is "Artotype?" It is a name or trademark given to prints, commonly known as collotype (from *κόλλα*, glue, and *type*, to print from), and of which trademark the United States government has granted the Artotype Company the use for thirty years.

The second paragraph of the advertise-

ment is that to which I specially desire to call attention. Under the patent granted to J. B. Obernetter, of Munich, on September 17th, 1878, and assigned to the gentlemen forming the Artotype Company, and in combination with the Albertype patent granted in 1869, they propose to grant licenses, and teach the Obernetter method of producing collotype prints, and charge an outrageously high price for the same, out of all proportion to the *value* of the *method* of working the process; for in the patent they claim to work under, there is *no* value, the same having become public property by prior publication three years before their obtaining a patent for preparing the plate before applying the printing film, and known as the Husnik process. Consequently a person buying of them the process for a certain city, town, or territory, has no legal means to prevent any one working the same, or a similar process, next door to him, supposing him to have the knowledge to do so.

The above-named patent is on a par with that granted to Despaquis, of Paris, Dec. 7th, 1875, for lighting the plate from the back, *after* the photographic image had been impressed thereon, the same having been fully described by Dr. Monckhoven, Borlenneti, Lecontysch, and other writers, as early as 1871.

Some may ask the question, then why does the Patent Office grant patents for what is already public property? The answer is, the Patent Office will grant a patent for anything they do not find on *their own* records, unless the Examiner in that special department brings to the Commissioner notice of a prior publication covering the application being made.

The combination of the Albert with the Obernetter patent gives to the latter no *real* strength; the combination is one evidently of *POLICY*. The Albertype patent, for prior hardening of the first film by lighting from the back, is a valid patent, and as such has been respected by the writer, who, in 1874, also filed a caveat for a photo-mechanical printing process, since modified, and from plates prepared by him, over one thousand impressions have been taken.

The claim as to quality of prints produced by the Obernetter process I can *nearly* coin-

cide with, but with the cost and quantity of production I cannot agree, having had sufficient practical experience in that line to enable me to say that it cannot be done at any such low rate of cost as that put forth.

In conclusion, I would gladly welcome the spread of photo-mechanical printing, and see no reason why at least every city of 50,000 or more inhabitants should not have its photo-mechanical printer as well as its lithographers and engravers; but I am not prepared to say that *one week's* tuition will make a *competent* collotype printer, when it is well known that to produce the finest work from a collotype plate, a thoroughly skilled lithograph printer is a *sine qua non*. But a sufficient knowledge, as a basis to start upon, may be acquired in a week. It must, however, be followed by close and diligent effort, if any eminence in the art of collotype printing is to be acquired by the individual undertaking it.

Try it once, you who may be skeptical, or have an unusual bump of self-esteem. To those who may desire to acquire a practical knowledge of heliography, photo-engraving, etc., the opportunity is open to obtain such knowledge, and at cost not ruinous. For information as to whom to apply, see advertisement.

Fraternally yours,

JOHN CARBUTT.

THE LIGHTNING PROCESS OF THE PAST.

IT is one funny fact, that photographers are so non-conservative in their workings that, in the muddle of their restless changings, they often forget a good thing which they have had in practice, or it becomes so lost to them they cannot recall it.

The "Lightninglists" claim Mr. William Notman, the distinguished photographer of Montreal, as their principal buyer. Mr. Notman, of course, dabbles none with the chemicals, but gets his men whatever they want; and one of his "faithful servants" is his brother John, who has been with him nearly or quite twenty years, and as long ago as that was a discoverer of a "Lightning" process. We recover it and restore it to the public from among "the lost arts"—Snel-

ling's *Photographic and Fine Art Journal*, April, 1858—on page 106 of which we find the following:

NEW NEGATIVE PROCESS.

MONTREAL, February 25th, 1858.

H. H. SNELLING, ESQ.

DEAR SIR: In reply to your favor of the 19th, I have much pleasure in sending for insertion in your journal, the following process for producing negatives; the time of sitting originally being less than for a positive.

After exposure, develop with

Protosulphate of Iron, . . .	2 ounces.
Acetic Acid (No. 8), . . .	12 "
Alcohol (95°), . . .	4 "
Water, . . .	1 quart.

Cover the plate with the above, and allow it to remain until all the details appear; then pour off and wash well with water, and continue developing with

Pyrogallic Acid, . . .	2 to 3 grains.
Glacial Acetic Acid, . . .	6 drops.
Alcohol, . . .	6 "
Water, . . .	1 ounce.

Previous to flowing the plate with the above, add to it two or three drops of a thirty-grain nitrate solution to each drachm, and flow off and on the plate until the desired intensity is attained. In hot weather, the proportion of glacial acetic acid must be increased.

Previous to making the above discovery, some three or four weeks ago, to obtain a good negative I found it necessary to have a sitting of forty-five seconds on an average. Now I find four or five seconds quite sufficient, having taken several good negatives since with simply removing the cap. The process is invaluable for children and groups, and the quality of the negatives is all that could be desired, giving beautiful detail in the shadows with instantaneous exposure.

I use but one nitrate bath in my practice for positives and negatives, and but one collodion, viz., Anthony's, which I find first rate.

It may seem strange to some, that the time of exposure is less than for a positive, but the reason is that a positive requires a more active developer, which cannot be prolonged to give the detail without injuring

the tone and clearness, so desirable in a positive.

Yours truly,

J. NOTMAN.

And then, and yet, in Anthony's *Bulletin*, for November, 1878, twenty years and seven months later, we find the following "characteristic" (*this is true*) evidence in support of what we first said, viz.:

"Mr. William Notman's estimate of the lightning process does not seem to have diminished, for on November 14th he sent the following order:

Lightning Silver, . . .	60 ounces.
Lightning Developer, . . .	40 bottles.
Lightning Collodion, . . .	15 bottles."

Oh, Mr. Notman! Mr. Notman!

Here is a good free advertisement for the Li'gelist.

SOCIETY GOSSIP.

PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.—The stated meeting of this Society was held on Thursday evening, November 7th, 1878. Mr. Bates in the chair.

The following gentlemen were elected to serve for the ensuing year: President, Mr. Joseph W. Bates; Vice-Presidents, Messrs. George W. Hewitt and John Carbutt; Treasurer, S. Fisher Corlies; Recording Secretary, D. Anson Partridge; Corresponding Secretary, Dr. Carl Seiler.

Mr. Bell exhibited an admirable photograph of an interior made with his emulsion.

Mr. Struthers exhibited a scenograph of French manufacture, which was examined with great interest by the members.

Mr. Browne exhibited a series of beautiful prints from negatives made during the past summer, and gave a further account of his method of applying heat to plates during development. He found the small flame of a candle very serviceable, as by its employment heat could be applied to a small portion of the plate only, and thus local development or intensification could be effected if desired.

The Chairman said that he had some experience with Swan's plates, and found them very quick and satisfactory.

Adjourned.

A stated meeting was held on Thursday evening, November 21st, 1878. The President presiding.

Mr. Young exhibited two negatives to illustrate the keeping qualities of washed emulsion dry plates after exposure.

These plates were both exposed in October, 1877; one of them developed at that time, and the other developed in October, 1878. The plate developed last was as good as the first one, with the slight exception of a portion around the edges of the plate, due to the wood of the plate-box in which it was stored.

A guide for mounting photographs with ease and accuracy, designed by Mr. Carbutt, was shown by Mr. McCollin.

The Chairman exhibited some very quick and satisfactory negatives made on "Kennett" plates.

Mr. Corlies spoke of a trouble he had met with in using a certain sample of albumenized paper, the sensitizing solution standing in drops or tears on the surface of the sheet after its removal from the printing bath.

Mr. Browne said this could be cured entirely by rubbing the surface of the paper with a pad of canton flannel before laying it on the bath.

Mr. Bell recommended blóttling off the sheets before hanging up to dry.

Adjourned. D. ANSON PARTRIDGE.

Recording Secretary.

OUR PICTURE.

OWING to the unusually continuous cloudy weather of December, we have been unable to print sufficiently of the pictures intended for our current issue, and are therefore forced to be so immodest as to bring before our readers, so soon, another emanation from our own humble establishment.

This is our apology. Of the picture, we have only to say that it is but one of the many beauty spots of the most beautiful Park in the World, and combines so many elements that go towards making up a picture, that one could scarcely fail on it. We are not to criticize it though. We invite our readers to do that. Later on we may refer to it again in a course of articles in preparation, and to accompany which it was intended.

Some of the photo-mechanical printers may chide us for not applying to them in such an emergency, but we have yet to see any of them equal good silver prints, and for the excellence of these before you much is due to our printer, Mr. H. C. Bridle. The negatives were made with a Morrison lens, and their work is hard to excel.

A CAPITAL chance is offered to any party seeking a southern locality, to buy a half interest in one of the best established galleries in the South. Address H., care of *Philadelphia Photographer*.

Editor's Table.

PICTURES RECEIVED.—A glowing, sunshiny portrait of ELBERT ANDERSON. Some Cabinets of much merit from Mr. G. M. BRETZ, of Pottsville, Pa. Mr. BRETZ is among the ambitious ones, and constantly improves his work. His positions are very good. MESSRS. O. MCINTIRE, Canton, Ohio, and A. FREEMAN, Dallas, Texas, also each favor us with examples of their Cabinet work, which does them credit. Nice, clean work, all of it. The same may be said of some pictures from Mr. E. WILBUR, Franklin, Pa., of which "Maud Muller" is a very pretty little composition. Mr. J. B. LEISENRING, Fort Dodge, Iowa, has proven himself as good at outdoor

work as at portraiture, judging from the examples of city views he sends us. Mr. J. H. SCORFORD, Lansing, Mich., has also gathered in a fine lot of stereoscopic negatives of his city, proofs of which are before us, including interiors and exteriors of the new capitol. Mr. J. CARBUTT, Ninth and Arch Streets, Philadelphia, has had remarkable success with his photo-engraving process, some fine examples of which we have.

ITEMS OF NEWS.—We saw Mr. S. T. BLESSING, the favorite Southern stockdealer of New Orleans, a few days ago in New York, recuperating his health after the scourge.—Mr. WALDBACK

made a mistake in his *Mosaics* article in stating that there are 30 grains in a gramme; palpably an error. His article on quick work is well worth the price of the book, nevertheless.—“Mites from *Mosaics*” and “Hints from *Hearn*” are laid over for want of space.—The English Almanacs not until January late: patience.—*Mosaics* has more practical, sensible articles this year than ever before; 144 pages, 50 cents.—Several articles received too late for *Mosaics* appear in this number. If the authors have not received their authors' copy, all, we will be glad to know of it.—“Kum in and Get your Pictur Token” is the sign on a — studio at Asbury Park.—The Boston Photographic Association met December 4th, and were entertained by Dr. HOLT and Prof. BLODGETT, with a series of microscopic projections and a lecture.—Mr. C. J. HUNTINGTON, of HUNTINGTON BROS., Olympia, W. T., died suddenly of heart disease November 1st, 1878. Their business is for sale.—Mr. JULIUS HALL was among the successful ones at the late fair of the American Institute, New York, having obtained a “diploma.” A good haul.—Mr. A. H. BALDWIN (No. 1 Chambers Street, New York), the veteran stockdealer, has sent us his carte. We take off our hat.—One of the city papers gives a half column to the best artist of Keokuk, Iowa, Mr. E. P. LIBBY, and tells of the good done by him in elevating our art thereabouts.

INTERESTING and eloquent lectures have been recently delivered by Prof. WILLIAM H. SHERMAN, before the Popular Science Society of Milwaukee, Wis., on Light and Photography, and published in the various papers of that city. We wish we had the space to republish them. The subjects were treated most ably, and the lectures accompanied by brilliant experiments. Prof. SHERMAN is one of the best scholars we have, and it is a source of regret to us that only once a year can we draw him out for the benefit of our art, and that is in *Mosaics*. He always writes for that. Read his 1879 article.

WE have been trying Mr. CARBUTT'S device for mounting pictures, noticed in our last. It is so useful we must speak of it again. Over 200 prints were mounted on 16 x 20 cards, exactly and neatly, in a very short time, although they varied in size from 5 x 8 to 14 x 17.

Mr. WALTER C. NORTH, whom it is well known has been serving for some time as a photographic teacher on the missionary plan all over the country, has returned to his old home, Utica, N. Y., and opened a fine establishment at No.

56 Genesee Street, where he has a fine light, instruments, and all the needful articles for the accomodation of a limited number of pupils. The grand “opening” of the new place is described in a column of praise in the Utica papers. We wish Mr. NORTH the great success he deserves.

A SECOND-HAND SARONY Posing Machine is wanted by one of our subscribers. Address S., care of this office, and state price.

THE only photographic book in *Spanish* is the *Manual de Fotografia*, published by Scovill Manufacturing Company, New York, at \$5.00.

ANOTHER EFFORT.—The following notice was liberally distributed “West:”

CHICAGO, November 25th, 1878.

DEAR SIR: It has been suggested that a meeting of the student element of the photographic fraternity in our city be called, and the subject discussed of organizing for mutual improvement. It is not intended to shape itself as a regular association or society, but to improve the winter and spring months in friendly and fraternal gathering, each week if possible, and develop a more systematic and thorough study of the wonders of our art-science.

If in harmony with this effort, we hope you will attend the first meeting, at 229 and 231 State Street (up-stairs), Friday evening, November 29th, 1878.

G. A. DOUGLASS.

Good! What the result was we haven't yet heard.

THERE is nothing more beautiful and pathetic than the unfaltering trust placed by some of our good and pure-minded photographers in the experienced process-sharps of the day. A person in our position necessarily becomes hardened, but when he sees such things he is forced to dissolve or precipitate.

THE medal awarded EDWARD L. WILSON for Magic Lantern Transparencies at the *Maryland Institute*, Baltimore, has been received, and is worth having.

Prof. D. A. WOODWARD has reduced the prices of his Solar Cameras. See his advertisement.

“Toronto.”—Thank you for favors received. Read our magazine, and keep on in your good work. Never fear, and keep us posted on your address, that we may communicate with you. Apprise us of all new facts in the case. A letter

from France opens our eyes. There is a battle among the moguls themselves, of course.

OUR journal still thrives, and we continue to get a few advertisements, and once in a while an item of news. Read the following from our veteran friend, B. FRENCH, Esq.

BOSTON, December 14th, 1878.

We inclose two pages. Would like to have them in the January number of the *Philadelphia Photographer*, in front part, next to the picture you illustrate your journal with. We shall soon have something new to announce, which will make all photographers rejoice. It will be a new supplementary back lens, which can be used in all sizes of the VOIGTLANDER & SON tubes, and make short focus quick acting, with perfect flatness of field, great depth of focus, and perfect correctness of picture, without any distortion of straight lines; the lens will screw into the objective in place of back lens now in use. When we give this to the fraternity they will not want any more "lightning" materials. We think this will be the next wonderful improvement made since the Euryscope was introduced. Will give you more particulars in regard to it when we get them.

Yours truly,

BENJ. FRENCH & Co.

MOSAICS MAKES MANY MASTER MANIPULATORS, and they send us honest testimonials as to the value of our little annual. Here are a few: Prof. H. M. MCINTIRE, now chemist with Prof. T. A. EDISON, of telephone fame, says: "The *Mosaics* came to-day. It does not require more than a glance at it to see that your claim 'better than ever,' is fully sustained."

"The *Mosaics* for 1879 received. I notice one article by E. P. LIBBY, on pages 82 and 83, which should interest all photographers, and I would advise them to invest fifty cents at once, and try the formula for quick working. We have a card picture represented to have been made in one-quarter of a second, which is excellent. We have asked Mr. BLACK to make some collodion and bath and try it, and if it works as represented, it is a valuable formula for all photographers.

Yours truly,

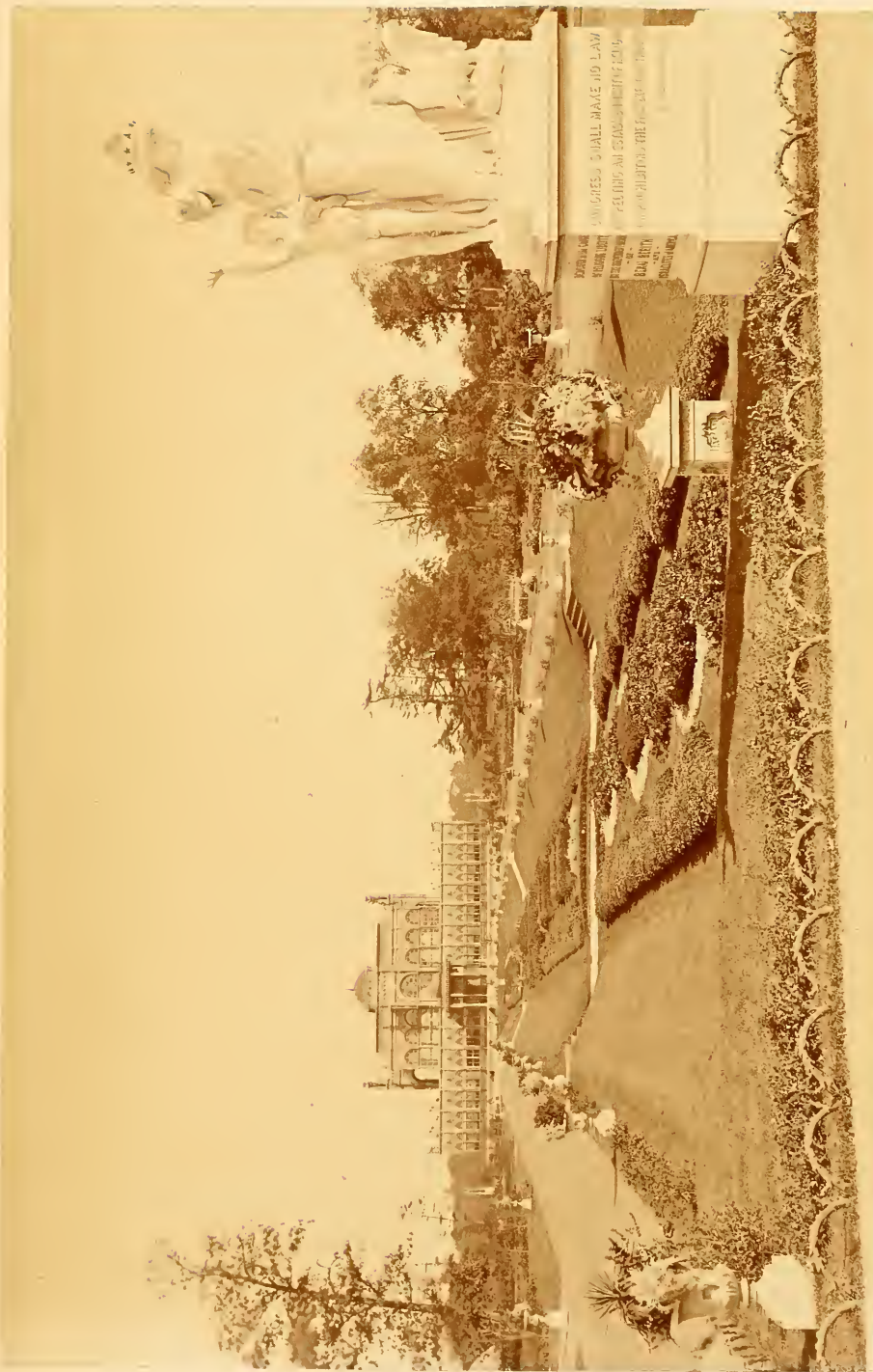
"BENJ. FRENCH & Co."

MR. J. C. SOMERVILLE, the deservedly popular stockdealer of St. Louis, is never behindhand, and our readers must not suppose so when they read his advertisement, and see that he still offers "*Catalogues for 1878.*" It is a mistake of our printer, and Mr. J. C. S. is on hand with a splendid *New Catalogue for 1879*, copies of which he

will send freely to all buyers. Don't buy before first consulting his catalogue for 1879.

TESTIMONIALS TO THE "PHILADELPHIA PHOTOGRAPHER."—Since the scattering of our prospectus in our last number, and our confidential circular, the testimonials have fairly rolled in on us. We have room for but a few extracts, as follows: "I want to whisper in your ear that I intend to send you something extra for the good old *Philadelphia Photographer* next year. Success to you both."—WALTER C. NORTH, Utica, N. Y. "Send it for 1879, and I hope you will get a great number of subscribers for the year. As some of your subscribers say they cannot get along without it, so say I. I look for it the first of the month much as a man looks for his dinner—hungrily. I have it since 1865, and a whole library of photographic works."—JOHN REID, Paterson, N. J. "Send me the journal and *Mosaics* sure for 1879."—E. KLAUBER, Louisville, Ky. "Don't fail to continue the *Philadelphia Photographer.*"—R. BENECKE, St. Louis, Mo. "Times are most exceedingly dull, but I cannot do without your journal, so here I come for another year."—A. C. ENOCH. "Your 'Over the Hill' is one of the best photos I have seen for a long time, both in artistic conception and technical finish."—Prof. KARL KLAUSER, Farmington, Conn. "I like your journal so well I cannot do without it."—B. B. GRINNELL, Fall River. "Your valuable magazine has done more for me than can be estimated on paper, and I am sure to-day I would have been in the ruts but for it."—F. R. BARROWS, Sturgis, Mich. "I prize the last number more than any preceding one. May you never travel 'Over the Hill to the Poorhouse' so long as you prove yourself to be, as you always have, the photographers' friend."—H. C. NORMAN, Natchez, Miss. "I hope the photographers all over the country will keep up their subscriptions to the *Philadelphia Photographer*, for it has always been the best, and in advance of all others."—JAMES SINCLAIR, Stillwater, Minn. "I always get just what I want by advertising in your journal."—E. DUNHAM, Ovid, Mich. "I receive all the magazines published in America pertaining to photography, and beg to state that the *Philadelphia Photographer* is the one I find most profitable and reliable. Therefore I congratulate you on being able to publish the best photographic journal in the United States."—L. A. WELLER, Austin, Nevada.

And so they come to us from North, South, East, West, and—St. Louis. We still live, and are "going on."



EDWARD L. WILSON,

Public Library
HORTICULTURAL GROUNDS,

FAIRMOUNT PARK, PHILADELPHIA.

PHILADELPHIA.

T H E

Philadelphia Photographer.

Vol. XVI.

FEBRUARY, 1879.

No. 182.

Entered according to Act of Congress, in the year 1879,

BY EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

WHICH WAY?

SO crowded were we for space in our last issue that we were compelled to defer these remarks, which properly belong to the beginning of a new volume.

The question, *Which way?* has caused us no little anxiety, during the last year especially. When we took upon us the work of this magazine, fifteen years ago, photography and its votaries were living and working under a most curious condition of circumstances.

Goethe, with his magic pencil, does not paint them too cruelly when he makes his hero in *Wilhelm Meister* say:

“How utterly these men are unacquainted with themselves, how thoughtlessly they carry on their trade, how boundless their pretensions are, no mortal can conceive. Each not only would be first, but sole; each wishes to exclude the rest, and does not see that even with them he can scarcely accomplish anything. Each thinks himself a man of marvellous originality; yet with a ravening appetite for novelty, he cannot walk a foot-step from the beaten track. How vehemently they counterwork each other. It is only the pitifullest self-love, the narrowest views of interest, that unite them. Of reciprocal accommodation they have no idea: backbiting and hidden spitefulness maintain a constant jealousy among them. In their

lives they are either rakes or simpletons. Each claims the loftiest respect, each writhes under the slightest blame. ‘All this he knew already,’ he will tell you! Why, then, did he not do it? Ever needy, ever unconfiding, they seem as if their greatest fear were reason and good taste, their highest care were to secure the majesty of their self-will.”

For not only were they in this unamiable and non-progressive condition as to each other, but they were themselves harassed and annoyed and robbed by a horde of process-sharps and patent peddlers, who gave them constant unrest, and helped in the general lack of growth and advancement.

There seemed a wide field for us to work in, and plenty to do in it. Right willingly we went at it, and were soon joined by many strong hands. What transpired we need not rehearse, except to say that a better feeling grew; the impostors were put down; a noble association was formed, and began to do good; and our beautiful art advanced until such studies as were never dreamed of were made. All seemed to be coming out as it should, until two or three years ago some evil, rankling spirits became dissatisfied and jealous; their growing, philosophical spirit left them; those who were the hardest workers became the most accused, and therefore dropped further effort for the common good, and the work of years fell

with a crush—and whence have we been drifting—*which way?*

Even photographic journalism has become a mockery, and space belonging to our art alone, given to foolish jest and personal spleen, until we are forced to cry again and again, Oh! photography, photography—*which way?*

We have seen our old friends of many years, tempted by the process-sharp and become so enthused and bigoted as to be unable to withstand any degree of good counsel in the matter, and therefore drop their old love for the new. We have received their haughty rebukes, and grieved over such a change in affairs. The enemy has approached us with far more than enough to make up all money losses, and often has come up the query, *Which way will you go?*

Thus far we have stood firm. The close of the old year came, when we were compelled to decide our policy for the new. With it came another candidate for the hard-earned cash of our constituency, and another tempter's voice to us. We began to feel that after all we *might* be on the *wrong way*. Our patrons seemingly liked to be taken advantage of. This sort of bleeding was frequent and very allopathic, but it was healthy and always welcome—and why should we not join forces with the leeches who were ready to do the work, and *hold* them and guide them while they did it? Our readers seem to want it. What harm?

Nay, we could not. The fair fame of photography, for which we have worked so long, shall have no unnecessary scars because of us, and the question, *Which way?* was decided for one more year, and our policy we announced.

What an escape we have had, and what a change is already wrought! The old friends are coming back with floods of kind and forgiving words. They are flocking in to see us with their congratulations, and an unprecedented subscription list (a necessity to us) is the result.

Now, photographers of America, which way? Will you join hands with us once more? Referring to Goethe again, in speaking of the actor's profession, he says:

“As easily as you may set in motion the

imaginations of men, gladly as they listen to your tales and fictions, it is yet very seldom that you find among them any touch of an imagination you can call productive. In actors this remark is strikingly exemplified. Any one of them is well content to undertake a beautiful, praiseworthy, brilliant part; and seldom will any one of them do more than self-complacently transport himself into his hero's place, without in the smallest troubling his head whether other people view him so or not. But to seize with vivacity what the author's feeling was in writing; what portion of your individual qualities you must cast off, in order to do justice to a part; how by your own conviction that you are become another man, you may carry with you the convictions of the audience; how by the inward truth of your conceptive power, you can change these boards into a temple, this pasteboard into wood; to seize and execute all this is given to very few. That internal strength of soul, by which alone deception can be brought about; that lying truth, without which nothing will affect us rightly, have, by most men, never even been imagined.

“Let us not then press too hard for spirit and feeling in our friends! The surest way is first coolly to instruct them in the sense and letter of the piece; if possible, to open their understandings. Whoever has the talent will then, of his own accord, eagerly adopt the spirited feeling and manner of expression; and those who have it not, will at least be prevented from acting or reciting altogether falsely. And among actors, as indeed in all cases, there is no worse arrangement than for any one to make pretensions to the spirit of a thing, while the sense and letter of it are not ready and clear to him.”

And so it is with *our* profession. Let us believe this. Let us work in *this way*, and the good ways of progress. So far as our humble ability lies, we shall, as heretofore, strive to instruct you “in the sense and letter of the piece,” hoping to hit and help the many who “have the talent.” Then the day will soon come when our art will begin to grow again; our work will improve; our association together again will be near at hand; our patronage will in-

crease; and our work shall prosper under our hands.

We have decided *which way*. Will not you do so? We want your co-operation. We want your support. We want the assurance from you that we are on the right way to help you—if we are. We want some good, old-fashioned club lists of new subscribers. We all want to be more acquainted with ourselves. We want more “reciprocal accommodation.” We want you to trust us, and work with us. Which way?

AN EXCELLENT LICHTDRUCK PROCESS.*

BY PROF. J. HUSNIK, OF TABOR.

BASIS.—As a basis I employ a polished glass plate, three lines in thickness, or may be thicker. These plates are polished mat on one side by rubbing them with finely levigated emery powder; the powder is moistened with a little water, and applied to the glass surface, the emery being uniformly moistened by rubbing with the finger. This is very necessary, for should any dry emery come in contact with the glass, deep scratches are at once produced. Another glass plate is placed upon the one covered with moist emery, and the former is rubbed by a circular movement, and with very little pressure. In a few moments you perceive that the noise from the breaking up of the large particles ceases, and then more pressure and freer and quicker manipulation may ensue. For about ten minutes the task should be continued, the grains of emery becoming smaller as the work proceeds, and the mat surface of a finer character. If, after the plate has been washed, it turns out that the glass surface has not been evenly rubbed, or that by reason of the inequality of the plate certain portions have not been touched, the grinding must be proceeded with, a fresh supply of emery being obtained. The action must be continued in

order to reduce the size of the grains as much as possible. In this way two mat plates are produced at one and the same time.

If it is a question of employing plates a second time, these, in order to be freed from gelatin, are put into a lead or zinc vessel containing an alkali solution formed of slaked lime or soda. This alkaline liquid may be preserved in good condition for more than two months, and may, by the addition of a further quantity of lime, be invigorated when necessary. In a bath of this kind the hard gelatin film becomes softened in a period of twelve hours, and the glass may then be cleaned with sawdust, or some such material, and washed. The plates are then ground with emery powder in the manner just described, in order to free the pores of the glass from any gelatin remaining in them. Finally, the plates are rubbed with a rag, and rinsed in several waters, and then dried.

First Preparation of the Plates.—I take twenty-five parts of white of egg, forty-five parts of distilled water, and eight parts of solution of soda water glass, such as can be obtained in commerce. The white of egg must be perfectly free from the yolk. The three constituents are mixed together, beaten to a froth, and then allowed to stand. Next day, or at any rate after an interval of six or eight hours, the clear portion is decanted off, and filtered through a clean cloth. This will render subsequent filtration through paper much easier. An open glass vessel, or glass beaker, is taken, and a glass funnel is put into it, so that the tube of the latter reaches nearly to the bottom; the filter is then fitted with soft and thick filter-paper, and the mixture poured in. The pores of the paper are very speedily stopped, and the process of filtering is suspended; for this reason the solution is poured from the funnel back again into the glass vessel, the filter-paper is replaced by new, and the solution again passed through it. This operation will have to be repeated several times before all the liquid in the vessel has gone through the filter. When the liquid has been once filtered, it can be easily submitted to a second operation without the filter-paper being changed. For this reason the filtered

* At the request of several of our patrons we republish this paper from the Photo. Correspondenz (Vienna, 1875). It gives a concise method of making collographic prints, and with sufficient instruction any sensible photographer should be able to practice it.

liquid is poured into another glass and filtered a second time. As the first filtrate always contains a few hairs or fibres, the liquid that passes through first of all should always be poured back to go through the filter again, and in this way a perfectly clean liquid, free from bubbles, is obtained.

To prepare the plates a sheet of glass of large size is laid down horizontally, and on it is placed one of the mat plates, which has, first of all, been dusted with a brush. Upon its surface, and near the edge, is poured some of the solution above described, and this is spread over the plate by gently inclining it. Those parts which are not wetted in this way are afterwards covered with the liquid by spreading it with a strip of paper; but, in any case, the liquid must not be allowed to flow quickly, but gently in a line downwards. Another vessel is brought to one corner of the plate, and there the glass is quickly turned on end, so that the superfluous matter runs off. The quick withdrawal of the liquid carries away any air-bubbles which may have been formed when the fluid was spread with the paper; but, if any should yet remain, a little more of the filtered solution is applied, and then again rapidly drained into the second vessel. The plate is permitted to drain, and is set up against the wall to dry. The fluid which has been poured off the plate must be filtered again before use. In this way a large number of plates may be prepared, and, in this condition, may be kept for six months. They must never be used immediately, but should remain a day or two before being employed. The longer they are allowed to remain, the better they are.

Second Preparation.—To coat the plates with gelatin, they must first of all be thoroughly rinsed with cold water, best under a tap, but without the prepared side being touched. They are then dried, and ready to be treated with gelatin. This is done in the following manner: a box having a sheet-iron bottom, and a cover of dark linen or cloth, is provided; inside, three inches above the iron bottom, is a frame, spanned with linen exactly the size of the interior, and this is covered with filter-paper, loosely laid upon it. This frame should equalize perfectly the unequal temperature of the iron

below, for under the box is fitted a gas or spirit flame. Three inches under the lid are iron rods from one side of the box to the other, placed horizontally, each rod being furnished with two or three holes, into which screws are fitted, upon the heads of which the glass plates rest. By turning these screws so that the heads are raised or depressed, the plates are easily brought into a horizontal position. A thermometer suitably fitted in the side of the box indicates the temperature. Two, three, or more glass plates are laid horizontally upon the screws, the box is closed, and the temperature raised to 30° Réaumur. In the meantime, a quarter of an ounce of gelatin (7.5 grammes) of the finest French gelatin is taken; five ounces (150 grammes) of distilled water is poured upon it, and the gelatin allowed to swell for an hour. After this the gelatin is dissolved upon a water bath, and when it has reached a high temperature (say 70° R.), fourteen grains (0.875 grammes) of bichromate of ammonium, and ten grains (0.625 grammes) of chloride of calcium are added; finally, after everything has dissolved, an ounce (30 grammes) of ordinary spirits of wine is added, and the mixture filtered.

The filtered solution is poured upon the warmed glass plate, and spread over the surface by means of a strip of paper. Not too much, nor too little, liquid must be applied, but only so much, that when the plate is inclined, only a little of it betrays a tendency to run off. When the operation has been carried out several times, the proper amount to be applied is easily guessed. Too thick a film does not last in printing, as the scraper abrades the surface; and too thin a film, on the other hand, permits the fine grains of the glass to appear as little black spots, the force employed in the press being the greater. When coated, the plates are put into the box and allowed to dry at a temperature of 35° R. Plates prepared to this stage will keep good in summer for the space of a week, and in winter-time for a month, becoming better after keeping a little while.

The Exposure.—This may be estimated at three-quarters of an hour in the shade, in the case of a good negative, or a quarter of an hour in the sun. Diffused light gives

the best half-tones. After exposure, the chrome salts, which have not been acted upon by light, are washed out with water, and the plate well wiped and put to dry. After three hours, the plate may be employed for printing purposes.

Printing.—The plate is fixed by means of plaster of Paris to a lithographic stone, and printed by the aid of a lithographic press. The plate is moistened and treated with two different inks or colors, one thick, one to blacken the plate, and one having a brownish tone, which gives the half-tones. After every printing, the plate is again wetted and wiped with a rag, when the inking is proceeded with once more. If the plate gives but little half-tone in the shadows, a blind proof is taken off, which takes off the last remnant of the color, and then the plate is wiped once more and printed. A plate of this kind should furnish six hundred prints or more. The permanency of the plates depends upon due attention being given to their preparation, upon having gelatin that swells but little, and employing little force in printing.

Concluding Remarks.—This method, according to my experience, is the best of the kind yet brought forward. It yields more certain results, and appears also to be pretty well known, without a word as to its details having appeared in print. M. Obernetter, of Munich, I am told from a good source, employs soluble glass, as likewise do other firms in Vienna; and Koch especially, who since the Austrian International Exhibition has produced some very fine specimens of lichtdruck, also makes use of soluble glass in his process. The latter gentleman has considerable scientific knowledge of photographic chemistry, and if it were not, unfortunately, for his inability to work, from illness, he could inform us of many interesting experiences and discoveries which he has made. In the State Printing Office this process has also been employed for the past two years, a plate yielding as many as six hundred impressions.

Some operators replace a portion of the gelatin with isinglass. This substance is to be obtained, as a rule, only of inferior quality, and is very dear; the bleached material

is perfectly valueless, and the only quality to be recommended is the Russian.

The choice of colors is important. If a brown tone is desired, then Munich varnish must be added to the black ink. This has the defect of coloring the plate, so that in the end it is not white, but brown. This varnish has the effect also of tanning the gelatin, and the prints soon appear flat. A good brown mixture is afforded by the finest printer's black of the thickest kind, mixed with red oxide of iron and a little Casar varnish.

To preserve the margins perfectly white, the negative is covered up to the image or design. On printing, fine tissue-paper is cut into bands of two or three inches breadth, and these are put on the edges of the plate, which are to remain clean before the printing-paper is applied. Or a frame may be employed, the aperture of which represents the size of the plate, and over this is stretched tissue-paper saturated with paraffin, and an opening the size of the picture is cut out, and this frame of paper is laid upon the plate every time an impression is struck off. I thought the time had now arrived when the process should no longer remain a secret, and have therefore published it in the hope that it will receive frequent application.

THE ARTOTYPE FROM AN INSIDE VIEW.

EDITOR PHILADELPHIA PHOTOGRAPHER:

As both sides are now using my name, I may, perhaps, with propriety, ask to tell a little of what I know about artotyping, and your proverbial love of fair play and candor, will not refuse to an old contributor a place in your columns for the expression of sentiments which may vary very much from your own.

Although I am an incipient artotyper, I have no interest in the sale of licenses, and can speak only of the capacities of the process as they appear in working.

Undoubtedly there are difficulties to be overcome which each practitioner must learn to meet for himself. I only wish that the difficulties were more and greater; it would be more money in the pocket of the

conquerors. Great ingenuity has been exercised in establishing the best formula, to overcome these difficulties, and to make clear the points on which they turn, so that the path is already pretty smooth, and is daily being straightened by the combined ingenuity of enthusiastic collographers. Even in my short experience, I have been enabled to arrange an apparatus which will entirely simplify one of the most tedious of the operations, and lessen the waste and cost of production.

All seem to be agreed as to the beauty and permanency of the artotype. Indeed, there can be but one opinion on these qualities, and I well remember how warmly you expressed yourself about them to me in the company's rooms in New York.

There are two objections mainly brought against the artotype: one as to the practicability of the process; the other is against the company rather than their process, to the effect that they misrepresent, and have not a valid patent.

I will speak of these in order, and only so far as my personal observation goes. First, as to its practicability. Does it take long to learn? I should say that the manipulations of the printing plates are more simple than those of a collodion negative; that is, given two persons of equal capacity; let one be instructed in our usual negative process, and the other in this particular collographic process, the latter would be the master first.

It is quite true that I was in New York two weeks. Very few now undertake to teach photography in six weeks, as was once the standard time; but I stayed in New York more for the pleasant time I had among my many friends there than for hard study on the artotype. There must have been a long, tardy mark registered against me every morning, and I each day tried to equalize the account by leaving very early in the afternoon.

My plan of learning is to get, first, a general view of the whole, and work out the detail afterwards. Others learn best by going at the detail piecemeal. I think that four days would have stood me as well in New York as the two weeks did, but as I remarked to you, I hoped, and still hope, to learn much.

I should say that Mr. Mueller is on an average three minutes in pulling a print; he was a little slower than usual when you were there. And it may be no disparagement to either of you gentlemen to intimate that he was, I thought, a little nervous on the occasion, and looking more after the quality than quantity of his pulls. Mr. Mueller can hardly be considered as a professional printer, and has not the strength to stand all day, and work with the vigor required to pull three hundred in a day; but this is done, and in New York, too.

During the two weeks, I had the pleasure of seeing for a few minutes Mr. Ernest Edwards, the heliolyper, of Boston, a gentleman who is considered to be about the best posted on gelatin of "the noblest Saxon of us all." He remarked to me, pointing to the artotypes, "Mr. Baker, *this is the thing.*"

To see a few nice prints pulled at the company's rooms in what, for lack of a better phrase, I will term an amateur way, would not have satisfied me of the practicability of the process, but when I saw it actually worked in a large establishment by Messrs. Harroun and Bierstadt, and knew that they had at once laid aside Albert's for Obernetter's method, I could no longer doubt; and whatever shortcomings I may have detected in the work as at present manipulated in this country, the perfection of the samples brought from Munich fully compensated for. What can be done in one place can be done in another, and I am sure that within the past month the artotypes of this country have much improved, and if they keep on, will soon be superior to the European ones.

As to extravagant assumptions on the company's part, as far as I have gone, all their representations have turned out quite correct, and the capacities of the process for business can hardly be overestimated. I am sure that I shall not be able to anything like fully develop them in my territory, even after I become an accomplished artolyper.

About the validity of the Obernetter patent. If, as my friend Carbutt says, a similar process was published three years ago, how happens it that neither the inventor of

the published process, nor any one else, save Herr Obernetter and his licensees, has succeeded in making a lichtdruck with as good half-tone as a silver print? which, even its enemies concede, the artotype does, so that it stands prominent and alone, singular, among a host of competitors as the *ne plus ultra* of collography.

The combination of the Albert patent with the Obernetter in this country was a matter of policy, and good policy, too, to all concerned, as it at once extinguished all chance for any of those interminable patent suits for infringements, and gave absolute guarantee and protection to both parties; but, moreover, the initiated will speak together more to the point on this combination than outsiders possibly can. As a licensee, I have every reason to be perfectly satisfied with the arrangement.

There is no doubt in my mind but that the artotype is the picture of the future. Its beauty, indestructibility, adaptability to all kinds of work, rapidity, and cheapness of production, make it about as near the desirable thing as can well be conceived, and I have to-day more confidence in the artotype than when I left New York four weeks ago. In a few years almost all the photographic printing must be done by this method.

Neither are these the words of an enthusiast. I look at the matter simply from a practical point of view. I so long ago lost my enthusiasm over photographing, that I had as soon make boots, or anything else that would give me ample remuneration by honorable methods, as photographs.

W. J. BAKER,
Buffalo, N. Y.

WAYMOUTH'S VIGNETTE PAPERS

ON page 23 of the January number of the *Philadelphia Photographer*, Mr. Emil Vogeler, of Chicago, Ills., has seen fit to write what he terms as a "reply" to what he designates as claims on my part to the invention of "Fancy Printing with Waymouth Vignette Papers." As his assertion that I claimed such inventorship is utterly false, I had not the slightest intention of taking any notice whatever of his article, until ad-

vised by some of my friends to do so, but had thought to let the readers of the two articles in question judge for themselves.

There is *not one word* in said article of mine that pertains in the slightest degree to any such claims, and if Mr. Vogeler in reading it understands so, I am sorry for his powers of comprehension, for even some of his own friends have told me that *they* do not see any foundation for any reply on Vogeler's part, and I think no one else does. As an author, I always, in the course of my writings, have endeavored to give "honor to whom honor is due," and if I have ever failed to do so, it was because I did not know who was the inventor, or it had escaped my mind to give it, but never in a single case have I ever claimed as my own what was not, whether in the way of ideas or anything else.

For instance, take the second edition of *The Practical Printer*. Page 21, I give credit to Professor Vogel; page 24, credit to Mr. H. T. Anthony and Mr. John R. Clemons; and finally, will I cite page 28, where I give credit to Mr. Ellbert Anderson for his explanation of the action of permanganate of potash when added as a rectifier of a disordered silver bath.

In the first edition of same book, I believe I gave credit to Mr. Briggs for his acetate of soda toning bath, and to Mr. W. L. Shoemaker for certain ideas of his on fuming and of a fuming-box.

In the "Printers' Corner," a part of the *Philadelphia Photographer*, which I conducted during the year 1875, I believe I have also given credit several times to Mr. H. C. Bridle, under the *nom de plume* of B. C. H., as well as others, for many valuable ideas, etc.

Mr. Vogeler also says that I have written an article on "Waymouth Vignette Papers" without proper trial, etc. Mr. Vogeler probably refers to the first edition of my *Practical Printer*. I did not write any more in favor of these vignette papers than was warranted by the trial which I gave, and which, although at that time (1874) not so very thorough, yet such as was the result of the trial I wrote, and no more.

He speaks truly when he says that I did not know the advantages to be derived from

them until I connected myself with Mr. Rocher; neither did I, nor many other excellent ideas on other things which I learned from Mr. Rocher himself, for it was that gentleman who enlightened me to a great extent on the subjects I wrote on in the December number of the *Philadelphia Photographer*, and for fear *he* may think I want to rob him of the honor of some of these ideas, and rush into print after me, I will here give him the credit of it, although Mr. Rocher, possessing as he does so many other honors and medals, *most assuredly deserved*, would not copy after his employee in making himself ridiculous, and trying to bring his claims before the fraternity in an underhand way (as a discoverer of what? simply a simple idea), by the making of a *false statement*, as Mr. Vogeler has done in the commencement of his article, in saying that I "claimed" to be the originator of "Fancy Printing with Weymouth's Vignette Papers." Certainly no candid reader can so construe it. What I wrote was to benefit the trade, and surely not to add to my own glorification.

CHARLES W. HEARN.

WARMING NEGATIVE BATHS

ON A COLD MORNING, IN TWENTY MINUTES, TO KEEP ALL DAY.

I HAVE a box large enough to hold two large bath-dishes, one of which is glass, in which I keep my silver bath; the other is made of tin. I place both dishes in the box, with a large cardboard between them. The first thing I do in the morning is to fill my tin dish with warm water (about warm enough to hold my hand in), and in twenty minutes the bath is up to eighty-five or ninety degrees (where I think it should be), and it will stay so all day. The next morning I slip a rubber hose into it, and siphon all the water out, and then fill up with warm water again, and so on every morning as long as it is cold.

In this way I don't care or worry a bit if a child is brought in even as early as nine o'clock, for I know that my bath is nice and warm, and in good working condition; and it is very easy to take the chill off of the developer, and I am prepared to make it

double strength at a moment's notice. Moreover, if I have a fair light at that time, and can manage to keep the child still two seconds, I am certain of a *good, thorough timed* negative, and that without any "lightning" or "rapid" either.

Although I am always on the lookout for some new improvement in photography, and have given two of the advertised quick processes a fair trial, I must say that they have been failures in my hands. I have failed to make a single fine negative with either of them yet. But they have taught me something, and that is to go back to my old reliable way of working, and to see that the bath, collodion, and developer work in harmony, and that I keep them at the right temperature. I usually add a little more bromide to my collodion, and stand prepared to strengthen my developer when it is necessary, and last, but not least, use a little more *brains* in posing and lighting my little mischievous subject. By so doing, I have given up the "rapids" for the present, and am saving up money for the next new process, which I suppose will take anything on the "*fly*."

If an operator is obliged to tip back the bath every time he coats a plate, in order to get rid of pinholes, I would not advise him to try the warm water, as it would make it rather awkward to handle. I work mine stationary. It holds three and a half gallons; and if it ever breaks, I shall buy the largest size bath there is made, although mine is a fair size.

E. D. EVANS,
Corning, N. Y.

THE THEORY OF PHOTOGRAPHY.

BY HENRY M. M'INTIRE, M. E.

(Continued from page 4.)

IF we have a solution of nitrate of silver (AgNO_3) in water, and a solution of bromide of ammonium (NH_4Br) in water, and we pour the one into the other, we will obtain a precipitate of bromide of silver (AgBr); that is to say, in a chemical formula, $\text{AgNO}_3 + \text{NH}_4\text{Br} = \text{AgBr} + \text{NH}_4\text{NO}_3$, nitrate of silver and bromide of ammonium form bromide of silver and nitrate of ammonium. The bromide of silver will be formed and precipitated because it is insoluble

ble in water, and it is a firm fact of chemistry that if two solutions are poured together, and by any change a salt can be formed that will be insoluble in the resulting liquid, that salt is bound to be formed, and being formed, to be precipitated.

Thus, in the case cited above, the bromine by leaving its ammonium, and the silver by leaving its nitric acid, find that they can unite together, and form an insoluble salt. They do not hesitate in doing so, but rushing at once to each other, accomplish the design. And now the ammonium being left, the nitric acid being left with nothing else to do, unite with each other, and form nitrate of ammonium, which, being soluble, must remain in solution.

If, in place of the bromide of ammonium, we should substitute iodide of ammonium, we should obtain similar results, a precipitate of iodide of silver. ($\text{AgNO}_3 + \text{NH}_4\text{I} = \text{AgI} + \text{NH}_4\text{NO}_3$, nitrate of silver and iodide of ammonium make iodide of silver and nitrate of ammonium.) And also, if in place of the iodide or bromide of ammonium, we should put some other iodide or bromide, we should obtain like results, precipitates of iodide or bromide of silver, as the case might be.

Now let us take a common collodion, and flow a glass plate with it; we have then the glass covered with a thin film of collodion, which acts as a ground or vehicle, and contains a bromide and an iodide. This plate is now placed in the silver bath. What takes place there is easily said. The bromide in the collodion causes bromide of silver to be precipitated upon the plate, and the iodide in like manner iodide of silver, and we have, when the plate is taken from the bath, a thin but uniform film of bromide and iodide of silver, and adhering to this some of the bath—a solution of nitrate of silver.

The plate is now placed in the dark-slide, and exposed. What effect does the exposure have on the plate? Here we meet face to face the question, What is the chemical action of light? Let us look at a few experiments. If we take some chloride of silver, some bromide of silver, and some iodide of silver, and expose these to the action of the sunlight, we will see that they

all darken, that the chloride becomes a violet color, the bromide yellowish-gray, and the iodide greenish. It may also be noticed that from the chloride free chlorine escapes, and from the bromide and the iodide bromine and iodine, as the case may be.

It was formerly supposed that this left the silver in the metallic state, but the supposition is now that all of the chlorine, bromine, and iodine do not escape, but only half of them, and that the silver from being a chloride (AgCl), bromide (AgBr), or iodide (AgI), is changed to the hypochloride (Ag_2Cl), hypobromide (Ag_2Br), or hypoiodide (Ag_2I); for example, thus: $2\text{AgCl} = \text{Ag}_2\text{Cl} + \text{Cl}$, chloride of silver forms hypochloride of silver and chlorine.

On account of this reducing power of light, a picture could be made upon the prepared plate in the camera; this would require hours of exposure. But in place of this, another property is made use of; that is, the attraction existing between the silver film acted upon by the light, and metallic silver in a finely divided state.

It has been found that the parts of the exposed plate that have been acted upon by the light have a great attraction for small particles of metallic silver. It is only required then that the plate be covered with silver in a finely divided state. How can this be done?

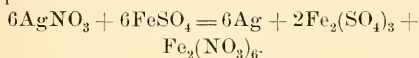
This can be, and is done, by the developer. There is upon the surface of the negative a solution of nitrate of silver, which it brought from the bath. This serves as the source of the metallic silver. But this is not the only good office that this solution performs. If, when the plate is submitted to the action of the light, and the chlorine, bromine, or iodine is given off, there be something to catch and retain the chlorine, bromine, or iodine, the sensitiveness will be found to be increased, and this the bath solution does. Being a solution of nitrate of silver, as soon as the chlorine, bromine, or iodine strikes it, it seizes at once upon that chlorine, bromine, or iodine, and makes it its own in the shape of chloride, bromide, or iodide of silver.

We have then upon the exposed plate a solution of nitrate of silver; from this the

metallic silver must be obtained. How can this be done?

By a "reducing agent;" something that will take away the nitric acid from the silver, and leave the silver in its free state. Hence the developer contains a reducing agent, either pyrogallic acid or protosulphate of iron. The action of either of these is the same, so we will only examine the iron developer.

If a solution of protosulphate of iron be added to a solution of nitrate of silver, metallic silver will be precipitated in a fine powder:



Nitrate of silver and protosulphate of iron make metallic silver, persulphate of iron, and pernitrates of iron.

The developer may contain alcohol. This is only to aid in its adhering to the plate, otherwise the alcohol from the collodion would repel the developer. The acetic acid has also the same effect, besides which it serves to keep the developer clear. A strong solution of sulphate of iron would not serve as a developer; it would reduce the silver too rapidly, and spots would be the result, hence the developer consists of only a dilute solution.

(To be continued.)

ON THE FADING OF PHOTOGRAPHS—BLISTERS.

MR. EDITOR: In your January number of the *Philadelphia Photographer* for 1879, is an article from friend Hesler, on the fading of photographs, and its remedy. Now I won't say that he is wrong, but I have my theory, and propose to give it for what it is worth. Friend Hesler comes to his conclusions from looking over an old lot of prints, and states that they were toned with gold and platinum, and claims that platinum has preserved them. Now might not the gold have more to do with their preservation than the platinum? I have never used the platinum for toning, and cannot say just what effect it would have, but the following I have used, and know whereof I speak. Ten and twelve years ago I used only the single albumenized paper and the *white*

at that; the paper was floated on the ammonio-nitrate silver bath (fumed or not, just as it suited the operator; mine was fumed); it printed a nice rich color, the prints were well and quickly washed in three or four changes of water, and then were further washed from twenty minutes to half an hour in running water before they were toned; consequently there was less free silver left in the prints; they were then toned in a bath composed of bicarb. soda and gold, and perhaps acetate of soda was added (but here is where I claim that the secret lies). They were toned to a purple or blue-black tone, fixed in *fresh* hypo, and well washed afterwards, dried and mounted, and such prints are *better* to-day than those made on double-gloss pink paper, and I believe will stand much longer. So you see that thorough washing *before* toning, and a slow and heavy toning, so as to approach nearly or quite to the blue-black stage is what is needed for *permanency*, instead of light toning for brown tones and even *red*, as some of them make. With the ammonio-nitrate bath and white albumen paper, using *plenty* of *water* in *washing* before toning, and toning slow and hard, I am satisfied that prints can be made nearly permanent, or as near so as it is possible to make silver prints.

Now as to blisters. I see an article in the same journal, from the pen of my esteemed friend, J. R. Clemons, in regard to those pests (blisters), and from my observations, I believe he has struck the key-note as regards the cause of blisters; for if it was in the manner in which the paper was albumenized, the whole sheet would be blistered. You may float a single sheet, print and tone it, and then fix it; parts will blister, and the remainder will be free from them. I am also satisfied that a medium strength for the fixing bath is preferable to a strong one, say one that will require 15 to 20 minutes to fix in, instead of from 3 to 10 minutes. I think with slow fixing that the free silver remaining is more effectually cleared away than with quick fixing. I am satisfied that the majority of albumenizers make one mistake, and that is they do not tell us how strong they salt their paper; we would have less trouble in silvering correctly did we possess that information. My friend Clemons has

stated the amount of salting he uses time and again, and that is what he always bases the strength of his silver solution on, and the time of floating is based on the strength of the solution used.

I have some prints made twelve years ago by the process above stated, that are as good to-day as when made; in fact I have a frame of them that has been exposed to the light and sun for that time, and are better to-day than prints made on double-gloss paper one year ago; pink is fugitive, and won't do for permanency.

FRANK THOMAS.

THE STÉRÉOGAPHE.

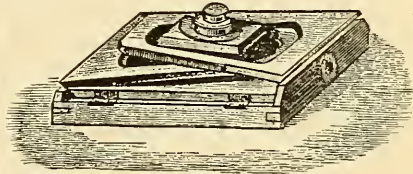
BY JOHN C. BROWNE.

FOR a long time photographers have expressed the hope that some person of inventive ability would perfect and place in their hands a cheap, portable, and reliable camera, lens, and tripod, together with changing boxes or double backs, suitable for dry-plate work.

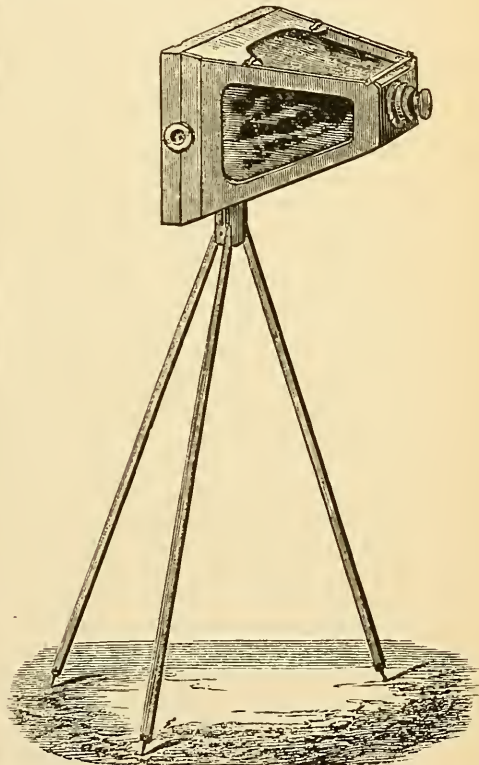
Time has passed, and I regret to say that until very recently little attention has been given to the subject in this country. Several clumsy attempts have been made to furnish such an outfit, but all were more or less defective. So the matter rested until a few years ago, when a very compact apparatus appeared in France, under the name of "*The Sceneograph*." This instrument, although very crude in many respects, was a great advance in the direction of cheapness as well as portability, the principal fault being the lens and double-backs, which were badly constructed. Within the last year a new candidate for photographic favor has appeared in Paris, named "*The Stereographe*." This excellent instrument is sold by Dubroni for the small charge of fifty francs (\$10). The outfit is complete, embracing camera-box taking a plate $6\frac{1}{2} \times 4\frac{1}{2}$; single lens by Darlot, two double-backs, tripod, and satchel. The weight is but a trifle, and the portability something remarkable.

In a paper by Mr. John Struthers, published in the January number of the *Philadelphia Photographer*, a short description is given of this camera, but unfortunately the cuts to illustrate it were not prepared in time

to appear with the communication. This was unfortunate, as a pictorial representation of the apparatus was necessary to make the description perfectly clear. I will not duplicate Mr. Struthers' words, but trust to what he has already written, simply introducing the cuts, which will speak for themselves.



Although the cost of this outfit is very small, yet most excellent work can be made with it. The results obtained by the writer



have clearly shown that it is not a toy, but a reliable article; the lens giving good definition, while the double-backs are light-tight, and not liable to get out of order. This piece of apparatus is within the com-

mand of all who feel interested in the art of photography, and it will be surprising if out-door work does not now receive fresh impetus.

It is quite possible that some improvements, or a better camera-box can be made in America, but the fact remains, that to France belongs the credit of furnishing by far the best cheap and portable outfit that has been offered to dry-plate photographers.

SOUND ADVICE TO APPRENTICES.

I HOPE you will find room in your valuable journal, of which I am an earnest reader, for a few hints to apprentices. When a young man learns a trade, especially the art of photography, he must never think that he knows as much as older ones in the art, for I think you can never be *learned out* in this business. There are a great many ways to do a thing, but to do it right is what we want. Everything you handle should be handled carefully, for everything is so easily spoiled; and another great thing, and a good one I think (especially to the printer), is to have everything handy, and have a place for everything, and everything in its place. In every spare moment that I have I look around and see whether I can't make some improvement in my printing-room. I have all my tools right at my hands. All this can be done at a very small expense, and how much better it is to have things that way than to run around and hunt them. The great change in the work now from that of years ago, is all due to improvements. There are men at it now who have good ideas about the art, and men who take a pride in it. If a man don't put his mind right down to it, he might as well stop where he is.

Fellow apprentices, when you are learning this business take advice from one who has had experience, and that is, don't think of play while at work. When I first entered our art I could not learn anything, and all because my mind was on out-door sport too much; but I see differently now. Apprentices should be careful of the drops of silver; don't throw them around like water because they look like it, but save every-

thing that has silver in it, for it is worth a good deal to your employer.

I will close my article, hoping it may do good to some brother in the art. My advice is, read the *Philadelphia Photographer*.

JOHN K. ZAHM, ,
Printer with B. FRANK SAYLOR,
Lancaster, Pa.

PHOTOGRAPHIC NEWS.

CARBON, since its kick (black eye?), is growing by the "slow development" process!

"A JOY to work with" is an American Optical Co.'s Camera-box plus a "Bonanza" Holder.

STRONG *negatives* seem to be the abhorrence of the process-sharp, which shows that the weak ones are on the decrease.

"IN England," says "Argus" of the *British Journal*, "everything and everybody seem to have had all the jollity squeezed out, and uniform depression prevails everywhere." Things are growing better here.

MR. WARNERKE spent six months of last winter in Russia, and in a communication to the Photographic Society of Great Britain, gives some interesting details concerning our art in that cold country. He says that in certain branches Russia occupies a foremost position. The government establishments use it largely for the reproduction of maps and of State papers; quite a number of the professors in the colleges practice photography, and Mr. Warnerke while there stirred them up to organizing a society, which he left flourishing. The portrait photography, in Moscow and St. Petersburg, is of a high grade, and their landscape photography is also excellent, and largely practiced.

IN describing a visit to Messrs. Albert and Obernetter, in Munich, Herr Adolph Ott says he is perfectly delighted with the progress Mr. Albert has made in chromo-photography. According to his description, his work is so fine that it is a perfect enigma for every one who does not know how it is done. There is nothing to betray the brush, therefore it cannot be a painting. It

cannot be a photograph colored like ivory-types, because the picture is presented on the surface of plain paper. It is no licht-druck, because the shadings are much too fine for it. "It is a dream," as Lenbach exclaimed when seeing Albert's creations. The problem is solved; but all that it is capable to tell about it is that the exposure is only fifteen minutes (!), and that colored glasses are used, and that Obernetter's reversed negative process is not applied.

PROPOSITION FOR A PHOTOGRAPHIC CONGRESS.—Whilst several years ago, the law establishing the liberty of trade was introduced in Germany, and with it was upset all spirit of corporation, etc., photographers are trying to substitute this liberty by new restrictions. Seeing that the business always changes to the worse, they have recently concluded to establish new rules of doing business. An appeal was sent to every journal, signed by a number of distinguished business men, the aim of which was to bring especially the conditions of paying on other bases. Others have believed to attribute the great stagnation of business to the mode in which it is carried on, and the manner in which the apprentices are educated. To solve all these questions, a proposition for a photographic congress has been made, in which especially the education of apprentices shall be treated. They should undergo an examination before they can enter in the grade of a photographer, etc. The education must be general, scientific, and artistic.

APPLICATION OF PHOTOGRAPHY TO THE ORNAMENTING OF TEXTILES.—Mr. Winter, of Prague, has just patented a process for making large positive prints on linen, cotton, silk, and woollen tissues, by means of the iodide or chromate of silver. It consists, in a general way, in impregnating the tissues with these salts, and making them sensitive afterwards to the action of light, so as to obtain from a seven-inch negative an enlarged image measuring forty square feet. With the electric light, this positive may be obtained in from three to four minutes.

The quantities vary according to the temperature, and according to the thickness of

the material. In cold weather, and for thick stuffs, the bath should be stronger, and the iodides are to be preferred to the chromates.

The stuff is immersed in a solution of four parts by weight of chromate of potash, one part of chromate of cadmium, and two hundred and forty parts of water; it should be equally wet on both sides, and then hung up to dry. When dry, it is passed in a bath of four parts by weight of nitrate of silver, one part of citric acid, one hundred and forty parts of water, and again dried.

Electric light is preferable for the exposure. All the operations are the same as with enlargements made in the solar camera. Expose to the light until the image is very visible.

A bath of ten parts of pyrogallic acid, forty-five parts of citric acid, and four hundred and ten parts of water, placed in a flat tank, receives the material for development, washing, toning, and fixing, as in the ordinary processes.

It may be remarked that the printed text has everywhere *chromates*. This may be an error, perhaps, and it should read *bromides*.—*Bulletin Belge*.

I HAVE lately seen a very pleasing custom, which consists in sending out to friends, instead of the common typographic cards announcing another departure from this life, the photographic reproduction of a mural frontispiece or monument, with or without the words, "In memory of;" and the date, in special cases, with a cut-out oval, or other opening, with mournful surroundings, is pasted upon a portrait (head or bust) of the deceased, and forms a very valuable present. I am not aware whether this practice is in vogue in England, but I think it might have been used for, and would have proved a very appropriate addition to, the portrait of the justly-lamented Princess Alice.

The manipulations are simple, and at the command of every photographer. A reversed design of any size is made in monochrome, which is reproduced as a negative. This will give a carbon pellicular image, which will serve both as a mask in printing any portrait, and as tinter to the positive

proof, or prints could be kept in stock with the openings cut out ready for pasting over ordinary portraits in cases of emergency. I have seen both *cartes* and cabinets thus profitably utilized. I throw out this hint in these times of depression in trade.

I have had described to me a new process for coloring photographs, and of which rumor says the right of use for England has been sold for the modest sum of 100,000 francs! Those who believe this have my free permission for the exercise of their faith; but I do not pledge myself to do so, being by nature very skeptically inclined. However, splendid specimens have been shown.

A piece of chloride of silver paper is slightly printed under a portrait negative, having well-defined repeating marks. This print, fixed and washed, is washed with flat tints of enamel colors by the artist. It is then chloro-albumenized, dried, silvered, dried, reprinted under the same negative by the aid of the repeating points, toned, fixed, and washed, and is a good photograph, full of details and half-tone, with the color behind, relieving the image, on the same piece of paper—doing away forever with double prints, portraits colored at the back and rendered transparent with Canada balsam or wax, and all their concomitants of yellowness and decay.—W. HARRISON, *British Journal of Photography*.

ABOUT RAPID PROCESSES.—Dr. Schnauss resumes in the *Archiv*, quite a number of secrets, got up during the short time photography has been in existence, and mentions, above all, the fever for the search of rapid processes. He recommends to review the *Archiv* during the nineteen years of its existence, and believes that one will find everything in favor of saving from two hundred to five hundred francs for other purposes. There is first, Le Gricce, the inventor of an excellent method for making glass positives. This collodion is equally recommendable for the negative process. It has a great sensitiveness. He recommends to add to an iodine-ammonia collodion (bromine salts were not known yet as additions to collodion), which is already a little red by its age, a piece of unslacked lime, and

expose it to the sunlight until it becomes colorless. This collodion is supposed to be exceedingly sensitive. Vogel adds carbolic acid, and reduces the exposure one-half. Schrank recommends a second negative bath, composed of a solution of acetate of silver, and pretends the exposure to be reduced one-half. The use of acetate of silver may be the cause of some failure, as small crystals of the same will adhere to the film. It would be better to use instead of it an addition of acetate of soda or lead to the silver bath. The effect will be the same, without any danger of crystals precipitating on the plate.

Davanne recommended an addition of nitrate of lead, which is now forgotten, as an acceleration. The magnificent street views by Ferrier and Soulier, in which men and horses were photographed in full motion, are made with a Liesegang's quick-working apparatus and normal preparations. The sole difference was the use of formic acid instead of acetic acid in the developer. Also Wharton Simpson has produced instantaneous views with rapid-working stereoscopic lenses, with $\frac{1}{4}$ stop, common bromine-iodine collodion, and a silver bath, 7:100, saturated with iodide of silver. His developer was composed of four grains sulphate of iron, five hundred grains water, four grains acetic acid. Ponting and other good photographers produced pictures of children in three seconds, by good light, in the summer. If an extra rapid method is reliable or not can only be determined in wintry weather. Nearly without exception, the additions for obtaining an extra rapid-working process, are bodies which very soon spoil the solutions. It can therefore be regarded as a *conditio sine qua non* (that otherwise one would not pay five hundred francs), if the solutions for the extra rapid processes are not extra rapidly spoiled.—*Archiv*.

BALLOON PHOTOGRAPHY.—The balloon experiments at Woolwich have, besides demonstrating the possibility of making military reconnoissances by means of balloons, opened an interesting field for an assault by the photographer's camera. Captain Templar has succeeded in showing that a well-known laboratory experiment may be util-

ized in the field for the purposes of warfare, and has already raised military ballooning into an art that must not be neglected. Hydrogen, the lightest known gas, can be prepared by decomposing steam, and Captain Templar has demonstrated that it may be obtained in a rough-and-ready fashion from materials that can easily be carried with the other *impedimenta* of an army. A supply of steam, a furnace, and an iron tube, with a quantity of iron turnings or shavings, are all that is necessary, and, as M. Giffard has proved that it is possible to construct a balloon that will retain hydrogen gas for apparently an indefinite time, the problem has been so far satisfactorily solved. Steam is passed through a tube containing red-hot iron; the oxygen of the steam is seized by the iron, and hydrogen is liberated, a few hours' working being sufficient to inflate a balloon capable of lifting 70 pounds for every 1000 cubic feet of hydrogen gas contained within its envelope. Mr. Woodbury has taken advantage of these experiments to try some of his ideas in balloon photography, and we may soon expect to hear that he has been successful. Captain Templar proposes to elevate an observer with his balloon, who is to report what he sees; but Mr. Woodbury's idea is to send up a camera, and to photograph the scenes exposed to view. The rope holding the balloon contains one or more electric wires, which, at the proper time, can be made to uncap the camera, and so take a picture which will enable the commanding officer to ascertain the positions of the enemy, without relying on the eye observations of an aeronaut. By a very simple arrangement, which, however, needs a battery, Mr. Woodbury proposes to take four negatives, which will give views of the surrounding country in four different directions, if required, or take four pictures of any given spot; and it is said that he has succeeded in devising a method of preventing the balloon from gyrating, the great difficulty that has hitherto been found impossible to overcome in taking pictures without an operator near the camera. So far as we have heard, no photographs have been taken from M. Giffard's captive balloon at Paris, but Mr. Woodbury found on making application that the "right" had al-

ready been sold. It is presumed that those who have acquired the right have been unable to surmount the obvious difficulties, and the experiments at Woolwich are consequently studied with more than the average amount of interest. Captain Templar is endeavoring to compress hydrogen, and store it in steel bottles, so as to carry a supply in an ordinary military wagon into the field; but if Mr. Woodbury can succeed in rendering his camera automatic in its action, it would facilitate the operations, by rendering it unnecessary to inflate the balloon to such an extent as would be required if an observer had to ascend in the car.

CARBON IN EUROPE.

IN your December number appears a letter from our friend Gatchel, under the title "Carbon in France," in which some statements are made in regard to the practice of the carbon process in Paris. According to Mr. Van Loo, who has just returned from a two months' trip to Europe, and who spent all of his time in the French metropolis, the carbon process has been tried and found wanting; and is not, in consequence, used by any of the leading artists. I doubt very much that Mr. Van Loo's opportunities for observation have been such as to enable him to judge with a full knowledge of the facts.

Walery, and no doubt many others, have tried to introduce carbon prints to their customers, and they have failed for the want of printers who had the same familiarity with the new process that their silver printers had with the process they have used for so many years.

I know little of what is going on in Paris, or in any part of France, but I can speak with knowledge of the part of Europe in which I resided four years, that is, Belgium. The leading establishment in Brussels, Geruzet Brothers, gave up entirely silver-printing two years ago; the Deron establishment had begun carbon printing at the time of the introduction of the Swan process, and have used it ever since for the large work; and about the same time Geruzet Brothers did, discarded silver altogether. A number of other photographers in Brussels are working carbon, sticking to silver, however, for small

work. Messrs. Beemant Brothers, in Ghent, gave up silver two years ago. They had great difficulty at first; their carbon prints did not come up in quality to their silver prints, and it was a source of loss to them; but they had the faith, and persevered, and succeeded. Their exhibit in Paris was entirely of carbon prints, and they were rewarded with a silver medal. Two other photographers in Ghent use carbon exclusively. A year ago there was one in Antwerp, two in Bruges, two in Liege, one in Meeklin, one in Courtrai, one in Mons, one in Charleroi, one in Namur. Carbon prints are to be found all over the country.

According to a statement made to me by Dr. Schaarwachter, of Nimègue, it is the same in Holland. The transition from silver to carbon is difficult in a large establishment and it is to be remarked that with a few exceptions, the carbon process is mostly worked in small places. This coincides with statements made by Dr. Vogel in the *Photographic News*, and in your own pages. It is very much the same in this country. I am not aware that there are many leading establishments in large cities which have adopted carbon; but in small places, all over the country, are to be found men who work it to some extent—some who abandoned it and then went back to it—who work it in a small way, and struggle and persevere until success is attained. Most of these men never saw the operation performed but once, and then often by men who understood little about it themselves.

I still believe that eventually the carbon process will be adopted by the generality of the photographers. It is very doubtful that a photo-mechanical process, such as the Albertype, heliotype, etc., will answer the purpose of the portrait photographer, as the public will exact permanency, and whenever the matter is brought forward, the leading men in the business will be forced to adopt carbon printing. The change, of course, will take place slowly and gradually, but those who have mastered the process so as to produce prints equal to silver prints, will find their reward in an increased patronage. I could give the names of a few, only a few, who are reaping the reward now, but these few are men who had the faith and the

tenacity to stick to it. It would be much better, no doubt, if the process was untrammelled by patents, but these patents not being contestable, as we are all forced to acknowledge, we have to make the best of it and pay royalty. If any photographer can get a license for twenty-five dollars or a country hotel bill, I would recommend it as a good investment. Truly yours,

CH. WALDACK.

SOCIETY GOSSIP.

PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.—The stated meeting of this Society was held on Thursday evening, December 5th, 1878, the President in the chair.

Mr. Albert S. Barker was elected to membership.

Mr. Browne read a communication from Mr. Powel, describing an improved "coffee process." Some good examples of work accompanied the communication.

The Chairman exhibited a beautifully made field camera and changing-box for one-quarter sized plates, made by Hare.

An exceedingly fine series of views on collodio-albumen and washed emulsion dry plates was shown by Mr. Wallace.

Mr. Browne exhibited prints from negatives made in the Sceneograph, shown at a previous meeting of the Society.

After the adjournment, some admirable slides, made by Mr. Bell, were shown in the lantern.

Another stated meeting was held December 19th, 1878, the President in the chair.

An exhibition of lantern slides at the hall of the Franklin Institute was proposed, and the Chair appointed Messrs. Young, Pancoast, and Dixon as the committee to make all necessary arrangements.

The advisability of forming an exchange club, as proposed by Mr. Browne at the last meeting, was now considered, and Messrs. Corlies and Browne were appointed to revise the rules of the previously existing club, and report.

Mr. Browne handed around for examination some excellent collographic proofs, by J. R. Osgood & Co., of Boston.

D. ANSON PARTRIDGE,
Secretary.

GIHON'S GATHERINGS.

COMPILED BY THE LATE JOHN L. GIHON.

II.

EMPTYING A BATH.—"The following is a good way to empty a bath-holder without wasting the contents. Simply use a white cotton string or twine, tied about an inch or so from the edge, and if the *glass and twine are dry* not a drop will be wasted."

Removing Stains from Old Negatives.—"Dip a tuft of cotton-wool into the hypo fixing-solution, which has been used for the prints the day before. (Strength should be about five ounces of hypo to a pint of water.) Work with gentle friction upon the damaged part, and after a few minutes the negative will be able to discharge its printing functions with all its former power.

"After the treatment, wash the plate carefully with plenty of water, and dry with blotting-paper first and a soft linen cloth afterwards, finishing with a little gentle heat from the fire."

"*Fog* may be caused by the use of imperfectly cleaned plates; silver bath containing organic matter or deficient nitric acid; diffused light in the camera or dark-room; want of acid in the developer; underexposure and prolonged development, and slovenly manipulation in various forms."

Spots and Stains.—"These may be caused by slovenly manipulation, badly cleaned plates, and the use of unclean cloths; allowing the inner frame of the dark slide to get wet and dirty; allowing accumulation of drainings in the dark slide; neglecting to place clean blotting-paper for the plate to rest upon; allowing pieces of dried collodion to fall upon the plate whilst coating it; immersing the plate in the bath too soon in cold weather; failing to cover the plate with the developer in one steady wave; pouring the developing solution on one part of the film; using the collodion too soon after it is iodized; dusty particles detached from the cork falling into the collodion."

Development of Outdoor Negatives.—"To secure uniform results with all kinds of subjects, in all kinds of weather, and under all kinds of conditions, it is absolutely neces-

sary to *modify* the strength of the developer to suit each and every picture as it is taken. To do this easily and quickly, a concentrated solution of iron is taken into the field. The following formulæ will be found excellent:

No. 1.

Sulphate of Iron and Ammonia,	16 ounces.
Sulphate of Iron,	16 "
Sulphate of Copper,	1 ounce.
Water,	66½ ounces.

This will give a solution containing about 180 grains of sulphate of iron to each ounce of water. This I call Solution No. 1. No. 2 consists of

Acetic Acid,	1½ ounce.
Water,	1 pint.

In my tent I always carry a small bottle of six or eight ounces capacity, graduated from half an ounce (this can be done with a file), to mix the developer in.

"When it is desired to make a developer, pour into the graduated bottle half an ounce of No. 1, and 5½ ounces of No. 2; this gives a 15-grain developer; half an ounce of No. 1, 4½ ounces of No. 2 give a 20-grain solution; half an ounce No. 1 and 2½ ounces of No. 2 give a 30-grain developer, and if a 40-grain solution be required, half an ounce of No. 1 and 2 ounces of No. 2 will give it. Other strengths are easily calculated as required, and if proper consideration be given the subject, many otherwise difficult or impossible pictures become easy when the developer is modified to suit each case as required. The 15 and 20-grain solutions are the ones most in use, but there is not one of them that is always in use.

"After developing in the usual manner, flood with a little of No. 2, drain, and put away in the plate-box to finish at leisure. When convenient to finish the negative, wash, and then carefully examine it; if found to be fully exposed, clear in detail and requiring only a little strengthening, a few minutes exposure to the sun will soon make it dense enough without in the least veiling the shadows. If, however, the negative is found to be hardly exposed or developed enough, after washing, it is flooded with a solution of iodine in iodide of potassium, well washed and intensified with a little of

the following intensifier, mixed with a few drops of silver :

Iron,	1 ounce.
Acetic Acid,	1 "
Citric Acid,	3 drachms.
Water,	1 pint."

On Keeping Plates for Later Developing.—“Sometimes it is necessary to take a view of an interior or of some object at a distance from the camera; in either case when as much as two hours must elapse between the plate leaving the bath and its development, the only extra precautions to be observed are, collodion quite ripe, and if inclined to give stains, the addition of a little water, say one drop to the ounce, will cure it. Bath proper strength, free from organic matter, and rather acid. Allow the collodion, to set well before putting the plate into the bath, and when in, keep it moving the whole time, and *directly* the greasiness has disappeared, drain, and put it in'o the slide, with a piece of wet yellow calico behind it. If it is an interior that is taken on this plate, the developer will range from medium to strong, as it happens to be well or badly lit; if it is an outdoor view away from the camera that has necessitated the plate being kept, a developer from medium to weak will be required. I find, as a rule in this case, that a less exposure and a weaker developer is required than if the tent had been on the spot, and the plate been kept ten minutes instead of two hours.

G. W. Wilson's Developing Solution.—

Protosulphate of Iron,	$\frac{1}{2}$ ounce.
Glacial Acetic Acid,	$\frac{1}{4}$ "
Spirit of Wine,	$\frac{1}{4}$ "
Loaf Sugar,	1 "
Water,	10 ounces.

Or—

Protosulphate of Iron,	$\frac{1}{2}$ ounce.
Gelatin,	15 grains.
Glacial Acetic Acid,	$\frac{1}{4}$ ounce.
Water,	10 ounces."

Development.—“No more developer should be poured on than the plate will contain without overflowing; any excess tends to lessen intensity in the first development. The developing action must be allowed to proceed as long as any detail remains un-

developed in the shades of the picture, and care must be taken not to continue it so long as to impair the purity of those parts of the film, which should be entirely clear, and free from veil. This part of the process is one which requires the exercise of great judgment and care. It is important that the action of the iron solution should be continued as long as it is seen to bring out further detail, or cause increase of intensity; but it is also necessary to avoid any trace of deposit on the shadows, such as would be caused by an excessively long-continued action of the developer. It is most desirable that the portion of developer first applied should be allowed to do its work thoroughly, and produce, if possible, all the intensity required; to this end, *as small a quantity as possible of the developer should be used.*”

Retouching Varnish.—

“Spirits of Turpentine,	1 ounce.
Balsam of Fir,	4 drops.

“With a small tuft of clean cotton, just moisten the surface of any *previously* varnished negative, and when dry it is ready for any grade of pencil. Try it, and you will be pleased with the result.”

To Clean Ferrotypes Plates.—“When you make a failure, lay the plate on a board at the end of the sink, and with a rag rub off the picture. Now ‘spit’ on the plate, rub the saliva quickly over the surface, rinse off well under the tap, and hang it up to dry, which it will do smoothly, and require no after-cleaning.”

How to Find the Focus of a Lens.—“An upright line of any nature is focussed sharply in a perpendicular position, in such a manner that the original and the reproduction are of equal dimensions. The fourth part of the distance of the object from the focusing screen is then the focus of the lens, measuring from the optical centre.”

Substitute for Yellow Glass in the Laboratory.—“Sheets of gelatin, rendered insoluble by tannin, dried, and then immersed for a few minutes in a solution of bichromate of potash, again dried, and exposed to the action of light, acquire a very non-actinic color, and will answer very well for the above purpose.

"They might be protected from the action of the air by being inclosed between two films of collodion.

"Another very non-actinic film may be made in the following manner:

Saturated Solution Bichromate	
of Potash,	3 drachms.
Hydrochloric Acid,	1 drachm.
Water,	6 ounces.

"A sensitive wet collodion plate is exposed to the action of diffused light for a few moments, developed and fixed in the ordinary manner, and after being washed is immersed in the above solution.

"When the action is complete, the plate is washed again with

Hyposulphate of Ammonia,	1 part.
Water,	2 parts.

The color of the film immediately changes to a reddish-brown, very non-actinic, and after being thoroughly rinsed with water and dried, the plate is varnished, and may be fixed in any convenient frame.

"The same process is sometimes useful in intensifying, but requires care to avoid making the plates too dense."

To Prevent Albumen Blisters.—"First immerse the prints in a freshly prepared and strong fixing solution, and then pass them into a weaker one. Then wash the prints in a small quantity of water first, and gradually increase the supply as the washing progresses. This treatment will thoroughly prevent the blistering of albumenized paper."

Want of Affinity between the Sensitizing Solution and the Albumenized Paper.—"Complaints on this score are very frequent, and the cause is a simple one, easily rectified. The silver solution is too strong for the paper, and thus causes the globules and zig-zag lines.

"The difficulty occurs only when the paper is too heavily albumenized. Papers coated with weak albumen sensitize evenly with silver solutions on any strength, simply because the pores are left open to exercise capillary suction. It is a curious fact that heavily albumenized papers require the weakest silver bath."

To Restore Faded Prints.—"Soak the print from the mount, wash well, and treat to a solution of bichloride of mercury. Then wash well, and remount. This will be found especially useful where a good copy is expected from a bad print."

To Reclaim Gold from the Fixed Paper Trimmings.—"Burn your paper-shavings carefully in a crucible, without the use of too much heat, as this might produce globules of metallic silver in the ashes. The product of combustion is placed in a large stoneware vessel, and formed with water into a rather thin paste; into this mass a rather strong current of chlorine gas is forced, which is produced by placing pieces of peroxide of manganese of the size of a pea into a glass flask, and pouring hydrochloric acid over it. The chlorine gas, which in a nascent state acts very energetically, converts the finely divided silver into chloride of silver, and the finely divided gold into chloride of gold. When this process is finished, the whole of the liquid is placed on the filter, and washed thoroughly, when on the filter the insoluble chloride of silver remains, while the soluble chloride of gold will pass through, and is contained in the filtrate, and may be reduced by sulphate of iron into metallic gold.

"This process is the one now generally employed in the mining laboratories, and recommends itself to the photographer by its simplicity, cheapness, and certainty."

Printing on Linen.—"Make a salting solution of 2 grains chloride of ammonium to every ounce of water.

"Make a sizing solution of

Water,	1 ounce.
White Glue,	2 grains.

"Soak the glue in hot water until it is dissolved, and then apply the solution to the part to be printed upon. When dry, apply the silver solution with a tuft of cotton, shielding the unsized portions of the linen.

"Fume when dry, and print in the usual way, or in the handkerchief printing-frame. Tone in your usual toning solution, fix, and wash well, using hot water for the final washing."

SCIENCE FOR THE PHOTOGRAPHER.

POISONOUS PAPERS.—A simple method is proposed by Professor Hager for detecting arsenical colors on wall-papers, and in paper generally. A piece of the paper is soaked in a concentrated solution of sodium nitrate, or Chili saltpetre, in equal parts of alcohol and water, and allowed to dry. The dried paper is burned in a shallow porcelain dish, where usually it only smoulders, producing no flame. Water is poured over the ashes, and caustic potash added to a strongly alkaline reaction, then boiled and filtered. The filtrate is acidified with dilute sulphuric acid, and permanganate of potash is added slowly, as long as the red color disappears or changes to a yellow-brown upon warming, and finally a slight excess of chameleon solution is present. If the liquid becomes turbid, it is to be filtered. After cooling, more dilute sulphuric acid is added, and also a piece of pure clean zinc, and the flask closed with a cork split in two places. In one of these splits a piece of paper, moistened in silver nitrate, is fastened, and in the other a strip of parchment-paper dipped in sugar of lead. If arsenic is present, the silver soon blackens.

A NEW DISINFECTANT.—Under this title, says the *British Medical Journal*, Dr. John Day, of Geelong, Australia, recommends for use in civil and military hospitals, and also for the purpose of destroying the poison germs of small-pox, scarlet fever, and other infectious diseases, a disinfectant ingeniously composed of one part of rectified oil of turpentine and seven parts of benzine, with the addition of five drops of oil of verbena to each ounce. Its purifying and disinfecting properties are due to the power which is possessed by each of its ingredients of absorbing atmospheric oxygen, and converting it into peroxide of hydrogen—a highly active oxidizing agent, and very similar in its nature to ozone. Articles of clothing, furniture, wall-paper, carpeting, books, newspapers, letters, etc., may be perfectly saturated with it without receiving the slightest injury; and when it has been once freely applied to any rough or porous surface, its action will be persistent for an almost in-

definite period. This may, at any time, be readily shown by pouring a few drops of a solution of iodide of potassium over the material which has been disinfected, when the peroxide of hydrogen which is being continually generated within it will quickly liberate the iodine from its combination with the potassium, and give rise to dark-brown stains.

In the wash-room and dark-room, this would often be useful and good.

NEW, CONVENIENT, AND CHEAP DIALYZER.—Huizinga, in Gröningen, recommends to make rectangular bags of moist parchment-paper, fastened together with a paste consisting of a warm 15 per cent. gelatin solution, containing 3 to 5 per cent. of chromate of potassium. The dialyzers are dried and exposed to the sunlight, fastened over hard rubber frames, and tested by filling them with water. Several such bags may be suspended in one vessel, care being taken to remove the water from the bottom of the vessel with a siphon, and to continually supply fresh water above. Egg albumen, neutralized with muriatic acid, lost its soluble mineral salts in such dialyzers in the course of twenty-four hours, while at the expiration of thirty-six hours it was identical with Schmidt's dialyzed albumen, no longer coagulating when heated, nor causing a reaction with metallic salts.

A BELGIAN scientific jury has lately awarded to M. Melsens the Guinard prize of 10,000 francs, for the best contribution to the amelioration of the condition of the working classes. The award was based upon the important discovery of M. Melsens of an effective remedy for mercury and lead poisoning, to the effects of which workmen employed in many occupations requiring the manipulation of these metals are dangerously exposed, and especially to the insidious cumulative effects resulting in chronic evils which have heretofore been obstinately incurable. The remedy proposed by M. Melsens, and which he has demonstrated to be efficacious not only in the cure of chronic cases resulting from years of exposure to and accumulation of poisons in the system, but also in the prevention of disease from these sources, is the iodide of potassium. The action of

the iodide is to transform into soluble form, and to eliminate from the system, the accumulation of insoluble metallic compounds, upon the presence of which the affections of the organs involved by the disease depend. The French Academy likewise has crowned this important discovery with the Monthyon prize.

OXIDE OF LEAD and concentrated glycerin will make a cement of great strength, capable of firmly uniting wood and iron, and resisting heat and acids. Manufacturers appear to have a difficulty in obtaining a convenient adhesive substance for attaching labels to tinned sheet-iron cans, boxes, etc. If to good flour paste some glycerin be added, in about the proportion of an ounce of the latter to a quart of the former, a mixture will be obtained that is not only cheap but remarkably good. The labels should be perfectly dry before the tinned packages are stowed away.

ACCORDING to Professor Gubler, cantharidized collodion is one of the most useful of vesicants. All that is necessary to do is to paint over the place where the blistering is desired. The adhesion is very complete, and the action is rapid.

PROF. HENRY MORTON has published an account of a singing telephonic arrangement capable of being used for purposes of illustration in lectures before large audiences. The transmitter is a hollow truncated cone, the smaller end of which is covered with a thin diaphragm. Against this diaphragm an adjustable platinum-pointed screw presses and forms contact. The centre of the diaphragm is also provided with a small platinum plate, which may be connected, if necessary, with a binding-post. The receiver consists of a powerful horse-shoe magnet, having on the ends soft iron caps terminating in poles, on which are flat spools of fine wire. This magnet is supported horizontally on an adjustable block. A guitar with the strings removed is placed firmly at right angles to the magnet, and so that a plate of soft iron at the bridge is opposite the poles of the magnet. With this apparatus any musical sound sent into the hollow cone is reproduced with great distinctness and intensity by the guitar.

AMONG the conclusions arrived at by M. Le Bon, who has been making researches on the variation in size of the human skull, are the following: A superior race contains more of voluminous crania than an inferior, and stature has only a slight influence upon the volume of the brain. Woman has a much less heavy brain than man of equal stature, and this difference is found constantly increasing as civilization advances. The average difference of crania of the present Parisian men and women is nearly double that between the crania of the ancient Egyptian men and women. With the same circumference of crania, there may be differences in volume of over 200 cubic centimetres. The cranium is unequally developed as to the sides, but this does not appear to have any relation to race or intelligence.

AMONG the new appliances for war is a hand-torpedo. It is made of gun-cotton, formed into a cake or ball three or four pounds in weight. One end of a long cord is attached to each charge, and the other to a sort of pistol in the hand of the operator. When the torpedo is thrown into a boat or on the deck of a vessel, a touch on the trigger of the pistol detonates the gun-cotton, and an explosion with very destructive results follows.

UNCHANGEABLE MUCILAGE.—According to A. Vogel, a durable and unalterable mucilage may be prepared by precipitating a solution of gum arabic with ordinary alcohol in excess, pressing the precipitate, drying it, and redissolving it in water.

OLIVE OIL.—Being less liable to become thick and viscid by exposure to air, it is often used for oiling delicate machinery. For application to such articles as burnishers, Bergner's Cutters, Robinson Trimmers, etc., the oil is refined by cooling, separating the fluid portion, immersing in it a slip of sheet lead or some shot, and exposing it to direct sunlight in a corked phial, when a whitish matter gradually subsides, and the oil is rendered clear and colorless. This, when decanted, is fit for use.

THE Berlin Chemical Society has received a communication from M. Schiff, of Turin, stating that salicylic acid has a remarkable

power in purifying water. It also states that the sulphide of carbon, in the proportion of 1 part to 1000 of salt water, will preserve animal substances for a long time from decay.

AMERICAN INSTRUMENTS COMPARED WITH EUROPEAN.—On the third day of the National Academy Convention, Professor George Davidson reported certain facts, gathered at the Paris Exposition, which will interest those who have hitherto declined to use mathematical, optical, and philosophical instruments of American manufacture. His commission to the Exposition was for the purpose of making a special examination of instruments of precision (in measurements, etc.), and he appears to have been at great pains to collect the data for forming an intelligent judgment. He finds that our artisans produce more accurate instruments of registry in all departments of theoretical and applied science, from the mere measuring-glass to the complex metres which enter into physical experiments in the laboratory. This conclusion is so contrary to the general impression as to be a matter of popular importance, the fact that instruments of American manufacture are offered at lower prices than imported instruments being, in the equality of other things, sufficient to command a wider market than heretofore. In the graduation of tubes, measuring-glasses, dropping-tubes, thermometers, barometers, and other articles of the same class, Prof. Davidson assigns the palm of superiority to American manufacturers, and tersely observes that a man's only reason for going to Europe on such an errand is to learn what not to buy, and just how indelicate and inexact an instrument can be made. One reason for this is the greater economy of materials obvious in articles of American workmanship. A German or English optician uses a tubing as thick as gas-pipe for the manufacture of a microscope; an American uses a thin, delicate, accurately-drawn tubing, which weighs not more to the yard than the former to the foot. Nicer manipulation is always possible in such cases. Prof. Davidson's paper was received with some surprise by many of the members, but none ventured to contravene his statements.

BLAKE has devised and practically applied a very ingenious method of recording articulate vibrations by means of photography, and has obtained some very interesting results. The apparatus consists of a mirror of steel, capable of oscillating about a diametral axis, to the back of which is attached a lever, by which it is attached to the centre of a telephone disk, arranged with the usual mouth-piece contrived by Pierce. Whenever the disk is caused to vibrate, the mirror oscillates with it, and a beam of sunlight thrown on the mirror from a heliostat describes lines of light on a suitably placed screen. If this screen be movable at right angles to these lines of light, and carry a sensitive collodion film, the light oscillation is recorded upon the prepared surface as a more or less complex curve, having the peculiarities of the sound wave which caused it. Representations of the curves of various sounds accompany the paper.

CORNU has communicated to the Paris Academy some remarks upon photographs of the ultra violet portion of the solar spectrum, which go far to supplement the views often expressed on the importance of the spectroscope, as an instrument for ascertaining the quantity of aqueous vapor present in the atmosphere. The purest sky of summer cuts out much more of the ultra violet rays than the purest sky of winter does. The absorption at the violet end is general, or in broad bands, while at the red end it is selective, or in narrow bands; the absorption by vapor which is but just beginning to condense affects the violet end, while the red is specially affected by vapor in a state approaching that of fog or cloud; the smaller the particles, the less do they affect the red end of the spectrum. Such are some of the principles deducted or suggested by recent investigations.

OXALIC ACID AS AN ABSORBENT OF OZONE.—Jeremin finds that a considerable quantity of ozone is absorbed by an aqueous solution of oxalic acid, and will keep in this solution for any length of time, becoming more efficient with age as a disinfectant. Gaseous ozone keeps better in contact with air than in the dark. The author prepares a cement from pumicestone, paraffin, wax,

and rosin, which he claims to be proof against ozone.

GOLD AND SILVER PLATING.—1. Dissolve 10 grammes of gold in 40 grammes HCl, and 15 grammes HNO₃; concentrate and evaporate off the acids as much as possible; precipitate the gold with ammonia, place on a filter, and wash. Dissolve 100 grammes of potassium cyanide in very little water, and dissolve the gold on the filter in this solution, always returning the filtrate to the filter until all brown particles are dissolved, then add sufficient distilled water to make 1 litre.

2. Precipitate 20 grammes of silver, dissolved in 60 grammes HNO₃ by an aqueous solution of 20 grammes of caustic potassa; place on a filter, wash with water, and dissolve on the filter in an aqueous solution of 100 grammes of potassium cyanide; add water to make 2 litres.

Both solutions are used by immersing the bright metals which are to be plated into them.

WRINKLES AND DODGES.

HOW TO DEVELOP A TASTE FOR THE BEAUTIFUL.

LOOK about you, and at every turn you will see it. Sometimes it may be covered with unsightly things, but still beauty is there; even when obscured, it requires but polishing to make it apparent.

So, too, in photography; many a rough exterior hides the soul within; so do not pass them by, for out of them frequently comes the most pleasing pictures; from the most commonplace incidents have been portrayed the most speaking sermons. So it is worth while to gather them up, for out of them comes your salvation, and the small incidents truly applied will make an artist of you, even if you do not get the shekels, for such is the condition of most artists.

So do not be discouraged; the want of many things make them relish the more keenly when they do come, and fits you to battle against surmounting obstacles. One cannot expect to realize the beautiful in all things at once; it is only by the study of the real that we see the gem. Now how many times have we sought for the essence, and distinguished it not, because our per-

ception was lacking, or wanted cultivation? This is the rock on which photography as an art is to stand, if it stands at all, so let us all contribute to it. M. H. ALBEE.

WHY DO THEY FADE?

Why do so many pictures fade that have had all the care that could be bestowed on them? There are patented washers, and most everything is brought into use to make the picture clean from chemicals. Some say too much washing is bad; others say you can't wash too much. I tell you it puts me in mind of the two Dutchmen who met in a drinking-saloon. Hence says to Yaucup, "Vat you dakes?" "O, I dakes some brandies, yaw." "Vel, den I dakes some lagers; you know, Yaucup, dat too much brandies is too much; but too much lagers is shoost enough!" So you see, if I like to wash less some other one likes to wash more; only take my word for it, and it will be short enough. I have pictures that have never been washed, mounted on the inside door of my laboratory with others that have been washed; they have been there eight years, and are good to-day. I also have in my reception-room photographs, made on plain paper, that have been made eighteen and twenty years, have passed through two fires, and are as good in tone and brilliancy as ever. Of course, when I say they have passed through two fires, I don't mean to say they were in the fire, but in the building, where it was too hot to live, and where tons of water were thrown, which made steam hot enough to almost cook the frames, and a full amount of smoke; of course, when I could get inside, I gathered them up and dried them, and they are now, to-day, examples of as good work as is done by any, even on albumen paper.

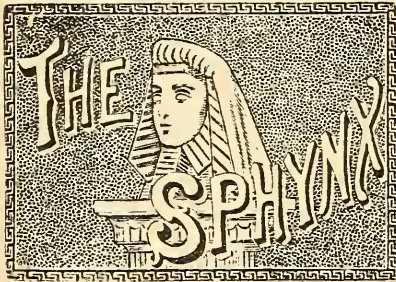
J. O. MERRELL.

A WRINKLE.

A stereo negative, by Mr. La Rosh, was handed us for the purpose of printing half a dozen 16 x 21 from it; the view was "interior of a Bonanza quartz mill," engine, etc. It would never do for a solar; it might break and ruin everything. Thusly we succeeded: Made a positive (transparency) from the negative. Put the positive in the solar camera, focussed on ground-glass of our

mammoth box, and on a sensitive plate 10 x 22 we gave an *instantaneous* exposure, and produced from the negative thus obtained satisfactory prints. While this may have passed from the minds of many of the craft, it may be new to some; if so, use it.

J. PITCHER SPOONER,
Stockton, Cal.



Question.

WHAT IS THE MATTER WITH HIM?— I am a young photographer, only having worked in a gallery one year all told; I have a gallery of my own now, and am doing pretty fair work. But in the gallery where I learned I always considered the *Philadelphia Photographer* a very dear friend on all subjects, and now I am at a terrible loss without it. Not only is it valuable for the good reading and information in it, but for the privilege of asking and receiving answers to questions. For instance, I would like so much to have some information on intensity of negatives; of course, if I ask any photographer what will give me intensity, they will say more iodide in collodion, and so it will give contrast between light and shade. But that is not the trouble I have. I can get the proper contrasts, and by redeveloping I can get a good negative every time, but it takes more time to redevelop, and of course more expense than it otherwise would. I believe my trouble is different from almost any other photographer's. If I give a short exposure, I will get a negative that you can see very distinctly objects through the most intense parts; while the shades are perfectly black, and when printed will be black all over, and, of course, won't print at all as it should, because it prints too quick. And,

again, if I time a longer time I will get a negative that has the proper contrasts between light and shade, but the same trouble, the whole negative too thin, and by redeveloping I can get strength enough to make a good print. I am honest enough to tell all my troubles and seek information. I have worked under this difficulty for a year, and have, probably, experimented more than any other photographer in the same length of time, but to-day I am just where I was six months ago, so far as that question is concerned. I have made some very fine photographs by this process, but it is all unnecessary. In the gallery where I learned I worked just the same way, and the formulæ were the same as I use now. Then, of course, one will say, it is your light; possibly it is, but I have tried it in all shapes, that is, my light; of course, I can improve my negative by my light being just right, but then I have to redevelop.

Now I have said all that is necessary, and perhaps more, too, on this subject. I would like to have *Sphynx* answer this question.

AMATEUR.

Answer.

We want to hear from others on this. Meanwhile we would say to "Amateur," viz., add a little more cotton to your collodion, say one-half grain to the ounce. In developing, use as little developer as you can to cover the plate, and don't let any flow over the edges; keep the plate quite still until the image is well out, and then "rock" it a little. If still too thin, add about two or three grains of sugar to the ounce of developer.

If you yet find difficulty in getting strength, write again, and give description of your light, and the composition of your collodion and developer. SPHYNX.

Question.

Can you explain the cause of the trouble we are in, and how to get out of it? The paper always seems greasy. I inclose you a piece silvered a few days ago. We cannot use it, though silvered on a bath sixty grains strong; and the *time* makes no difference, one or four minutes producing the same result. Old paper and new work alike. What can I do?

Whether I draw the paper over a glass rod after silvering or not, the trouble comes. The paper looks well enough at first, but when it begins to dry off, it looks gray, like a badly coated plate. By blotting it off we get it right, so far as silvering is concerned, but when we go to tone, it is so gray again we cannot tone. Some of the prints again are blue at one end, while others are all spotted. If you or some of your readers will tell us the cause and cure of this great trouble, we will be very grateful, and spread the glad news.

B. & R.

Answer.

Reduce strength of silver bath to fifty, and add four grains to ounce of nitrate of potassium. Keep room warm where you silver, or have the bath solution just a little warm while silvering, and, as a further precaution against that greasy appearance, rub the surface of each sheet of paper with a tuft of cotton before silvering. That greasy appearance is *always* an indication that your silver bath is *too* strong. When it makes its appearance, and you still rub your paper, reduce the strength until you *just* get rid of it. Float the paper two minutes, and fume fifteen or twenty minutes.

Will some of our correspondents please give us *their* experience on this subject?

Question.

What can be used in place of alcohol (have not got the gas) in heating the burnisher, as alcohol is *too* expensive? If any substitute, what? and how used?

B. H.

DURABILITY OF SILVER PRINTS.

BY CHARLES WALDACK.

IF we turn back to the files of the photographic journals a few years ago, we find a good deal written about the means of insuring permanency to silver prints. In our days, the subject has been entirely dropped; not because it is of less interest than it was at that time, or that by the means recommended the object has been attained; but because the conviction has been forced to the minds of all those who take an intelligent interest in the matter, that silver prints are not durable, and, what is worse, that they cannot be made durable,

in the strict sense of the word. A glance at a collection of photographs will convince any one, however, that some prints stand the test of time much better than others. If we could know why, it would be of great benefit to all photographers. I will endeavor, in this article, to throw some light on the subject.

While in Europe, I had occasion to examine a collection of photographs of all kinds, of my own make, which I had sent from time to time to a near relative, and which had been by him carefully preserved. Among them were samples of nearly all the printing processes known; also a number of daguerreotypes, ambrotypes, and ferro-types. The daguerreotypes looked dim, and covered with a brown film; but a wash with cyanide of potassium restored them to all their pristine beauty. The ambrotypes and ferro-types were as fresh and brilliant as if they were made only a few days.

The perfect preservation of these silver pictures goes to prove that pictures composed of metallic silver are permanent. What is the reason, then, that silver pictures on paper are liable to fade? The best preserved silver pictures in the collection were some dating from 1858. They were enlargements, made by the calotype, or double iodide process. Other prints, made by development, in which serum, starch, gelatin, albumen, arrowroot, and tapioca had been used, mixed with the iodizing solution, showed signs of fading; those made with gelatin, serum, and albumen being much the worse of the prints made on plain salted paper. Some were in a much better state of preservation than others. The worst were probably made in the old hyposulphite and gold bath, which, as all old photographers will remember, was used day after day, adding a little gold every time. Prints made on plain salted paper, silvered with ammonia-nitrate, had changed but little; also some albumen prints, made before the quantity of chloride had been reduced to a minimum. The albumen prints, old and more recent, which had been toned deeply, had changed less than those with red and warm tones. The worst of all were those made on double-gloss paper. The mounted prints had faded a great deal more

than others, but some which had been pasted in an album, the edges only being starched, were only faded where the paste had touched them.

The examination of the collection of photographs confirmed me in some opinions which I have held for some time in regard to the durability of silver prints, and which I will now state.

Silver prints are the more durable as the compound forming the image is nearer to the metallic state. The ambrotype and ferrotype, in which the image is composed of metallic silver, are strictly permanent. So are the collodion transfers now so popular in England, which are thin collodion transparencies toned with gold, and transferred to the double transfer paper used in carbon printing.

Developed prints are conceded to be more durable than prints in which the silver compound has been reduced by light alone. Those again in which no sizing has been used but that which was in the paper, are more durable than those in which gelatin, albumen, or serum have been mixed in the iodizing solution. Old calotype negatives and positives (double iodide process) are generally found in a good state of preservation. It is admitted that the silver compound produced by the action of gallic or pyrogallie acid, contains a smaller amount of organic matter than that produced by the action of the light alone.

The silver compound most easily affected by the different influences which conduce to fading, is that in which the largest amount of organic matter of an animal nature predominates. The different starches, or similar substances, are not by far as bad as albumen, serum, and gelatin.

The relative proportions of chloride of silver and albumen, or other similar substances, have much to do with the durability of the prints. Strongly salted albumenized papers give more durable prints than the weakly salted double-gloss paper, so much in use now. But strongly salted papers will only give very indifferent prints from the thin negatives now generally made.

Prints made on weakly salted albumenized papers are very vigorous, but the image

is composed of a silver compound, in which organic matter predominates. This albuminous silver compound is not only affected to a greater degree by the influences which cause the silver print to fade, but is still sensitive to light after the photograph is fixed and washed. To be convinced of this, let any photographer examine the prints in his show-cases, after an exposure of a few weeks to light. The parts covered by the mats will be found to have preserved their original color, while the rest will have taken a reddish hue.

The opinion prevails among a large class of photographers, that the fading is owing to imperfect washing. This is probably one of the causes. It is very doubtful, however, that the removal of the hyposulphite should be imperfect in large establishments, where all the necessary facilities for washing are at command. And still the prints made at these establishments fade. I think too much stress is laid on the difficulty of removing every trace of the hypo salt. Why it should be so much more difficult to remove hypo by washing than many other saline compounds it is difficult to comprehend, as it dissolves easily in water. The most delicate test will fail to detect its presence in the drippings collected from prints after ten consecutive washings and drainings, which may all be done within one or two hours.

An idea has been put forward that it is most important to wash the prints perfectly before toning, so as to deprive them of the free nitrate of silver which they may contain. If this was really so, perfect washing is a very slow way of attaining that object. The addition of a few grammes of salt to the third or fourth washing water, or to the toning bath, is a much more direct way.

On the question, How to make silver prints as durable as it is possible to make them, I will now give you a few ideas, based on the observation of the facts alluded to above.

For enlarged prints which have to be crayoned, or colored in water colors, use the double iodide, or any other process in which the image is developed by means of gallic or pyrogallie acid. Avoid adding serum, gelatin, albumen, or any other siz-

ing to the iodizing solution. Use paper which is not strongly sized. It is difficult to handle, but gives prints which will stand better. Whatman's drawing papers are the best, and are most appreciated by the artists. Make weak, gray prints; a good artist likes them better. Strong, vigorous shadows are only an impediment for him, and if the weak print on which he has built his work should, in due course of time, change, the alteration will not be visible. Prints to be retouched only, should be strong and vigorous. Retouching is only improving the imperfections of a photograph. Portraits to be colored in oil should be traced on the canvas, the image being thrown on it by means of a solar camera.

Prints to be retouched should be made on plain paper, salted with a one or one and a half per cent. solution of salt, and silvered with ammonia nitrate. And now for albumen prints: It would be useless to recommend the disuse of albumen paper. Let us thus try to make the most of a bad case. Any photographer can testify to the fact, that strongly toned prints, those in which the substitution of gold for silver has been carried the farthest, are the most durable. Now *tone* is nothing but a matter of fashion; brilliant brown and reddish tones are the fashion in this country. That fashion we have set ourselves, and I do not see why we cannot change it. Let us then take a step towards the black, and we will find that our customers will soon get used to it. If you have any doubt about it, interview a carbon printer. Now a carbon printer has very likely tried purple, brown, and black tones, and he will tell you that in most cases his customers prefer the engraving on the warm black to the tones imitating those of the silver photograph.

Tones similar to those can be obtained by pushing the toning further than is usual. The printing will, of course, have to be carried further also. Prints thus produced will have more body, and will contain a greater proportion of gold.

It would also be of great advantage to make use of a different mounting material. Paste made with starch or flour, however freshly made, is one of the great causes of fading. The least amount

of moisture will cause it to become sour after the print is mounted. Glue or gelatin would be much to be preferred, although more difficult to handle. A gelatin solution could be made, to which a small quantity of chrome alum should be added. The chrome alum cannot, I think, have any influence on the silver photograph. It converts the gelatin into an insoluble substance which does not attract moisture, a kind of parchment. Four ounces of a good brand of gelatin should be soaked in water for about four hours, allowing it to absorb all the water it can. The excess is then poured off, and the swollen gelatin is slightly warmed to melt it. While still warm, about thirty grains of chrome alum dissolved in one ounce of hot water, and allowed to cool, are added a little at a time, stirring the liquid. The gelatin solution thus obtained should be used warm. It can be diluted if necessary with warm water. It should be made fresh every time, as it can only with great difficulty be brought to the liquid state again if allowed to cool.

CINCINNATI, January 20th, 1879.

CARBON IN PARIS.

IN the November number of your journal you published a letter of W. D. Gatchel, Esq., of this city, which contains a very exaggerated account of a conversation had with me, in regard to the use of carbon in Paris. Mr. Gentile, having noticed Mr. Gatchel's erroneous statements in your last number, I will thank you if you will publish the following facts in regard to carbon printing in the French capital.

Mr. Liebert is the only artist of ability who uses carbon exclusively for all sizes. The results he obtains (and I examined his work very carefully) are not as good as those obtained by silver, being apparently weak, lacking in body, and the texture often being granular, making the half-tints feeble and insipid. This is the case in the glacé carbon print, and when finished with a mat, dead surface, this inferiority to the silver print is much more apparent.

Mr. Walery, the ablest and leading artist of Paris, did give carbon printing a very fair and honest trial. He employed a man

already experienced in carbon printing, fitted up a special room for his exclusive use, giving him the privilege to select from his many negatives the finest and best adapted for carbon tissue. All the different tissues of the different manufacturers were put at the disposal of this already trained man, and after six months of trial, Mr. Walery abandoned all ideas of adopting the carbon process, the results being quite inferior to those obtained by silver. I saw many dozens of these carbon prints, and they would average about one in ten that was really good, without a blemish; the balance were lacking in the half-tints, too granular, spotted in various ways; some were covered with parallel lines, very similar to the effects found in wet plates when the collodion contains too much water; some the half-tints were altogether gone; not a few had thousands of dark spots throughout; others exceedingly weak all over. All these imperfections were easily accounted for, by imperfect tissue; bad gelatin had been used in the one, the coloring matter had not been perfectly ground in another, and still another had become insoluble, owing to age or very bad gelatin having been used in its manufacture; excessive hot weather produced only more troubles, and of different kinds.

These are the facts as I saw them, and make plain the reason why carbon printing is not, and will not be generally adopted by the leading photographic artists here or in Europe, for small, say card, cabinet, or 4 x 4 sizes, portraits.

There are, I believe, in Paris besides Liebert, who is an artist, some four picture-takers, fifth-rate photographers, who exhibit some specimens of carbon printing in their show-cases; but their silver prints are so damnably bad that the quality of their carbon productions needs no comment here.

The successors to Braun, of Dornach (for both father and son are dead), have opened a portrait gallery in Paris, and use silver for all cards, cabinets, and 4 x 4, unless especially ordered to use carbon. I inquired personally at their establishment, and was told, that *for small sizes, silver produced more satisfactory results*, which were obtained with much less labor and less waste.

Last year Mr. Kurtz sent a number of his

finest negatives, especially selected for carbon tissue, to Mr. Loeffler, of Staten Island, an experienced and practical carbon printer; and the results which Mr. Kurtz showed me last October were about the same as those obtained by Mr. Walery—*the average very inferior to silver prints*.

I am a licensee of Mr. Lambert's, and have given the carbon subject no little of my leisure time. I do believe, that with the present quality of tissue, the carbon process is not practicable for *small work*; it is more expensive, much more labor to produce the same number of prints, and the results inferior to those of silver, while for large pictures, such as published by Braun, copies of antique statuary, paintings, drawings, architectural monuments, and even landscapes, I consider carbon effects far superior to those obtained by silver, and the reason is simply this.

In the large prints, the objections of the small ones, granulation, fine spots of all varieties, lack of delicacy and strength in the half-tones, are lost in the distance between the print and the spectator. I saw some very fine large carbon prints at the Exposition. Mr. Braun has long ago settled the practicability of carbon printing for large pictures. His beautiful autotypes settle this matter; *but that does not prove the process practicable for small portraits*.

Yours truly,

LEON VAN LOO.

CINCINNATI, January 16th, 1879.

ABOUT ARTOTYPE.

THIS subject continues to interest the fraternity largely. We know of a number of intelligent photographers who have wisely made pilgrimages to New York "to look into it," and who have returned wiser, without making any purchase. Others again are trying it.

Mr. W. J. Baker's communication, on page 37, is worthy of consideration, and we print it because it comes from a man whose probity is unquestionable, and because we want to be exactly fair. But it must be remembered that, as Mr. Baker admits, he is yet a novice, and has yet to battle with his new bantling *in the summer-time*. Difficul-

ties will crop out then which he has not yet dreamed of perhaps. Besides, "in speaking of a child, we never speak of what is present, but of what we hope for."

A PHOTOGRAPHER beyond the Sierras was recently burned out. He telegraphed us to know if all the Artotype Company claimed was true. If it was, he was "going to seek some other business, for photography is done," he said.

It is absurd to think that artotype is ever going to supersede silver. What are we to do for vignettes, medallions, and the hundred pretty styles impossible for it to do?

At the request of some of our readers we republish Mr. Husnik's article on page 35. This is undoubtedly the artotype process. In any case, it is sufficient to enable any one to produce similar results. Of course, personal instruction in printing is essential, and on that you can largely economize.

WE are more and more convinced that Mr. Obernetter's patent, therefore, will not "hold water" in this country, and it is a question whether or not every purchaser of it cannot recover from the Artotype Company in court of law, if they find they wish so to do.

It is always safe to make allowances for parties who permit themselves to be carried away with the *appearance* of things, and who, without actual practice or experience, give glowing testimonials, which they *know* they cannot back up with facts.

ANOTHER of our clear-headed photographers, a foreigner, and a thorough expert in our art, says: "The idea of Obernetter patenting in this country a process the invention of somebody else, and known five or six years! Those that purchase licenses will have no occasion to make use of them in their ordinary business, for the process is a difficult one. The prints do not stand comparison with silver or carbon prints from the same negatives. Examine those in Anthony's, and in the St. Louis journals, and you will find them very granular (rough) in the deep shadows. It will not do for portraits except for book illustrations, and it will not do for mercantile work (machin-

ery, furniture, etc.). The men who get such kind of work done want the very best."

It is not true that photo-mechanical prints, *with half-tone*, were not made until Obernetter discovered how. They have been made in this country, commercially, for several years, by Mr. Charles Bierstadt, New York (Albert's patent), by the Heliotype Printing Company, Boston (Edwards's patent), and by Mr. John Carbutt, Philadelphia, by his own method, but these gentlemen have not seen fit to offer their processes for sale to the general public. In this latter only has Obernetter and his colleagues presented any new thing.

ONE weakness of the artotype process is in the absence of any *good* method of transferring negatives, which latter is necessary unless the prints be reversed.

WE understand that our last issue was a welcome one to many. One correspondent writes, *viz.*: "Your little article on the last page of the December number, entitled 'Artotype,' is worth dollars to *me*, and I hope to others. I will hold off buying any process until it is proved *openly* to be *good*. I was led to believe that the process was practical for 'every-day work,' but I am now prepared to wait and see. I hope you will stand by the photographers, as heretofore, and not lead us off into by-paths. I bet you'll find out about these 'hawked' processes ninety-nine-one hundredths of them are a 'catch.' With many wishes for your welfare, I am, as of yore, your friend,

"C. OBSCURA."

ANOTHER one says: "Take it all in all, your January number is the very best you have ever issued. It caps anything you have heretofore done in defence of American photographers. You have honestly been tried in the balance, and stood the test nobly. Every one here in New York asks, 'Have you seen Wilson's journal?' Oh! if we could only call a convention together, some folks would get ventilated. You have played a good hand, which will rebound to your credit. There is wailing and weeping here. Even some of the carbon workers see that they are abandoned."

STILL another, and a "carbon licensee," writes thus: "I am glad to see you take so

much interest in the welfare of photographers in regard to the new processes that are so *much advertised* of late. We photographers, as a general thing, are quite too ready to bite at what seems to us a good process, because we want to be 'up with the times,' and unless we have good council are liable to get bit.

CARBON WORKER."

"I HAVE seen several specimens of artotypes and like them very well, and would like to know how to produce them, but the price for license is too high these hard times, especially in country towns, where large quantities would not be called for. Now, if Mr. Carbutt can furnish the proper instructions to produce good work (and no license required), I make a motion that he be supplied with pupils as fast as he can attend to them.

D. C. PRATT."

It is no secret, *with us* at least, and therefore we freely give the information to our readers who need it, that the presses sold by the Artotype Company are made by Parks, machinist, over the N. H. R.R. depot, Centre Street, New York. The colors are from Keim & Sennig, Leipzig, Germany.

OUR PICTURE.

SURELY not for want of opportunity to get them, but for various other reasons, we have refrained from giving our readers more frequent examples of photo-mechanical and other than silver prints. It has been our policy from the beginning to make our embellishments teach photographers some good lesson in their daily work, and since we did not consider photo-mechanical processes of *general* interest enough to illustrate them very often, we have refrained from it, although they have gradually been simplifying and improving during the few years last past.

Now, however, we depart from our rule in this direction, and give you an example of colotype, or heliographic, or photo-lithographic, or lichtdruck, or artotype printing, or whatever you choose to call it, of the highest perfection yet attained in that branch of our art, simply to show you what is possible, and that the method of doing such work is by no means monopolized by any company or its licensees; and therefore the lack of occasion for paying large sums for licenses

under a foundationless patent, and submitting to extortion for the sake of learning how to produce such prints. *How* similar results are produced, is described quite fully on page 35, though Mr. Carbutt's method is very different in detail. Such ocular demonstration as is needed is offered on moderate terms by Mr. John Carbutt, S. W. corner Ninth and Arch Streets, Philadelphia, who made the beautiful heliographs which adorn our present number, and who has been making similar ones for a couple of years or more.

The giving of this example to our readers also makes good what we have said in the matter, and we are not afraid to have the results compared with the *artotype* specimens given in the St. Louis *Practical Photographer* or *Anthony's Bulletin*. If there is any difference, our's is better. They are doubtless as good as photo-mechanical printing can do at present.

It was not until the 18th of January that we concluded to use this picture, and Mr. Carbutt did not begin printing them until January 23d. They run very uniform, and give all there is in the negative, which, by the way, is of a group of Japanese bronze and silver ornaments from the Centennial collection, arranged to suit our own whim and fancy, the goods having been loaned us by the Chinese Commissioner for the purpose.

If any of our readers wish a silver print of the same for comparison, we will mail them one on a large mount for twenty-five cents, to cover expenses and postage. On this we expect to make *our* everlasting fortune, since we have shut out ourselves from the advertising patronage of artotype.

J. TRAIL TAYLOR, Esq., the talented photographic author, who occupied the editorial chair of the *British Journal of Photography*, London, for nearly fifteen years, has resigned his post, and come to this country to engage in a special branch of the photograph business, where he hopes to find more room to grow than he ever could as editor of a photographic magazine. On the evening of January 4th he was given a testimonial dinner in London, by his many photographic friends, and it was a very brilliant affair. He came away with a gold chronometer and chain, and a purse of gold. We wish him good prosperity here.

Editor's Table.

MR. J. C. SOMERVILLE'S "Bargain List" No. 7 is before us, and should be carefully consulted by every artist who can conveniently deal in St. Louis, for good goods—the best—are here offered at astonishingly low prices; it being Mr. SOMERVILLE'S determination to treat everybody right, and to sell as low as the lowest. 17 South Fifth Street, St. Louis.

MR. W. H. TILFORD, the veteran St. Louis stockdealer, died, after a long and painful illness, in that city, January 17th. He was noted for his integrity and liberality, and had hosts of warm friends.

ATTENTION is called to the latest novelty introduced in the advertisement of Messrs. GATCHEL & HYATT. MR. GATCHEL writes us, viz.: "I think the retouching machine is going to be a great help to the art." We expect to have opportunity to try it shortly, and shall then speak from experience.

OUR last picture, instead of being made with a MORRISON Lens, as stated by us, was, on the contrary, made with a Ross Symmetrical, from WILSON, HOOD & Co., 825 Arch Street, Philadelphia. We do not see how any lens could do any better, and we would not steal from its fame.

OUR PRIZE OFFER.—Please do not forget it, and leave it too late. Let us have a *generous* competition. We want good negatives for our magazine, and we want many to have the good and useful experience of trying for the prize.

We will send one of our special circulars and list of books to all applicants.

MR. ALBERT LEVY, 77 University Place, N. Y., receives a very flattering testimonial to the qualities of his emulsion, from the *British Journal*, in which the editor says: "It fulfils satisfactorily the requirements of an emulsion. The two negatives we obtained through its agency possess all the features which we usually secure when making use of a good sample of washed emulsion."

MR. W. LANGENHEIM, one of our old fathers of photography, died in this city, January 10th, 1879. Only a year or two ago his brother and partner died. We received the information too late to give further notice of his useful life now, but it shall appear in our next. His career was that of photography.

MR. CHARLES WALDACK, the well-known author of one of the best photographic works in existence, *Waldack's Treatise*, has arranged to contribute regularly to our pages; and his first article appears this month, as full of vim, and practical, careful thought, as of old. We congratulate our readers on this accession to our fund for information.

\$400,000.—This is the sum which has been "refused" from the United States, for a process of making photographs in natural colors. The Vienna *Free Press* tells the story. The process is briefly thus. "The sitter is posed before a mirror silvered in a peculiar way. The image is then developed, detached from the glass, and gives all the color and reality of nature." Somebody bid next.

NEWS OF THE MONTH.—SCHOLTEN'S gallery, St. Louis, was burned on New Year's eve.—PACH'S Cambridge gallery is under the management of Mr. B. F. BALTZLY, and he is photographer for Harvard, Yale, Princeton, Vassar, Wesleyan, Dartmouth, Columbia, and Williams Colleges, and West Point Military Academy.—CHARLES COOPER & Co., 191 Worth Street, N. Y., have our thanks for a copy of their new price list of chemicals.—RICE & THOMPSON, stockdealers, Chicago, have dissolved, and Mr. HIRAM J. THOMPSON succeeds.—The cold weather has really stopped operations in several of our cities, by freezing up the pipes. Cool proceeding, surely.—The firm of TAIT & ARTHUR, Bowmanville, Ont., is dissolved.—Our friend, Mr. E. D. ORMSBY, Oakland, Cal., is called "*the Oakland photographer*."—Mr. D. A. CLIFFORD, whose galleries are at St. Johnsbury and Montpelier, Vt., sends us some admirably printed vignettes in gray. He receives most flattering testimonials from the press of that State. Photography is appreciated in the Green Mountains, surely.—Among the provincial photographers, Mr. S. H. PARSONS, St. John's, N. F., holds sway with the press, who notice him finely.

VOGELER *vs.* HEARN.—While we try, as far as we can, to prevent error from creeping into our pages—yet it sometimes will—we are not to be understood as indorsing everything we allow to appear. Last month, we printed an article from Mr. VOGELER, in which we thought we saw many useful things, but wherein he

made a statement which we intended to correct, but which was overlooked. Mr. HEARN now corrects the statement himself, and here the matter must end; yet it is but just that we should also state, what any one can see, that Mr. HEARN made no such claim as Mr. VOGELER attributes to him. In all our intercourse with Mr. HEARN as an author, we have found him singularly conscientious about giving credit to others, and we are sure his present article proves it. He has been, and is, one of our most useful contributors, and we trust Mr. VOGELER will himself take the trouble to see that he has made a blunder. Both these gentlemen excel in their beautiful branch of our art; and we hope peace may reign with them. When an author relates his experience in print, he by no means always claims originality.

Mr. JEX BARDWELL, Detroit, Mich., has sent us some very interesting collographic prints—copies of letters, pen-drawings, etc.—which interest us exceedingly. Mr. BARDWELL claims that literally, in *two minutes* after he receives the original he can show proof, and that any photographer can do the same, at an outlay of twenty-five dollars for outfit, and such sum as they may agree upon for instructions. We have seen no application of it to portraiture; but there are many businesses which ought to find such a process invaluable. We hope to have more to communicate on this in our next. To show the possibilities of his process, Mr. BARDWELL has written all of his recent letters to us by its means. He is one of our oldest and best experts, and can doubtless verify all his claims.

OUR magazine and our books seem to have lately infused somewhat of the old enthusiasm among their readers, as witness a few extracts from letters received, which we trust means good for us all, viz.: "You gave a capital number for January; one of the best you ever got out."—GATCHEL & HYATT. "I am anxious to keep posted, and I recognize your journal as an honest, reliable, and fair medium for that purpose, daring to stand by the rights of photographers."—B. F. BATTELS. "I cannot close without conveying to you my highest esteem and gratitude for the manner in which you have defended our interests in the past, and that in taking such a course, you need never fear that 'all the circulation of your magazine will be laid on the shelf.'"—J. E. SMALL. "It is decidedly the best photographic publication published, and I won't be without it."—FRANK THOMAS. "We must have the journal, sure; it has got to be such an appetizer

that we can't *eat of photographic knowledge* without it."—J. O. MERRILL. "The course you took in the LAMBERT affair saved hundreds of dollars to many country photographers."—P. BRITT. "I have never before felt the want of your valued journal to such an extent as at present, when through some cause or other I conceived the idea that my December number (which was long ago in its place upon the shelf with its predecessors) had yet to arrive, and only after repeating my visits from three to four times a day to the post-office within the last two weeks, did I discover my mistake."—JOHN H. HENNING. "You may take this as a compliment, but in truth I must acknowledge, that out of four photographic journals I keep, the *Philadelphia Photographer* is the one I could spare least. It is like the juice of the grape: the older it grows the better it gets."—T. M. SCHLEIER. "Of all the journals that are published, I think yours is the truest to the photographers; always ready to expose fraud, and give the fraternity the benefit of that which is practical and good. I, like a great many others, ought to have saved \$200 at one clip, if I had not let my subscription to the *Philadelphia Photographer* run out."—E. J. POTTER. "I want to say right here that I feel like a new man with the *Philadelphia Photographer* in my hands again, and I must say, in my estimation, no man can afford to do without it, and I never intend to again!"—F. P. FORD. "We have been taking the *Philadelphia Photographer* from our newsdealer for ten years, and have paid \$6.00 per year, and cannot now do without it, at least we cannot *afford* to."—LEONARD & MARTIN. "I am bound to say one word more in reference to your publications. This year's *Mosaics* is certainly a useful little gem. It is at best a little photographic pocket encyclopedia. Since I want to begin the dry-plate process, I find in it all I care to ask on the subject. Again: we were always troubled by formulae being given in French measures. So many cry, 'Give us plain weights and measures.' Now, as the metric system is published in full, let no one become a 'squalling brat,' since he can refer to this year's *Mosaics*, and be made plain."—RALPH DOUGLAS. "I found a copy of *Mosaics* in my letter-box the other day. It certainly is a capital volume, containing lots of *useful* matter, nicely printed, and tastefully bound."—ABM. M. DE SILVA.

CROWDED OUT.—Dr. VOGEL'S letter, and Prof. STEBBING'S, came too late for insertion. We are also obliged to lay over "Friends in Council," and many other valuable papers, until our next.





Boston Public Library.

T H E

Philadelphia Photographer.

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Entered according to Act of Congress, in the year 1879,

By EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

THE WAY MORE FULLY DECIDED.

WE feared it might not be so, but it is extremely gratifying to be able to state as a fact, that our leading article last month—"Which Way?"—has elicited approval from many sources to which we did not look for approval. It has struck a vein which we feared did not yet exist, and over which we rejoice in behalf of our fraternity at large. We feel more hopeful. Photography will yet shine. The clouds are breaking, and we see light. Others see it too; and many are going the *right* way, without question.

We of course have to publish our magazine in a measure for profit, but not for that alone, by any means. So long as it is ours to edit and own it, it shall be the advocate, fearlessly and independently, of the fraternity at large, not even our own interest standing between. We are glad, therefore, to see our influence spreading; for we believe the more it does, the greater good will accrue to the whole craft. While you help us, we can more largely help you. We have room to add only a few of the kind words of support which have been sent us.

Your "Which Way?" is gratifying, and recalls a sentiment the writer has freely expressed—that you have done more for photography than any one else in the United States.

Respectfully yours,

"WM. H. ALLEN."

"Which Way?" is one of the very best and truest applications to the present needs I have ever read. 'The text fits like a shirt.'

"ELBERT ANDERSON."

MORE ABOUT ARTOTYPE—SAVE YOUR MONEY.

BY DAVID BACHRACH, JR.

I HAD intended to keep silent, and leave to an abler and better-known hand the task of thoroughly showing up the "true inwardness" of this so-called artotype business, but the postal card lately sent out by the "Co." (which for its effrontery and cupidity stands unequalled in the attempt to coerce the fraternity), and the fact that no one has yet presented the matter in its true, practical light, has impelled me to attempt, in my plain, humble way, to do a duty to the fraternity at large. I do not pretend to be a leading photographer, but only an average one, yet one who believes in progress, and has improved year after year steadily. In technical knowledge of the profession, and especially in the photo-mechanical processes, with which I have had intimate acquaintance for years (being one of the patentees of the ² Levy & Bachrach Photo-engraving Process"), I will not yield in judgment to any one.

Some two weeks ago I went to New York on business, among other things to

examine into the artotype matter, and, if it was practical, as they claimed, for ordinary routine work in the profession, and not open to the many objections to all the previous processes of that kind, had intended to call a meeting of the photographers of this city and buy it for our use. No one here, I am pretty positive, would invest five hundred dollars singly in any process, after their experience with the carbon and other process-mongers. I called at the office and saw Mr. Powelson, to whom I stated my object, telling him, however, that no more "pigs in a bag" could be sold in Baltimore. I found, after a very short stay, that the process was in no essential free from the objections to similar ones heretofore. Their results were superior to any in this country, but that the process can ever take the place of silver printing in the average gallery is an absurdity. It will be confined to such establishments as Mr. Bierstadt's or Carbutt's, and if any photographer wants to use it for an occasionally large order for commercial purposes, he can do so without paying an exorbitant price for a worthless patent, and by simply using the published knowledge on the subjects, *with brains*.

I have been asked "Are their prints equal to silver prints from the same negative?" I say, emphatically, *No*, and to prove it, take the illustration in the December number of the *Bulletin*, and compare it with one of Sarony's silver prints from the same negative; that will be enough. It is one of the best examples of its capabilities.

Now, suppose, we will say, that you are going to adopt it altogether for your work, Mr. Average Photographer: let us see how you will manage. You have, say, on an average, fifteen negatives per day to print from. For this purpose you employ one good printer (as they require from six to about twenty-four from each one, and some few even less), and he gets through with them very easily, and gives good prints. Now, however, you are first required to give up albumenizing your glass, *and must clean each plate with extreme care, as the negatives must be stripped off to avoid producing reversed prints*. You must be sure to have a duplicate negative to allow for spoiling one, which fre-

quently happens in this operation. If you object to that, you must make a glass positive and make a reversed negative from that, and if you do, the quality is far behind that of the original with fine negatives. Which horn of the dilemma will you take? For each negative you will have to prepare a piece of crystal plate-glass with the gelatin coating to receive the image to be printed from, which requires a careful manipulator, *and this, with stripping that number of negatives, requires one man by itself at least*. Now then for the printing. It takes an excellent hand to pull three hundred from one plate in a day of ten hours; how many can he get off from *fifteen different ones, and each one requiring to be made ready in the press?* But now suppose a little rush takes place occasionally, and double the number of prints are required. This one man with one press cannot do it, nor can he work at night, as any one of experience knows that a man is exhausted after ten hours of such work. Here you have two men who really cannot do the work that one does with the silver process. Why, one man can handle and get prints from thirty or forty negatives in a day in the ordinary way. Two men have all they can do with fifteen negatives by the "artotype" method; I will venture to say, that experience will prove that they *cannot* handle even that number. Now all this is on the supposition that everything works right, and no hitches occur; if such should occur, *as they certainly will in all gelatin processes*, then look up your dictionary of profanity; and when you have orders for duplicates, what then? Must all the printing-plates be kept, or must new ones be made each time?

Now suppose a commercial job comes in, and five hundred are required from one subject. Now you think you have me. Perhaps so; but suppose *the sun shines*. I will then make ten negatives of the subject, *print as fast as you can and do some other work besides*. In such a case the cost of material is an advantage on the side of the mechanical process, and when photography has become reduced so low that this cost is an important factor, it will be found best to leave it alone. I wish to state right here, that not only myself, but numbers of others, have been at

work for years, to invent a method of *producing relief plates in metal, in grained half-tone, to print in the ordinary printing press*, and when that is accomplished, as it surely will be, it will settle the *commercial* feature of this case also. One company in Philadelphia is already producing some tolerable work of this kind.

I had forgotten to mention that all "artotypes" require to be varnished in order to compare well with albumen silver prints, and that previous to this they must be coated with a gelatin solution, if a *high* gloss is desired, otherwise they are soon disfigured by handling, due to the chalk surface on which they are printed; and that takes up more time.

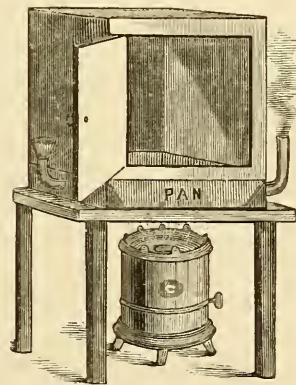
This could be obviated, and the trouble of first sizing saved if the paper was sized with chrome alum and gelatin before the chalk surface was put on. That, however, would increase the cost to almost as much as photo-paper.

A process of this kind is certainly an advantage, however, as I have stated before, in an emergency in dark weather, or where publishing is going to be done on a large scale. Now if every one will only keep posted, experiment a little, and follow my directions, he will make just as good prints as are made on the average by any of these methods. We have a lithographic press in our establishment, and as soon as we are ready, we will put it in order (as we consider it better than the rattle-trap called an "artotype press"), and will use it without buying the process; take notice, gentlemen of the "Company."

As to the patent and its validity, I have Professor Husnik's recent work, from which I find that the method practiced by Obernetter, and lately patented in this country, had been known and practiced in Germany a number of years, and was never patented there because it was not patentable. The patent here only covers the method of making a substratum, and as that was done over two years after it had been published, it is undoubtedly a worthless patent in this country.

Professor Husnik's method of making a substratum on the glass plate for the gelatin film is an excellent one, and the best

so far published; but it has been improved (and this is the method adopted by the Artotype Company) by *drying the film at once in the oven used for drying the gelatin film*, at a temperature of about 150° Fahrenheit; this enables the plate to be used at once for the gelatin, the heat causing the mixture of silicate of soda and albumen to coagulate in less than half an hour and adhere very firmly to the glass. The best oven for the purpose (and the one used by them) is made by simply making a simple wooden box, about thirty inches square and five feet high, the bottom formed by a *closed, flat, hot-water pan, made of metal*, about four inches deep, and having two pipes leading outside, one for the escape of steam and one to pour water into. A gas- or kerosene-stove is put underneath, and if it has been carefully levelled, two thicknesses of blotting-paper are put on top of the pan, on which the plates are to be laid. Several more rows of glass can be put in by means of strips laid across at intervals, with levelling screws attached. One side of the box is a door. The drawing will give something of an idea. The albumen and silicate



solution should be carefully spread over the cleaned surface of the plate (in a room absolutely free from dust), the excess allowed to run off, and then laid in the oven at a temperature of 140° to 150°, and allowed to remain about twenty minutes or one-half hour. It is better to keep these plates a day before using, but when dried this way, they may be used at once. They must then be rinsed under a tap and dried again, when

they are ready to receive the gelatin. The oven must be brought up to at least 180°, the plates carefully levelled, and then the gelatin mixture is to be applied, by pouring on in the centre until it just spreads to the edges of the glass, *but no more*; experience is necessary in this. The method now practiced in Europe is to pour off the excess, and pour on again, and then pour off *all but a little of the excess*, and allow to dry. This avoids any air-bubbles, and also too thick films. The thicker the film, the coarser the grain, and more intense the blacks. The thin films give the best detail, but too thin ones yield flat prints. The Artotype Company (and so does Albert) replace about one-third of the gelatin with Russia isinglass, which is better than pure gelatin; the latter must be of the kind known as the *Magdeburg*, a German make, which does not swell much in water. The plates will require about twenty minutes to a half hour in the oven, and during this time the door should not be opened. As soon as dry they are ready for exposure; this must be learned by experience, and varies with the negative. After exposure, it is washed thoroughly under a tap till all the unreduced chrome salt is washed out, and again dried, when it is ready for the press. I wish here to remark, that the Russia isinglass requires to be boiled two or three hours, and then the insoluble residue must be separated from the solution before adding to the gelatin. It is also unnecessary to grind the glass, as recommended by Professor Husnik. It will also be found better to dry the gelatin film at about 200° Fahrenheit than any lower; the high temperature gives a finer grained film. In order to produce a larger number of impressions from a plate, several modes of hardening (notably with chrome alum) have been patented, but it is not essential. In some future number I will give a method of doing so without infringing on any patent. On a flat marble slab in the press, plaster is poured, and a plate glass of suitable size pressed on and allowed to set; on this plate glass the exposed plate is put on by capillary attraction with water; it is then ready to be inked and printed. On this subject enough has already been written, and Mr. Benecke, of St. Louis, who has had much more experience than I have, can give

clearer directions. Of course, experience is required, but any good lithographic printer can initiate a photographer.

Now as to ink and paper. In this the Artotype Company has made an advance, *by purchasing them made for the purpose in Germany*; any one can import the same. The ink used is made by Kein & Sening, Leipzig, and the paper has a very fine, white, and hard surface, and is known in Germany as *Kreidepapier*; is especially made for *lichtdruck*, and by sending an artotype print or any imported *lichtdruck* to any paper importer, the very same can be purchased abroad; create a demand, and you will get a supply. In fact the materials can be got from Messrs. Roemmler & Jonas, the large *lichtdruck* publishers in Dresden, *who make just as fine prints as the Artotype Company or Mr. Obernetter, and pay no royalty or license to any one*. The ink is that known as *Kreidefarbe*, and comes in black, which should be used thick for the first rolling, and in carmine, which should be used thin for the second rolling for fine half-tints. The finishing may be done with any good varnish for lithographs, or gum copal varnish, thinned with benzole; though for commercial work the gloss is unnecessary.

As a sensitizer for the gelatin, I prefer the bichromate of ammonia, and I would strongly recommend one grain of salycilic acid to the ounce of solution, as a preventive of trouble when the weather is favorable to decomposition.

To strip Negatives for Lichtdruck purposes, etc.—The glass must be carefully cleaned and polished with soapstone powder, or, still better, with a five-grain solution of *pure wax in pure benzole*. Polish with a canton-flannel rag. After the negative is thoroughly washed, put it in a dish of clean water and soak a sheet of fine gelatin, such as Messrs. Anthony sell for printing borders for carbon prints, *until it lays flat, but no longer*; press on the negative under water, squeeze out the water and air-bubbles with a rubber squeegee, and lay it flat, face up, to dry in a place free from dust; when dry, it will come off the glass, taking the collodion film with it. If you cannot procure the gelatin from them, you can get it from those who manufacture transparent gelatin cards. They can

also be stripped by pouring on the negative (after draining and levelling the plate) a solution of gelatin of the proper thickness, and allowing it to dry, but this is the slowest way.

I had expected from their advertisements that they had overcome the practical objection of having to strip the negative, and simplified the process so that a photographer could use it who has the usual number of negatives and prints, and would have thought of investing in it, but I found on the contrary only a slight modification of the old processes, rebashed, with a few improvements in materials, and some unnecessary and worthless patents.

One thing must be borne in mind, that in order to obtain the best results, the very best and finest materials must be obtained. In this the Artotype Company has succeeded, and by gathering them together and putting them in their own name in the hands of a dealer, *exclusively for the use of their licensees*, together with the most thorough puffing and advertising, hope to make a grand onslaught on the pockets of gullible photographers, under cover of some old and worthless patents, *a la carbon, a la lightning, a la Sarony crayon swindle, etc., etc.* Now here I wish to say a few words to you, fellow-photographers. So long as you will be easily gulled by every foreign-named process-monger, so long as you will, in your eagerness to get ahead of your neighbor, try to cut each other's throats, so long as you will not act together against the common enemy of process- and patent-mongers, so long will you be open to just such conspiracies against your pockets. The success of Lambert in taking nearly *a hundred thousand dollars* of the photographers' money for carbon licenses, has let loose a host of process-mongers, who hope to follow in his footsteps. Mr. Obernetter's process was brought over for the purpose, *the method of making the substratum for the gelatin patented* (nothing more is claimed in this flimsy affair), Mr. Bierstadt's Albertype patent was secured from him, and which is paid for out of the proceeds, thus silencing another possible opponent, and the scheme swimmingly inaugurated. I am only surprised that they did not secure this journal *at any price*, for then they would have been

invincible, as all opposition would have been silenced. I certainly should have done so in their place, and it was an immense oversight on their part; it could undoubtedly have been done by a little good management, as I do not imagine Mr. Wilson to be unconquerable, especially if *well paid*, and the thing made to look plausible to him, which these gentlemen ought to understand how to do.

Now I am going to attack especially the Western photographers, as they are the first to bite, in their eagerness to get ahead of their brethren at all these things. Have you not yet learned the bitter lesson, *that not the process but the artist commands success*; yea, even with "*permanence*" as the battery of the *processist*? If a process is patented *and good*, the method is open, and you can try it thoroughly before purchasing; but if it is a secret, it will surely come out, and you can afford to wait and let some more eager fool get fleeced. Let me tell you how we managed it in Baltimore with carbon, *and there is no other way in which a process will ever be sold again here*. As soon as Lambert's arrival was announced, there was a general eagerness manifested, on account of the fine samples shown and flaming advertisements. After consultation with a brother photographer, I had a meeting called at Busey's gallery of all who were interested, so as to act together. A committee of four (Bendann, Busey, Perkins, and myself) were authorized to investigate and act for the *thirteen* who responded. One hundred and ten dollars was demanded as a license, which we informed Mr. Lambert was too much for any of us; he then (this was T. S. Lambert, the fogleman of the inventor) proposed to sell the city for six licenses to the committee, and they to license the others. We finally offered to pay the price of four licenses, and then only after the process had been fully demonstrated to the committee. At this he was highly indignant, fumed and expostulated, and told us we would all be *compelled* to buy it afterwards at a higher price, if we did not *accept the present offer, etc.*, in his well-known arrogant style, which is a regular dodge with him since. We were, however, inexorable, especially as Messrs. Bendann

and Perkins had been taken in by this same weather-eyed chap on the Sarony crayon process, and they were suspicious. (I had warned several of my friends against that process, but without avail.) Well, he found there was no other way of selling it here, and so our terms were accepted. The result was, it cost each of us about thirty-five dollars; about all it was worth. Now, gentlemen, is this the right, sensible method, or is the throat-cutting way the best? Now, I here give warning to all process-mongers, that they must submit to this method, or they go out of our city without the photographers' money.

I here wish to state, in conclusion, that I have no personal prejudice against T. S. Lambert; that was taken out of me on my arrival in New York. It is his business to sell processes to photographers, if he can, for any one who will pay him enough of the proceeds; and, as a clerk of the Messrs. Anthony remarked, "*He can sell more of them, and get more money out of photographers, than any man connected with the profession.*" And that makes him a valuable man to those who can use his services. If I could do as well in selling processes and—photographers, I might be tempted to follow in his footsteps. A great deal of unnecessary spleen is wasted on him by the fraternity. He is undoubtedly a man of great ability—in his way.

To show the interest I have always taken in these matters, I believe I am the first one who made an Albotype in this country. In the winter of 1868, I believe, I was employed by Mr. William M. Chase, the stereo publisher, in making a set of negatives of Washington. We received the *Philadelphia Photographer* on the second of the month, containing a European letter, which gave the bare outlines of Albert's method, *just patented*. It being a rainy day, I at once prepared a plate, guessed at the proportions, exposed it next morning on a negative of Wallach's New School-house, and took it to a lithographer on Ninth Street, near the Avenue, to be printed. They were all surprised when it was inked up and a print was made from it; but, of course, not knowing how to put it in the press, the plate was smashed. Mr. Chase kept the print, and

some others that I made, for a number of years as a curiosity, and he can corroborate what I say.

I beg your indulgence for this long and hasty composition, but if it will prevent any of the fraternity who earn their little by honest toil and effort from wasting their hard-earned savings on what is not essential to them, or enable them to practice a fascinating process without submitting to license fees, I will willingly pocket the sneers of the others.

ZERO IN THE FUMING-BOX.

BY ROBERT HODGE.

AT this season of the year the air is full of complaints of paper working badly, giving flat, weak prints even when the silver bath is up to sixty. This is in a great degree attributable to *insufficient fuming*.

In a cold atmosphere, ammonia gives off its fumes very slowly, therefore the box should be kept warm. A simple and convenient way of doing this, is to place a hot brick (not red-hot) in the bottom of your fuming-box, and put the saucer of ammonia on the brick. Twenty minutes fuming in this way is enough for any paper. Another source of uneven printing is the careless manner in which some printers "time" the fuming. The first batch of paper, being wanted early, will be fumed perhaps fifteen minutes, the next will be allowed to remain in the box until it is wanted, it may be an hour, or even longer (I know of more than one printing-room, where part of the paper is fumed all night, while that floated next morning gets twenty minutes).

You can no more expect uniform results from such treatment, than you could expect the eggs you had for breakfast, boiled three minutes, would have been just as good if they had been boiled an hour.

Regularity is half the battle, and a big half too; keep your silver bath up to the strength you think best (I work at thirty-five), float each sheet the same number of seconds, in a temperature of from fifty to sixty degrees, and keep your fuming-box warm, and I think you will not complain of weak, flat prints.

In silvering plain paper, the ammonio-nitrate bath is preferable, but where it is more convenient to use the same solution, as for albumen paper, the plain should be fumed at least one hour.

For all artists' work, Clemons's "Matt Surface" is by far the best in the market; its even grain, and fine texture, making it peculiarly adapted for either india-ink or color. Mr. Clemons advises the use of the ammonio nitrate for floating, and the combined hypo and gold bath for toning (hypo one, water eight, and gold sufficient to tone). He certainly shows some very fine prints made by this process.*

PHOTOGRAPHING ANIMALS IN ACTION.

BY E. J. MUYBRIDGE.

WHEN in our January number, commenting upon the wonderful photographs of *horses in motion*, taken by Mr. E. J. Muybridge, we expressed a hope that he would give us some further details as to his method of working. It has elicited a very agreeable letter from him on the subject, from which we make the following interesting extracts:

"In your notice of 'The Horse in Motion,' you announced your intention to ask me for further information upon the subject. The best general account of the apparatus and experiments appeared in the *Resources of California*, which was republished in the *Photographic Times*. The chemical formulæ I have not yet perfected, and consider it inadvisable to publish them at present. Whether they are equal to the various 'lightning processes,' I do not know; but that they will admit of an exposure of the two-thousandth part of a second, is proved by the fact of the trotting-horse not having progressed one-quarter inch during the exposure. They will, however, be neither patented nor kept secret, when they have been improved as far as I think I can improve them. I have not, nor do not claim any credit for these photographs; whatever praise others may have

* One of which—a very fine one, indeed—Mr. Hodge sends us with his remarks above.—Ed.

thought proper to award, has been entirely unsolicited, and to which Governor Leland Stanford is entitled much more than I. He originally suggested the idea, and his persistency and liberal expenditure has accomplished the trifling success we have met with. I am instructed by him to continue the experiments until we have illustrated the subject of animal locomotion about as far as photography can illustrate it. For this purpose we are constructing a new outfit of electrical shutters, which will be used during the next summer, with twenty-six cameras to obtain records of consecutive positions of ten or twelve inches apart, upon a track the Governor is having made especially for the purpose. With this new apparatus and certain modifications in our chemicals, we hope and expect to obtain better results than those already achieved, and with exposures reduced to the five-thousandth part of a second. Horses in every position it is supposed a horse can possibly assume, in jumping, running, trotting, walking, or kicking, etc., draught oxen, dogs, and men will all be illustrated. Mr. Stanford proposes to have all this done simply from his love of art, and his desire to correct some generally received ideas about animal locomotion that he feels satisfied are erroneous. I am in daily receipt of letters from Europe and the United States, from artists, physiologists, and breeders and fanciers of horses, inclosing orders for photographs; and from the acknowledgments I often receive it would seem they do not fall short of their anticipations; but next fall I shall hope to be enabled to send you some specimens which will surpass them in interest and execution."

A RAPID PROCESS IN FULL.

A CORRESPONDENT, who desires his name withheld, sends us the process given below in detail, which, he says, was given to him with the statement that it was being sold and given away in Chicago and the West pretty extensively. Not being restricted in the matter, he desires that all his fellow-craft should have the opportunity to enjoy its advantages.

It looks extremely practical, and we com-

mend it to the attention of our readers. "Try it before purchasing elsewhere."

SILVER BATH.

"Take any quantity of nitrate of silver, place it in an evaporating dish, and heat, not merely until liquefied or fused, but heat to a *red* heat for at least two hours. This, if properly done, will burn out all impurities. Allow it to cool, and dissolve in *pure water* (prepared by adding two or three grains of silver to the ounce of water, and sunning until clear). Reduce to sixty grains to the ounce, and of a thirty-grain solution of iodide of calcium add all it will take up, or until it remains permanently milky. Now reduce to forty grains with the prepared pure water, shake, and sun until clear. Decant or filter through chemically-pure filtering paper, and add C. P. nitric acid until it tests decidedly acid; let stand twenty-four hours, and add of a saturated solution of sal soda, one drop at a time, so long as it will take up without showing permanent milkiness. Sun until all is clear, and you will have a bath that will work *quick* and clear as long as there is anything left of it, provided it is kept in a temperature of not less than sixty degrees, and allowed to stand open when not in use.

DEVELOPER.

No. 1.—Water, . . .	32 ounces.
Iron, . . .	2 "
Alum, . . .	3 "
Loaf Sugar, . . .	$\frac{1}{2}$ ounce.
Acetic Acid, . . .	2 ounces.
No. 2.—Water, . . .	32 ounces.
Iron, . . .	2 "
Sulphate of Soda, . . .	1 $\frac{1}{2}$ "
Concent'd Ammonia, . . .	6 drops.
Acetic Acid, . . .	4 ounces.

Mix equal parts for use.

"For stock, the above can be mixed double strength, and reduced to meet the requirements of the negatives. It acts slowly, but keeps at work a much longer time than any other developer, so that your negative is under control. When the detail is all out, and you wish more contrasts in the lights and shades, take of the bath solution two or three drops of silver in a small vial (a wide-mouthed iodide four-ounce bottle answers the purpose), and in a separate bottle have

a three-grain solution of pyrogallic acid mixed as follows: Pyro three grains, citric acid two grains to the ounce of solution. Flow the plate with this, and pour off into the vial containing the silver. Now flow on and off the negative until all the intensity you wish is obtained. If the plate has been overexposed so that the image flashes out and then sinks in, wash off the developer at once and clear; if not intense enough, proceed with the pyro as above.

RAPID COLLODION.

"For plain stock collodion, take equal parts of Atwood's alcohol and concentrated sulphuric ether; cotton, six grains to the ounce of collodion. First soak the cotton in a weak solution of alcohol and ammonia (one drop concentrated ammonia to the ounce of alcohol); squeeze out dry as possible, then rinse out once in a little alcohol, again squeeze dry and add to the stock of alcohol; shake up, then add the ether. Shake until the cotton is dissolved.

"Samples of cotton of the same brand differ greatly, both in rapid working and in the quantity it will take to make the collodion the required thickness to give best results. For this reason it is always best to test a batch of cotton by mixing and trying a little of it before preparing a quantity.

"As a rule, Hance's Delicate Cream Cotton will make the most rapid collodion, but this sometimes proves worthless as to rapidity.

RAPID IODIZER.

Iodide of Ammonium, . . .	4 $\frac{1}{2}$ grains.
Iodide of Lithium, . . .	$\frac{1}{2}$ grain.
Iodide of Calcium, . . .	$\frac{1}{2}$ "
Bromide of Cadmium, . . .	2 $\frac{1}{2}$ grains.
Bromide of Lithium, . . .	$\frac{1}{2}$ grain

to one ounce of plain collodion.

"To Prepare: Take the amount of alcohol you wish to iodize, place the iodides in a mortar, and add alcohol, and grind to saturation, and pour off into a separate bottle. Repeat, adding the alcohol, and grinding, until all the iodides are dissolved. Then do the same with the bromides, and pour into the iodizers. With care and proper grinding no water need be added, although a little water, free from any acid reaction, will add somewhat to the rapidity. The longer this iodizer

is made up the better it will work. Make for convenience so that one ounce will iodize sixteen ounces of plain collodion; or if you only wish to iodize eight ounces at a time, make up so that one ounce will do for eight ounces. The plain collodion should be made up in stock, and not less than one month old; six months is better.

"After iodizing, it takes ten days in cool, and five days in hot weather, before it is ripe enough to work its best. If kept cool it will improve until about three to six months old, though usually two weeks to three months old will give the quickest and best results.

"*Caution:* In mixing the iodizer with the plain collodion, *always* pour the collodion into the iodizer, a little at a time, and shake as you add, until the collodion is all added."

ARE OUR PORTRAITS ARTISTIC?

A FEW REMARKS ON THE LIGHTING OF THE MODEL, AND THE EXPOSING, DEVELOPING, FIXING, AND RETOUCHING OF THE NEGATIVE.

BY CHARLES W. HEARN.*

(Continued from page 365, Vol. XV.)

Developing and Fixing.

IT is needless, and rather out of place, to the intelligent readers of the *Philadelphia Photographer*, to mention much on either one of the above subjects, for all of our artists know full well how necessary it is to be careful and cautious in both of these processes, especially in that of the former, where, for instance, the careless flowing of the plate with the developer would wash off the rich deposit of silver contained on the surface, resulting more or less to the injury of the fine half-tones of the negative.

Negatives made with so much care and attention before developing, should in justice require that the developing is carefully

* The writer would not like to have any of his readers of this, the preceding, or the following article, to think that he has at all exhausted the subject in the suggestions given in these articles, for in many things he falls far short, and would be classed with others as a student after their successful attainment.

done. The proper filtering, temperature, and strength of the developer are also matters which should command attention.

There are many who prefer the use of hyposulphite of soda to that of cyanide of potassium in the clearing of the negative, on the basis that the cyanide eats away a portion of the fine detail. It is known that if a strong solution of the hyposulphite be used for the fixing, and then a weak solution of cyanide be flowed once over the plate, to give a clear color to the negative, first rinsing the hyposulphite off, it will be found to much benefit the negative, both in printing qualities, as well as improving it greatly for retouching purposes.

Retouching.

Notwithstanding the argument advanced by some that negatives should be made that require no retouching, it will of necessity be some time before this end is successfully reached, not only on account of its difficulty, but also because the public mind has become accustomed to the others, and it will be as hard a task to break them from demanding the retouched negative, even if it were desirable to do so, as it has been during the last ten years to educate them to demand different from the black-and-white negatives which were made some time ago. The photographers eventually took hold of this reformatory idea, and pushed it with a zeal worthy of the greatest commendation, and the result undoubtedly is (as one of our most popular writers on photography has recently written), "the number of good photographers increases;" and "each year the distance between the good and the bad, the careful and the careless, widens."

Making negatives so that they will require no retouching whatever, is a matter with which the photographers, as a class, are not in favor, for they like retouching, and if it is judiciously and artistically done, it certainly is correct and proper. As an advocate in favor of unretouched negatives, the writer recently had the pleasure of seeing a cabinet profile portrait of President Hayes, made by Sarony, of New York, and claimed to be, and undoubtedly was, from an unretouched negative. The texture of

the skin as it is in life was very pleasantly seen in the portrait, evidently being relieved from the harshness of roughness by the admirably happy arrangement and selection of the various iodides and bromides used in the composition of the collodion, and assisted also by the lighting of the negative, which had the *full* side in soft shadow, with the exception of a little light on the high cheek-bone, which relieved and brought out in beauty the whole portrait.

An unretouched negative may with reason have its advocates, but the state of the minds of our artists at the present time is *not* in this direction. Retouching is not to be cried down, but urged on to a more artistic state of excellence, so that all the beauties of the really artistically touched negative can be retained, without the presence of those defects that are cried against it, such as "spoiling the character and life of the sitter," "making a marbled face," etc., etc.

To do this understandingly, it is necessary that our retouchers should make a study of the anatomy of the human face and head, together with a more or less perfect understanding of the principles of physiognomy and phrenology.

It is not sufficient that the retoucher should be able to touch out the spots, to model the face with a tolerable degree of nicety, or to soften the hard, objectionable lines in the face, *but he should know the different traits of character expressed in a face, and all that goes to make up these traits of character.* He should, *before* he commences to retouch, take a general look at the most expressive parts of the face, and be able at once to read in a great measure the character displayed there, and then as he retouches, he should preserve this character, and thus keep likeness, as well as to perform in an acceptable and artistic manner the principles of retouching as now generally understood, which consists in nothing more (except with our leading artists) than in removing the freckles, and other objectionable portions of the human face, which the camera often brings out in more prominence than is seen in life.

If his knowledge and attention are thus drawn to this fact, and all his energies bent

towards acquiring this faculty of readily reading the character of the face, he is far more likely to keep the expression and character than if such were not the case, or if he thought it sufficed to notice the protuberances and other marked parts of the face, and to preserve them as he came to them.

There is considerable difference between committing a page of any matter to memory, and *not* understanding it, and learning it and *understanding* it mean while. One of the best scholars in "our class" at school, always had to study his review lesson just as hard as he did his advance, as his scholarship was one acquired just in this way, and did him no good at that time, nor have I heard that his school training has stood him in good stead since.

It is necessary to understand thoroughly what these protuberances, this drawing in of the lower lip, the "stiff upper lip," etc., *mean*, to thoroughly do them justice in the retouching or modelling of the negative. Then again it is necessary to know the relation one part of the face bears to another, to more fully enter into their deeper knowledge, *as it is this knowledge that makes us observe those very slight things which go so far towards completing the exact expression as a whole*, and not to simply reproduce the few more marked places, and think that is all that is sufficient.

It is just so with those artists in pastel, oil, crayon, ink, or water color, who are never known to thoroughly please a customer. They observe and paint in those marked portions or parts of the face that are easily seen, and as near as possible keep to the photograph from an untouched negative, which they ever have by their side, but their knowledge on these seemingly minor things being rather insufficient, they do not notice them; and draw the lips *tolerably near* what they are, and neglect certain minutiae of character displayed there. *Same with certain portions of the forehead; the little bumps (which in phrenology denote intellectual acquirements) they have neglected to place there (and many a man, and woman, too, are *fond* of these bumps), and also other portions of the face, which they have thus

neglected, until after one little thing and another has thus been overlooked, they have spoiled the face as a whole, and have produced a portrait resembling in a measure the model, yet as a whole a failure.

I have recently had the pleasure of witnessing Mr. Dabore, of Baltimore, Md., an excellent artist in pastel and oil, make several large pastels, and, unknown to him, I have at times watched him as he, with the greatest care, slowly drew each part of the lip, first one side, then the other, looking at the model repeatedly as he did so. Just the same care and attention did he pay as he drew more fully the other portions of the face, and what was the result but the most perfect satisfaction with every portrait, with not the slightest flaw. One or two of his pastels were in their nature also exceedingly difficult.

It was nothing but this most careful study that brought him the success he has met with as an artist, and to succeed in artistic retouching the same care and study has got to be observed, only *we* have a much easier task to do than Mr. Dabore had, for while he had to place in these traits of character, we, in a nicely-made *thin* negative, have them all there, and what we have got to do is to preserve, and not destroy them.

To enable those that are desirous of thus doing, I have with some little difficulty drawn out, and attempted to locate, where these protuberances are to be found, if the sitter possess any, their character, the degree of character according to their size, and other parts of the face that in the retouching of the negatives we are liable to come across, that bears a relation to the science of phrenology, as derived by personal observations, and from study as an amateur for several years of that science.

Under the head of Physiognomy I shall endeavor to show location of the lines, their indication, and the places where firmness, mirthfulness, reasoning faculty, etc., etc., are also located; for all of the emotions of the heart, such as anger, love, kindness, piety, fear, as well as those of the head, such as reflection, etc., all have a magnetic, sympathetic chord with different portions of the face.

If a man's life has been particularly

marked in any one portion, if he has been so placed that his business was to amuse, instruct, deceive, etc., his face has become the telltale, in a great degree, of the conflicting emotions under which he has for years been brought, and there, to the clever physiognomist, is an open book to read from. If we are angry, joyous, in pain, or whatever other conflicting passions may be dominant in our head or heart, they are seen the same in the face. If we are persons of great decision of character, there in that compression of the upper lip are the magnetic, sympathetic chord, quite near the edge of the lip, under the nose, and in the hollow between that and the mouth, and somewhere between four- and five-eighths of an inch apart.

Before proceeding, however, with the location and description of the various seats of passion, etc., as seen in those parts of the face that bear a great relation to us as retouchers, I will proceed to note a few facts in regard to the *touch* of the pencil upon the negative, reserving the description of the above-named organs until further on in this series of articles.

It is no more right that the touch should be *smooth*, than it should be *spotted*, or *vice versa*, both being as often inartistic and unnatural to the sitter, as they are correct. There are few faces, the skin of which is so uneven and rough, as to attract particular notice, although the cases may possibly be more universal (in the case of some ladies especially) when the texture of the skin is so fine as to bear the closest scrutiny without hardly any perceptible evidence of there being any texture at all, so fine is it. In the latter case the smoothest of retouching cannot be far from correct and proper, although, as will be mentioned further on, even this style of surface can be improved on, but in the former case, such a touch is far from being what is wanted.

(To be continued.)

THE iridescent glass which is becoming very popular is prepared by exposing it while very hot to the fumes of stannic chloride. When the colors are very deep the nitrate of barium or of strontium has been added.

VOICES FROM THE CRAFT.

I THINK that every photographer in the land ought to assist you in your efforts to advance the interests of the fraternity by subscribing for the *Philadelphia Photographer*, and by contributing commonsense, practical articles for the journal. I call you Friend Wilson, and think you have been a friend to the poor photographer whenever he would take your advice, but there are some that won't take it, consequently they are not benefited. I have wisely refrained from all patent processes until they have been approved by the editor of the *Philadelphia Photographer*, and if the fraternity at large would do the same, they might be much better off than they are. I am sorry to see men who hold the highest positions in the art, and whom the country operators naturally look up to, recommending every little humbug that some fellow thinks to put money in his pocket with. If they will quit so doing, the process-mongers will grow fewer by degrees, and beautifully less again.

Promising you to give you all the assistance in my power to sustain you in the course you are now pursuing in the publication of your journal, I subscribe myself,

Your friend,
FRANK THOMAS,
Columbia, Mo.

Our readers will remember Mr. Thomas's excellent article in our last issue. We shall be glad to hear from him often, and are grateful that our policy meets with the approval of *some* of our intelligent workers at least.—ED. P. P.

WILL you be kind enough to inform me whether there is any work published on Background or Scenic Painting? I have a number of works on Water Color, but there are so many dodges in the *background* (?) business, that if published might be of advantage to those who have a desire to try to paint their grounds.

While on the subject of painting, I will say that I have been somewhat surprised at the progress I made since the receipt of Gihon's little work on painting photographs. I followed his instructions closely, and the result, though not up to the mark, is much better than I thought myself capable of pro-

ducing in so short a time. If I had the time to practice, I am sure I could become competent to paint what work I have in that line, and I never attempted painting before. I but do justice to Gihon's book by giving it credit for my progress.

GEORGE M. BRETZ.

We have had in our hands for some time the manuscript of a work on Background Painting by W. A. Ashe, Esq., which we shall probably issue soon.

We are glad our correspondent (and many others) have found Mr. Gihon's work so useful. We give it as a premium for new subscribers for our magazine.—ED. P. P.

A PLEASANT ENTERTAINMENT.

QUITE a large audience were present at the Franklin Institute on Wednesday, January 22d, 1879, by invitation of the Photographic Society of Philadelphia. During the evening a number of views of the French Exhibition of 1878 were shown, together with some very fine pictures made in Portugal, the entertainment closing with several excellent portraits by Mr. F. Gutekunst.

Mr. L. J. Marcy managed the lantern, which was one of his sciopticon instruments burning a lime-light. The illumination on the screen was brilliant, and the pictures were much admired.

Upon this and other occasions, the Photographic Society were indebted to Mr. Joseph W. Bates and Mr. Edward L. Wilson for the use of slides.

THE following is from the *Unicorn Greenbacker*, of Illinois. If it has not appeared before, I think you may like it for some corner in your *Philadelphia Photographer*.

R. D.

It is real good, and we give it a corner here.—ED. P. P.

“CORNERED AT LAST.”

“His wife had, probably, been arguing and coaxing for years, for he looked like a man whose spirit had been worn out before he had consented to have his photograph taken. He had halted at the door of a gallery as if trying to invent some excuse, but she pushed him up-stairs, and he was in for it at last. He hoped the photographer would be

crowded with work, but he wasn't. He hoped the camera was out of order, but it was in fine condition.

"Can't take me to-day, can you?" he queried.

"Oh, yes; take you right away," was the reply.

"Have I got to sit up straight?"

"No; sit as you please."

"Hain't these clothes too light?"

"Not a bit."

"I can't spare over three minutes."

"Very well; I'll take you in two."

"There was no way to get rid of it, and with a despairing look around, and a frown at his wife, the old chap dropped into a chair with a sigh, shut his eyes, crossed his legs, and groaned out:

"Well, if I must, I must. Bring on your laughing-gas, and don't let my wife go through my pockets while I'm unconscious."

I WANT to see another number of the journal. I want to see what there is left of it, for I should judge by the other journals I read that it is badly smashed. I read of your interview with the great Lambert in New York, and of the "comical way" he met you! How did he meet you; with a squeegee in one hand and a roll of tissue in the other? And the "squint" he gave you, was he looking to see if you had stolen his lightning? I would like to know how many of his licensees are working his process now? I don't know of one that bought it that can work it.

I inclose money for the journal and *Mosaics* for 1879.

Respectfully,

J. L. NYE.

We sent our friend a copy of what is left of us. As to his queer queries, he must be joking to suppose that we should find Mr. Lambert at work. That he is never guilty of. We saw him twice at 619 Broadway, crouched behind a high desk. We can never tell when he is looking at us, so we do not know whether he looked then or not. We examined the beautiful pictures, made by Mr. Obernetter, on the wall, and then escaped, thankful enough to get away from such a presence, fully alive as ever to the interests of our readers.—ED. P. P.

I INCLOSE post-office order for the *Philadelphia Photographer* for 1879, and want you to send me the dozen Centennial views which you offer as a premium for one subscriber with \$5.00 in advance. I have already sold the views for \$2.00, making the *Philadelphia Photographer* stand me only \$3.00 in cash. I had a prospectus of the St. Louis *Photographer* sent me, and it only awakened me to a sense of my duty to again read the old-time *Philadelphia Photographer*.

O. H. PARK,

Clarinda, Iowa.

Here is a bright idea. Why cannot every subscriber secure his dozen Centennial views, and then sell them for \$2.00 (which they are well worth), and thus get his magazine for \$3.00? Enterprise is ever ahead.—ED. P. P.

I HAVE enjoyed reading the *Mosaics* for 1879 so much, that I am anxious to secure a few of the back numbers. I have been trying to secure a few subscribers for the *Philadelphia Photographer*, in order to get *Mosaics* as premiums.

I find a friendlier feeling manifested towards your journal than ever before. Photographers, seeing your course in the Lambertype issue, are laying aside a prejudice they previously felt against journals.

A word to explain. Mr. X. is one of the most successful photographers in this section. He has been in the business many years, and began poor. He has worked his way up, been very industrious and economical, and makes fine work; has a nice property. For several years he has not taken a journal (only the *Bulletin*, which Anthony sends without payment), and his influence is very strong, as all photographers around here are more or less acquainted with him. He has said the journals did not pay, as they did not put in anything practical, and to prove it, would hand you a *Bulletin*, saying that he would just as soon have that as any of them.

I have taken your *Philadelphia Photographer*, the St. Louis *Practical Photographer*, and Anthony's *Bulletin*; bought Hearn's *Printer*, Hearn's *Studies*, Robinson's *Pictorial*, Burnet's *Composition*, Anderson's *Skylight and Dark-room*, and lastly wrote

an article for *Mosaics*, received copy, and loaned them to him, and when we visited talked about them; and now he says "send for the *Philadelphia Photographer* for me."

He would not buy a burnisher for a long time, for fear they would play out. After I got one, he did. I have exchanged work with different photographers who take the *Philadelphia Photographer*, and then showed it to him, and while it has taken time to bring it about, I think I have won a great victory, for I have always felt that he labored under a mistaken idea. And now I think I can in time secure others who have not taken it because he did not.

I now want a Robinson's Trimmer, and think it will be the means of your selling more. I inclose draft in your favor for \$16.00, to pay subscriptions to the *Philadelphia Photographer* for myself and club.

Truly yours, A WORKER.

This is truly something like. If we had more of such unselfish subscribers, our list would soon swell largely; we could afford to give a still better magazine; we could help you all to better times; we could spend more in your behalf in the many ways required of us, and we are sure the added intelligence you would secure would help our whole profession to grow.—ED. P. P.

ANOTHER WESTERLY LIGHTNING STREAK.

I HAVE made an improvement on the "lightning process" I wrote for *Mosaics*, and thought perhaps you might use it. "It is a combination of well-known quick processes," as Lambert says of *his humbug*. First and foremost, use quick-acting lenses; next, replace the brown and weather-stained glass in your skylight by pure white crystal glass; it is costly, but it is the cheapest to use; get pure chemicals, and mix as per following formulæ:

COLLODION.

Alcohol and Ether, . . .	equal parts.
Gun-cotton,	5 grs. to 1 oz.
Iodide of Ammonium, . . .	5 " " "
Bromide of Potassium, . .	1 gr. " " "
Bromide of Cadmium, . . .	1 " " "

DEVELOPER.

Protosulphate of Iron, . .	1 ounce.
Acetate of Copper,	30 grains.
Loaf Sugar,	2 drachms.
Acetic Acid,	1 ounce.
Water,	16 ounces.

Pour one ounce of boracic acid in a clean filter, and filter your developer through it.

SILVER BATH.

Nitrate of Silver,	1 ounce.
Distilled Water,	12 ounces.
Acetate of Silver,	3 grains.
Glacial Acetic Acid,	6 drops.

Acetate of silver is formed by adding a solution of acetate of soda to one of nitrate of silver, wash the precipitate, dry, and preserve for use. This salt is partially soluble in the silver solution, and communicates intensity to the shades of the negative; it renders the film also more sensitive, and shortens exposure. If the fraternity will try this process they will find it as quick as any that is being hawked about the country.

The January *Philadelphia Photographer* received; it is a good number. The fraternity owe you a debt of gratitude they can never repay; you are the only one that cried "wolf" when the sheep were in danger. Hope you may reap a golden harvest through your efforts in their behalf.

Fraternally yours,

E. D. ORMSBY.

OAKLAND, CAL.

THE THEORY OF PHOTOGRAPHY.

BY HENRY M. M'INTIRE, M. E.

(Continued from page 42.)

IF we take a sample of silver chloride, one of silver bromide, and one of silver iodide, and observe the effect of light upon them, we will see, as has been said before, that the chloride will darken to a violet, the bromide to a yellowish-gray, and the iodide to a green; also that the chloride is the most affected by the light, and the iodide the least. We will at once jump to the conclusion that the chloride is the best and the iodide the worst salt to use; if we do this we will at once be wrong. To try an experiment, let us take a plate containing chloride of silver, one of bromide, and one

of iodide, and under like conditions expose each, develop them, and examine the results; we will then find that the chloride gives the weakest picture and the iodide the strongest. If then, without more experimenting, we should say that iodide of silver is the stuff we want, and use it accordingly, experience would soon teach us that while iodide of silver was just the thing for strong light, it was not exactly so for the weaker. That, while the bright parts would be well represented, the weaker would be indeed weaker. If then we should experiment further, we would be apt to find that the bromide was just the thing we were looking for. That if we mixed the bromide with the iodide we would obtain a picture not quite strong, but still an intense picture of brighter parts, and a great improvement on the darker parts; and so thereafter we would use both bromide and iodide in our collodion. We will also notice in time what varied action the different colors have upon the sensitized plate, and will wonder what may be the reason for it. To find out, the best way would be to try the action of each prismatic color upon the plate and compare; to do this in the best way will probably be to photograph the solar spectrum. Doing this we find that violet and dark blue have the greatest, and red and yellow the least effect upon the plate. With the knowledge of this fact we can soon find a reason for violet and dark-blue objects coming out light, and red and yellow dark upon the finished picture, and also reasons for other anomalies in the reproduction of the various colors.

It is also surprising what slight shades, invisible to the eye, will affect the photographic plate. Dr. Vogel gives in one of his works* a surprising anecdote illustrative of this fact. A lady was photographed in Berlin, and when the negative was developed specks appeared that were not to be found upon her face. A day afterwards, however, the lady was taken sick with the small pox. It is supposed that very pale yellow pock-marks were upon her face

which could not be seen by the eye, but which the sensitive plate did not fail to represent in a most decided manner.

Now to return to the plate. When left, it was developed; it will, in all probability, have to be intensified. If this is done by nitrate of silver and protosulphate of iron, or pyrogallic acid, the intensification is obtained simply by a new deposit of silver. Why the protosulphate of iron or the pyrogallic acid should reduce metallic silver from a solution of nitrate of silver has been shown before. If, however, the intensification is produced by sulphide of potassium, it is accomplished by the changing of the coating into a more opaque substance, sulphide of silver being formed. Thus $2\text{Ag} + \text{H}_2\text{O} + \text{K}_2\text{S}_2 = \text{Ag}_2\text{S} + \text{KHS} + \text{KHO}$; that is, silver, water, and sulphide of potassium form sulphide of silver, sulphhydrate of potassium, and hydrate of potassium. Or perhaps the negative is to be weakened in intensity. If this is done by iodine and the fixing solution, then the reason is that the iodine unites with the outer part of the silver deposit, forming iodide of silver— $\text{Ag} + \text{I} = \text{AgI}$. Silver and iodine form iodide of silver, which will be removed in fixing, as will be shown further on. Or, if corrosive sublimate is used, then the corrosive sublimate changes the silver into chloride— $\text{Ag} + \text{HgCl}_2 = \text{AgCl} + \text{HgCl}$. Silver and mercuric chloride (corrosive sublimate) form chloride of silver and mercurous chloride (calomel). The chloride will be removed by fixing.

And now the plate is to be fixed. For this purpose, we have choice of two solutions—hyposulphite of soda and cyanide of potassium. As the theory of both is ultimately the same, let us look only at the action of the cyanide of potassium.

If we take a solution of nitrate of silver, and add to it a solution of cyanide of potassium carefully, we will get a precipitate of cyanide of silver— $\text{AgNO}_3 + \text{KCyan} = \text{AgCyan} + \text{KNO}_3$. Nitrate of silver and cyanide of potassium form cyanide of silver and nitrate of potassium. If we take this precipitate, and treat it with some more cyanide of potassium, we will find that it will dissolve, the double cyanide of silver and potassium being formed— $\text{AgCyan} + \text{KCyan} = (\text{Ag} + \text{K})\text{Cyan}_2$. Cyanide of silver and cyanide of po-

* The Chemistry of Light and Photography. International Scientific Series. D. Appleton & Co., New York, 1875.

tassium form the double cyanide of silver and potassium. If we should now experiment upon the action of potassium cyanide upon metallic silver, we should find that it will have no effect upon it, except in the presence of the oxygen of the air. Thus $2\text{Ag} + \text{O} + 2\text{KCy} + \text{H}_2\text{O} = 2\text{AgCy} + 2\text{KHO}$; that is, silver, oxygen, potassium cyanide, and water, form cyanide of silver and hydrate of potassium.

We can now see at a glance what an efficient agent this will be for fixing; how when it is poured upon the plate it will attack the silver unacted upon by light, changing the bromine and iodide into cyanide; going still further, how it will dissolve this cyanide when it is formed. But all this time it will have no effect on that substance produced by the combined action of light and the developer, metallic silver. But the fact that in presence of air it will attack the metal, shows the necessity of having the fixing solution to cover the entire plate, and also of pouring it off quickly and washing with water immediately.

The action of hyposulphite of soda is similar to the cyanide. If hyposulphite of soda be added to a solution of nitrate of silver we will get a precipitate of hyposulphite of silver, $2\text{AgNO}_3 + \text{Na}_2\text{S}_2\text{O}_3 = \text{Ag}_2\text{S}_2\text{O}_3 + \text{NaNO}_3$. Nitrate of silver and hyposulphite of soda form hyposulphite of silver and nitrate of sodium. If we add as much again of hyposulphite of soda we will obtain the precipitate in solution, and so on in a similar manner to the reacting of cyanide of potassium. The plate has then but to be varnished, a simple mechanical process.

(To be continued.)

THE RAPID PROCESS OF JAMES INGLIS, MONTREAL, CANADA.

THE following process is sold as a secret to the gullibles by Mr. James Inglis. We copy it from the printed circular supplied by him:

PURIFIED WATER FOR SILVER BATH.

Soft Water,	1 gallon.
Kaolin, or French Chalk,	2 or 3 ounces.
Nitrate of Silver,	$\frac{1}{4}$ ounce.

Put this in the sun until perfectly cleared, which will take about a week.

NEGATIVE BATH.

Nitrate of Silver, pure,	4 ounces.
Water (purified),	48 "

When dissolved, add just sufficient bicarbonate of soda to cause a slight precipitation, which will only require a few grains. Iodize by pouring in about one-fourth of an ounce of the collodion. Now put in the sun for half a day or so. Filter through clean cotton-batting, or a small piece of sponge; filtering-paper is very uncertain. Now add from two to three drops of C. P. nitric acid, or enough to make it work clear. Keep up the strength of the bath by frequently adding to it a fifty-grain solution made the same way.

PLAIN COLLODION.

Alcohol,	16 ounces.
Ether,	16 "
Gun-cotton,	192 grains.

Iodizer No. 1.

Double Iodides,	240 grains.
Double Bromides,	96 "
Alcohol,	8 ounces.
Ether,	8 "

Dissolve the iodides and bromides, first in the alcohol, then add the ether, and let settle before using. There will be a heavy precipitate.

Iodizer No. 2.

Iodide of Ammonium,	144 grains.
Iodide of Cadmium,	96 "
Bromide of Cadmium,	48 "
Alcohol,	8 ounces.
Ether,	8 "

To six ounces of plain collodion, add one and a half ounces No. 1 iodizer and one and a half No. 2 iodizer. When the collodion becomes too white, add iodine to keep it a nice straw color.

TO PREPARE THE DOUBLE IODIDES AND BROMIDES.

Bromides.

Bromide of Potassium,	175 grains.
Bromide of Cadmium,	220 "

Iodides.

Iodide of Potassium,	293 grains.
Iodide of Cadmium,	136 "

Dissolve the two bromides and iodides separately in a small quantity of water, and evaporate them over a gentle heat sufficiently to allow them to crystallize when cold.

DEVELOPER.

Iron,	6 ounces.
Nitrate of Potash,	3 "
Acetic Acid No. 8,	8 "
Water,	80 "

REDEVELOPER.

Iron,	1 ounce.
Citric Acid,	1 "
Water,	80 ounces.

By using it as weak again, with, say, one drop of silver solution, and patiently keep redeveloping, you will be astonished to see what an amount of detail can be brought out of an under-exposed negative.

OUR PRIZE OFFER.

OUR readers will please remember that the time for competing for our gold medal ends on March 15th, for the best six negatives sent us by that time, suitable for embellishing our magazine.

The subject may be of your own choice—portrait, landscape, or composition; the negatives may be retouched or not; size not larger than 5 x 7 inches.

They will be adjudged by competent gentlemen, and "photographic excellence" will be the first consideration.

A print from each negative must be sent, with the private mark of the competitor, and full explanations and claims sent in each case in a letter to the undersigned direct.

All carriage to Philadelphia must be paid.

Each competitor will receive a print from one negative of each competing set, free. The medal is made, and will be sent promptly to the successful one.

We expect several of our foreign friends to compete for this medal, and hope our own home photographers will make it hard for them to get, if they get it at all.

May we not hope for a generous co-operation in this matter, as our whole aim is for the progress of our art?

Please direct parcels to

EDWARD L. WILSON,
Editor *Philadelphia Photographer*,
116 N. 7th St., Philadelphia, Pa.

READ.—Photographers could save themselves immense trouble if they would read the books published for them. See our book-list.

ST. LOUIS CORRESPONDENCE.

I AM very sorry that I have to open this correspondence with the news of an accident, by which two employees of Mr. J. Scholten came very near losing their lives. Last night, at about eight o'clock, some supports of Mr. S.'s temporary gallery gave way, and in a second or two the whole establishment was a heap of ruins. Furniture, instruments, and over sixty thousand negatives were broken to pieces, and two of Mr. S.'s employees buried under the debris; one of them receiving slight, the other more severe injuries. This temporary gallery was fitted up in the adjoining building to his old gallery, which was destroyed by fire December 31st, 1878. The loss Mr. S. sustains will be not less than \$3000, I understand, not counting in what he will lose by the interruption of his business. Mr. S. is at this time on his way East, and has, I suppose, his trip spoiled in consequence. Yet, knowing his energy, it will not be long before a more elegant, if possible, palace of art will adorn the corner of Tenth and Olive Streets.

Our St. Louis *Photographer* editor is also absent from the city on a visit East, and I would not be at all surprised to see that old daguerreotypy converted into a young artotypy. Well, it will do him good to work at the press for a week or two. It is as good as playing billiards!

When they talk about Mr. Sherman's successful financiering, I think it's the artotype that caused the gold and silver to come down! No more of those precious metals used in printing! Soon nobody will be wanting gold and silver, if we all take up artotyping, and money will be made like hay; for even now, at this early day, complaints from Cincinnati reach our ears, where a converted artotypy has got in a bad fix by making more money than he knows what to do with! Unhappy young man! Come West, young man, we will share your misery!

In spite of the very cold weather we have had here this winter, business has been fair, and, with the aid of friend Long's bath-warmer, we get along nicely, not missing the "lightning."

Now, if you allow me, I will have a few

words to say about the artotype business, in the interest of all photographers, and in justice to Professor Husnik. I would like to say to Messrs. Cooper & Co.: Gents, don't spoil a good thing by using foul means to advertise and to *sell* it. Don't try to intimidate, as you do in your postal-card sent out recently, a copy of which I add below, but *stick to the truth* in your statements.

“PHOTOGRAPHERS BEWARE!

“Knowing that some irresponsible persons are representing themselves as our agents, and that others offer to teach a photo-mechanical printing process which is an infringement of one of the patents we hold, we hereby caution all photographers that we employ no agents, and advise every one to require an absolute guaranty with security against the damages that are sure to accrue from any infringement of our patents.

“It is the custom of such people to show examples made from paintings, chiselled bronzes, line and dot work, or to illustrate some *obscure* periodical with these deceptive works, that can be easily made by many of the so-called lichtdruck processes *that are free to all*. Your only safeguard is to require *portraits from life*, which alone show the capabilities of a printing process.

“Should any photographer be brought into trouble and sustain heavy damages through an infringement of our patents, or be induced to pay \$100 to learn a process to work which he must pay to us the full amount of our license—for we teach our process to every licensee *free of charge*—he will have only himself to blame.

“To avoid immediate discovery of infringement, these persons may sell their *improvement* as a *secret*, therefore photographers can well afford to wait until a few have purchased, when the pretended improvement will be a secret no longer, for some of the first to learn it will be those sent by ourselves, when we shall immediately publish and teach it free of charge to all who, to avoid litigation, may afterwards on payment procure a license of

“THE ARTOTYPE COMPANY,

“516 BROADWAY, N. Y., Jan. 25, 1879,

“Where *all varieties* of lichtdruck printing can always be seen.”

Who can be frightened by such?

Moreover, you say, in Anthony's *Bulletin*, January number, that Mr. Husnik admitted that he could get no detail by the process which he was then describing in his work on lichtdruck. That is not so. I have the book before me, and in justice to Mr. Husnik and his process, I will tell you *what* he said. He says, on page 20 of his work:

“In the year 1874, it appeared that a new method became known, doing away with the lighting of the first film from the back, and in which water-glass plays the main part. To this improvement I paid the greatest attention, but *nowhere could I find a detailed* description of its use, and had to fall back on my own resources.

“After many experiments, I found that water-glass and albumen only then would give excellent and lasting plates when used in a certain way, and my observations coincided with those of Messrs. Maerkel & Reich, in Vienna, who were using a similar preparation.

“It is said that the first idea of this improvement came from Obernetter, in Munich, who, in fact, used water-glass prior to this in the first preparation of the plates. Though about this time different firms used this process in their daily practice, nowhere was a word written or printed on the subject, except what was published by the editor of this work (Husnik) in the *Photographische Correspondenz*, September, 1875. With these improvements, I introduced the lichtdruck in the Imperial Printing Office and in Mr. Loyer's establishment in Vienna, and have had occasion to try and find out the excellent tenacity of the film and the surety of the manipulations, etc.”

Now, this don't look like an admission that the process which Mr. Husnik was then going to describe was of no account. In defence of their pockets, I was expecting a reply from the Artotype Company to the articles in your January number, Mr. Wilson; but I did not think they would make it so easy for me to show them home!

Yes, it is a bad thing to build up arguments on falsifications.

Again, I would like to be told where there is a difference between these two formulæ, viz.:

Husnik directs, on page 26 of his book, viz.:

Albumen, 7 parts.
(Or 1 part dry albumen and 6 parts of water.)
Water-glass, 3 parts.
Water, 8 to 10 "

In hot weather use more, and in cold weather less water.

The artotype patent specification reads:

Albumen, 7 parts.
Soluble Glass, 3 "
Water, 8 "

Mr. Lambert talks about the right of a man to patent certain combinations. This latter is certainly only a copy after the other, and the patent cannot be valid, even if it has in some way been secured.

I hope a good many photographers will take hold of this new and charming process, yielding prints as durable as lithographs; and if you care for it, I will send you more translations from Prof. Husnik's work on his improved lichtdruck process.

I have, as you know, meddled with lichtdruck these last two years, in an amateur-like way; but the demand for that kind of work is increasing to that extent that I have just ordered another and somewhat larger press of Mr. Murat.

But good-by, now, Mr. Wilson; when occasion calls for it, I will bother you with another letter.

Yours, etc.,

R. BENECKE.

St. Louis, February 4, 1879.

GERMAN CORRESPONDENCE.*

The Past Year—New Scientific Discoveries—Photography and Science—Sensitiveness of Gelatin Dry Plates—Dr. Wolfram's Researches on Pyroxylin—Hearn's Practical Printer—Gihon's Photographic Colorists' Guide—New Books in Germany.

THE old year has passed away—it brought us many surprises. We have seen a grand international exhibition, which, dazzling as it was, and the shower of medals notwithstanding, brought bitter disappointment to many, while the main profit fell to the share of France.

All the splendor of the exhibition was not able to dispel the gloom which has hung over trade everywhere, even to some extent in France, for several years, and which seems to grow darker and darker, even, as time moves on. The crisis exercises its sombre influence upon all trades, and upon all classes of people. Even photography and the arts are affected by it, and science only seems to be able to stand its own, and to add new triumphs to its record, in spite of the crisis.

Even during the last few months, when the excitement about electrical light and photography had scarcely died away, Lockyer reduces all simple bodies into their component elements, even gold and silver; and, if the sensational report of some French newspaper is to be trusted, that the constituent elements of these metals are really hydrogen, oxygen, and kalium, then, verily the splendor of the "Big Bonanza" and Consolidated Virginia mines stands in danger of being eclipsed before long. Crookes finds a fourth aggregate-condition, or ultra-gaseous state, and Zöllner, our great physicist, of Leipsic, discovers the "fourth dimension of space" which escaped us other poor mortals till now, and in which the spirits carry on their high gambols and mock us common mortals. The American slade served him as a medium in his experiments, and he did wonders as usual. A whole table vanished before Zöllner's eyes, and returned a few minutes afterwards through the ceiling. Zöllner exhibits photographs of that table and of other remarkable things which can be traced to the world of spirits; among others a photograph of their footprints, which make the decided impression of too tight boots and stockings.

Further interesting photographic manifestations are to be expected, and, if of all the reports of new discoveries, only the tenth part proves to be true, the year 1878 will be the pivot for an entire change of the views and beliefs of mankind. Unfortunately, only the official report of the discoveries of Zöllner has appeared in three volumes, while of the discoveries of Lockyer and Crookes only a few gleanings reached me through newspaper reports.

In Lockyer's experiments, photography

* Received too late for our last issue.

was assigned a very important part. A reliable comparison of different spectra is only possible by "retaining" (literally photographing) the same, side by side, upon a photographic plate. In this way proceeded Prof. Henry Draper, in New York, when he proved the existence of oxygen in the atmosphere of the sun; and Lockyer used the same method before and after the former in "retaining" (photographing) the spectra of the different elements.

In spite of the daily growing importance of photography in regard to the sciences, there are yet many men of science, who decline to pay any attention to the art of photography. The practical application of the same is too disagreeable to them; they are afraid to soil their fingers, and without incurring this risk one cannot be an adept in the noble "black art." At the time of the daguerreotypes, there were many ladies who made a pastime of photography, for then it was a real nice and clean thing to do, and it did not interfere even with the wearing of kid gloves; but since the introduction of the "wet" photography, all those amateurs have sought other fields; though, perhaps, the progress of the dry process may eventually bring them back again, for the results of late experiments with gelatin dry plates in regard to sensitiveness, are of such a surprising nature, that its success in future, even for portraits, seems to be assured. Easton took already the photograph of the pope with gelatin dry plates, and with momentary exposure, on a summer evening, and the other day, gelatin dry plates were used here for portraits with the like success. I found that plates from Wratten & Wainwright, London, showed a sensitiveness ten times higher than wet plates, and this enormous preponderance is certain to insure the gelatin dry plates a place in the ateliers, to be used under unfavorable conditions of light, and to make the same a formidable rival of the collodion plates, which had full sway during the last twenty-five years. Of course gelatin dry plates will never displace collodion plates entirely, for collodion is as easily handled and prepared as developed and dried, and it can be used without injury to itself with very many other chemical substances.

I have received from America the second edition of the *Practical Printer*, a complete manual of photographic printing, by Charles W. Hearn. We have no like work in our literature about photography, either in England or on the Continent, and the fact that the book has reached its second edition already, is proof of its value. In fact, the author treats all phases of the printing process with such care and exactness as only a thorough understanding of the subject allows. I have read with special interest the chapter about "Porcelain Printing," and I regret that this beautiful process finds so little favor in Europe. I would like to recommend also the *Photographic Colorists' Guide* to all those residing in smaller cities and western places in America, who cannot easily secure the services of a painter.

The new books published in Germany, interesting to the photographer, all refer to the photographic "plate printing." In the first place I quote in this connection Husnik's book on "Heliography." The book contains highly interesting heliographic samples from the author, and instructions how to produce the same. Very valuable especially are the details about "lichtdruck;" but in the main, the art is acquired more by practical experiments than by study from books. The main point in reaching success is the skill of the printer and his experience in treating colors.

If I am rightly informed, the lichtdruck also finds in America more attention, and though I do not think that the process has much value for taking portraits, yet it will be a boon to publishers who need pictures copied one hundred and one thousand fold.

Very truly, H. VOGEL.

BERLIN, Dec. 30, 1878.

MR. LACAN, late editor of the *Moniteur* in Paris, acknowledged the receipt "from America of a charming volume, embellished with numerous cuts and specimen of photography, which he recommended to those of his readers who read English." "It is," he said, "the second edition of *The Practical Printer*, a complete manual of photographic printing, that Mr. Hearn has just issued through his publisher in Philadelphia, Mr. Edward L. Wilson.

FRENCH CORRESPONDENCE.*

PART I.

Notes on Gelatino-bromide Emulsions—A New Dropping-Bottle—The French Photographic Society.

WILL ever the gelatino-bromide emulsion process drive out of the field the silver bath and the salted collodion, which has rendered (and does still) such service to photographers? that is the question. Although the doctoring required in the wet process is sometimes tantalizing, the general results obtained satisfy the greater number of the profession. In general, photographers are not experimentalists; they have no time, and their legitimate object is to make as much money as they can, knowing well that if they attempted to experiment, not only would their time be lost, but their purse would cry famine very often. So they choose the more sensible part; they read the journals devoted to their art, in which they are kept *au courant* of any progress that has been made by amateurs and *savants*, whose occupation, on the one hand, is to bring to light the secrets of nature, and on the other, whose pleasure it is to render service to so pleasing and interesting an art. The most intelligent of the trade repeats the experiments he reads of in the journals, and sometimes discovers a gold mine in the notes he reads, the suggestions he has thought and meditated on, and by so doing has been able to incorporate a new process and new life into his old business. The public rush to his establishment; his renown, success, and above all, loss of customers to his rivals, draw their attention to his *modus operandi*, and they seek, in the most indefatigable manner, to discover his secret.

As an example, suppose his success is due to instantaneous portraiture, and the indiscretion of an operator lets it ebb out that he works with gelatino-bromide plates. Immediately his co-laborers would make a rush in that direction, and would make more

progress in popularizing that process, and advancing knowledge in that direction, in a few weeks' time, than all that a journal could say to its advantage in several leading articles.

Now it has been proved over and over again, that a gelatin emulsion is much more rapid than a wet plate, and gives as fine, if not finer, results. Then why is it, it may be asked, that there is such a poverty of votaries for such a promising process? In my opinion, it is because many have tried it and have not succeeded for the following reasons:

1. Too long a time has elapsed between the preparation of the emulsion and its definitive position on the glass, causing a commencement of decomposition of the gelatin, and in consequence puckering, red fog, and the other ills that unhappily we know of.

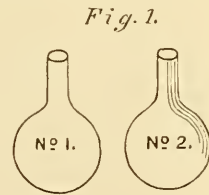
2. Too much heat employed to dissolve or redissolve the gelatin; the heat should never exceed 100° F.

3. Too much light in the operating-room.

4. Overexposure, and in consequence flat, foggy negatives, rebellious to intensification.

The greatest success I have had was with an emulsion made after the following formula:

I take two experimenting vases (see Fig. 1). I put 1 ounce of distilled water into each. Into No. 1 I add 36½ grains of nitrate of silver; into vase No. 2 I put 20 grains of bromide of ammonium. When it is completely dissolved, I add 44

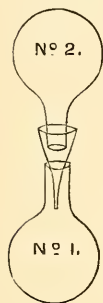


grains of the best gelatin. I leave it to soak an hour; in that time it is thoroughly swelled, and the bromized liquid has made its way into the gelatin. I now put the two vases or bottles into a cold water bath, and raise its temperature by degrees to 100° F. The nitrate of silver is now completely dissolved in vase No. 1, and the bromized gelatin is now thoroughly dissolved in vase No. 2. The two vases are also of the same temperature (this is a great condition of success). I now put a small glass funnel in the neck of bottle No. 1 (containing nitrate). I take

* We regret that "a stormy sea" prevented our getting this letter in time for our last issue.—Ed. P. P.

No. 1 in the left hand, and No. 2 in the right hand, and without hesitation I put the neck of No. 2 into the funnel (see Fig. 2). The bromized liquid makes its way slowly into the nitrate solution, and the

Fig. 2.



double decomposition takes place without any trouble. When all has run through, I shake it well, and then pour the contents of No. 1 into No. 2, and then back again several times. I am now certain that no silver or bromide is left in either bottle. I leave the emulsion to ripen all night in the water bath at 100° F. The next morning it is well shaken, a few drops are poured into a test-tube and a little alcohol is added, and well shaken; the alcohol has taken up the water containing the subsalts from the gelatin. Two equal parts of this alcohol is taken, a drop of a 2 per cent. solution of chloride of sodium (common salt) is added; if a slight trouble of a milky appearance is obtained, the emulsion is in good order, for it contains a slight excess of nitrate of silver. If no precipitate be obtained, I pour into the other part of alcohol which remains one drop of a 1 per cent. solution of nitrate of silver. If my silver solution is precipitated, I know that my emulsion contains an excess of bromide, which is bad, and I doctor it in consequence. When I find the emulsion in a good state, that is to say, containing a slight excess of silver, I add from 20 to 30 minims of white of egg to every ounce of emulsion; albuminate of silver is now formed in the emulsion, and upon analysis, as I have already described, no free silver ought to be found. The emulsion is well shaken for one or two hours, and then poured out in a flat dish to set. When firm, it is cut into lozenges with a silver spatula. The dish is now filled with distilled water, and allowed to remain an hour, after which it is poured off, and a small stream of ordinary water is allowed to run into the dish for about four hours, the last rinsing to be done with distilled water. The emulsion is left to drain.

Now comes the query, What is to be done with it? If not wanted for immediate use, it

can be laid upon blotting-paper in a current of dry air, and thoroughly desiccated; in this state it will keep for years. If required for use, the dish must be placed in warm water, or what is better, in cold water, which being slowly heated to 100°, gives better results. The emulsion is now filtered through a piece of flannel into a warm bottle, and 10 to 12 drops of a 3 per cent. aqueous solution of chrome alum is added; the bottle is then well shaken, and filtered again into a very small bottle, so that the solution may come up the neck to a level with the top. Any air-bubbles in the emulsion will now rise to the surface, and can be destroyed by drawing the finger over the top of the bottle. A few minims can also be poured into the stock-bottle for further use. We have now in the little bottle a pure emulsion, free from bubbles, etc., ready to coat the plates. It is better to slightly warm the glass. The necessary quantity can now be poured upon the plate in the same manner as collodion, and allowed to run from one corner to another until it gains its level. On no condition ought it to be drained; the exact quantity required must be measured, or on some of the plates the film will be too thin, on others too thick. I prefer to lay the plates upon a glass shelf in the drying-cupboard, which cupboard had been previously warmed, so that when the plate bearing the emulsion is placed upon the glass shelf, it cannot be chilled by contact with the cold glass; a current of dry air is established, and the film dried as rapidly as convenient.

If films be required to replace the glass supports, in travelling or field work, rub a little oxgall over the plate with a piece of flannel before the emulsion is poured on; it is not even necessary that the gall should be dry before the emulsion is poured on. When the emulsion is dry, pour upon the plate a solution of india-rubber in benzine (about 1 per cent.); this solution dries very rapidly. A plain gelatin solution containing a little glycerin is now poured upon it, and left to set; when set, it is plunged for one or two minutes into a 3 per cent. solution of chrome alum; it is then washed and dried; when dry, it leaves its glass support freely. A great number of these sheets or

leaves can be carried with ease up a mountainous country without fatigue. The emulsion, I find, is very rapid and certain, giving fine outlines. I think the addition of albuminate of silver to the emulsion imparts many qualities to it. The small quantity of chrome alum prevents swelling, and the gelatino-bromide emulsion works better with than without it.

It must not be forgotten that all the emulsion must be employed after the addition of the chrome alum; if not, it will be of no service, as it cannot be redissolved after it has once set. As regards the plain gelatin intended to suppress glass, it may be seen that I have not added any chrome alum, but counseled the immersion in a bath of that salt after the gelatin has once set. The reason is, that there are so many different gelatins; some will bear a certain quantity of chrome alum without becoming insoluble; some, by the addition of only a little, become so thick and unmanageable that it is impossible to use it; therefore, to prevent my readers from experiencing these difficulties, I have turned the difficulty by plunging the gelatin, when once I have finished working with it, into a solution of chrome alum. The object is thus attained with any kind of gelatin. The films may be developed in a hot solution; the gelatin will not dissolve, and no puckering can ever take place.

I have already given in the pages of the *Philadelphia Photographer* formula for the development of dry plates, and very good and appropriate for the films. I now give another, which I believe is due to Mr. Swan, with which I have had very good results.

No. 1.—Pyrogallie Acid, . . . 15 grains.
Water, 10 ounces.

No. 2.—Water, 1 ounce.
Bromide of Ammonium, . . . ¼ "
Liquor Ammonia (.880 oz.), 1 "

Put the film or plate in a flat porcelain dish. If it be a whole plate, 2 ounces of solution will be necessary to cover it, therefore take 16 drops of No. 2, pour them into a measure, and add 2 ounces of No. 1. Now pour it instantly over the plate lying in the

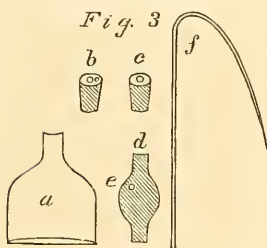
tray, in the same way a photographer does his iron solution over his wet plate. Rock the tray to equalize the action. If the image appear too rapidly, add a little bromide to check the action of the developer. As for myself, I prefer the ferrous oxalate developer, as communicated to me several years ago by Mr. W. Willis, Jr. This developer is very rapid and energetic in its action, and sometimes causes markings and uneven development. This is more the fault of the operator than of the process, for if after the plate has been flooded with alcohol, it be very carefully washed so that no greasy marks appear, the developer can even be employed at full strength without danger. It is much more energetic than carbonate of ammonia, and more powerful than liquor ammonia. I think its greatest value is in the total absence of any tendency to fog.

The ferrous oxalate developer is very easy to make. Take 10 ounces of protosulphate of iron (copperas), put it in an evaporating-tray containing sufficient water to dissolve it. When hot add, little by little, 5 ounces of oxalic acid, stirring all the time; a yellow precipitate of ferrous oxalate will be obtained; this must be well washed and then dried. This powder is soluble in neutral oxalate of potash.

To make the developing solution, put half a pint of water into a glass balloon (see Fig. 1); add 3 ounces of neutral oxalate of potash. Apply heat until all is dissolved; then add to the hot solution half an ounce of the yellow powder, shake it up well, and allow it to settle. When old, decant a part of the clear portion for use, say 60 minims, which is weakened by an equal quantity of water, which makes 120 minims, a sufficient quantity for one-half size plates.

Lay the film or plate in a porcelain tray, after it has been flooded with alcohol and well washed; then throw the solution over its surface as quickly and evenly as possible. Rock the dish gently until the required density is obtained. The plate must now be well washed, and plunged into a saturated solution of hyposulphite of soda, and then thoroughly washed. It may now be dried spontaneously, or if wanted immediately, the drying can be hastened by flooding it with alcohol.

I have found a great convenience in the employment of



a Glass bottle with tubular neck.

b Cork perforated by two holes.

c Cork perforated by one hole.

d India-rubber hollow pear.

e Small hole punched in india-rubber pear.

f A curved glass tube.

To fit up the apparatus, fit cork *b* firmly into the neck of bottle *a*; now pull over the neck the lower part of the india-rubber pear, and fasten it on with a string, or with iron or brass wire. Now fit cork *c* into the top of the india-rubber pear, and fasten it tightly in the same manner. Take the glass curved tube, and push it down the centre holes of the two corks into the bottle; the apparatus will appear as in Fig. 4.

To set it at work, press the india-rubber pear in, taking care that the thumb covers the small hole *e*; the air contained in the pear will rush through the small hole in cork *b*, and press upon the liquid in the bottle. The liquid will make its way up the glass tube, and make its exit either rapidly or in drops, according to the pressure of the hand upon the india-rubber pear.

To fill the apparatus, draw out the glass tube, and put down a long, thin tube with a glass funnel at the end. The liquid will easily make its way down, as the air will be expelled by the hole in the cork into the india-rubber pear, and from thence through the thumb-hole *e* into the atmosphere.

PART II.

The January meeting of the Photographic

Society of France took place last night, the 10th inst., instead of on the 3d of the month, it being postponed on account of the new year.

Mr. Harrison laid before the members some cotton which had been prepared in Russia; by submitting it to high-pressure steam it appears that it is cleansed of fatty or resinous matter, and so fits it for making superior pyroxylin. A small quantity of this cotton was put into a glass of water, it readily absorbed the liquid, and fell to the bottom. To all who are acquainted with the preparation of pyroxylin the advantage of a cotton which will readily absorb the acids, is obvious. Experiments will be made on this cotton by members of the Society, and the results obtained will be laid before the Society at our next meeting.

Mr. Harrison likewise spoke of the improvements in artificial lighting now made use of in England, of the production of portraits, etc., placed within the reach of all by Messrs. Adler & Clarke. To my knowledge several Parisian photographers are experimenting with artificial light, among whom I can cite Mr. Liebert, who, I believe, has purchased Van der Weyde's French patent, and Mons. Pierre Petit, who is about to work a similar process. As to the pyrotechnical processes, I think as yet no one has given them a trial, although any artificial method stands a good chance of success at the present time, seeing that we have a most dismal winter.

Mons. Lamy, who has already rendered service to photography, made a useful and interesting communication to the Society on the manner of improving negatives and giving them an artistic touch which they might be deficient in. In order to make his communication clear to my readers, I will briefly state a few dodges known and employed to attain the end he seeks. When a photographer finds that the negative of a landscape for which he went to great expense and much trouble to obtain, gives a satisfactory result with the exception of the first plan, which ought to represent a part of a high mountain covered with great stones, dwarfly trees, etc.; this, when printed, looks like a black spot, without any detail in shape or form, notwithstanding in the nega-

tive the detail can be seen, but very feebly. Now, what is to be done? Formerly a piece of tissue- or tracing-paper was pasted on the back of the negative, and a quantity of black lead rubbed upon the paper over the spot to be protected from the light; this answered pretty well. I proposed in connection with this to rub, by means of a drawing stump, a small quantity of "rouge sanguine" upon the varnish; in the hands of many amateurs this succeeded very well.

As soon as I became aware of the non-actinic qualities of the chrysoïdin, I made a colored collodion which I spread over the negative previously covered with a solution of albumen to prevent the varnish or collodion from being dissolved. This colored collodion could be taken off at the required spots by ammonia or potash water, but I never tried to obtain a gradation of tint by this means; the color was spread, it must be remarked, on the collodion side of the negative.*

Mons. Rousselon informed the Society that the commission charged with the organization of the photographic department of the late exhibition had made an economy of twenty-five per cent., which would be returned to the exhibitors. (Great applause.)

I had the honor to make a communication to the Society as follows:

GENTLEMEN: It has occurred rather too often that my correspondents have drawn my attention to spots, streaks, etc., in washed bromide emulsion prepared by themselves; had not these spots, stains, etc., presented the same features in most of the letters, I should have set it down as faulty manipulation on their part, but here was something more serious. The complaint was, in most cases, that the plates, after development, presented more or less the appearance of horizontal lines, beginning fine from the top and getting larger and larger to the bottom, with little ramifications on the way; towards the bottom they took the shape or form of a Rupert's drop (see fig. 5). I was

at a loss to account for this phenomenon, until it occurred to me the other day. I prepared a few plates during the evening and, as is my wont, I experimented on one of them the next morning to see if they were good. To my astonishment, the same, or nearly the same appearance, presented itself. I then went to work to see if, peradventure, I could discover the cause, and was very fortunate to succeed. I offer to the members of the Society the results of my investigations, hoping it may render service to many who employ washed collodion emulsions.

An idea came into my mind that it might be caused by the cold produced by the evaporation of the ether. Under this inspiration I prepared two plates under the same conditions, that is to say, the weather was very bad, the painted walls of the house, as it were, running with water. In a quarter of an hour I visited my plates, water was running down the front as well as the back of the glass; the ether preventing its passage, compelled it to take a zig-zag form on the collodionized surface; this is what caused the ramifications. In fact my advice is never to prepare washed emulsion plates excepting in a very dry place. I firmly believe that much failure attending washed emulsion plates is due to this not unknown but unobserved cause. Any member can make an experiment of this by covering a glass plate with ordinary collodion, and placing it against a wall in a damp place to dry; in two or three minutes the phenomenon will have made its appearance. Now that the cause is found, the cure is easy.

Mons. Ferrier presented some fine positives made with gelatin-bromide plates.

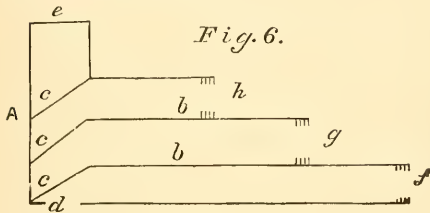
FIG. 5.



* A full translation of Mr. Lamy's remarks will be found on page 56 of *Photographic Times* this month.—Ed. P. P.

Mons. Ch. Cros made a very interesting demonstration of a scientific apparatus which he calls a "chromometre." It is well known that this gentleman, Ducos du Hauron, and Mons. Leon Vidal, have been working for many years to solve the problem of the production of natural colors by photography. The apparatus shown before the Society had for its object to prove that by the three fundamental colors, the red, yellow, and blue, the true reproduction of a picture could be made containing all the supplementary colors.

To reproduce a picture, three negatives are made; the first by interposing a red glass, the second with a yellow, and the third with a blue. When the three negatives are obtained, Mons. Cros puts them in an apparatus. (See fig. 6.)



A. Ground plan of a box, 4 inches high, containing two separations (*b b*).

c, c, c. Three pieces of plate-glass, placed at an angle of 45 degrees.

d. Hole in the side of the box, in order that the observer may perceive a white proof pasted at the end of the box at *e*.

f, g, h. Three square openings with grooves, in which slide three colored glasses: in *h*, the red; in *g*, the blue; in *f*, the orange-yellow.

The three negatives are likewise placed in grooves behind these glasses. Now, if very much light be admitted into this box at *f, g, h*, a polychromic image will be formed in the end of the box at *e*, which can be distinctly seen by looking through opening at *d*. Whether this instrument will advance photographic knowledge, time alone will show.

A correspondent gave his opinion that photographic proofs could be printed at a distance by transmission, by a kind of phonograph. His idea is neither clear nor distinct. As much as I could glean, he proposes to prick round the contour of the image, the

positive having a piece of tin-foil at its back; these holes to be used for the transmission by the electric wire far, far, away. I cannot comment on this; there is no knowing, in our century of wonders, what may turn up.

A new society of photography has sprung up, a little in opposition to the old ones. If their new manner of working will be a general benefit to photography and photographers, let us welcome its appearance.

Photographic journals are also rising up like mushrooms, in every direction; but I fear few will survive, as most of them were only created in view of private advertisement, etc. The *Bulletin* of the Society, and the *Moniteur de la Photographie* are the journals in which we can have great confidence.

I am certain that many readers of the *Philadelphia Photographer* will join with me in expressing my deep sorrow for the long illness which the proprietor of the last-mentioned journal has undergone, and in the great pleasure I experience in hearing of his convalescence.*

PROF. E. STEBBING.

27 RUE DES APENNINS, PARIS, JANUARY 11th, 1879.

NEW IMPROVEMENT IN THE PREPARATION OF NEGATIVES.

WE have to call the attention of our readers to a new candidate for their favor, which, although it comes to us with less color than carbon, less spasmodically than "lightning," and more modestly than the "artotype" scheme, will, we think, prove of more value to them than any of the others.

Some time ago, Mr. G. W. Stigleman, well aware of the difficulty of producing good solar enlargements that would not require skilful after-retouching or working up, accidentally made a discovery which led him to experiment until he had perfected a method of securing solar prints of any size, as good as contact prints. This method he has patented, and assigned to Messrs. Howe & Beecher, the well-known stockdealers of Columbus, Ohio, who now offer it to the public in their advertisement, under the title of "*Solar Retouching Process*."

* Mons. Lacan has since died.—Ed. P. P.

All are familiar with the fact that the waves caused by the uneven flow of the varnish, the coarse deposit of the developer, and the consequent forming of the varnish thereon in globules or hemispheres, which obstruct the rays of light at their centres, and cause them to pass around their sides, all are fatal to good solar printing, for markings and white specks upon the surface of the prints are sure to follow them. Moreover, if the retouching of the negative is attempted, similar roughness in the prints follows. All these, and many more such troubles, Mr. Stigleman obviates. He first supplies a proper surface for retouching, then supplies a method of preparing the negative in such a way that upon it being printed the same delicacy and softness may be had in a life-size picture that is obtainable in a card or cabinet, from the same negative.

It will be seen then that the photographer of moderate means may have it in his power to supply his patrons with large pictures at a low price, thus obviating the necessity, even though he could afford it, of a large lens, camera, or bath, to say nothing of the printing difficulties.

We have seen many examples by this means, several *from our own negatives*, and are much pleased with them. The fee asked for the full term of the patent is moderate. We know nothing else like it; it has the indorsement of many able to judge of its qualities, and we feel that we are doing our readers service by drawing their attention to it. The object of the method is to properly prepare solar negatives. You should look into it.

Since writing the above, we have received the following from Mr. W. L. Shoemaker, who is the well-known solar printer with Mr. Albert Moore, of this city. It certainly speaks well for the method described, as follows:

"I have carefully examined the samples of Stigleman's retouching process, as exhibited in this city by Mr. H. C. Gager, of Messrs. Howe & Beecher, Columbus, Ohio. As samples of enlargements from retouched negatives, they excel any I have ever seen. The retouching seems to be on the surface of the print, while really the work is done on the negative itself, thereby reducing the

cost of a finished print. For producing good samples of enlarging, there is no way that I know of producing work equal to it, except by elaborate finishing on the surface of the print itself. W. L. SHOEMAKER."

And later, Mr. Moore himself writes, viz. :

MESSRS. HOWE & BEECHER.

"The prints shown me by your Mr. Gager I think are the best solar prints that I have ever seen. They look like finely finished prints worked up by an artist. This, of course, is due to the preparation of the negative, since the prints are utterly untouched.

"It seems to me now that any photographer can supply his patrons with first-class enlargements at a small price.

"Yours truly, ALBERT MOORE.

"FEBRUARY 21st, 1879."

ABOUT ARTOTYPE.

OUR space is so much taken up on this subject by Messrs. Bachrach and Benecke, abler ones, that we have to cut down what we would like to say.

Some things recently done by "The Artotype Company" are very amusing. For example, the postal-card issued by them January 25th, copy of which is included in Mr. Benecke's letter, page 81. It is pretty hard to get the *St. Louis Practical Photographer* to illustrate with an artotype, and then call it an "obscure periodical," even if it might be true. The hit was evidently intended for *our* magazine, but, unfortunately, the blow was given ten days too soon.

It had not the effect of squelching our purpose of giving our readers a picture fully as good as the artotype process would make, by a method much cheaper, however, which latter caused much illness and demoralization. We knew it would surprise them.

Ever since, night and day, it has been the constant study of the "Company" to know how they might "gobble" Mr. Carbutt, who does *not* infringe their patent, he claims, and who is very busy instructing pupils.

Mr. Jex Bardwell writes that Mr. Carbutt is justly entitled to the one thousand dollar challenge offered by the New York parties.

Mr. Benjamin French, of Boston, writes as follows:

"The illustration in this month's journal is the best specimen of photo-mechanical printing I ever saw. Carbutt deserves much praise for such work, and I hope he may make a fortune from it."

A good deal of personality accompanies the replies made, in the other journals, by the Artotype Company, to our strictures, in which they have an advantage over us. We cannot find an editor who is willing to allow us his space for any such object, and are therefore relieved from that distasteful business. There are a few assertions made, however, mainly in the *Bulletin*, which are not true; and we beg to contradict them.

First, the impression is given that we wrote to Mr. Cooper, of the Artotype Company, with respect to illustrating our magazine, last fall. We did not. On the contrary, our letter published on page 19 of the *Bulletin* was an answer to one *previously written to us* by Messrs. Harroun & Bierstadt, and which, for the sake of truth, we append.

EDITOR PHILADELPHIA PHOTOGRAPHER:

DEAR SIR: What size, how many copies needed for your November edition, what will it cost for one, two, or three issues, and what is the latest date when we can forward you a full-page illustration by the Albertype process — announcing rights for sale, and warning the public against buying from others an infringement of our rights. Please give us low terms as possible.

Yours truly,

HARROUN & BIERSTADT.

NEW YORK, October 7th, 1878.

Moreover, the subject of inquiry was not "artotypes" at all, but "Albertypes," as the letter plainly states.

The statement of Messrs. Illingworth and others, that we admitted the beauty of the results, is certainly true (see our own remarks as to that, on page 17 of our January issue); but the statement that we said that the negatives lent by us had "not given good silver prints," is *not* true, for one of them had been printed for the *Philadelphia Photographer* (Mr. Ely's snow picture), and the other was a stock negative,

which had never been printed in silver at all.

We have not anywhere spoken ill of the beauty of the *results* of the artotype process. Our remarks have been against the claims as to cheapness, made in the four-page advertisement (which we refused at once, and even so late as this month again); as to the possibility of the process being of service to the ordinary photographer, and as to the validity of the patent.

We still hold our ground on these points, and others of experience confirm us. As to the patent, "we have drawn the fire of the enemy;" and if that is all they have to go upon, we are still strong in our affirmation. Indeed, they admit that they hold no patent for a *completed* process, but *only* for the *preparation of photographic plates for printing by mechanical means*, etc.; and this, we are satisfied, could not be sustained in the courts.

A correspondent puts the following: "Why is it that two of the Artotype Company having photograph galleries do not use the artotype process in them, if it is so 'good' and 'economical,' and the results 'so beautiful?'" INQUIRER.

Also, why does not "Uncle Napoleon" Sarony use it for printing his celebrities?

TWO FABLES WITH A PHOTOGRAPHIC APPLICATION.

WE extract the following fables from a work under way by a friend, who has intrusted us with his manuscript to read, and with his permission we publish them, because of their fitness for the present photographic times:

THE LION, THE MONKEY, AND THE ASS— A FABLE.

A vain and conceited monkey disported with pirouetted motions, in juxtaposition with gyrating and serpentine contortions, before an audience of the other beasts of the field. "Hoop-la!" cried he, turning to the lion, "how do you like my dancing?" The lion, who had looked on with Arctic reserve and unmitigated contempt, witheringly replied: "You dance very ill; you lack the agility of the dear deer gazelle." "Ah, ha!" exclaimed the monkey, "he is

envious," and turning to the ass, asked him how he liked his dancing.

"Beautiful," cried the donkey, "splendid, ravishing, fine!" For a moment the poor little monkey's face was confused with blushing pleasure; but soon a shade, a gloom, a despair, settled on the same, and, with heartrending vocalization, quoth: "Alas, *now* I know I cannot dance, when only the ass praises me."

Moral.—Let your specifications be such as may please the judicious, and not such as to lead on the barren to much pitiful aberrations.

THE MILKMAIDENS AND THE BOVINES.— A FABLE.

In a field of richest verdure, sparkling streams, and otherwise emblazoned with nature's generosity, promenaded gracefully several virtuous bovines which were fair to behold, and of unctuous udders. A young and lovely maid, on a seat sequestered, gazed with tearless eyes on the unmoved firmament; at her side lay a gentle milk-pail. Zelfhinia, for that was her name, waited with that patient look of sublime resignation only conceived on the visages of the ultra-devout—waited until the bovines would back up to her for to be milked.

In another field, to which nature had proved an indifferent parent, *sans* verdure, *sans* water, *sans* turnips, *sans* everything, other unsightly bovines (but yet with udders prolific), were driven in a corner and duly milked; and when the vesper chime belched forth its clamorous tongue, the maidens returned to their sylvan domiciles, the one rich in milk, the other nix-ey.

Moral.—Go after your interest, for it will not come to you. A good manager cannot possibly *suddenly* sit down on the business end of a tack without the latter imparting to the former at least a portion of its own alacrity.

A NEW LENS.

WE desire to call the attention of our readers to an important advertisement of a new lens, now ready for the market, from the old and well-known house of Voigtländer, and sold through their agents, Messrs. B. French & Co., Boston.

We have already announced the coming of this new helper, and Dr. Vogel has described it in his correspondence. We have only to call your attention to it, therefore, to make you take an interest in the subject. We hope to have more to say presently.

OUR PICTURE.

OUR readers will be glad to have an example of portraiture once more, and we are pleased to be able to supply them with so good a one, from negatives by Mr. R. E. Atkinson, Troy, New York.

This picture is not the handiwork of one of our older photographers, but from one who may be classed with the last generation. Upon his success we congratulate him. In his letter which follows, is enough to encourage any young aspirant for photographic fame to push ahead vigorously, and aim for the highest order of success. In fact, Mr. Atkinson is a living example of what we have always advocated as the policy to be pursued by those who would gain position in our art. He has always been a diligent and careful student; a punctilious reader of the magazines and books pertaining to our art, and a clean and conscientious operator.

We commend his example to others, and his work as a suitable study. The prints were made on the extra brilliant Dresden paper advertised by Mr. G. Gennert.

Mr. Atkinson writes:

"I have a clear, north-light 18 feet square, slant 45°; the side-light is 18 x 6 feet; skylight, 12 x 18 feet. The formulæ I use are as follows:

"COLLODION (KENT'S).

" Iodide of Ammonium, . . .	3½ grains.
Iodide of Lithium, . . .	1½ "
Bromide of Potassium, . . .	2 "
Ether,	12 ounces.
Alcohol,	12 "

"I use my iron from 7 to 15 grains, according to the light and subject. Silver bath 40 grains strong, slightly acid with C. P. nitric acid.

"I am quite fond of good things, and I think the article by I. B. Webster in the January, 1879, *Philadelphia Photographer* is something that photographers have missed.

"Short time" seems to be a great oversight. I do not care if I give a full minute if I get what I set out for.

"As to my instruments, the negatives were made with a Harrison tube, 4-4 size, which my friend Elton used fifteen years ago. You will see that the negatives are *perfectly* clean, not a pinhole or stain in any of them. This can only be by having clean baths, collodion, clean rooms, and everything to match. My operating-room is 25x45. I can make a standing cabinet, working in any direction, under my light.

"It may be encouraging to some new in the

business to know that it is only seven years since I drew the first focus. I have never taken any instructions out of my gallery, still I never find any trouble in getting all the information I asked for from such artists as J. H. Kent, Barhydt, A. Bogardus, Mora, Gregg, of Rochester, etc. I have yet to meet a photographer, no matter how poor work he made, but that I could learn something from him. *Constant study will tell*, and must be closely adhered to in order to succeed.

R. E. ATKINSON,

"No. 13 Second Street, Troy, N. Y."

Editor's Table.

DR. VOGEL'S letter is again delayed this month. We waited for it until the 26th inst., expecting it to give us some interesting facts concerning Obernetter's, Husnik's, and other processes kindred to "artotype." If they come soon, and are important enough, we shall issue and send a *supplement* containing them to our readers.

PICTURES RECEIVED.—Mr. E. T. EVERETT, of Mankato, Minn., sends us some very pretty stereoscopic views of the country in his neighborhood. His views of St. Anthony's and Redwood Falls are quite charming; also some rock and glen views show good taste in selection, and the photographic part also evinces care and desire to make first-class work under any and all difficulties. A pretty little card picture, "Cinderella," aged five, and "The Prince," aged six, from Mr. M. P. BROWN, of Tecumseh, Mich. Time, only six seconds, and the picture clear and sharp. Also samples of their work from Mr. ISRAEL FORMAN, Grafton, W. Va., and Mr. A. J. SHEPLAR, Coshocton, O. Mr. ROBERT HODGE, Philadelphia, sends a print of an old country house, made on CLEMONS'S "Matt Surface" paper, worked with the ammonio-nitrate bath, and the gold and hypo toning bath. The tone is excellent—all that could be desired. From Honolulu, H. I., Mr. A. A. MONTANO sends us some very excellent portraits of King KALAKAUA and Queen KAPIOLANI, also a portrait of himself. These specimens show that in those distant islands photography is as well executed as in our first American cities. This would have surprised us much had we not at the same time learned that Mr. MONTANO has been for years an

attentive reader of our magazine. We have recently received a visit from Mr. JAMES HOWARD, of Plattsburg, N. Y. He had a pocketful of specimens of carbon printing by several of his pupils in that state. They are certainly very exquisite specimens of photography. Mr. HOWARD has travelled through the difficulties of carbon printing pretty successfully, and now thinks he has mastered it. He claims to have a varnish which greatly facilitates the stripping of the carbon prints. Examples of their best work, from Messrs. CORE, Lincoln, Ills.; BRETZ, Pottsville; and HARRY SUTTER, Milwaukee, Wis. The latter gentleman seems remarkably successful with children, and his work is excellent. Mr. S. W. DOUGLASS, Evansville, sends us some very well done carbon prints, Mr. J. H. SCHROEDER, printer. Some capital animal groups, really artistic compositions, from JOHN VAUGHAN, Esq., No. 1 Chestnut Terrace, Jeffrey Road, Oxford, England. From Mr. JOSEPH L. BATES, 4 Beacon Street, Boston, some splendid interior views of the late fair of the Charitable Mechanics Association in that city. From Messrs. GILBERT & BACON, 40 North Eighth Street, Philadelphia, an admirable portrait of the late THOMAS H. POWERS, Esq. From Rev. CLARENCE E. WOODMAN, San Rafael, Cal., several admirable 8x10 interiors, made after the excellent formula given by him in *Mosaics*, 1879, page 59. Also some prettily posed winter and snow pictures from Mr. F. H. FOSS, Dover N. H., and Mr. W. H. MOORE, Marion, O; examples of clean and careful work.

OBITUARY.—In our February number we an-

nounced the death, on January 10th, of Mr. FREDERICK LANGENHEIM, promising at the time to give our readers some further particulars of the life and work of this "Father in Photography." He was born in Brunswick, Germany, and the early part of his life was spent in agricultural pursuits. In 1840, he came to Philadelphia, just at the time Daguerre had published his experiments. He at once became interested in the new art, and applied himself to its further development, and was one of the first to make daguerreotypes in this country. He had at this time entered into partnership with his brother, W. LANGENHEIM, which partnership lasted until the death of the latter, in 1874, when the business was closed up, and Mr. LANGENHEIM passed the remainder of his life in retirement.

His pictures of Niagara Falls (the first ever made) won him the highest testimonials from the leading sovereigns in Europe, and scientific associations in this and other countries. When photography came up, Mr. LANGENHEIM at once took it up, and spent two years in Paris perfecting his experiments. On his return, he began making stereoscopic views, in which branch of photography he for many years stood alone in this country. At the outbreak of our civil war he began making magic lantern slides, continuing to devote himself to this work until the close of his business career.

It is with a great deal of regret that we announce the death of our valued co-laborer M^{rs}. ERNEST LACAN, editor of the *Moniteur de la Photographie*, Paris, from the pages of which we have so often made translations for our readers.

Mr. LACAN was probably the oldest living photographic editor, *i. e.*, he began the duties of that office in 1850. He was one of the most enthusiastic friends of our art, and ever ready to befriend and assist those who followed it. He died January 18th, 1879, of congestion of the brain, in the prime of life, in the fiftieth year of his age.

He was noted for his generosity and goodness, and had gathered around him a wide circle of friends, who now sadly miss him.

When in Paris we enjoyed his companionship and courtesies, and before and since have had much pleasant correspondence with him. It was our habit for a number of years to exchange examples of photography, and, as our readers will remember, he was for several years the French correspondent of this magazine.

His death, and the resignation of Mr. J. TRAIL TAYLOR, have caused a great vacuum in photographic editorship, which we fear cannot be *speedily* filled.

THE ALMANACS FOR 1879.—We have received the *British Journal Photographic Almanac* for this year, and, as usual, it is full of capital articles on photographic matters. The same may be said of the *Year Book of Photography* and *Photographic News Almanac*. Both of these books we will mail to any address on receipt of price.

Mr. J. H. FITZGIBBON, editor, St. Louis, sends us a copy of his *Practical Photographer's Almanac*. Its pages are filled with useful matter, making it well worth the price asked for it—50 cents.

LEVY'S EMULSION DRY-PLATE CAMERA.—Mr. ALBERT LEVY, 77 University Place, New York, so well known in connection with his emulsion and emulsion plates, quick to see the needs of the fraternity, has already placed in the market a unique little camera for dry plates, to serve the purpose of the "Stereographe," described in our last number, and offers camera and lens for \$12, for plates 4 x 5 inches. For this sum a half-dozen plates, developer, pyro, and hypo, are included, with full instructions for working the same. Mr. LEVY has thus doubtless met a real want.

MESSRS. GEORGE S. BRYANT & Co., the well-known stockdealers of Boston, write: "Send twenty-four more copies of the January *Philadelphia Photographer*," and that means twenty-four new subscribers for 1879. New England is alive to the value of a good, independent magazine.

Mr. C. A. ZIMMERMAN, St. Paul, Minn., called upon us a few days ago, and then went to New York. He returned without buying an artotype license.

A MAGNIFICENT WORK.—We have had the pleasure of examining a most unique pictorial catalogue recently, consisting of a volume of about 300 pages, 5½ x 10½, of photographs of the silverware manufactured by Messrs. REED & BARTOX, Taunton, Mass.: each page being a photograph, pasted back to back to another, two sheets of albumen paper thus forming a leaf. The photographer is Mr. M. L. DAGGETT, who, having for some time worked at this special branch of our art, must be without a rival, for we have not seen anything in their line to equal them. One great secret in handling such subjects is in the management of the lighting, and this Mr. DAGGETT seems to have under perfect control. His effects are elegant, and his negatives are faultlessly printed.

TO CORRESPONDENTS.—We do not know anything of the process offered by G. W. HUTCHINGS, Burlington, Kansas. When you are told that a

process "will make fine negatives in one-sixteenth of a second, and ferotypes in a twinkling of an eye," *doubt it*, until you see it done.

THE attention of our readers is called to the advertisement of the Helio-type Printing Company, Boston.

They are now prepared to make for the trade photo-process work of all kinds, and relief plates to print with type; price, from ten cents per square inch upwards.

Photographers will be rejoiced to learn that any and all can now obtain work done in these varieties, instead of the processes being held secret for the use of a privileged few.

SINCE our friends still send us such pleasant letters, showing how they value our magazine, we deem it but fair to continue to give a few extracts from them to our readers at large, that they too may share the gratification of knowing that we still continue to be useful.

"I am just entering business for myself, and in 'stocking up' the *Philadelphia Photographer* was one of the *first* things on my list of necessities. I have been a constant reader of your valuable journal since I first entered the profession, and now that I am my *own* 'boss,' I find I cannot do without it. I *must* have it."—W. B. GLINES. "We have barely existed for the last year without the *Philadelphia Photographer*, and have made up our minds that we can't 'keep house' without it."—CARSON & GRAHAM. "I cannot give it up, although business is dull. I always find in it good help and advice; I have never read a number (and I have read all since 1865), but that gave me satisfaction, and I think you are doing a good work, and hope you will continually increase, and be able to hold out the beacon light to the photographic world."—J. O. GOETCHIUS. "*Mosaics* very excellent, and journal we don't want to do without, if money *is* scarce."—IRVING SAUNDERS. "Business is dull, but we cannot get along without a photographic journal, and yours is worth all the rest put together."—DAVIS BROTHERS. "I had thought that I must do without the *Philadelphia Photographer* this year, but there is no use, can't run business without it."—J. E. RICH. "I consider *Mosaics* as valuable to the photographer as a bit to the horse's bridle for the driver; for me, as long as I am a photographer, I intend to treat myself to one every year."—A. BRADSHAW. "I have been a subscriber to the *Philadelphia Photographer* for ten years, as also most, yes, all the others, and I have never seen one which could compare with it."—GEORGE MOORE. "I am taking your *Philadelphia Photographer* for the

last seven months' time; cannot do without it; it is like sugar to my coffee; it also keeps peace in my family."—K. MCKINNON. "I do not intend to let my subscription to the *Philadelphia Photographer* expire; although I am not at present engaged in photographic pursuits, I do not propose to remain in ignorance of what is transpiring in the photographic world."—N. S. HOWE. "Please mail to us two copies of the January *Philadelphia Photographer* for 1879. We are having an unusual call for that number."—DAVID TUCKER & Co. "I have taken many journals on photography, both foreign and those published at home, and make no hesitation in affirming that your journal and the *British Journal of Photography*, take the lead of all other photographic journals and publications."—M. THOMAS. "I have found the journal and *Mosaics* just as necessary as butter on my bread, and it would be hard to do without it after the long and familiar acquaintance."—E. S. WERTZ. "Received yours. The *Philadelphia Photographer* and *Mosaics* are worth double the money to any one, *especially* a beginner in photography."—F. L. BRIGGS. "This is my ninth year for it; cannot do without it."—MOSES TOMLINSON. "Your February number is just received; it is splendid."—GATCHEL & HYATT. "I was without your journal last year, thinking I was not able to pay for it; but have concluded that it is poor economy to do without it. I gladly avail myself of the opportunity to renew my acquaintance with such an esteemed old friend. Have you all the back numbers for 1878, and what will they cost me?"—IRA F. COLLINS. "After a leave of a few years, in which we tried a new journal, we come back to our old and well-tried friend of photography, which does not only *say* that it is its friend, but *shows* it, and saves many a poor photographer a dollar. Hope to be a life-long subscriber as long as you fill your part as you have done."—REEVES & SCARFF. "Send the *Philadelphia Photographer* soon. Have been reading up the *St. Louis Photographer* for over a year past, but I don't know so much whether I will in the future do so or not. A little too much carbon to suit me."—C. C. HARLAN. "Have had your valuable journal as a companion for years, and would consider it a hardship to be deprived of it. I think your 'Over the Hill to the Poor-House,' the best thing of the *kind* we have had yet. The *Mosaics* for 1879 is worth its weight in chloride of gold."—B. R. GIFFORD. "I was delighted with the selections you made for me in books, and am anxious for *Gihon's Colorists' Guide*, as I expect to find it equally as good in its line."—E. L. READ.



GILBERT & BACON

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T H E

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By EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

OUR PRIZE AWARD.

FOR some unexplained reason we have not, up to this writing (March 20th), heard from our agent in Liverpool, who was to receive and forward such parcels of negatives as might come in competition for our Gold Medal. We are, therefore, unable to announce the award until our next issue. The jury have examined and passed upon the *American* negatives, and should nothing come from abroad to disturb their opinion, the prize will, after all, be secured for negatives which were in hand before the time was extended to suit our friends abroad. The judges request us not to announce any names until the award is positively decided.

THE VALUE OF PHOTOGRAPHIC PROCESSES AND PATENTS.

BY DAVID BACHRACH, JR.

HAVING lately taken up the pen against mongers of worthless secret processes and patents, as well as the gouging and coercion attempted by the owners or venders of good ones, and the photographic community being overrun by peddlers of all sorts of processes, I am impelled to write this article for the guidance of those who have not given the matter that thorough attention requisite for a deliberate judgment on the merits of such claims, and shall try to place

the subject before the readers of this journal in such a light as to enable them to select the good, and reject the doubtful or bad. To do this in the space of a magazine article, I must necessarily be rather terse for such a subject, but will do my best to make it complete.

It must be understood that this fight is not waged against legitimate inventors, who place the product of their hands and brains before us on their merits, and who expect to reap a just reward. On the contrary, I should feel it a duty to encourage all such for the benefit of our art. But it is against charlatans, peddlers, and unscrupulous agents, that I desire to combat, and which action will be continued whenever I can show them up, and wherever I am given space. It is against those who speculate on the inventions of others, and attempt, by the means of high-sounding quack advertisements and the most impudent threats, to make the fraternity believe that they hold monopolies of processes that "*every one must have*," or suffer in their business, and thus take advantage of those who lack the experience to judge of these things. In most of these cases it will be found that every one can practice the very processes they sell by keeping properly posted, or receiving lessons at legitimate prices from those who have the experience, instead of paying enormous license fees for worthless patents.

Years ago the problem was simple. Process peddling had not become a fine art as at present. Those offered for sale were secret, and generally sold for anything they would bring to their impecunious venders, and those who had the money to spare and were green enough, would buy and—get sold. I have not known an instance where the process was worth the money paid, while the prevalence of photographic literature ought to have prevented intelligent men from being taken in in this way.

One of the most remarkable instances of this hankering after secret processes that ever came to my notice (and I might add, of the ignorance of so many of our craft), was the so-called "Sarony Crayon Process," which was peddled around by T. S. Lambert (of carbon, lightning, and artotype fame), and another individual. As soon as I saw their samples I saw *through* them, being nothing more than toned transparencies on glass, backed with paper designs, against investing in which I vainly warned several photographers here. Nowadays the problem is more difficult. No sooner has an individual or a little "ring" become possessed of some process or modification of old processes, which may be useful and can be made to appear plausible, than they buy up several patents (good or worthless) bearing on the subject; dashing advertisements are inserted in the journals; a *corner made in special materials* (this is the latest and most effective dodge); indorsements received from all the *leading* photographers (I never saw a process advertised that was not indorsed by them, and which in most cases they never used); a foreign name given to it; a high price put upon it; and, as a result, those who have not kept posted up, get taken in for ten times the amount the thing is worth. Now there are two ways to stop this wholesale swindling, one of which I have already given in the last number of this journal, viz.: by combined action on the part of the photographers of a community; and the other, by being able to judge the real value of these things; of which latter I propose to treat.

First, let us consider the processes that are entirely secret. Every one can safely *totally reject them*, as it is the business of our journals

to get hold of and publish any secret process of any value—that is *what we pay them for*. This, however, need not prevent one from buying something which is useful and can be made of *immediate value*, if offered by a respectable and able man, for a small sum *which you can afford to lose*. A great deal of deliberation should be exercised, however, and safety lies only in giving *your own purse* the benefit of a doubt.

Second, let us consider those processes which are patented, *or said to be*. How many of you understand what a "process patent" is? I have given the subject a great deal of attention, both in theory and practice, having made application for others, and taken out patents myself, and am now tolerably well posted as to the value of such claims. In the first place, this class are the weakest of all patents, nine-tenths of them are not worth the paper they are written upon, *unless they are totally original and novel to such a degree as to involve entire departure from previous methods or principles*. Of this class, those which come under the head of photo-mechanical processes, and which depend on the sensitiveness of gelatin to light in the presence of the chrome salts, as their foundation-stone, are especially weak. The reason is, *that a principle is not patentable*, and all of them are only variations and modifications of this principle. For instance, take an entirely different patent (Cutting's), the well known one for the use of the bromide salts in collodion; *the patent only applied to what it stated*, and did not mean the use of bromides in any other way, and could not have been sustained even for a limited time as such. *A patent only covers the specific objects in the claims, and they must be distinctly stated or they are valueless*. Now, if these are only for certain proportions of certain chemicals, and the use of the latter in that connection is not *totally new and original*, then any variation of these proportions accomplishing the same object is not an infringement.

Even in case a patent has been granted in this country, and a publication can be shown two years previous covering virtually the same ground, it will be declared void by the first tribunal that tries a case under it, and is consequently of no value. Process patents

have therefore this disadvantage, as compared to those on mechanical contrivances, inasmuch as the latter can be modelled and illustrated, and cannot well be imitated without infringement. Take, for instance, Obernetter's patent for a substratum on glass for holding the gelatin film, taken out in this country, *but not patented in Germany*, and upon which mainly the Artotype Company build their castles. It was granted only through an oversight, and is utterly valueless, and will be declared so by any tribunal, because it was undoubtedly published here two years before it was patented. The other claim in it, "the previously described method of preparing a gelatin film," etc., is all bosh and useless verbiage, as the making of gelatin films in various and equally effective ways is not patentable. So long as the basis upon which all these processes rest is not patentable, an invention of that kind must have totally new and novel features to become valuable as a patent.

It must be borne in mind that mere modifiers and improvers of the ideas of others, are not inventors, and are not entitled to the benefit of original inventions. Now take such a patent as that of Johnson, for *developing* a carbon print on a firm support, such as glass. This is no doubt valid; *not the making of the print or tissue*, but simply the method of development. If developed on any flexible substance it would not infringe this patent. Or take the process of Mr. W. Willis, Jr., of printing on paper by using the oxalate of iron as the sensitive agent, and precipitating (in combination with potassic oxalate) metallic platinum on the exposed portions. So far as I can judge at present, the patent based on this principle is valid, as I am not aware that this combination has been used before. The first step to take in examining a patented process, is to send for the specifications, by forwarding twenty-five cents to the Commissioner of Patents, for which they will be mailed to any address. If you have not the number or date of patent, the name of the inventor and the subject of the invention will answer. After receiving the papers, *examine with the utmost care the claims* which are always at the end of the process described, and always commence: "I (or we) claim as my (or our)

invention the," etc. Now be careful and see *just what is claimed*, for that is all which the patent covers, no matter how much verbiage may be used in the preliminary description, as that may include anything which is necessary to make clear what the invention really is. *Only the actual claims are covered, and they must state in definite terms what the invention is.* Any claim which attempts to include a general process *previously described*, without stating any single step or combination of steps in that process, *executes itself*, for if any portion thereof has been published or publicly used two years previous, it invalidates the whole of such a loosely worded patent.

There are many which are called "Shanghai Patents," that are mere blinds, patenting some unimportant step, and keeping the gist of the thing a secret. They are generally intended as scarecrows, in order to coerce as many as possible into purchasing a process which is really secret, and yet have within them a sort of latent threat against possible infringers, and they give them a sort of respectability which they would not have otherwise. Of this sort is the so-called patent of Obernetter, the main stay of the Artotype Company, or at least it looks like it. Of course, as soon as the secret part gets out, which it surely must in such cases, their value is gone.

Last, but not least, try the process as specified in the patent. If it does not work practically then the latter is worthless, and only a fool would invest in it.

Finally, see whether it will pay you to use it, and whether it is worth the price demanded. Never get frightened by any threats to increase the price in the future, or the hundreds of other means used to push these things. A patentée never voluntarily ceases to take money for his licenses. Don't be in a hurry. Your money in your own pocket makes you the master of the one who seeks it. Your money in his pocket makes him your master to that extent.

One of the most outrageous examples of the damage photographers have suffered by being in a hurry to throw their money away on well puffed and trumpeted foreign inventors, may be found in the numerous carbon licensees, who were mulcted at least in four

times the real value of what they learned, and yet it all looked beautifully plausible under the hands of L. Lambert, and the glib tongue of T. S. Lambert. Yet nine out of ten have never used the process in their business, and their money is absolutely wasted.

Here, owing partly to my own strenuous efforts and one or two associates, it cost us only about thirty-five dollars each, by forming a mutual combination, and determining not to buy except in a body. By waiting still longer it would have been better. Who will say that this is not sensible? And I throw this out as a hint to photographers all over the country. Every new process looks well on paper at first sight. Now make this a motto: Any one who has a valid patented process, and is afraid to practically demonstrate it or allow you to try it thoroughly before purchasing, has not much faith in its merits.

In conclusion, let me repeat, that I have taken up this fight against process *extortioners*, not against legitimate inventors, and shall continue it until the tribe becomes extinct. Who will join in this crusade?

COLLOTYPIC PRINTING.*

BY THOMAS BOLAS, ESQ., F. C. S.

THE bare principles of collotypic printing are as follows: A plate of glass or metal is coated with a uniform layer of bichromated gelatin, and this is exposed to light under a negative. Certain parts become insoluble by the action of light, others remain soluble and capable of absorbing water. The plate is damped, and a roller, charged with fatty ink, is passed over it. Those parts which received the water refuse the ink; and a piece of paper being laid on and pressure applied, the ink sets off on the paper, forming a print. But more than this is true, as we have an infinite number of grades between the two extremes of water-taking parts and of ink-taking parts; those parts which had a slight exposure to light being capable of receiving both ink and

water, the proportion in which each is received depending on the extent to which the parts has been acted on by light.

The first step in preparing the collotypic plate is to take two pieces of plate glass, such as I have here, to put some water and flour emery on one of them, then to grind them together until the rubbing surfaces are uniformly depolished. When the plates have been sufficiently ground, they must be well rinsed, and reared up against a shelf to dry. The next thing is to prepare a mixture of seven parts of albumen, three parts of commercial water-glass solution, and ten parts water. This mixture being made, it is churned to a froth by an American egg-beater. Now pour this froth on a paper filter, and as it breaks up it runs through. This solution is now ready to pour on the plates, and you see that it runs easily over. Now let it drain off at one corner, and allow the plate to dry in an inclined position. When dry, the plate is well rinsed in water, in order to remove all soluble matter, and is again reared up to dry. In this state the plate is covered with an extremely thin whitish film, which causes adhesion between the plate and the gelatin coating which is next applied. The sensitive gelatinous mixture is prepared by dissolving six parts of gelatin in forty-eight parts of water, and adding one part of ammonium bichromate and forty-eight parts of alcohol. The mixture is then strained through fine muslin, and is ready for use.

Here is a metal hot plate, made double, and in the interspace water is kept boiling. Three levelling screws support one of the prepared glass plates, about an inch from the surface of the metal hot plate. The glass plate usually reaches a temperature of about 50° C. under these circumstances, and when this is the case, and the plate is quite level, all is ready for coating it with the sensitive gelatin. I now pour on the middle of the plate as much of the sensitive mixture as it will conveniently hold, and see that it runs well over the plate, even up to the corners. I now lift up the plate quickly, drain off the excess of gelatinous mixture, give the plate a rocking motion, and put it back on the levelling-screws in its old position. In about ten minutes it will be dry and ready for

* Condensed for the use of our readers interested in this sort of printing, from a lecture delivered before the Society of Arts, London,

exposure in the printing-frame, and this exposure is about equal to that which would be required to make a silver print from the same negative; but a plate which has been dried quickly requires a longer exposure than one which has been dried slowly. Now print.

After having printed the plate under the negative, the next step is to soak the plate in cold water, in order to remove the free bichromate; and during this soaking the image becomes much fainter. During this soaking in water another change, and a remarkable one, takes place; all the exposed parts of the plate become puckered up into a multitude of little folds, which wind about in a very peculiar manner. These folds may be traced almost all over the picture, their depth being greatest on those parts which have been most exposed—at least up to a certain limit, beyond which increased exposure tends to destroy the folds. The pitch of these folds may vary from about fifty to three hundred to a linear inch, and this pitch varies according to the treatment of the plate, the kind of gelatin used, the condition of the bichromate, the length of time which the sensitive mixture is kept before use, the rapidity of drying, and other circumstances. This puckering, reticulation, or grain has much to do with the printing qualities of the plate, one with a cross grain being easier to print from than one with a fine grain, but the results are, in general, not so good. When the plate has been soaked in water sufficiently long to remove the excess of bichromate and to develop the grain, it is taken out and allowed to dry spontaneously. The dry plate may then be kept without injury for several days, or weeks, or even months. It should be kept in a dry cool room, and, as a rule, ought not to be put away in a brightly lighted place.

We now pass on to the inking of the plate and its treatment in the press. Before use the plate should be soaked in water, in order to saturate the soluble portions of the gelatin with this fluid, and generally five or ten minutes is sufficient for this purpose. It is usual to employ the ordinary lithographic roller, and ordinary lithographic inks, for collotypic printing, and when a lithogra-

phic roller is in really first-rate condition it answers admirably; but a new lithographic roller can only be got into a sufficiently good condition by daily exercise for about a month, and the least carelessness, the drying of ink on it, or a cessation of work for a few days, will degrade it from the state of a roller suitable for collotypic work to that of any ordinary roller suitable for lithography.

Here is a form of roller which I have devised, and have found to answer admirably, as it is always ready for use. It consists of an outer cylinder of red india-rubber, made smooth on the outside by means of fine glass paper; inside this is a thickness of about three-quarters of an inch of ordinary typographic roller composition (glue and treacle), and inside all a wooden core, provided with handles. To make this kind of roller, I put the india-rubber cylinder inside this brass mould, place the core in position, and pour in a little of this glue and treacle composition—just enough to seal the joint at the bottom—and when this has set I will fill the space with the glue and treacle mixture. When a roller of this kind is done with, the ink can be cleaned off by means of a rag moistened with a little oil of turpentine, care being taken not to use too much. The roller is then ready to be put away, and can be brought into use again at a moment's notice.

The labor of mixing stiff inks and colors, and of getting an even film on the inking slab, is considerable; but I have found that the following plan obviates all difficulty on this score. The ink is mixed up with oil of turpentine to the consistency of cream, and the color may be modified by the addition of the artists' oil colors which are sold in tubes. In this way a thorough mixing of the colors is insured, and when it is intended to use a portion, a piece of muslin is tied over the mouth of the bottle containing the color, the bottle is then inverted, and the muslin-covered neck is rubbed over the inking slab. The ink thus filtered out is spread evenly by means of an ordinary typographic ink roller, and is then allowed to remain a few minutes, in order that the turpentine may evaporate. Thus is obtained a layer of ink, free from lumps, well mixed, and evenly

spread. The collotypic plate, being now taken from the water, is laid on the bed of the press, this having been previously covered with a sheet of white paper, and is generally wiped with a soft piece of muslin. The inking roller, being charged with ink from the slab, is gently rolled backward and forward, as I am now rolling, it being borne in mind that a slow rolling with heavy pressure tends to put much ink on the plate, and quick rolling with light pressure tends to take off an excess of ink. It is advisable to be provided with two inks, one rather thinner than the other, as the half-tones sometimes require a thin ink to bring them fairly out. To make this thin ink, a little of the very fluid lithographic varnish (known as tint varnish or S. H. varnish), is added to the mixture of turpentine and ink.

The plate having been inked, and the paper laid on, a moist sponge is passed over the back of it. I then put on a few thicknesses of blotting-paper and a sheet of india-rubber an eighth of an inch thick, shut down the tympan, and pass through the press. Here, then, is the result.

Any kind of paper may be used for collotypic printing, but if it be desired to imitate silver prints, a thin and rather soft enamel paper must be used, and the prints must be varnished with a varnish prepared by dissolving two parts of white shellac and one part of mastic in a convenient quantity of methylated spirit. The strength of the solution will depend on the effect required, and it is scarcely necessary to say that the varnish must not be allowed to chill. Here is a print; I will varnish one half of it, and when dry, you can compare the two sides.

The process which I have demonstrated to you is practically that of Professor Husnik, as set forth in his invaluable work on the subject, and if I were to give you the leading features of the various collotypic processes, I should occupy several hours in doing it. The characteristic feature of the Albertype process consists in covering the glass plate with a film composed of gelatin, albumen, and potassium bichromate, and exposing this to light through the plate of glass, so as to make that part in immediate contact with the glass insoluble,

washing off the soluble portion in warm water, so as to leave a very thin film of insoluble gelatin, capable of serving as a bond between the glass and the actual printing film, which is now applied.

FRIENDS IN COUNCIL.

II.

(Continued from page 27.)

ON arriving at our rooms at the next meeting, I found about half a dozen in attitudes of easy abandon, carelessly discussing the latest photographic matters of news and incident. After the first greeting, one pointed to the *Philadelphia Photographer* on the table, and said, "We see you are going to report us, spoil all the freedom of our social talks by intruding the idea constantly, that

'A chief's among us taking notes,
And faith he'll prent 'em.'"

"Oh, no," said I; "no such feeling is necessary, for in the first place I have neither time, space, nor inclination to report the hundredth part of what we say here, for as you all know, we talk a 'heap.' What I do report will generally be what you will all consider the least consequence of anything said. And to avoid all constraint of *fearing* to be reported or *wishing* to be reported (and one is as bad as the other in preventing all natural and spontaneous expression), I shall avoid everything personal, and give no names of speakers or spoken of; I shall report only ideas, opinions, facts, all impersonal, and all such as I think have some general interest."

"That simplifies matters greatly," said the first speaker, "for we talk pretty freely here at times, and handle some great reputations and sacred names (photographic) a little roughly, but it would never do to say it openly, and the fear of it would put a damper on us all."

"Yes, yes," chimed in another; "go ahead on that line, old fellow, if it takes all summer. 'Say what you please; you can't turn our stomachs,' as the boy said at the blessing before dinner."

"Yes," said another, "write away, my boy; it pleases you, and it wont hurt us. All

this eternal write, write, for the journals neither does harm nor good to anybody but the publishers; but you always write so grave and serious. Why don't you write funny like the "Synonymous" fellow in the January number; something jolly, to wake the fellows up, and make 'em laugh."

"Funny, you say," broke in another; "pun-ny I should call it; one string of puns from beginning to end. They say any man who will deliberately make a pun, will commit murder on slight provocation; if that is so, what desperate slaughter this fellow must be capable of if aggravated. All puns are atrocious, but some of his are very good though," chuckling at the recollection. "Who is he, any how?"

"Some photographic swell, probably," said another, "who likes to have his fun without compromising his dignity."

"I should say," broke in a third, "it was the same pun-ny brain that furnished the capital stock, when 'the good woman and her-son' were flourishing like a green bay tree in photographic pride. They have been corked up a long time, and naturally there is an accumulation of effervescence."

"The same as then, you say," queried another; "who was it then?" "Then or now, 'who cares a Kurtz,'" said the last speaker; "if the fun is good, laugh at it, and ask no questions. I am going home; good night."

Your faithful reporter,

E. K. HOUGH,

New York.

HOW CARBON DIPLOMAS ARE "AWARDED."

ON account of our miserable mail arrangements, this is the first opportunity I have had for some considerable time to communicate with you; and if you will permit me through the columns of your widely circulated journal to say a few words, I shall feel greatly obliged.

Your correspondent in the January number of the *Philadelphia Photographer*, in his defence of carbon, thinks that my letter, in connection with one from Cincinnati (published in a previous number of the above journal), to quote his own words, "*is calcu-*

lated to discourage photographers in practicing, or trying to, one of the greatest and most useful improvements in photography."

Your correspondent is certainly mistaken in the way he interprets the meaning of my letter. I can assure him that I would be one of the last men that would attempt to throw discouragement in the way of anything that would really advance or improve the photographic art; but there is one *art* that I would and shall do my very best to discourage, and that is the *art of wholesale cheating*; and I shall do all in my power to prevent any of the fraternity from being cheated or duped into paying an outrageous price for the *exclusive right* to work a process that has long since become public property; a right that the venders thereof cannot nor will not try to protect; and if my own experience will tend to prevent others from being sold in the same way, why the fraternity shall have it as long as there is a journal (willing to publish) whose sole aim is to protect photographers, or raise a warning cry to those no better *posted* than I was.

Your correspondent does not see how I can get out of paying the balance for that *carbon* business; well, I *do* see, but perhaps in a different *light*, and, before a great while, hope to be in a *position* to show him a *positive proof*. That Cooper had "exclusive rights" (or whatever he pleases to call them) to sell, I know to my cost; where and how, and of whom he purchased them, I cannot tell. The question I have to deal with is, as to how the so-called exclusive right is to be protected *to me*, or how do Cooper & Co. intend to protect said right from usurpation. Any person or persons who choose can come right here and work the process under my very eyes; what can I do to prevent them? Apply to Cooper & Co.? Bosh! What can *they* do? They say: "Oh, we won't supply the special materials to them." This last I consider the essence of effrontery and impudence; for, be it known, that to-day I can get the materials from several different sources, notwithstanding their boasted control of the whole market.

To sum up the whole matter, I want to see my rights protected by legal, material guarantee from all and every intrusion; and until this is done, I refuse to pay the money.

That there is wilful fraud upon the face of the whole transaction, I am prepared to prove, and will do so to the best of my ability.

I have again to point out another mistake your correspondent has made. I did not say I received a diploma from the "American Carbon Society." I take it that the American Carbon Society differ as much from the *Society of Carbon Process-peddlers* as a fine oil painting does from an illustrated circus bill.

I certainly ought to have stated that the names of Cooper and Lambert, two of the Artotype Company, as treasurer and secretary, were attached to the *D—ploma*, but omitted to say so; at any rate, I was led to believe during my negotiations about this process, that Lambert, Cooper & Co. were the *Alpha* and *Omega* of carbon, not only in New York, but everywhere this side of the Atlantic. What I wonder at now is that they did not claim Europe as well. I understood that the headquarters for their *carboniferous* orgies was located in that city, hence my terming them the "New York Carbon Society." I am sorry that the term so applied has tended to mislead a man so intelligent as your correspondent.

I send you a photographic *fac-simile* of the

place it before your readers, so that no one else will be mistaken with regard to it?

I have been long enough at photography to know that having the right to work carbon will not make a carbon print, as well as your correspondent, and to prove that the experience has not cost me anything, I would inform him that I have not yet tried to make a carbon picture, or attempted it in any way. One thing I hope he will credit me with at least, is the saving of what little *brains* I do possess.

My remarks about the difficulty and cost of working carbon against silver, were based upon information received from most reliable authority; one, in particular, with whom I have the honor of being personally acquainted, living in Boston, and who has spent the greater part of a long life in photography, and is still at it, "and long may he be spared to be as useful as he always has been," and whom the majority of the readers of your journal well know; from him it was I derived my information with regard to the progress of carbon in the New England States. I did not write with the intention of discouraging improvement of any kind; on the contrary, let improvement of every kind go ahead, but in mercy sake, let us have



questionable document "awarded" me gratuitously for pictures I never made, and if not too much trouble to reproduce, will you kindly call photo-engraving to your aid, and

no *sweet-mouthed* swindlers, process-sharps, or peddlers.

A few more words, and I am done. Your correspondent says he could mention the

names of ladies in Boston who are making good carbon work; and why not, pray? Why not ladies do as well, or better, than men? What right have we to even hint, suppose, or infer, that ladies are inferior in brains to the so-called lords of creation? Take care, my friend; put off your shoes; be careful; you are stepping upon holy ground. Remember the motto "*Be gent(i)le unto all.*"

S. H. PARSONS,
St. John's, Newfoundland.

This solution will never turn brown, and will keep paper for two or three days in hot weather. Fume not more than ten minutes. With this bath you get brilliant prints, and no albumen comes off in the silver.

[NOTE.—In the negative bath it is absolutely necessary that the bath should be iodized to saturation. There will be no danger of pinholes or other imperfections. The negatives look a little fogged by gray deposit, but are perfectly clear on varnishing.]

TO MAKE A NEGATIVE BATH

THAT WILL WORK IN ONE-THIRD THE USUAL TIME.*

BY E. P. LIBBY.

TO 96 ounces of pure water add 8 ounces of nitrate of silver, 40 grains of iodide of potassium, and 288 grains of nitrate of baryta. Shake until the whole is dissolved. Now filter thoroughly through two thicknesses of filter-paper; filter several times until the milkiness has all disappeared, then make sufficiently acid with C. P. nitric acid. Any good developer will do, but I make mine in this way:

Pure Crystals of Iron,	. 10 ounces.
Granulated White Sugar,	. 6 "
Water,	. . . . 32 "
Acetic Acid,	. . . . 3 "

Of this stock solution take 3 ounces, and add 12 ounces of water, and 1 ounce of acetic acid.

I have been able to make pictures of infants in one second, that were full-timed negatives, and averaged sittings in from three to six seconds.

The above formula is one that I gleaned from the London *Photographic News*, and does away with all windows in the camera.

SILVER SOLUTION FOR ALBUMEN PAPER.

Water,	. . . . 48 ounces.
Silver,	. . . . 4 "
Alcohol,	. . . . 4 to 6 "

Alum, a lump as large as a hen's egg.

Break the alum in several pieces, and place in the filter, and keep it there; or, better still, in the bottle containing the silver.

WRINKLES AND DODGES.

A FEW HINTS.

THE following may be old to some, yet new to a great many; at any rate, they ought not to be overlooked.

Always keep the bath covered when not in use; there are always small particles of dust flying in the air. A particle at a time, of foreign matter, soon spoils a good bath. You may say, "A good operator will not be so careless;" I know one who is considered first-class, yet he never covers his bath; hence, after working a few days, he is troubled with pinholes in his negatives, and must spend some time in getting it in order again. Be careful, and save time.

Sometimes my burnisher scratches a little; I am in a great hurry, and have no time to stop and polish it. I have a piece of crayon-paper folded to the thickness of a card; when the scratches appear, I run the paper through the burnisher a few times, and the scratches are gone. It seldom fails; I rarely have to polish my burnisher.

A GOOD WAY TO SAVE THE PLATE-HOLDER AND SILVER DRIPS AT THE SAME TIME.

Cut a filter-paper or a sheet of blotting-paper into pieces about an inch square; place them in a box near the shield; place a piece of this paper in each of the lower corners of the kit, and after the plate is well drained, place it in the kit as usual, letting the lower corners rest on the paper, which absorbs the drips and saves the silver and kit at the same time.

After having used the lightning process for several months I have at last thrown it aside. I have the common formula for negative bath, make my own collodion, and use

* By request of several readers of the Philadelphia Photographer and Mosaics, we reprint this article from the Photographic Mosaics of 1875.—Ed. P. P.

iron developer. I will challenge any one to make a baby's picture with more ease than I. For adults, in winter, my exposure is from four to eight seconds; in summer, from two to four seconds. I use no redeveloper or intensifier, and yet I get good, strong negatives; better than I ever got with Lambert's lightning. The secret is, I think, everything fresh, clean, and at the proper temperature. Having the bath and developer at the proper temperature is the one great thing so much overlooked by our fraternity. It will not do to neglect this, if we would at all times work the same. One who does neglect it can never depend upon his bath, but works in the dark, as it were.

G. B. W.

SILVERING PAPER.

It is a more difficult matter to do this *right* than almost any other one thing connected with our art. Many ways have been suggested to prepare the paper for the silver bath. Some say, rub briskly with a tuft of cotton; others place the paper in a tight box, in which a tray of water is placed, and let stay over night, etc. But the best and easiest plan that I have found is, early in the morning, while your silver is filtering, hang the amount of paper you wish for the day's printing outdoors in the *shade*, each sheet separate; and by the time it has hung there from twenty to thirty minutes, you will find that it has absorbed dampness from the atmosphere to make it limpid enough to take nicely to the silver; or, if you are *sure* of the morrow being a good day for printing, silver paper the night before, and a few moment's previous hanging in the air outdoors will be sufficient to dampen enough to silver nicely.

Some one try this, and report.

I am using a developer I like so well that I would like to give it to the fraternity. There is nothing new about it (having got my ideas from the *Philadelphia Photographer*), only in the preparation. I believe it will work as quick as any. I use

Alum,	. . . .	1 pound.
Sulphate of Iron,	. . . .	1 "
Water,	. . . .	1 gallon.

Heat the water hot, and pour it on the

alum and iron; add gum camphor in excess; acetic acid, but a small quantity. I use now one to sixteen ounces. It works quick and clean, and negatives hardly ever require strengthening. I boil my water in a granite-ware wash-dish, and I think it superior to porcelain-ware for any gallery purpose. With this developer and a bath made of fused silver, or half fused silver, and any good collodion, negatives and positives can be made as quickly as necessary. Photographers, try it.

I inclose a hastily made "idea" for an eye-rest, to be 8 x 10. I find it works first-rate.

[This consists of a disk, around the outer edge of which is a line of portraits of persons of various ages and sexes, with a clock dial and hands in the centre, and the words, "My Grandfather's Clock" painted thereon.—ED. P. P.]

Would it be asking too much to ask you to reprint the "Quick Process," published in *Mosaics* for 1875, and spoken of in *Mosaics* for 1879?

CHAS. A. KELLEY,
Lapeer City, Mich.

[See page 105.—ED. P. P.]

A SPLENDID RETOUCHING PENCIL (AND NOT PATENTED EITHER).

Go to a printing office and get a piece of type-metal, such as they use to space with; it is about one-sixteenth of an inch thick, three-fourths wide, and four or five inches long; cut off strips of this, sharpen nicely, and try it, and you will not pay forty or fifty cents apiece for points no better.

Spring will be here ere long, and you will want to do some stereo. work outdoors. Procure a good willow basket, say two feet long, twelve or fourteen inches wide, and twelve or fourteen inches high (you can have it *made* to suit at a willow-ware factory); cover it outside with three thicknesses of buff calico; have a sheet of the same made three thicknesses and ten feet square; make a couple of wire-bows, and use them in each end like wagon-bows; spread your sheet over this, and you have a splendid dark-tent, one that you can *carry* all your outfit in and be light and handy. I have one that I have

used for several years, and would not exchange it for anything else. J. W. H.

GREENCASTLE, IND.

SENSITIZING PORCELAIN PLATES.

On page 296 of the *Philadelphia Photographer* for October, 1878, will be found a process for making porcelain pictures, which, in my hands, has worked very well, although I found some difficulty at first in flowing the plates evenly with silver, according to the direction given, so I resorted to a change, which I think much easier to accomplish successfully, and avoid waste of silver and smeared fingers. Instead of flowing the silver on, I used a small tray, into which I put the silver, and then immersed the plate evenly and let remain the required three minutes. I think persons trying this will readily discover how much easier it is to cover the plate nicely. G. M. BRETZ.

GERMAN CORRESPONDENCE.

Gelatin Emulsion Plates and their Sensitiveness—The Artotype Process—A New Rapid Aplanatic Lens from Steinheil—A Novelty in Portraiture—On the Action of Dyes in Bromide Films.

THE topic of the day is now the gelatin plate, and in fact the first samples of such gelatin plates which were sent here by Wratten & Wainwright showed such a wonderful sensitiveness that they were sure to attract the attention of everybody. Who dreamed a short year ago of a sensitiveness ten, yes, twenty times more energetic than that of wet plates? and the more or less doubtful processes, such as the lightning process, or the theories of Boissonas, Klary, and Richard, appear to be very inefficient in comparison to it, and will, no doubt, be very soon forgotten. And how simple and easy is the handling of the gelatin plate; so simple in fact that with a very little experience satisfactory results may be reached. The extreme sensitiveness of these plates (which is affected not only by lamplight but by moonlight even, so that a photographer in Liverpool actually copied a picture on a gelatin plate in the light of the full moon in a minute), makes it necessary for the dark-room to be made ten times darker than would

be required for wet plates. Even double-red panes only afford partial protection, for the sensitiveness of these plates to red light is such that I succeeded, without coloring the layer, in photographing the whole spectrum of hydrogen, the red light included, in a Geissler tube, and I therefore always develop the plates in the shade of my red lamp. Of course it was at once tried here to prepare the plates, and the result was very satisfactory. It is easy to obtain a sensitiveness twice or three times as susceptible as that with wet plates; and it is a well-known fact that the sensitiveness increases with the ratio of the time of emulsification. It is curious, however, that with strictly equal manipulation, the plates are one time hard and another time soft working. The same fact seems to prevail with the gelatin plates prepared in England, for they also show the like difference in regard to hard and soft working. It may be that the quality of the gelatin is the cause of this occurrence, and it is fully possible that the same may place many obstacles in the way of working this process; everybody who has tried the carbon process knows what an important part the gelatin holds in it. It is interesting that the gelatin after entering with success in the positive process, and holding its own in the carbon process, begins now also to appear successfully in the negative process.

I learn from American journals, that the gelatin process appears there now in quite another role, *i. e.*, as a rival of the printing process. I mean the artotype process, in which the gelatin is not the basis of the picture-forming substance, as in the emulsion and carbon processes, but it is simply the printing-plate, which is enabled through the influence of light to absorb fatty inks, and to pay them out again in printing. Here the gelatin acts as a substitute for the lithographic stone, while it acts in place of the collodion with the emulsion plates, and instead of the film in the carbon process.

When I read in the American papers the enthusiastic comments on the artotype, I was quite surprised and puzzled, for it was obvious at the first glance that it was nothing else but the old and well-known lichtdruck, collotype, or Albertype (or whatever other name it may have received), which has been

brought to its present high degree of perfection in Germany, as everybody knows. I have watched, step by step, its progress, and reported the result of my observations to your friends. I know that the lichtdruck has been perfected in the course of the last ten years to such an extent that pictures can be obtained with it fully as beautiful as silver pictures. I used the same these last six years for the pictures I furnish with my journal, the *Photographische Mittheilungen*, and it is my friend Obernetter who finishes those illustrations which are taken by many to be silver pictures.

We have about thirty or more lichtdruck establishments in Germany, which turn out excellent work, and half of the German photographs in the photographic pavilion, in 1876, were lichtdrucks, or, as they call them now, artotypes. It is queer that then nobody talked about those artotypes, while now all at once such a sensation is raised; and it is worthy of remark, that since then no progress has been made in the process. We here who are, so to speak, at the bottom of the thing, can judge the matter very exactly, and, therefore, once more—wherefore the excitement?

We fully appreciated the excellent results reached with the lichtdruck process long ago, but nevertheless no portrait photographer here would think of introducing the same. If, apart from questioning the fact that the artotype process is old, you put the question plainly, "Is the process good?" I answer, "Yes, the so-called artotype process, or better said, lichtdruck process, of my friend Obernetter, is good, very good!" But there are, as you are aware, many nice things in this world, which are good and even very good, without being however in the least necessary to the portrait photographer. For instance, a steam engine is, no doubt, a very good thing, but it is hardly of any use in taking portraits. The question arises now, is the lichtdruck, or Albortype, or else artotype, necessary for the portrait photographer? and to this I reply, that lichtdruck is very good in cases where the portrait photographer desires to obtain very quickly some hundred prints or more from one plate, but when only some dozen prints are required from one plate, then the lichtdruck is not neces-

sary. These few dozen are obtained much easier with the ordinary silver printing process, or with the carbon process, as the workings of these old and well-known processes is easier than the manipulations of the lichtdruck, which requires, especially in the mechanical printing part, a high degree of skill and practice; and it is owing to this fact that here in Germany, the cradle of the lichtdruck, no portrait photographer uses this process. "But," you will say, "what are all those German lichtdruckers doing?" Well, one makes landscapes and architectural views, the other reproductions of engravings, oil paintings, or illustrations for price-lists, or geographical maps, or pictures of subjects of art, industry—in short, only pictures from which many hundred copies are wanted for a moderate price. Only sometimes it happens that a portrait photographer employs lichtdruck. Schaarwachter here, for instance, has a portrait negative of G. Rose, the celebrated mineralogist; he prints it for sale always in silver. Only upon the death of Gustav Rose, and when the German Society of Chemists ordered twelve hundred copies from the plate, Schaarwachter sent the same to Obernetter to make the copies with lichtdruck therefrom. You will find this lichtdruck portrait in the Report of the German Society of Chemists of the year 1874, of which there are many copies in America. But now Schaarwachter prints the same negative again with the silver process.

On page 61 of your February number it is stated that with the artotype process no vignettes could be made, which is an error. I have myself published vignettes in lichtdruck in my journal as far back as ten years ago; but the permanency of lichtdruck prints depends totally upon the ink. It has often been tried here to add carmine to the lichtdruck ink, in order to impart a warmer tinge to it, but this is a mistake. I have in my possession pictures which showed a rich purple tone when I received them first, and which now, after three months, look quite gray; but these are errors which may be avoided, just as well as in the carbon process.

Certainly, the lichtdruck requires reversed negatives. Obernetter has a very simple

and beautiful process to produce the same, but it requires one operation more; for one thousand prints this may not be taken into account, but it is another thing with a dozen. Furthermore, there can be no doubt that in the hot and dry summer months, the printing from a lichtdruck plate is subject to many more difficulties than in winter. All these drawbacks together were the cause that only a few persons in Germany use the lichtdruck or artotype process, and that the portrait photographers, when desiring for once to have the process applied, send their negative to special "lichtdruckers."

I have stated herewith my candid opinion, and those who have read attentively my letters which I have been writing to the *Philadelphia Photographer* these long years, will remember, perhaps, that I have uttered already on former occasions the same opinions.

In the province of photographic optics, there has appeared a novelty from the factory of the well-known Steinheil in Munich, which gave occasion to much favorable comment. It is the old aplanatic lens in a modified form, which excels in a greater intensity of light and a longer focus. I have examined one of these new lenses, and must confess that in comparison with the old aplanatic lens, it shows a very material progress. It has one and three-quarter times more intensity of light than the latter, so that one can work quicker with it than with the Rapid Rectilinear and the Euryscope; the large field (seventy degrees) allows a wider angle, which makes the instrument adapted to the taking of groups, and Steinheil names it therefore "Gruppen Aplanat." The curvature of the field is very small. With smaller stops, I obtained in an instrument which was analogous to the old aplanatic of fourteen lines, a very clear and exact picture over the whole plate, eight by six inches, to the margin of the field. Curious is the extraordinary thickness of the two lenses which constitute the instrument, as they are almost as thick as they are broad. The front and back lenses are not quite symmetrical, so that a slight distortion appears, which, in landscaping, however, is of no account.

Another curiosity in the portrait branch

has appeared, which might perhaps find favor in America. The inventor of the same is Mr. Ball, who produces photographic silhouettes, in which the profile of the person appears perfectly dark on a white background; and to obtain this result, the person is not lighted at all, while on the contrary, the background, which consists of a sheet of white linen, is placed against the glass side of the atelier, so that it is very strongly lighted. The person is protected from the light by black blinds in front and on both sides. Pose the profile toward the background, and expose only a very short time—one second at the utmost—and a very clear picture of the background will appear upon which the profile of the person stands out in black. For persons with a very marked and sharp profile, the effect is striking.

In the beginning of the year I had the honor to be the subject of a controversy in the *London Times*, in which Captain Abney and Mr. Stillman took part, in regard to the fact observed by me, and confirmed by Captain Waterhouse in Calcutta, and Prof. Becquerel in Paris, namely, that by the addition of certain dye stuffs collodion bromide may be made sensitive to the influence of such rays which otherwise act very little, or not at all, upon it; as, for instance, green, yellow, and red, provided that the dye absorbs those rays. So, for instance, the red rosaniline, which absorbs the yellow-green rays, makes the collodion bromide sensitive to yellow-green rays, and the "aldehyd green," which absorbs the red rays, makes the collodion sensitive to red.

These facts have been the subject of many a controversy, and have very often been misunderstood; as, for instance, by Mr. Stillman, who imputes to me the assertion that green dye stuffs are sensitive to green rays, and red dyes to red rays. Mr. Stillman proves by this that he did not read my writings attentively, or that he did not understand them. I thought, however, that sentences like anilin red sensitizes towards yellow-green rays, aldehyd green towards red rays, were plain enough to be comprehended by a child, and I therefore cannot understand how Mr. Stillman can construe an entirely different meaning out of the

same, and assert that he made his experiments "strictly according to Dr. Vogel's direction." How could he follow my directions so strictly when he so plainly misunderstood me, and that under these circumstances he utterly failed is no wonder. I would advise him to read the matter up again with more attention, instead of imputing false theories to me. From Captain Waterhouse and my papers he will convince himself that we do not count with facts "tortured to testify a theory," but with real, well-established facts, easily observed by anybody who likes to read our papers exactly, and who is in the condition to understand them, and who will also strictly follow our directions.

Misconceptions like the one Mr. Stillman labored under, could not occur at all if there were not so many to whom the phenomena of the optic absorption are totally unknown, as it is of fundamental importance that they are thoroughly understood before the theories of the relations between the chemical effects and the absorption can be comprehended.

Yours truly, DR. H. VOGEL.

BERLIN, March 5th, 1879.

FRENCH CORRESPONDENCE.

Death of Mons. Lacan—Mons. Lamy on Carbon Printing, Actinometre, etc.—February Meeting of the Photographic Society of France—Mons. Chardon and Russian Cotton—Mons. Ferrier on Gelatino-bromide Plates—Remarks by Mons. Davanne, Franck, etc.—Presentation of Proofs by Mons. Maquy—Interesting Communication by Mons. Bardy—Inauguration of Electric Light in Paris.

SINCE my last letter, which spoke of the *Moniteur de la Photographie*, we have to deplore the death of its able and intelligent editor and proprietor, Mons. Ernest Lacan. From the year 1850 he devoted his energies to photographic art and the familiarization of science. By his very amiable and agreeable character, and his continual desire to render service to others, he made a very large circle of friends, and it may be said of him (which is, indeed, rare), he had no enemies. Although his departure for a better world was so sudden, still it could not

be unexpected by his near friends. For a long time he had been a sufferer; last summer he had a cerebral congestion, from which it was thought he would never recover, and, in fact, from which he never did; for since that time he became nervous to excess. I paid him a visit about a fortnight before his death, and was astonished, and, above all, saddened at the change; nevertheless, I did not foresee the so-near approach of the end of his labors. He died on the 18th of January, at the age of fifty years, and was buried in the cemetery of Père Lachaise, on the 20th. An affectionate farewell was taken of him in a very able and pathetic manner, in a touching improvisation, by one of his friends. *Requiescat in pace!*

In a former communication I gave my appreciation upon a new actinometre presented to the Photographic Society of France by Mons. Lamy. I have just received a letter from that gentleman, in which he sends me a report, which he says completes the information I there gave, and contains some new remarks likely to be of service to carbon workers.

"TO PROF. E. STEBBING,

"27 Rue des Apennins, Paris.

"I read yesterday, in the January number of the *Philadelphia Photographer*, the part of your correspondence concerning my actinometre. I regret very much that it was not possible to publish word for word my explanations before the Society. The description and appreciation which you gave I think require to be completed by the following explanations:

"My actinometre does not resemble in any way, neither in principle nor in construction, any other instruments invented for the same object. Its principle reposes upon,

"1. The employment of colored glass, to retard the action of light upon the chlorized paper.

"2. The employment of a special tinted paper, obtained by enamel colors. This tint is exactly the same as is obtained by exposing a piece of chlorized paper to diffused light for ten seconds at midday. This enamel tinted paper is always the same, and serves for every actinometre.

"3. A special sort of paper which preserves its whites and tints always in a regular manner, no matter how old it be.

"Water, 100 parts.
Chlorhydrate of Ammonia, 2 "

When dry, it is sensitized upon the following bath :

"Distilled Water, 100 parts.
Nitrate of Silver, 12 "
Citric Acid, 8 "

Prepare as many sheets as possible upon this new bath, as it is not good when old.

"My actinometres are regulated at noon, in the shade. When the lightest tint of colored glass is employed, it requires fifteen seconds for the chlorized paper to attain the fixed tint; whereas with the darkest color glass I employ, it requires fifty minutes. In consequence, if a negative is marked ten tints, the actinometre No. 10 is employed, and so on. The paper prepared as I have indicated is the best of all that I have tried. I could not employ bichromatized paper, which is yellow, and which in two minutes has arrived at its maximum of coloration, and which then loses its color until it becomes of a yellowish-white; moreover, its decoloration is very difficult to follow under a colored glass.

"In order to obtain well exposed carbon proofs, my experience has taught me as follows :

"1. That carbon paper taken from the same sample, and sensitized on the bichromate bath of the same strength, and employed before twelve hours have expired after drying, will be impressed in a regular and selfsame manner, if the thermometer indicates a temperature from 54° to 73° Fahrenheit.

"2. A considerable change takes place if the temperature descends lower than 54° Fahrenheit. To remedy this it is necessary to expose

One-fifth more for a temperature from 52° to 44°.
One-fourth " " " 43° to 41°.
One-third " " " 39° to 36°.
One-half " " " 35° to 33°.
Two-thirds " " " 27° to 25°.

"3. The bichromated gelatin becomes harder, that is to say, less soluble, the longer it be kept after being sensitized. This

hardening of the bichromatized gelatin has led many to suppose that the action of the light continues even in the dark-room. Such is not the case.

"Whether the carbon paper has been sensitized a few days—exposed even a few days or a few minutes ago—or whether it has been allowed to wait between the impression and the transfer, or between the transfer and the development, in either case it requires warm water to develop, so much the hotter as there has been more time elapsed since its sensibilization, that the air is warmer or damper, or the time elapsed between its exposure to light and its transfer and development. In consequence, by raising the temperature of the developing water, under these conditions, to the proper point, the proper density can always be obtained by printing with the same tint of the actinometre. But if a piece of carbon paper which had been sensitized a few days before be developed in water of the same temperature (which acts very well upon newly-prepared paper), the development of the old goes slowly, and the operator can think it is finished when it is only partly so, and the print it gives is heavy and of no value. It is possible to obtain the same results without raising the temperature of the water, by adding a feeble quantity of liquid ammonia to the developing water, when the paper has not been prepared the same day.

"The information which I have here given, and which was only known to myself, is with the object not to complicate my actinometre with another instrument, such as the "Graduateur des Rapports" of Mons. Léon Vidal.

"If the variations caused by a temperature under 54° Fahr., and the cause of the partial insolubilization of the gelatin, and other details which I have here given, had been known, no instrument of that kind would have been required.

"Yours, etc., LAMY."

Last evening, the Photographic Society of France held its monthly meeting, Mr. Peligot in the chair.

Mons. Chardon made a communication on the sample of Russian cotton which had been confided to him for trial. It appears

that he treated it at 176° Fahr., and that twenty-six grammes produced only fourteen grammes of pyroxylin. The chemical agents penetrated rapidly into the pores of the cotton, but the results proved that it was too soluble in water. Another trial was proposed, with a lesser degree of temperature.

Mons. Ferrier presented a negative and some glass positives, made by the gelatino-bromide process.

Mons. Davanne then informed the Society that he had experimented with some plates made by me, which gave remarkable rapidity. The weather was very dull, and for wet collodion he would have been compelled to have exposed thirty seconds, whereas the gelatin plate required only the half; but no great density could be obtained. Mons. Franck de Villechore remarked that in the plates developed before him, great density was obtained. Mons. Liebert had tried the same plates, and had obtained good negatives in seven seconds, when at the same time he was obliged to expose his customers thirty seconds with the ordinary bath, etc.

Mons. Maquy presented some very fine landscapes, made with collodio-bromide emulsions according to the formula of Mons. Chardon.

A very interesting communication, with demonstration, was made by Mons. Bardy, on the means to detect fraud in glacial acetic acid.

Now, as this communication is certain to render service to photographers, I will enter, first of all, into an explanation.

Pure acetic acid is very dear; at the same time, difficult to obtain. The commercial glacial acetic acid is generally diluted with water; sometimes sulphurous acid is added, in order that it should solidify more readily in cold weather, and thus deceive the public as to its real strength; sometimes it contains a slight trace of hydrochloric acid. But Mons. Bardy told us, last night, that it contained formic acid, and a product called 'furfural;' that he had experimented upon specimens bought of almost all the principal druggists of Paris, and that all contained, more or less, the products of which he had spoken.

1. If acid is supposed to be diluted with water, to detect it proceed as follows:

Pour a little into a test-tube, and add the same quantity of spirits of turpentine, and even a little more. If the solution becomes milky, the acetic acid has been diluted.

2. If the acid is supposed to contain sulphurous or hydrochloric acids, to detect them proceed as follows:

Pour a little of the acid into a test-tube, and add a few drops of a two per cent. solution of silver nitrate. A white deposit will be obtained; this deposit is either chloride or sulphite of silver. To know which of the two it is, drop the precipitate into nitric acid. If it dissolves, it is sulphite of silver.

3. If the acetic acid contains formic acid, which would very soon destroy the silver bath, it can be detected as follows:

Pour a little of the acid into a test-tube; add a little of a two per cent. solution of silver nitrate. If formic acid be present, in boiling it a little over a Bunsen burner the solution will become black.

4. If it contains the product called "furfural," it can be detected in the following manner:

Pour a little into a test-tube, and add one drop of anilin; immediately the solution will turn to a bright red, and so on deeper and deeper in color in proportion to the quantity of furfural contained in the liquid.

The furfural can be eliminated by distilling the acetic acid on chromic acid.

Mons. Liebert, the well-known photographer, inaugurated, on the 6th instant, his new studios adapted for portraiture by the electric light. The card of invitation itself was not in the usual form, being issued in the name of his baby son, and excited curiosity.

From 10 o'clock in the evening until 7 in the morning, the photographic palace of the Rue de Londres was inundated with electric light. The first part of the *soiree* was dedicated to musical and dramatical entertainments, among which may be cited *une grande symphonie burlesque et triomphale*; music and words composed for the occasion, all in honor of photography and electricity. The second part of the *soiree* was taken up by the ball. At 1 o'clock the *salons* were lighted up by the electric light, amid the applause of the Society. At this moment, quite a fairy scene was produced; the gas

and wax tapers flickered and paled before the resplendent light obtained. The ladies, in their multicolored garments, appeared to have suddenly changed their attire, and the reflection of the electric light by their diamonds added more lustre to the scene. The portrait of a young lady was now taken in a few seconds, giving a positive and palpable proof that photographers are not, at present, absolutely tributary to the orb of day.

The system employed by Mons. Liebert is that of Van der Weyde, but considerably improved. A hollow hemisphere in copper, of about two yards in diameter, is suspended from the ceiling by means of pulleys, and can be placed at any angle required; the cavity naturally faces the person to be photographed. A large-size kettle-drum will give a good idea of this instrument. Two carbon points are so placed that the one coming from the top, which is fixed, and the other from the bottom, may meet in the centre of the apparatus when the latter is pushed up to form the electric spark. In order not to fatigue the eye of the sitter, as well as to obtain more harmony, depth of shadow, etc., a small saucer is interposed between the spark and the sitter. This saucer acts as a reflector, and projects the rays of light towards the interior of the hemisphere (kettle-drum), which, being covered with white paper or paint, reflects them towards the model, so that these rays of light, dispersed, divided, and reflected, inundate the person whose image is to be reproduced with a soft, brilliant light, not at all fatiguing to the eye. A collection of proofs were exposed, made by the electric light, quite equal, if not superior, to those made by the aid of the sun. Mons. Liebert employs a four-horse gas-engine, with Gramme's electro-magnetic apparatus, to produce his electric light.

As Mons. Liebert is a gentleman who makes it a point of honor to be always the first in the field to adapt any invention, let us wish him every success with his new undertaking, and that he and his family, as well as little George, may see for many years *le soleil au dedans et la lune au dehors*.

PROF. E. STEBBING.

27 RUE DES APENNINS, PARIS, February 8th, 1879.

OUR PICTURE.

WE have pleasure in introducing a novelty to our readers this month, from negatives made by Messrs. Gilbert & Bacon, whose studios are at No. 40 North Eighth Street, and 820 Arch Street, Philadelphia.

The novelty consists in the peculiar treatment of the negative, called *etching*. The method will be understood from the following extract sent to the *British Journal* some time ago by Messrs. Gilbert & Bacon's artist-operator, Mr. Osborne, viz.:

"In our practice we employ no special collodion, and only the ordinary sandarac varnish is used on all negatives made in this establishment. For etching purposes the varnish should not be too thick, and preference ought to be given to a freshly-prepared plate, though we have worked successfully on old negatives, the varnish containing sufficient oil of lavender to retain its elasticity. After sketching the design lightly on the negative, lay in the lights with crayon, india-ink, or any opaque material, and proceed to etch or scratch away such portions as may be desired, using a coarse needle and firm strokes for the foreground and strong shadows, and a finer point for the more delicate and retiring effects—hatching, cross-hatching, and knitting together, as it were, with irregular markings, and blending into the parts to be left untouched with a delicate stippling process, care being taken to avoid a patchy or wiry appearance. The successful manipulation of the print can only be attained by practice; and, although a careful study of good engravings will materially assist the student, yet an attempt to imitate their character would entail too great an amount of labor, and result only in failure and too harsh a contrast with the texture of the untouched portions of the negative."

Messrs. Gilbert & Bacon do not claim to be the originators of this method. We brought similar examples from Germany five years ago and more; yet they have done much to improve and perfect the results. Moreover, what is of so great assistance in producing such charming pictures, is the elegant photography of these gentlemen, who now stand in the highest rank of American photographers.

We have printed for this magazine from six of their etched negatives, all of one subject—a private lady, whose father is a distinguished editor and publisher in this city—and, therefore, the usual cry, “Oh! *any* one can make such work if they have actresses for subjects,” cannot be raised. No two of the negatives are at all alike.

No. 1. Represents the fair model leaning gracefully upon a balustrade, and the etching is upon the latter, with magical touches here and there upon the background. A real gem.

No. 2. Represents a full figure of the lady catching the crystal drops upon her bouquet from the mouth of a lion at a spring, and is helped by one of Seavey’s best backgrounds, representing the entrance to a villa. The etching is scattered daintily and artistically all through the picture with good effect.

No. 3. Presents the lady ascending a stairway, hat in hand, her opera cloak upon her arm—“the return from the ball;” the background, of course, representing a hall—artistic throughout. The etching is upon the balustrade, and gives pattern to the marble floor. A fine study.

No. 4. Is a sadder picture, and seems to tell of *disappointment*. The same stairway, the same hall, but the lady holding an open letter in her hand, looking down, seems to be grieving that “he cannot come.” The etching is distributed about as in No. 3. A fine composition.

No. 5. Is similar in design, but the stairway is more shown, and the figure posed with great effect. The etching here is done with remarkable care, giving the woodwork the appearance of rich antique carving. It is fine.

No. 6. Is entirely different from all the others. The figure is three-fourths, the lady dressed in summer walking costume, standing by an antique pedestal and vase of flowers, the *whole* of the accessories having been etched in the negative by the wizard hand and touch of the artist.

It takes a true artist to produce such pictures. So much the better. We shall then have none but good ones. Many will try their hand at it, and we recommend the study of all of these examples. Seavey’s inimitable backgrounds are used in all.

Messrs. Gilbert & Bacon have won themselves great fame by their portraits of “publics,” *i.e.*, actors, actresses, etc., a large number of whom they have taken. Among the later “etchings” and portraits, as studies, we recommend those of Helen Houghton, Annie Pixley, Katie Forsyth, Marie Roze, Maude Branscombe, and the members of the various “Pinafore” companies. The wholesale and retail agents of Messrs. Gilbert & Bacon are Messrs. Wilson, Hood & Co., 825 Arch Street, Philadelphia, who keep a fine assortment on hand.

If we could each month place such exquisite examples of work as these before our readers, we think photography would be greatly advanced among them.

We can do it partially at least, for we have now in preparation pictures from negatives by Messrs. Mora, Landy, Elton, Bradley & Rulofson, and others, which will be well worthy of your study.

THE THEORY OF PHOTOGRAPHY.

BY HENRY M. M’INTIRE, M. E.

(Continued from page 81.)

THE negative having been obtained, the next step is to produce positives from it. The fact long known to man, that nitrate of silver in the presence of organic matter, darkens in sunlight, is utilized for this purpose. In darkening, it is probably reduced to a subnitrate, but why it should be reduced, and why in the presence of organic matter, is a question that will not be proposed here, because its answer would lead so far into the fields of theoretical chemistry that we might find ourselves more in shadow than before we entered those holy domains. The fact is certain, that the nitrate does darken when exposed to the sun, and it is also true that this fact is utilized in obtaining positive prints. The paper is first albumenized, because it gives a fine, smooth finish to it, and allows it at least to work as fast as the plain paper. When this is floated upon a nitrate of silver bath, albuminate of silver is formed; but as there is also free nitrate of silver present, and as it is a so much simpler salt, and as the reactions are similar, we will consider it as nitrate of silver, in the pres-

ence of organic matter—albumen. A piece of paper is then taken, with a coating of albumen, and coated with nitrate of silver and allowed to dry. If now this is used to print with, it would be found that the reaction would be retarded by the nitric acid that would be set free (nitric acid being liberated before). Something is evidently needed to seize upon the escaping nitric acid, and by uniting with it prevent it from doing any damage. This “consummation devoutly to be wished” is obtained by the “fuming,” when the sensitized papers are hung up in a box and subjected to the fumes of ammonia. Those fumes, acting upon the nitrate of silver on the paper, forms with it ammonio-nitrate of silver. So then when the paper is placed under the negative, and the light acts upon it, and in acting upon it disengages nitric acid, this nitric acid instead of escaping, instead of retarding the action of the light, seizes upon the ammonia, forms nitrate of ammonia, and then as a retarding agent its work is at an end. The sensitized paper having been exposed for a sufficient time is, as every one knows, taken from the printing-frame and washed in water; washed so as to remove the free nitrate of silver; after being washed in several changes of water it is transferred to the toning bath.

A solution of chloride of gold. What can this do? Gold is what might be called an ascetic metal; it likes to live alone. In other words, it is easily reduced from its salts to the metallic state. So when this sheet of paper, covered all over with silver salts, is brought into a solution of chloride of gold, the silver, having a great attraction naturally for chlorine, and the gold parting willingly with its chlorine, it is no more than can be expected to find the chlorine leaving the gold and uniting with the silver, forming, of course, chloride of silver—the dark subchloride, when the silver has been reduced to the subchloride by the action of the light, and the white chloride when the silver is unaltered, and then the gold, having lost that which held it in solution, has nothing to do but come down as a precipitate of metallic gold, and so metallic gold is deposited upon the picture. It is noticed that

the toning bath has a lowering effect upon the picture; and also that if it be alkaline, this effect is reduced to a great extent, so for this reason alkaline toning baths are often used. There can, however, be three kinds of toning baths evidently: acid, neutral, and alkaline. An acid solution will tone brownish, a neutral violet, and an alkaline bluish violet, and probably for these reasons: If we add to a solution of gold chloride (Au_2Cl_6) a solution of caustic soda (Na_2O), we will obtain an oxide of gold, one of sodium and common salt, thus: $\text{Au}_2\text{Cl}_6 + 4\text{Na}_2\text{O} = \text{Au}_2\text{O}_3 + \text{Na}_2\text{O} + 6\text{NaCl}$, but this will not remain so; upon standing we will have the following reaction between the gold and sodium oxide and the salt: $\text{Au}_2\text{O}_3 + \text{Na}_2\text{O} + \text{NaCl} = \text{Au}_2\text{O} + \text{Na}_2\text{O} + \text{NaClO}_2$. Now if hydrochloric acid be added, from the oxide of gold we will obtain the chloride, thus: $\text{Au}_2\text{O} + 2\text{HCl} = \text{Au}_2\text{Cl}_2 + \text{H}_2\text{O}$. Au_2Cl_2 or AuCl , we see, differs from the chloride with which we started out, Au_2Cl_6 or AuCl_3 .

The reaction of the first of these with silver is as follows: $\text{AuCl} + \text{Ag} = \text{AgCl} + \text{Au}$; and of the second as follows: $\text{AuCl}_3 + 3\text{Ag} = 3\text{AgCl} + \text{Au}$.

We may see in the first that for one atom of silver there is but one atom of gold deposited, while for the second, for three atoms of silver there is but one atom of gold thrown down; a much more copious deposit in the first case than in the second—a fair reason for difference in color.

Having now toned the picture, the only chemical process that remains for it is the fixing—an operation that resembles the negative fixing so much that it need not be explained here. In regard to the dry processes, it may be said that the only essential difference between these and the wet consists in there not being any free nitrate of silver upon the plate to unite with the chlorine, bromine, or iodine that will escape, so something else must be used; and this is the chief office of the preservative.

And a word may be added about the theory of the many carbon processes. There is not much theory to them; the only thing is that a mixture of gelatin and some chromate becomes insoluble when exposed to the light. It is easy, then, to see how the parts exposed become insoluble, and the parts

protected remain soluble, and then how the one can be washed away by water, while the other will remain behind.

(To be continued.)

SOCIETY GOSSIP.

THE members of the Boston Photographic Society elected for the ensuing year the following: President, Mr. J. W. Black; Vice-President, Mr. F. C. Low; Treasurer, Mr. E. F. Smith; Secretary, Mr. J. H. Halenbeck.

With Messrs. Bowers, Burnham, and Prescott for the Executive Committee, the members may look for some very interesting and instructive meetings. I understand that several of the most successful workers in the photographic art have already been secured to give lectures, etc., during the coming year. One of the first resolutions adopted at the last meeting, was to place all members who had been dropped for non-payment of dues (many having been out of the business, and others having been out of the city for several years) on the roll of membership, upon the payment of the next year's dues. This will have the effect of bringing back many old members who are now in the city, and the meetings will once more assume their old proportions and interest. B.

USE OF SALYCILIC ACID IN CARBON SENSITIZING SOLUTION.

BY D. BACHRACH, JR.

IN the January number of Anthony's *Bulletin* there appeared an article contributed by me on the above subject. Since then I have had a very good opportunity of confirming my experiments in that direction. My directions were, to use from one grain to perhaps one and a half at most, of salicylic acid to every ounce of the bichromate solution, which latter should be, for most work, about ten grains to the ounce, or about one-third to one-fourth stronger than when used without the acid. The salicylic acid being insoluble in water, must be dissolved in alcohol; which latter must be occasionally added to keep it in solution. This is used by us to prevent the decompo-

sition of the tissue while drying in summer, and prevents all reticulation, while it keeps the sensitized tissue for a long time perfectly soluble. In winter I have used it six weeks after sensitizing. In fact, it overcomes the greatest of all the difficulties with the process in our climate; although, in my opinion, it can never be made practical for commercial use for ordinary photographic printing.

The discovery of this remedy for these difficulties was the result of an exhaustive series of experiments on my part for over a year; it being very desirable for us, as we use it in our establishment for porcelain miniatures, and for positives for producing enlarged negatives; for which purposes we find it unexcelled. Recently we had occasion to sensitize some tissue, and on printing it, about two days thereafter, found it very hard to dissolve, and yet clear. This seemed strange, for on printing a piece sensitized three or four weeks before on the same solution, we found it perfectly good and soluble. On examining the solution, however, I found all the salicylic acid at the bottom in a flocculent form. The addition of an ounce of alcohol, and shaking up, remedied the difficulty, and since then all the tissue has worked perfectly.

Hitherto we had to abandon carbon from May to October almost, but now we have no difficulty. We might add, however, that we never contemplate working it for regular prints, as it involves too much guesswork, unless a man does nothing else, day after day, and thus becomes an adept. That no photographer or printer would care to do, as silver and carbon do not go together very well. Those who reside in small towns, and *do all their own printing*, and can afford to give it the extreme care and attention necessary, will find it easier and more profitable to work than those who do a regular and large business and employ others. The claim that was made, that it only required mere routine mechanical labor, is an absurdity. The care required for silver prints will not begin to suffice for carbon, to say nothing of the fact that it is a great deal more expensive.

For porcelain work, however, and for single transfer on all kinds of surfaces, it answers admirably.

The Autotype Company, and others manufacturing carbon tissue, should incorporate salicylic acid in the tissue in the proportions which I name, and thus save all the trouble to the photographer. It would thus always work uniformly; the acid, being insoluble in water, would not leave the tissue while being sensitized. This step would undoubtedly tend to popularize the application of carbon printing in many directions. There can be no doubt of the conclusiveness of my tests, as any one can determine for themselves. I am generally very sure on technical points before I venture a public assertion.

In conclusion, let me call attention to the fact that the salicylic acid is also excellent for use in the salting solutions for plain and drawing-paper, both for regular and developed prints, by keeping the whites pure in hot weather, and preventing the rapid decomposition of sensitized paper. It should be used one to two grains to the ounce.

RANDOM IMPRESSIONS.

BY E. Z. WEBSTER.

I HAVE often thought, as I perused the well-filled pages of each new *Philadelphia Photographer*, that a few remarks touching the various subjects therein presented might prove acceptable to the majority of its readers. And in accordance with that impulse, I herewith offer the following *Random Impressions*, suggested by the contents of the February and March numbers of this magazine.

About "Which Way?"—I think that no unprejudiced person can possibly accuse E. L. Wilson of any lack of sympathy or unselfish devotion to the best interest of all honest workers in our beautiful art; indeed, there can be no doubt that he has sacrificed more than all the "honest workers" combined in the almost thankless effort to protect them from the jackals and coyotes which haunt their path, ready to pounce upon and devour their substance. Doubtless there are many photographers who do appreciate the service done them, but about the only recompense friend Wilson can surely count upon, will be the consciousness

of having done what he conceived to be his duty; but it is to be hoped that his reward will yet come to him in a more tangible form.

Lichtdruck.—Professor Husnik has given the fraternity what appears to be a very clear and intelligible process for the production of this "last sensation in *picturographing*" (how's that for a newness?) and if the sample picture in this (February) number is the result of that process, it would seem that our friend Carbutt has the "proper stitch," and can show just as good work as the *sm*-artotypers; at least none of the samples which have come under my eye, made by *any one*, can surpass this one by Mr. Carbutt; and yet there is no use in decrying and defaming the silver print for the purpose of shoving an inferior picture upon the public. The various styles of *lichtdruck*, including the artotype (so called)—Phæbus, what a name; how can the thing be expected to live?—and the glue-type, misnamed the carbon picture, are all good in their place, and should each occupy such positions among the heliographic productions as their distinctive peculiarities seem to fit them for. Why can't a glue-typer make glue-types, and glue-type everybody who wants glue-types; and the artotyper make his artotypes; and the lightning-typer make his lightning-types, etc., and let the photographer make his photographs? and not keep up that everlasting howl about *fading*, when they know a photograph that is properly made and cared for, is not only quite as permanent, but is far superior in almost every respect, to any other style of picture, especially for sizes ranging from *carte-de-visite* to four-four, which are the prevailing sizes in all portrait galleries. For commercial, mechanical, and architectural work, and for illustrations, the various forms of *lichtdruck* seem admirably adapted; while the carbon process, in the hands of such men as Rowell, of Boston, can be made to show splendid enlargements.

Waymouth Vignette Papers are certainly getting a large share of advertising, and I suppose friend Hearn feels that a reply to Mr. V.'s foolish attack is necessary "on principle;" but it seems a waste of breath, because the matter in dispute is of microscopic importance. Who cares whether Mr.

V. blows his nose with his left or his right hand? or if Mr. Hearn should happen to do it in the same way, would it be smart to make a fuss about it? The salvation of our art does not depend upon the use of those vignette papers, but doubtless they are a convenience. As for Mr. Hearn, I will cheerfully accord to him the honor of having composed, compiled, and published the most practical, complete, and comprehensive work upon photographic printing that has ever come to my notice, and the fraternity owe him lasting gratitude, and liberal assistance and patronage; but hereafter would advise him to advertise for the claimant of any little "dodge" or "wrinkle" which may come into his head, in order that due credit may be given.

"*Gihon's Gatherings.*"—Always good, lucid, practical, well-digested matter, giving concise formulæ, hints, wrinkles, and dodges, of much value to the fraternity.

"*Sphinx*" is asked if there is not some way of heating a burnisher without gas or alcohol. Yes, and save about one thousand per cent. of the expense. Send your burnisher to some machinist, and have a hole cut through the bed-plate large enough to allow the chimney of a large kerosene lamp (common hand-lamp) to come up within an inch or so of the burnishing tool; the hole should be two and a half or three inches across; fasten the burnisher over a still larger hole in your bench, set the lamp upon something beneath which will bring the top of the chimney about an inch or so from the under side of the burnishing tool, fill and light the lamp, and set it under; get all the blaze you can without smoke; cover the burnisher with an inverted box, or something which will help retain the heat; a few holes bored or cut will insure a good draft; *keep the lamp well filled*; sufficient heat can be generated in half an hour or less, and there need be no fear of overheating. I fixed my own burnisher in that way five or six years ago. It is not patented; it works tip-top, and always has; made by Entretien (all but the hole).

"*More About Artotype,*" by David Bachrach, Jr., gives the most sensible, comprehensive, and convincing article upon the above subject that has come to my notice, and how

any person of average common sense, with eyes to see, and the least particle of taste or discernment, can hesitate in regard to the inferiority of the artotype for *portraiture*, passes my comprehension; still, if there be such, we would advise them to read what Mr. Bachrach has so spicily and forcibly written upon the subject, and then if they *will* go and pawn their birthright for the artotype pottage, let them do so; *they* are of the "gullible." And here I will take the opportunity to remark that, like Mr. Bachrach, when the carbon wave first reached America, two or three of us photographers met and argued that neither of us would buy that or any other expensive patent or secret process until we had carefully investigated, and were fully convinced that the thing was what it purported to be, and then we would all invest if we thought proper. The result thus far has been the gaining of much useful information, and the saving of our money.

"*A Rapid Process in Full*" may be very good, but, to my mind, this "craze" for some "fly-catch" process is not conducive to a healthy condition of the photographic mind, and I don't believe that "lightning" is half as much needed by some of our craftsmen as "BRAINS."

"*Are Our Portraits Artistic?*"—Apparently this is one of a series of articles by Mr. Hearn, of whom, as a silver printer, we all have "hearn," and we always hear something worth hearing, at least so far as he has got on the subject of "retouching." The present article is apparently from the well-stored "knowledge-box" of a painstaking student of physiognomy, who knows how to adapt the proper means to secure the desired end. In answer to the query, "Are Our Portraits Artistic?" I would venture to say, some *are*, and some *are not*, with a large majority of *nots*. But so far as art enters into photographing, it can only be demonstrated in the skylight-room; retouching and every other manipulation, is only mechanical or chemical. But why call the penciling of a negative which has never been touched *retouching*? Penciling or stippling would be better. But call it what you will, it has proved a great boon to the photographer.

"Voices from the Craft" are good; let's have more of the same sort, and we'll swell the chorus till the welkin rings; for "there's a good time coming, boys; wait a little longer."

The St. Louis Correspondent, Mr. Benecke, hits 'em hard. He is evidently posted.

The German and French Correspondence is instructive and interesting, especially as to the emulsion and dry plates; but that subject is decidedly *dry* to us wet-platers; still there is always much that is interesting and useful therein to every live photographer.

ABOUT ARTOTYPE.

ALTHOUGH many pages of the *Bulletin*, each month, and at least eighteen pages of the *St. Louis Practical Photographer* for March, are devoted to the processes in which Mr. Lambert is interested, and much attention given to the personal abuse of the editor of this magazine, we have not yet been confuted in one of the three main points we have taken, *i. e.*, 1. That the artotype process is not of service to the general portrait photographer; 2. That the prints cannot be produced at so cheap an average rate as is stated in the Artotype Company's advertisement; and 3. That the patent granted Obernetter, and assigned to the Artotype Company, is valueless. The first opinion is confirmed by Dr. Vogel in his letter this month—*excellent* testimony, coming from the *home* of such processes. The second is being verified and confirmed by every one who is working the process, and by ordinary common sense. Mr. Charles Bierstadt, the eminent Niagara Falls photographer, says the silver process is undoubtedly the cheaper, and at the present price for stereographs, he could not afford to use the artotype process. The third is admitted by the Artotype Company, who, since our strictures began, having been shown the weakness of their patent, have braced and patched it up with the Albert and Edwards (heliotype) patents, and have "compromised" with Mr. Carbutt. Moreover, being without a transfer process, they have also "arranged" for that of Mr. Edwards. What a comical picture is thus presented.

In the *Bulletin* for March, the "editor"

(doubtless) says, under the heading "The Artotype Squabble:" "The attack upon Mr. Lambert proceeds from a personal opposition on the one hand, and on the other from the persistent desire to do everything possible to 'beat Anthony.'" Most wondrous self-flatterers! We do not care one cent for either. Our whole desire and determination is to *protect our patrons*. We believe we have informed them fully, and fulfilled our duty to them. We are now disposed to discontinue the "squabble," *unless* our readers are in danger again, when they can count on us *every time*, no matter who is "beat."

Dr. Vogel, we are proud to say, *is* our "intimate friend," and Herr Obernetter's "friend," and yet see what he honestly declares are the facts concerning the value of artotype in an ordinary portrait gallery.

"Twixt doleful songs, tears, and sad cries,
Such as old grandames, watching by the dead,
Are wont to outwear the night with,"

the Artotype Company try to frighten the weak-kneed into their toils.

We cannot see what they have gained, however, in securing the silence of Mr. Carbutt. They have "given" him Philadelphia, twenty-five miles around it, and a license for Wilmington, Del. He drops his opposition to them, and works "artotype." They first sent James Howard, of carbon fame, to "learn" of him, as a "spy," and then Messrs. Cooper and Lambert came here; then threatening telegrams came, and then—Mr. Carbutt "compromised."

It is a long story. Had Mr. Carbutt held out until he obtained \$2000 or \$3000, we should have forgiven him. As it is, he must expect some "crowing" over his conversion. The whole thing shows great lack of self-confidence on both sides.

The following appeared in a late number of the *Chicago Tribune*:

A CARD.

To the Photographers of Chicago:

It has come to my knowledge that one B. F. Powelson, a member of the so-called Artotype Company, has circulated among you the story that myself and Mr. E. L. Wilson sent a man on to New York to learn the artotype process, and that this

man then came to Philadelphia, and made the heliographs that illustrated the February number of the *Philadelphia Photographer*, all of which is pure fabrication and a lie. I myself made the plate, and one of my printers printed the heliographs.

Yours fraternally, JOHN CARBUTT.

PHILADELPHIA, March 1st.

Probably our mysterious way of finding out things precipitated the hunger after Mr. Carbutt. We announced it in our last.

Mr. J. H. Fitzgibbon, of St. Louis, is also a self-confessed disciple, and "owner of the process in St. Louis." He had to "come to it." The "Practical" part of his business must be declining.

Notwithstanding all we have written on the subject, we are asked for counsel as to the purchase of the artotype process, or Mr. Carbutt's. We cannot advise any one not having a lot of commercial work, to buy either, for we cannot see where either can be of any value in a small business. It is cheaper to get your orders filled by parties more largely in it. Don't fear your neighbor getting ahead of you. If he does, it will be to his sorrow eventually.

Mr. W. J. Baker, a gentleman whom we highly esteem, thought best to send a copy of the article by him, which appeared in our February number, to the St. Louis *Practical Photographer*, and including the four or five lines we crossed out because they were not true, and which he gave us in writing his permission to cross out. It is of little importance except that they were untrue; but we remonstrated, whereupon he wrote us as follows:

FRIEND WILSON: I esteem your letter as kind and considerate, and am sorry to see so much of your time taken up with so small a point. With your letter, I referred to the St. Louis *Practical Photographer*, which had been on hand some days, but not read, and have written to Fitzgibbon to correct the statements in his preface. I am perfectly willing to believe that you think you are right, as fully as I think I am right, and to give you your choice as to which you will believe is mistaken. I hope you will cease to worry about it.

Yours,

MARCH 13th, 1879.

W. J. BAKER.

Mr. Bachrach deserves the thanks of the

fraternity for the able and manly manner in which he advocates their cause in giving us his excellent papers.

Mr. Lambert steps out from his "Co." and abuses Mr. Bachrach, without answering any of the strong points taken by our valued contributor. Why? He *couldn't*.

The Artotype Company spares us not. Now they have so precipitately "given away" Philadelphia, what have they left to offer us? But we have no favor with process-venders, though

"The rascal thinking from his point of view, Concludes that all the world are rascals too," and often tries to "get" us.

Mr. George S. Cook, Charleston, S. C., one of the "fathers," writes to the St. Louis *Practical Photographer*, viz.:

"One has only to look at the latest illustrations of the Philadelphia and New York journals to see the warm and lovely tone of the former and the cold harshness of the other. Silver is better than ink for photographs, especially when you tone it over with pure gold."

The New York pictures were "ink" artotypes. Wet your finger, and try the permanency of the unvarnished ones.

It is true, as stated in the other journals by the Artotype Company, that "the owners of the Woodburytype patents," and of the Albertype, heliotype, Lambert, Swan, Johnson, and Rye patents, have "maturely adopted" the artotype process (mainly by *exchanging favors*); but what of it? Not one of the aforesaid "owners" but have sunk tens of thousands of dollars in "perfecting and working" said processes, and after these many years are still dissatisfied with their investment. We doubt if artotype reclaims that which was lost.

Mr. Charles Tomlinson, Elmira, N. Y., writes, viz.:

"Mr. Edwards, of the 'heliotype,' says that 'a manuscript or drawing made with ink, with gallate of iron base, impressed on a wet sheet of gelatin, can be inked and printed from immediately.' Gallate of iron seems to be a very excellent article to incorporate with the gelatin film in heliography, to prevent the gelatin swelling, and I imagine the secret of success comes largely in

hardening and preventing the gelatin swelling, and thus give a perfect contact with the plate in printing."

IMPORTANT ANNOUNCEMENT TO PHOTOGRAPHERS!

Having entered into the contest against the wholesale process swindling of the fraternity, and wishing to make my opposition effective, and not merely a wordy one, I have induced Mr. Gennert, the importer and dealer in photographic materials, 53 Maiden Lane, N. Y., to order and keep on hand all the materials necessary for the successful practice of the lichtdruck process by any one who desires, without having to pay for any instruction or license fees. If any other dealer wishes to keep them, and desires information on the subject, I will willingly furnish it. I shall also furnish Mr. Gennert with a short pamphlet containing a full description of the process, translated from the latest work of Prof. Husnik, which I have just ordered, as well as from my own and others' experience, *for free distribution*. I shall be obliged to any one who may have any hints to give upon the subject not already published, although the descriptions already published in this journal are ample.

Do not be alarmed by any threats or bullying of the Artotype or any other "company." This process has been open and free to all in Europe for years, and any attempt to make it appear the sole property of any individual or ring in this country is a swindle and a fraud!

Again, I say that *it is not a necessity*, nor even desirable, for portrait work; yet those who wish may practice it without fear of consequences. Fraternally,

D. BACHRACH, JR.

SHORTENING OF EXPOSURE BY DIFFUSED LIGHT.

BY CHARLES WALDACK.

IT has often been proposed to shorten the exposure in the camera by admitting diffused light to act for a very short time on the plate. In the very infancy of photography, in daguerreotype times, Becquerel asserted that the action of the light in the camera could be continued under red light,

so that a plate which had been underexposed could be brought to the proper exposure by what he called the continuing action of the red ray. Blanquart Evrard proposed to reduce the exposure by using what he called the *light camera* (*chambre claire*), a camera which had been painted white on the inside. The light of the parts of the image on the edges of the field would then strike the white sides of the camera and be reflected, thus producing a much lighter image on the ground-glass; and as a consequence, a shortening of the exposure. Although this lighting of the image must, to a great extent, deprive it of its vigor and boldness, still in the hands of a skilful man it may in some cases be adapted to a useful purpose.

Our old friend Gage proposed, fifteen or twenty years ago, in cases of bad illumination and underexposure, to allow the light reflected from the camera cloth held in front of the lens to act for a short time on the exposed plate. This has proved in the hands of many a very useful dodge in making portraits of children; and although it is quite forgotten by the present generation of photographers, it deserves to be brought to light again.

A few years ago, Mr. Newton admitting, it is supposed, the correctness of the Becquerel theory in regard to the continuing action of the red rays, allowed the light passing through a red glass inserted in the front of the camera to act on the plate, thus obtaining a reduction of the exposure. As no red or green glass perfectly opaque to the chemical rays is to be found, it is supposed that the reduction of exposure is owing to these rays passing through the colored glass and acting on the sensitive film.

A year or two ago, Scotellari, holding in theory that violet light was more actinic than white light, or, in other words, that a part is larger than the whole, found, after having induced a Paris photographer to cover a studio with violet glass, that his theory was erroneous. He then constructed a lens cap into which a piece of violet glass was inserted, and allowing the light to act through it on the sensitive plate for a few seconds, succeeded in reducing the exposure considerably.

The dodge of allowing the light to act

slightly on the plate, to be able to do with a shorter exposure, is, however, not to be despised, and made use of intelligently, will do good service. A means which is communicated to me by a friend, and which I have not seen published, is to cover the largest stop with white paper, and cut out an opening the size of the stop generally used. The result is a softer negative, with one-third or one-half less exposure than if the opaque stop had been used.

This action of diffused light, lighting up the image, and thus reducing the exposure, often takes place when the photographer is not conscious of it. Years ago, when it was customary to make negatives for vignettes against a white background, it was found the exposure was considerably reduced.

Again, the image may be lighted by reflection from the sides of the camera and from the surface of the lenses. The lighter parts of an image, the sky, for instance, will reflect diffused light on the inside of the camera, and thus light up the darker parts. Any landscape photographer may have observed that a view with much sky will require a less exposure than one from which the sky is nearly excluded. We all know that long exposure reduces contrast. Suppose we have before the camera a country residence, with overhanging porticos illuminated by a strong summer sun. The contrast is painful to the eyes; and still, by giving a sufficient long exposure, we can reduce it so that the house appears to be bathed in the mellow light of an Indian summer day. How much of this may be owing to the diffused light reflected from the more illuminated parts?

It is an unquestionable fact that the most brilliant image on the ground-glass is produced by lenses having the smallest reflecting surface adapted to a well blackened camera. It is also evident that when all the rays but those forming the part of the image depicted on the ground-glass are excluded by means of a hood or cone, the image will gain in vigor and brilliancy. The question whether it will not, in certain cases, be an advantage to sacrifice some of this brilliancy for the sake of rapidity of action, is one which is submitted to the thoughts and consideration of photographers.

WHAT THEY SAY.

WHAT Mr. Heighway said (speaking of Mr. Anderson's *Skylight and Dark-room*), in the *Philadelphia Photographer*, December number, 1872, page 425:

"It is grand, and you deserve the congratulations and thanks of us all for securing its publication."

What Mr. Heighway said (speaking of Mr. Anderson's *Skylight and Dark-room*), in the *St. Louis Practical Photographer*, March number, 1879, page 528:

"Mr. Anderson's book I do not look upon as an authority in the art."

What Mr. Heighway said in a letter to Edward L. Wilson, Esq., editor of the *Philadelphia Photographer*, February 10th, 1879:

"SIR: My attention has been called to an anonymous article in your journal entitled 'What Now Transpireth,' which contains a most false charge against me of incorporating portions of Mr. Anderson's *Skylight and Dark-room* in my *Practical Portrait Photography*. This I most emphatically deny. I am not indebted to it for a single sentence of my book."

What Mr. Anderson says:

"I have just seen a copy of Mr. Heighway's book, and (after comparing it carefully with my *Skylight and Dark-room*), I am perfectly amazed to find that he has copied (so far as relates to photography proper, and photographic manipulations) word after word, line after line, page after page, from my *Skylight and Dark-room*, *verbatim et literatim*.

"I would not have you think for a moment by the above, that I deem Mr. Heighway dishonest; oh, dear, no! He is undoubtedly a somnambulist, and has arisen in the night and nearly copied the whole book. It would be then, under these circumstances, most unfair to hold him accountable for the faithfulness of the reproduction.

"Mr. Heighway says my article is '*most vulgar and offensive*.' OFFENSIVE? Well, very likely. I know that I would consider such a serious charge against me as '*most offensive*.' VULGAR? What! my article vulgar? Humph! *possibly so*; for after

reading over Mr. Heighway's elegant expressions in *his* article, I am constrained to admit that he is certainly a most competent judge of vulgarity.

"Yours very respectfully,

"ELBERT ANDERSON."

VOICES FROM THE CRAFT.

PROCESSES OF THE FUTURE.

WHY is it that some photographers in the past two or three years have been, and now are, interested in processes which greatly base their claim of merit upon the assertion that they are the "processes of the future?" Do engravers, lithographers, and other branches allied to the arts, or in any sphere of industry, buy or practice at present any "processes of the future?" I believe the future can, and will, take care of itself.

Shortly after the chromotype was introduced, I questioned a seemingly enthusiastic licensee as to the practicability of the process, but "it is the process of the future" is all I could get out of him. Lately I noticed the same stereotyped mystification applied to (in this country) that newly and apparently also prematurely born infant christened "artotype." PRESENT.

HINTS TO THE FAIR SEX.

A PHOTOGRAPHER gives the following directions to his customers. When a lady sitting for a picture would compose her mouth to a bland and serene character, she should, just before entering the room, say "bosom," and keep the expression into which the mouth subsides until the desired effect in the camera is evident. If, on the other hand, she desires to assume a distinguished and somewhat noble bearing, not suggestive of sweetness, she should say "brush," the result of which is infallible. If she wishes to make her mouth look small, she must say "flip;" but if the mouth be already too small, and needs enlarging, she must say "cabbage." If she wishes to look mournful, she must say "kerchunk;" if resigned, she must forcibly ejaculate "cat."

A "DODGE" FOR THE POOR.

SOME time ago I got a pair of Imperial Dallmeyer lenses on trial; but they dis-

torted the straight lines worse than a single view lens.

If any photographer will get a pair of plain Gem tubes (Darlot's), one-sixth size, not one-ninth, he will have all he wants. They will focus three and a half inches, and cover fully one-quarter plate each; and when front glasses alone are used they will cover 4 x 6 plates, and focus six inches. Price, only \$3.75 each. I have tried them this week, and I will not think of buying any other, as they suit perfectly.

R. D.

READ AND GROW RICH.

"THE more I get, the more I want," of such valuable reading matter as the *Philadelphia Photographer*, *Mosaics*, *Hearn's Practical Printer*, etc. I would think it a great loss were I deprived of the pleasure of reading each month the *Philadelphia Photographer*, and each year the *Mosaics*. No photographer who wishes to push ahead and build up should do without the *Practical Printer*. I find it of the *greatest* value every day. It is a help to the *young* printer as well as to the *old*. *Both* will find in its pages hints of greatest importance. With a few such books as this, with the *Philadelphia Photographer* to back them up and keep us up with the times, it would be a *great* wonder if a man could not succeed.

Pardon me for so many words; I could not help telling you how I *prize* these readings. W. B. GLINES.

CARBON IN CANADA.

SEEING the spirit in which you are holding up to view a certain party, allow me to give you my opinion of Mr. Lambert's processes.

If any doubt remains on his mind as to whether his *patents* are humbugs of the very first water, he has only to visit his licensees in Canada, and I will pledge myself he will be able to purchase his *rights* back again for five cents on the dollar. There are very few on this side of the Lakes that would not jump at that offer, and less.

The proof is only too plain, and photographers in this country will only be too willing to indorse what I say.

Mr. Editor, if you wish a knowledge of

the feeling towards him, I will furnish you with the addresses of his licensees here, and ascertain for yourself the truth of the above.

In case this benefactor of photographers should adopt his usual trick, and say I am incompetent to make a good working negative, I need only remind him that he admired my negatives, and some of them he did not touch at all, saying they were just what they should be.

If this letter should have an answer, I am ready and perfectly willing to show him up a little clearer still, and get plenty others to do the same. My only wish, sir, is that this will meet the eye of some poor beggar who has not been foolish enough to pay a few hundred dollars for a few cents' worth of trash.

I am, sir,

"ONE OF THE TORONTO CLASS."

THIS mail brought my February number of the *Philadelphia Photographer*, also Bigelow's book. The *first* batch of books arrived safely and in due time. The books I am certainly well pleased with. My printer, after reading Mr. Hearn's book for a few hours, went to work and fixed up his bath, and now is making splendid tones right along every day. I would recommend every photographer who has not got that book, and wants to make good tones, to send and get it immediately. He cannot afford to do without it. In it are contained the plainest directions, and also splendid samples of what may be attained to by the intelligent worker. And there is *Mosaics* again bristling with good things, worth its weight in gold to any live man; a volume of the brains of the best workers, and all for fifty cents. Surely good reliable photographic literature is cheap enough. Burnett's *Hints on Composition* is a parcel of gems; and I only hope you will produce the volume that is to follow quickly. There is more said in the few pages of Bigelow's *Artistic Photography* than I have seen in volumes of ten times, yes, twenty times its capacity. Now that I have those books, and know them, I would not be without them for twice their value.

I have only two of Seavey's backgrounds, and am writing him this time for illustrated catalogue of his goods, as I intend to have

a complete outfit eventually of accessories, both in backgrounds and set-pieces.

Hoping that you have settled to your own complete satisfaction "Which Way," I remain,

Faithfully yours,

SIMON H. PARSONS,
St. Johns, Newfoundland.

ALL ONE WAY.

WHAT would become of us poor photographers did we not have *one* magazine at least true to our interests, and impregnable to the assaults of our enemies and their tempting offers? If the journals were all one way, where would we be, unless they were *for us*?

Yours gratefully,

W. A. G.

PHOTOGRAPHIC NEWS.

MR. DUNCAN DALLAS thinks he has discovered the cause of the mat spots produced in developing plates, and which are so often a cause of embarrassment when using alcohol or acetic acid for the better flow of the developing liquid. The author uses, as many others, sulphate of iron and ammonia; to this double salt he adds a small quantity of gelatin dissolved in sulphuric acid, and he uses acetic acid instead of alcohol to obtain the uniform flow of liquid. As soon as the weather became cold, and he slightly heated the developing liquid, the spots showed themselves in number, and ruined many of his plates. By dispensing with the acetic acid, this effect was no longer produced, and he finished by discovering that it is due to the *aldehyde* which is sometimes found in acetic acid, and in impure alcohol.

IMPROVED SUPPLEMENTAL BACK-LENS, FOR PORTRAIT OBJECTIVES, BY VOIGTLANDER & SON—In the *Correspondenz*, Dr. Schnauss says of this new discovery of Voigtlander, viz.: "As appears from the separate circular of Messrs. Voigtlander & Son, there has just been perfected, in their establishment, an improvement on the photographic portrait instrument, which will cause a universal sensation no doubt. This improvement consists in the construction of a supplemental back-lens, *i. e.*, a pair of lenses joined together with transparent cement; the focal distance of

which is exactly equal to that of the front lens. The diminution of the focal distance of the whole objective, which is caused thereby, increases its intensity of light considerably, without any material detriment to the depth and size of the picture. At the present time, when everybody is exerting himself to the utmost trying to invent some "rapid" process to shorten the time of exposure, the increase of the intensity of light is certainly of very great advantage. Besides that, in acquiring the supplement back-lens, one has in possession virtually two instruments, according as one uses the old back-lens, or the new combination lens with the front combination of lenses.*

IN spring it is well to try the non-actinic value of the yellow glass in the laboratory. Many panes which thoroughly stopped chemical light during the winter, do not do

* We have been able to confirm the remarks of Dr. Schnauss by means of some trials made with the usual half-size lens, supplied by Messrs. B. French & Co., Boston, and found the supplemental lens certainly a wondrous advantage.

A portrait was made with the usual combination in twenty seconds, and repeated with the supplemental lens in thirteen seconds, and equally as well timed as the first. The head, however, was fully one-half smaller. We overcame this by placing the face of the lens within $38\frac{1}{2}$ inches of the nose of our model, and still obtained a picture fully equal to the first, *without distortion*, in ten seconds. This certainly gives us a *great* advantage in rapidity, and every one owning a Voigtlander lens will need to get a "supplementary" to match. They are surer than "lightning."—Ed. P. P.

so in the spring, and thus become a frequent cause of foggy prints. Mr. Barker has found that a few crystals of anilin red, dissolved in negative varnish, render this varnish completely non-actinic. The glass is thinly coated on both sides. This is much preferable to the application of a thick coating on one side only.

A NEW product called vegetable isinglass, which is extracted in quantity from seaweed, is said to yield an excellent size for cotton cloth, and to be extensively used for that purpose in the French factories. One valuable property it is claimed to possess is that of defying at common temperatures both dampness and mildew. This will become very serviceable to photographers in many obvious ways.

DR. LIESEGANG, writing from Dusseldorf to the Paris *Moniteur*, gives the following formula for making an artificial light, to be used in the apparatus invented by Mr. John Moule, a kind of large lantern in which the mixture is burnt:

Nitrate of Potash,	. 112 grms. (3½ Troy ozs).
Flowers of Sulphur,	. 42 " (648 grains).
Black Sulphate of Antimony, pulverized,	. 12 " (185 ")

These three substances are intimately mixed and kept for a few days in a warm room. Before using the mixture add a few grammes of magnesium wire previously cut into small bits. This mixture is placed upon an iron plate and burnt in the lantern. The effect is much more agreeable than that obtained with magnesium light alone, the luminous surface being greater.

Editor's Table.

PICTURES RECEIVED.—Messrs. A. C. McINTIRE & Co. have sent us some beautiful views of "Scenery among the Thousand Islands of the St. Lawrence." They are truly *fine* specimens of photographic art. Among them are some pictures of "Bonnie Castle," the summer residence of Dr. J. G. HOLLAND, which show what a charming home a man of artistic tastes can make for himself; and, thanks to the skilful photogra-

pher, we too are enabled partly to *share the enjoyment* thereof. Mr. H. B. CALFEE, Bozeman, Montana, sends some gems of natural scenery in the great Yellowstone National Park, or, as it is most aptly called, "Wonderland." No wonderland of fairy lore could be more grand and strange than these regions of geysers, rocks, mountains, and cascades (lovely subjects for the camera), and almost equally wonderful is it that the pa-

tient photographer should have climbed to these almost inaccessible points to secure the *best view*. Truly there are as brave soldiers in photography as in any army. From Mr. C. J. SNYDER, Parker City, Pa., some Panel photographs after Mr. ELTON'S style, which are excellent samples of photography, and reflect great credit on the artist. Mr. R. GOBEL, St. Charles, Mo., sends us some children's pictures. One is of a pair of twins, both in a full roar. The expression is perfect, and we can almost *hear* the screams. Mr. GOBEL says they are taken with *his* "lightning," a fact the little ones bear on their faces; and they are supplying the thunder at the same time. Some very soft and pretty vignette pictures from Mr. W. B. GLINES, Norwalk, Conn., who has only been in the business since December last, certainly do him credit, and shame some of the old "fathers in photography." A new style of book-marker from Mr. THOS. HOUSEWORTH, San Francisco, Cal., which he calls the "Celebrity Book-mark." A miniature photograph of some well-known persons, actors, etc., on the face, with HOUSEWORTH'S name and address below. Quite a pretty idea, and a good means of advertising.

PHOTOGRAPHY BY ELECTRIC LIGHT.—Mr. ISAAC WHITE, Hartford, Conn., sends us a print of the room in which the thread is wound of the Wilimantic Linen Company. This room is lighted by two electric lights, which take the place of sixty-two five-foot gas-burners. Time, only twelve seconds. This is a wonderful achievement. We have seen many interiors taken by sunlight, with long exposure, that have not had so much detail as this one *taken by electric light*.

ITEMS OF NEWS.—A correspondent sends us quite a curiosity in the form of an advertisement of "Brady's New and Extensive *Daguerrian* Establishment." This was cut from the *Living Age*, 1853.—Messrs. N. C. THAYER & Co., Chicago, have reduced prices for their "Rapid Chemicals."—CHARLES COOPER & Co., New York, have sent us their March price-list of photographic chemicals.—The SCOVILL MANUFACTURING Co., New York, have issued a circular warning against infringements of their patent of the *Bonanza Holder*.—At the last annual meeting of the Boston Photographic Association, the question brought up for discussion was: "Is it expedient to continue the meetings of this Association monthly?"—The SCOVILL MANUFACTURING Co., New York, are having good sales for their Agate Ironware for photographers' use. Send and get a price-list.—Mr. M. LIVICK, Bloomington, Ill., offers to the trade his "Champion

Burnisher Heater," which he claims to be the most economical in the market, and we believe it is much praised and liked by all who use it.—We have received from Mr. C. S. ROSSON, Harrisburg, Pa., a list of second-hand apparatus which he has for sale. These lists can be obtained by applying to Mr. ROSSON.—Messrs. A. M. COLLINS, SON & Co., send us some exquisite samples of their new styles of advertising cards. They are ornamented with fine steel engravings in artistic designs, printed on tinted cardboard; far preferable to, and more elegant looking than, the chromo-cards that have so long been used for this purpose. From Messrs. BENJAMIN FRENCH & Co., a price-list of their "New VOIGTLANDER & SON'S Lens." Send for descriptive circular and prices.—Mr. ERNEST RITZ, formerly of Boston, has accepted a position as operator with Mr. DANA, Fourteenth Street and Sixth Avenue, New York. He is making fine work, and his pictures are said to rank almost on the same level as the best of Mora's and Sarony's productions.—We have received a circular from Messrs. LONG & SMITH, Quincy, Ill., in which they publish the formulæ for the bath and developer to be used in their "Condensed Lighting Process." This circular they give *free* to any photographer on application. We subsequently received from the same firm a notice of the dissolution of their long and well-known partnership. Mr. JAMES H. SMITH will continue the wholesale business, and Mr. E. LONG the retail.—We have received from Messrs. A. & G. TAYLOR'S Philadelphia branch, No. 814 Arch Street, a beautiful album illustrated with twenty-nine photographs of the various portions of the Albert Memorial. First is given a general view of the monument, then the various sculptures of the podium, composed of groups of the poets and musicians, the painters, the architects, and the sculptors—making in all a very interesting and valuable collection.—The New Orleans correspondent of the *Cincinnati Trade List*, in speaking of the beauties of the "Gulf State Exposition," pays a very high compliment to Mr. THEODORE LILIENTHAL'S exhibit of carbon prints. He says: "Much credit is due to Mr. LILIENTHAL, and he really deserves all the patronage that is so liberally extended to him."—One of our patrons has sent us a circular advertising certain secret processes and a "little book," for sale by a Mr. T. S. NUTTER, and asking if we could indorse him. We know nothing of Mr. NUTTER. But photographers know what our advice always is about *secret processes*; better keep your money for the good things that are all open and above board.—Mr.

HIRAM J. THOMPSON, No. 259 Wabash Avenue, Chicago, sends us a circular entitled "What All Want" *Free*. This contains directions for the preparation and use of several rapid-working formulæ, same as those given on page 71 of our last issue. These circulars Mr. THOMPSON offers to scatter among photographers.—We have received some beautiful specimen sheets from the Photo-Engraving Company, No. 67 Park Place, New York. They are the finest samples we have seen of this sort of work, and we hear the Company are reaping the reward of their enterprise. They show in these sample-sheets reproductions from copper-plate engravings, photographs, wood-cuts, and pen drawings, which compete with the finest wood-cuts. Truly, this branch of photography has been handsomely developed by these gentlemen.

THE *Youth's Compendium* is a sprightly sheet of eight pages, published by the Economy Publishing Company, 57 North Third Street, Philadelphia, interesting for children of all ages.

OBITUARY.—We have heard with regret of the sudden death of Mr. PETER LE NEVE FOSTER. He had returned to his home on February 20th, after a day of active business, and sitting down to read his paper, was seized with a sudden attack of heart-disease, and found dead in his chair a few minutes after his return. Mr. FOSTER was well known as a contributor to photographic publications, and as an experimentalist in photographic art and other sciences. The abrupt closing of this long, busy, and useful life, will leave a blank not soon forgotten by those among whom his labors were carried on.

WE have just heard from Prof. D. A. WOODWARD, patentee of the Solar Camera, that in order to accommodate all grades of photographers, he has placed the price of his "Gem" Solar Camera, complete, at \$60. It prints 25 x 30 inches from a one-fourth negative. This concession on Prof. WOODWARD'S side will enable many to secure a "Gem," and do their own work. Those having an average amount of solar printing to do will soon save the price of the camera. See advertisement.

OUR friends still continue, unsolicited, to send us words of good cheer and appreciation. Here are some extracts from these pleasant letters:

"I hate to miss any of the articles. Carbon and lightning are well enough, but we all wish more light on plain old photography, and your journal is the best for that."—W. H. KIBBE. "I have been a reader of your journal for seven years; have not lost a single one; could not get

along in business without it; also the *Mosaics* for same time. You are doing a good work for us."—B. L. MOON. "You have courted me back as a subscriber by your reasonable circular."—JAMES NICHOLSON. "I have been a subscriber from the first publication, and have them nearly all bound; while I am in the photograph business, and can raise sufficient to get a year's subscription, I shall have it. I know too well what I have lost by not having it."—A. C. MCINTYRE. "The fact of the matter is I just can't stand to do without the *Philadelphia Photographer* any longer. I have never missed anything like I have it, and but for reading the old ones over I don't know how I would have got along; but I would not take to-day anything in reason for my old *Photographers*. I find so many good and useful things; in fact, it is more interesting to me now than when I first read them. I am behind the times now, as I have not seen or heard anything new in our line. It will be a feast to me when I get my back numbers for January and February."—J. H. BLAKEMORE. "I have read most of the journals on photography published in the United States since the commencement of the art, and among them all I cannot say I like yours *less* than any other. I have been well pleased with your views; and, so far as I know, your advice in regard to secret process-venders, and also on the subject of worthless patents which have flooded the country, being imposed upon a too confiding community which, if they had all adhered to your timely and prudent advice, 'Old Split Foot' might not have rejoiced so greatly at the swindles practiced upon us."—CALVIN DART. "I cannot do without *our* magazine."—N. P. JONES. "As the 'Practical' is cheaper, I subscribed for it nearly a year ago, but found, in this case, that the cheapest is the dearest in the end. It is published more in the interest of process-mongers than photography. I for one have concluded to drop it as I would a hot potato."—JOHN DAILY. "Hope many may appreciate it; good many good things in this number."—BENJ. FRENCH & Co. "I have decided 'Which Way,' and that is to take all of the good photographic publications that I can get. You are right when you say you have saved money to very many artists in the way of exposing *frauds*."—W. L. EDWARD. "We must have some more of the March number of the *Philadelphia Photographer*. BACHRACH'S article alone is worth ten thousand dollars to the photographers of the United States. We had a letter to-day from one of our customers, who came here about three months ago on purpose to buy the artotype patent for his town. He writes: 'Hurrah

for the *Philadelphia Photographer*! I think we had better all stand by WILSON after all. He is trying to save money for us by exposing the tricks of the process-mongers."—GATCHEL & HYATT. "Some items in the March number I would like to see (description given in circular just to hand); would like also to see your opinions on artotype. Had I been a subscriber before I might have been saved from the chromotype, perhaps."—E. POOLE. "The *Philadelphia Photographer* came in good time; I am well pleased with it; it, in all probability, saves me one hundred dollars investment in a worthless patent."—WM. JOHNSTON. "The March *Philadelphia Photographer* is wonderful; you can't imagine how eagerly I read everything in it, including all the advertisements. Hope you won't abandon the article."—GEO. H. JOHNSON. "We are glad to know you feel encouraged in your work, for good cheer for you means the same for us. The editorial entitled 'Which Way?' was the best one we have ever seen in any photographic journal, and shows you to be just what you are—master of the situation."—HOWE & BEECHER. "I received the *Philadelphia Photographer* again in due season, and shall not again try to do without it."—E. GODDARD. "No sane photographer can afford to do without it. Go on in the good work of exposing the frauds and swindling process-mongers."—O. R. LANE. "The *Philadelphia Photographer* came this morning, and we are highly pleased. Please send us six extra copies for March."—HOWE & BEECHER.

THE BONANZA PLATE-HOLDER is really a money saver.

MR. W. E. BOWMAN, Ottawa, Ill., still stands by his camera for the good of the "dear public."

WE are frequently asked by photographers to sell them the specimens that are sent us from time to time. We should not feel at liberty to do such a thing, and beg that no offence be given when we refuse, as there certainly would be if we acceded.

MR. H. BOISSONNAS, the inventor of the "lightning" process, writes us as follows:

"I have the honor to inform you that Mr. KLARY ceased to be intrusted with the sale of my process since the 1st of November last, and has therefore no longer any authority to represent me. In the event of your having acquired my process by his agency, I now inform you that I am at your service to give you every information necessary to facilitate your complete success, and the rapidity such as that which I obtain myself. The photographers who will send me their name

and address will receive in exchange, gratis, a selection of photographs taken instantaneously, and printed in photo-lithography.

"H. BOISSONNAS,

"Geneva, Switzerland."

MR. KLARY, it seems, has turned out a dishonest agent. Whether Messrs. LAMBERT & Co. dealt through him or not, we cannot tell.

A NEW STOCK-HOUSE IN ST. LOUIS.—A new enterprise has just been started in St. Louis, which is none other than a new photographic stock-house, by Mr. WILLIAM J. HAZENSTAB. Mr. HAZENSTAB has recently been East to purchase goods; and with a long experience in the business, plenty of energy, and a complete stock in trade, we predict success for him in his new career. Photographers will find every requisite for their use, and will do well to give Mr. HAZENSTAB a call before purchasing elsewhere.

THE attention of our readers is called to the very favorable testimonials in "Specialties," to the new method of making solar prints, on which subject, under the heading "New Improvement in the Preparation of Negatives," an article was given on page 90 of our last issue.

MR. J. C. SOMERVILLE, No. 17 South Fifth Street, St. Louis, has sent us a most complete catalogue of "photographic supplies." It seems to include *everything* the American photographer uses, in its one hundred and twenty pages, together with designs for card mounts, several special lists, and a "budget" of formulæ and useful recipes at the back, which make it well worth while to obey the request on the cover—*i. e.*, "Please hang me on a handy nail." Certainly there will be a demand for this catalogue. Our copy hangs in our sanctum.

MR. BACHRACH TO MR. LAMBERT.—The following came too late to insert on page 119.

DEAR SIR: I notice in ANTHONY'S *Bulletin* for this month, a gross personal attack upon me by LAMBERT, in which not one word of reply is given to the points I have made against the Artotype Company. I deem it unnecessary to make any reply to such scurrilous trash, except to state that *what is not a garbled representation of occurrences is totally false*; and that includes most of the article. I am willing to rest this simple statement with those who know me personally and know him and any who have done business with our firm and *have purchased processes from him*. I shall take no further personal notice of him in this journal, he being beneath my contempt. Respectfully and fraternally,

D. BACHRACH, Jr.



J. LANDY,

208 W. 4th St. Cincinnati

CINCINNATI.

T H E

Philadelphia Photographer.

Vol. XVI.

MAY, 1879.

No. 185.

Entered according to Act of Congress, in the year 1879,

By EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

ALL THAT IS SECRET IN WORKING THE ARTOTYPE PROCESS.*

IF you will permit one who has been a constant reader of the *Philadelphia Photographer* for the last ten years, and who is in a position to know whereof he writes, to say a few words as to what he knows about the much-discussed artotype, then I will submit the following, which consists of all that is secret in the working of the artotype process, with the exception of proportions used in Solutions Nos. 2 and 3.

SOLUTION No. 1—SUBSTRATUM.

Bichromate of Potash, . 150 grains.

Albumen from six eggs.

Ammonia.

The germs are separated from the albumen, of which there will be about five ounces, placed in a clean dish, and beaten to almost a complete froth, when it is allowed to settle for an hour or so, then it is filtered. The method of filtering the albumen by the Artotype Company is to tie a piece of clean chamois skin over the top of a funnel; after moistening with pure water, the albumen is carefully poured upon it; after filtration, the bichromate of potash is added, which may first be dissolved in a small amount of water. The less water in the substratum, the less liable to blister when it comes to be printed; only

enough ammonia is used to preserve the albumen, and need not be used when the solution is used immediately. A piece of polished French plate-glass is carefully cleaned, as carefully as for making a negative; a perfectly clean flat brush, about three inches wide, is dipped in the solution, the surplus albumen removed by drawing once or twice over the edge of the dish. Now balancing the glass on the thumb and forefingers of the left hand, draw the brush containing the albumen diagonally across the plate, commencing at the upper right-hand corner, then diagonally across the plate in the opposite direction, after which the operation is repeated, going both ways square across the plate. The plate is next placed in the drying-oven, which is kept at an even temperature of about one hundred and thirty-five degrees; from twenty to thirty minutes are required to dry the plate. The drying-box used by the artotype licensees is constructed with a sheet-iron bottom, and doors sliding from the bottom upwards. The doors are so constructed to prevent currents of air in opening and closing them; the bottom has a thick covering of plaster of Paris, which holds an even temperature in the oven of about one hundred and thirty-five degrees. Supports are placed across the box, upon which the plates are placed flat, but not levelled, as no levelling is required.

After the substratum is dry the plate is

* We give this for what it may be worth to our readers, though incomplete.—ED. P. P.

placed with its albumen side down, upon a board covered over with black cloth, and exposed to a diffused light until a piece of silvered paper placed by its side is pretty well blackened, when the plate is removed to the coating-room and Solution No. 2 is applied.

Solution No. 2 consists of bichromate of potassa, gelatin, and water. Two kinds of gelatin are used: one is a superior quality of Russian isinglass, the other a fine quality of German gelatin, the same as mentioned by Mr. Bachrach in the *Philadelphia Photographer* for March. I cannot at present give the exact proportions of this or the following solution, but will say that they are not strong, being, when made up, only a little darker than good working collodion. The gelatins are first soaked for several hours in water, after which they are boiled for about two hours over a water bath. They are then placed in the heated drying-box and filtered, when the bichromate is added, which is probably about one hundred and fifty grains of bichromate to the ounce of solution.

To apply Solution No. 2, first have the plate warmed to the temperature of the drying-box, then holding the plate with the left hand, the same way as No. 1, pour upon and entirely across the upper end of the plate just enough of the bichromate solution to cover the plate, then slightly tilting it with the flat side of the little finger cause the gelatin to flow evenly the whole length, then drawing the little finger around the edges of the plate, cause the solution to flow to the edges all around. If there is a surplus gathered at the lower corner, turn it off the plate, and place the plate in the drying oven to dry, which will take at least half an hour.

Solution No. 3 consists of bichromate of ammonia, gelatin (same as in No. 2), chrome alum, glycerin, and water. It contains about as much bichromate as in the preceding solution. The chrome alum is to harden or toughen the film, and the glycerin to keep it from becoming too brittle; only a trace of glycerin is used. This solution is made and used the same as No. 2, only in coating the plate the solution is poured upon the opposite end, so as to equalize the thickness of the coating.

When again dry, the plate is placed in the

printing-frame and printed in the usual way, and the progress of the printing examined from the back; experience will soon tell when they are sufficiently printed. They are then placed in running water of from seventy to one hundred degrees temperature, and left until all traces of the bichromate is washed out; when, after being again dried, they are wet up and put in the press and printed from in the manner already described in the *Philadelphia Photographer*.

Your readers will see by the foregoing that the much vaunted "artotype" process is nothing more than the Albertype, with such improvements of manipulation as years of experience have taught the Germans were best. It will also be seen that they use no water-glass, or anything of the kind in any part of their process, and that their patent upon the same, and their extensive blow about it, is only an artful blind, used to deceive the uninitiated.

The fact that they are doing finer work than was done previously by the Albertype process is due to their importing a better quality of material from the lichtdruck workers of Germany, for which they are entitled to due credit.

If the foregoing will serve to enlighten any one upon the subject of mechanical printing, which I believe to be destined to play an important part in the future of photography, then I shall feel amply repaid.

AN OLD SUBSCRIBER.

ON THE FADING OF SILVER PHOTOGRAPHS.

BY F. A. WENDEROTH.

THAT photographs will fade more or less, sooner or later, photographers as well as the public are by this time aware, but the thought to give up silver printing, with its facilities and unsurpassed beautiful results, is not much cherished either by professionals or by amateurs; even if there was a new and better process offered it would be accepted with reluctance, as we all know what time and labor it costs to master a new process. But has there anything new been offered that for general application is better than silver? One who reads the following remarks by the editor of the English *Pho-*

tographic News, would be inclined to think that there was. He says: "When permanent printing processes exist it is amazing that another silver print is produced." Reading this, I wondered what he meant; certainly not the carbon processes which (allowed that when carbon alone is used in the form of ivory- or lampblack for coloring-matter, one of the substances needed for their production is permanent), for general use is impracticable, as most of those who have tried it can testify to. A large part of the business of portrait galleries is touched-up work, either painted, india-ink, or crayons. To use carbon prints for this kind of work is out of the question, as its surface, being either collodion or non-absorbing gelatin, is even a great deal worse than albumen, and water colors applied to it when mixed with gum, will crack off as soon as dry; or, without gum, will rub off by slight touch. It is even worse than to paint on glass with water colors; and how to finish with crayons is an enigma to me.

Mr. Willis, Jr.'s, platinotype process is too little known yet to determine about its adaptability to studio work. It is a pretty general opinion with photographers that a process where the image is produced by development is not very desirable; and another drawback will perhaps be found by having to float each print separately on two different solutions, but practice will soon settle this point.

The last processes to be considered are the mechanical printing processes, by some of which very excellent results are obtained; but the expense, labor, and time required in their practice, make them unavailable for single prints or small quantities, as no plate can be made with the shadow of paying a small profit from which five dollars cannot be realized as a minimum; so at least I have been informed by different parties who work these processes commercially. Where large numbers of copies are required, these processes will certainly supersede silver printing, but this business will go into the hands of large establishments.

In investigating the fading of silver photographs, the first and most important question to be answered is: Are the silver and gold compounds which form the visible

image permanent? Which, I think, can be answered in the affirmative, as everybody owns, or has seen photographs taken at various times, which are perfectly preserved. I myself have some twenty years old, which are perfectly preserved, but all the rest have faded and discolored to a greater or lesser extent; but the most convincing proof I found of the perfectly unchangeable nature of the image, is in all those of my colored pictures called ivorytypes, made from ten to twenty years ago. The photographs constituting these pictures were taken on plain paper, some developed by the gallic acid process, some the ordinary ammonia-nitrate chloride silver; some small, some as large as twenty-five by thirty inches, and cemented with hot beeswax on to plate-glass. By this means the paper was perfectly saturated with the wax, enveloping the image completely, and shielding it effectively from atmospheric influences. In none of those ivorytypes that have within the last few years come under my notice, can there be the least trace of fading discovered; the most delicate tints are perfectly preserved. There is not the smallest spot or stain visible, and the painting and photograph are in the same harmony as on the day when done; so unlike most painted photographs, where the silver image has disappeared, leaving the paint in unsightly daubs.

I am sorry to say that most of these ivorytypes are more or less discolored in their transparent parts, I suppose by the oxidation of the wax where it was exposed to atmospheric influences, but where it was protected from these, as in those parts of the work where body colors had been employed (which are mostly metallic oxides), inclosing the wax between the glass and the paint, the tone is unaltered. These ivorytypes were made during a period of twelve years, and I cannot guarantee that the photographic part of them was done on all in the same manner; but they are all alike perfectly preserved, whereas plain photographs, on plain paper, made at the same time, and under the same circumstances, and kept framed in a dry room, have more or less faded; showing distinctly the preservative property of the wax.

The next question to be considered is: What makes silver prints fade? Three main

causes have been assigned as conducive to the fading of silver photographs: the mounting materials, the presence of soda, and outside influences.

To test the first, some prints made in the ordinary way, and well washed, were mounted with some decomposed starch or gum; others with fresh, were exposed in a very damp and impure atmosphere for over one year, when they showed slight fading all over, uniform, no difference with sour or fresh mounting material, settling this point. To test the second point, the presence of soda, prints from which the soda, after fixing, had been removed with blotting-paper only were, in connection with well-washed prints, exposed under several thicknesses of very moist blotting-paper for three days and nights, after which time both showed signs of fading; those with free soda being a little lighter, and the tint of the image somewhat more brown than the washed ones. This result surprised me, as I expected to see the soda prints perfectly destroyed; and I am convinced that a trace of soda left in prints which are kept under favorable circumstances, will not affect them to any noticeable extent, and that the presence of soda in prints is not of so great account as generally supposed.

To test the effect of outside influences, prints made in the usual way and mounted with fresh starch, were one half of the surface covered over with sour starch, and exposed with those mentioned above as having been mounted with sour starch, to the same influences. After one year's exposure the one half covered over with the sour starch showed very distinct fading in proportion to the varying thickness of the starch covering; whereas the uncovered halves were but slightly affected. Other well washed prints, mounted with fresh starch, were exposed under several thicknesses of blotting-paper which had been well moistened with hyposulphite of soda fixing solution, and after an exposure of several hours were almost destroyed. These results convinced me that outside influences are the most effective in regard to the fading of silver photographs, as likewise illustrated by the preservation of the above-mentioned ivorytypes.

Silver photographs made on different papers are influenced differently, and with-

stand the destroying elements differently. Albumen prints, with very few exceptions, fade and discolor simultaneously; prints on plain paper fade but do not discolor, at least the paper does not more so than ordinary paper under the same influences. Since the introduction of highly albumenized papers this discoloration has very much increased. This difference is very marked on prints kept in an album for fifteen years, the whiteness of the paper of which has suffered but little, whereas prints made within the last few years have very much discolored, the first ones being on single, the last ones on double albumenized paper.

Another decided difference is in the tint of fading prints on these two kinds of paper. On the single and on plain paper the remaining tint of the image is blackish, whereas on the double paper the remaining tint of the image is mostly brown or reddish-brown always on a more or less discolored albumen film. In fading out silver prints artificially there is a marked difference in the way different substances attack and change the color of the image. Cyanide of potassa and hyposulphite of soda seem to attack the tint which is supposed to be produced by the gold, first changing it from purplish-black to muddy brown, whereas sulphuret of potassa attacks the reddish tints first, changing the tone of the remaining image to a pure black.

Cyanide of potassa does not change the tint of the albumen, but sulphuret of potassa turns it from yellow to brown, according to length of exposure and thickness of albumen film.

It will be asked what produces the difference in the amount of fading of silver prints made on the same paper under similar conditions. This, I think, in most cases, can be explained by the difference in the strength of the negatives, difference of albumen film, over- or under-printing, and consequently great difference in the changes produced by the gold toning bath.

I think it admits of no doubt that prints made from strong negatives, consequently stronger printing and gold toning, will resist fading influences better than those made from thin negatives and slight toning.

Prints on thinly albumenized paper permit of a deeper incorporation of the image

in the body of the paper support, and having less organic matter to expose to atmospheric influences, will suffer less and keep an even surface even after the application of water. This is entirely different with double albumenized papers. Prints on these papers, when closely examined after being mounted, will be found to have cracked into millions of particles, but firmly adhered to the paper; after the application of water, these little pieces curl up, leaving open seams between them, giving free entrance to their great enemy, the sulphuretted hydrogen of the atmosphere, and the body of the albumen film being of considerable thickness, the absorption of moisture will be greater, consequently the process of fading more energetic and quicker than with single albumenized paper. I think the sooner these highly albumenized papers are discontinued the better.

As it is my conviction that silver prints suffer most from outside influences, and that, for want of anything better, we will have to use the silver processes for who knows how much longer, I have directed my labors of late to produce prints that will resist these influences, with what success you can judge for yourself by the accompanying samples.* Prints made in this way were immersed simultaneously with ordinary prints in solutions of cyanide of potassa, hyposulphite of soda, and sulphuret of potassa, and came out uninjured, whereas the ordinary prints were completely destroyed, and a prolonged exposure over a hot solution of sulphuret of potassa failed to attack them in the slightest degree, and I think that silver prints which can withstand these tests might be considered as permanent as most other things that are considered so, or as much so as reasonably could be expected.

THE THEORY OF PHOTOGRAPHY.

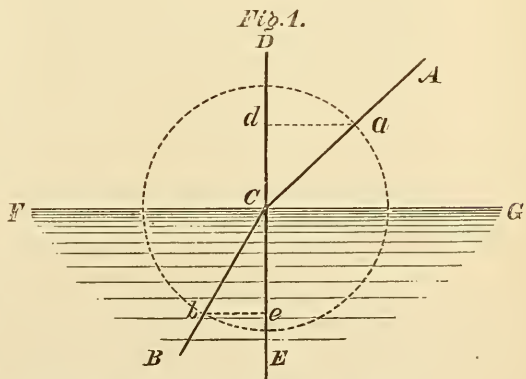
BY HENRY M. M'INTIRE, M. E.

(Continued from page 116.)

AND now, having finished that part of the theory of photography which belongs to chemistry, let us turn our attention to that which has to do with optics; and as in the one we commenced with light, so

here we will commence with the same. But while we before treated of light as a chemical agent, we will now treat of it as an optical agent. This is the one thing that chemistry and optics hold in common, the neutral ground, the place where one crosses the other.

The first thing, then, to be noted of light is that it travels, when left to itself, in straight lines. As long as it goes through any one substance, fluid or solid, which is in all parts in the same condition, the light will follow its straight path, looking neither to the right nor to the left, bending neither up nor down; *but* as soon as it enters a substance of a different density, then its path is changed. It is changed only, however, at the point where it leaves the one and enters the other. Having once entered the new medium, it continues in a straight line in its new course until it meets another medium, and one of different density. This bending of the ray of light is called *refraction*; and the following facts have been noticed in regard to this refraction. Calling the ray that is passing through the first medium the incident ray, and this one, after it is bent, the refracted ray; the line drawn at the point where the ray leaves one medium and enters the other, perpendicular to the surface of the media, the normal; the angle which the incident ray makes with the normal, the angle of incidence; and the angle which the refracted ray makes with the normal, the angle of



refraction. That is, referring to Fig. 1, *AC* is the incident ray; *CB*, the refracted

* We shall report upon these in our next.—ED.

ray; DE , drawn perpendicular to the surface of the media, FG , the normal; ACD , the angle which AC makes with this normal, the angle of incidence; and BCE , the angle which BC makes with the normal, the angle of refraction.

We have for the first law of refraction, that the angle of incidence and the angle of refraction always lie in the same plane, which is called the plane of refraction. And now, if from C , where the ray leaves one medium and enters the other, we draw a circle, and from the point a , where it cuts the incident ray, we draw a line perpendicular to the normal, DE , and also from b , where the circle cuts the refracted ray, and the perpendicular to the normal, we can then enunciate these rules thus. The angle ACD and the angle ECB always lie in the same plane, or, in other words, the angle of incidence and the angle of refraction lie in the same plane, which plane is called the plane of refraction; and secondly, for the same media, the perpendicular, ad , divided by the perpendicular, be , will always produce the same quotient, or, in mathematical terms, since ad is the sine of the angle ACD , (the angle of incidence), and be the sine of the angle BCE (the angle of refraction), we can say that the sines of the angle of incidence and of refraction are in a constant ratio. This ratio between the sines of the angles of incidence and refraction is called the relative index of refraction of one medium with regard to another. When a ray passes from vacuum into a medium, the ratio of the sines is then called the absolute, or simply the index of refraction, which, of course, is permanent for each substance.

When, now, a ray enters a piece of glass plate, it is refracted towards the normal, and when it leaves the glass it is bent away from the normal; but as in each case, the media are the same—glass and air—the index of refraction will in each case be the same. The ray will be bent as much toward the normal from the point where it enters the glass as it will be bent away from the normal from the point where it leaves the glass; and as both faces of the glass are parallel, the normals will be parallel, and, therefore, the ray, before it enters the glass, will be parallel to the ray after it leaves the

glass. It will not leave the glass as a continuation of the line it followed before it entered, but on a line parallel to that line. If the line strikes the glass perpendicular to the surface, the consequences will not be as above described, as may easily be seen. This, of course, is only when both sides of the glass are parallel; but when they are inclined, so that they will meet as in the prism, the case is different. When the ray enters the prism it will be bent towards the normal, as in the plate, and when it leaves the other side of the prism it will be bent away from the normal also, similar to the plate; but, as in this case the sides are not parallel, the ray leaving the prism will not be parallel to it when entering, but bent downward toward the broad end of the prism.

This may be clearly seen by constructing a diagram. It is the fact upon which rests the utility of lenses, no matter where used or for what purpose, as we shall see further on.

(To be continued.)

THE CENTENNIAL PHOTOGRAPHS

IN INDEPENDENCE HALL MUSEUM.

LAST spring an effort was made by a committee of prominent gentlemen of this city, to secure for *Independence Hall Museum* a collection of the photographs made of the Centennial Exhibition of 1876.

What splendid success they have had may now be witnessed at the Museum, where such a collection has recently been placed.

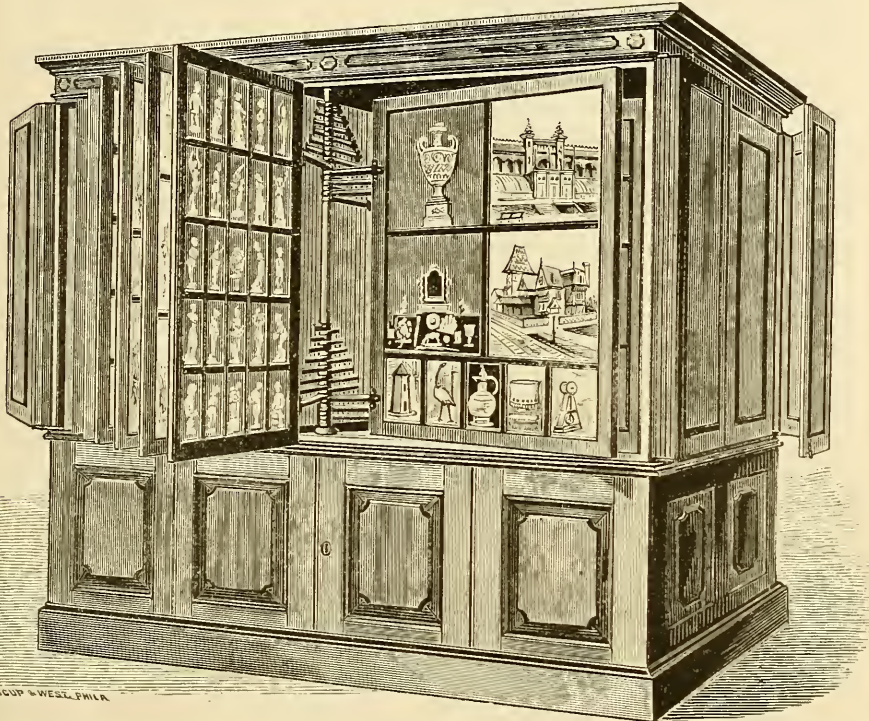
Here we find an elegant walnut cabinet, in outward appearance, when closed, like a great bookcase. The doors being thrown open on each side, at once a gigantic photograph album is presented to us, whose pages are filled with a most interesting and valuable selection from the negatives of the Centennial Photographic Company, Philadelphia. The drawing annexed will show it exactly.

The arrangement of the interior of the cabinet is very much like that of a hinged-back album, and was invented for this purpose. A vertical rod runs through the centre of each side of it, upon which, by means of peculiar hinges, each succeeding pair of

which is longer than its predecessor, are hung walnut frames or leaves, supplied with openings on each side of various sizes, for the reception of pictures. These receptacles are all compactly filled with photographs, neatly numbered and labeled with their

back very freshly to the memory the glories of our 1876 Exhibition.

The lovers of the beautiful; the artisan, young and old; the sculptor; the architect; the manufacturer—all will find ample subjects for study here, and much to profit by.



names, and the name of the country from which the peculiar product shown in the picture came, all under glass.

Here are bronzes and bric-a-brac; statuary and silks; machinery and metal-ware; ceramics and curiosities; tapestries; laces; jewelry, and what not, from all the nations represented at our great World's Fair; together with photographs of about every building erected within the inclosure; exteriors, interiors, and bird's-eye views of the grounds in abundance; the whole collection, including nearly one thousand of the larger views, most effectively arranged by Mr. Edward L. Wilson, the proprietor of the Centennial Photographic Co.'s works, and the Superintendent of Photography at the Exhibition.

An examination of these pictures brings

The work has been thoroughly and handsomely done, upon which the parties to whom our city is indebted for this fine present are to be congratulated; and Independence Hall must certainly now be visited more than ever, with this new and worthy attraction. —*From the Philadelphia Press.*

The above is brought to the attention of our readers with the belief that it will serve them to know that cases constructed as this one is can be had for exhibiting their own specimens in a most compact form, and that collections of these admirable photographs are obtainable at a low price for the adornment of reception-rooms. A very similar collection and case were furnished to the State of Kansas, and placed in Topeka. See advertisement hereafter.

PAYMENT IN ADVANCE POSSIBLE

PHOTOGRAPHERS are often much incommoded by the carelessness of their patrons in paying for pictures. They dislike to appear too exacting in asking for prompt payment, and so bills are left to accumulate. This is a false idea of modesty; rather call it by its proper name, weak-kneedness. If a man spends his time and stock to fill an order he has a right to expect and demand his pay for the same, be it furniture, upholstery, or photographs. Courtesy, and a disposition to be obliging, should always be shown. Never give a customer the idea that you doubt his ability or intention to pay for his pictures, but act as though prompt payment was a matter of course.

There seems to be an idea in the minds of people generally, that there is less consequence about paying for photographs than for other luxuries—"they seem so little, they can't cost much."

This notion the photographer must combat, and to assist him we give the following novel plan for a price-list sent us by a valued subscriber, Mr. F. B. Clench, Lockport, N. Y.

PRICE-LIST.

No. 1 Prices charged when paid for at time of sitting.
 No. 2 Prices charged when *not* paid for at time of sitting.

	No. 1.	No. 2.
6 Cards and Sitting, . . .	\$2.00	\$2.50
12 " " " . . .	2.50	3.00
Re-sittings, each, . . .	.50	.75
6 " Duplicates, . . .	1.00	1.25
12 " " " . . .	1.50	1.75
25 " " " . . .	2.50	3.00
50 " " " . . .	4.00	5.00
3 Cabinets and Sitting, . . .	2.00	2.50
6 " " " . . .	3.00	3.75
12 " " " . . .	4.50	5.50
Re-sittings, each, . . .	.50	.75
3 " Duplicates, . . .	1.00	1.25
6 " " " . . .	1.75	2.00
9 " " " . . .	2.50	3.00
12 " " " . . .	3.00	3.50
25 " " " . . .	5.00	6.00
50 " " " . . .	9.00	10.00
3 Promenades and Sitting, . . .	2.50	3.00
6 " " " . . .	3.70	4.50
12 " " " . . .	5.50	6.50
Resittings, each, . . .	.50	.75
3 " Duplicates, . . .	1.20	1.50
6 " " " . . .	2.00	2.40
9 " " " . . .	3.00	3.50
12 " " " . . .	3.50	4.00
25 " " " . . .	6.00	7.00
50 " " " . . .	10.00	11.00
1 6½ x 8½ and Sitting, . . .	2.00	2.50
Re-sittings, each, . . .	.50	.75

	No. 1.	No. 2.
1 6½ x 8½ Duplicate, . . .	\$0.75	\$1.00
3 " " " . . .	2.00	2.40
6 " " " . . .	3.50	4.00
12 " " " . . .	6.00	7.00
25 " " " . . .	10.00	11.00
1 8 x 10 and Sitting, . . .	3.00	3.50
Re-sitting, each, . . .	.50	.75
1 " Duplicate, . . .	1.00	1.25
3 " " " . . .	3.00	3.50
6 " " " . . .	5.00	6.00
12 " " " . . .	9.00	10.00

All duplicate orders, not paid for in advance, will be charged No. 2 prices.

It will be seen that this is self-explanatory, and Mr. Clench says he has found it a most useful assistant in portrait work. The prices each one can rate to suit his own ideas, of course.

When persons see that by payment in advance they can save from twenty-five to fifty cents, they are glad to embrace the offer. It is an excellent security against dead-beats, and the fifty cents extra charge for re-sittings, prevents fussy people from sitting again and again because some little minor arrangement of dress or accessory was not quite as effective as it might be. This price, fifty cents for re-sitting, is very moderate, but it meets the customer half-way, and saves the impression of imposition, which might arise if the price was higher.

The plan of advance payment also prevents duplicate orders being left on hand. It will be noticed that the prices here given are *decreased* in proportion as the order *increases*. There is a wise policy in this; it induces customers, so Mr. Clench finds by experience, to order large quantities, and when a person gives away twenty-five or fifty portraits it will result in inducing some of the recipients to sit for pictures, that they may return the compliment. This is good for the trade.

In fact, as Mr. Clench observes, it serves as a sort of general "Accident Insurance," and keeps the photographer from so keenly feeling the non-payment of the few.

Every gallery has some customers who prefer to have their little bills charged up in quarterly accounts. Simply charge these the second price; they will not object to it.

THE *Photographer to His Patrons* is the best advertising medium a photographer can have. See advertisement.

PATENTS AND PROCESSES.

"PATENTED processes are the 'photographer's pests'" says one, and yet not necessarily so. A good deal, yea, the most, of the worry and trouble and expense which our fraternity has had because of patented processes, has been owing, not so much to the existence of these pests, but to the unbusinesslike way in which they have been treated. Photographers should, when they contemplate the purchase of a patent, or an interest in or license under a patent, act as other prudent men do in undertaking any serious business: seek the advice of those whose proficiency is well known, and not trust to the statements and public instructions of volunteers, any more than they would confide in an amateur doctor or an amateur lawyer.

And because they do not do this, they suffer, and sometimes most outrageously. The costs for counsel's consultation fee would be small compared to that of a suit. It has always been our effort to prevent such impositions as are practiced upon our constituency; but they will not listen. How many times has our advice been overlooked, to the bitter cost of our readers. And yet, we venture once more to give them the best instruction it is in our power to obtain; and if they heed it not, our skirts are clear.

In our last issue Mr. Bachrach very generously gave us a few words of caution on this subject. While his remarks were in many particulars correct and to the point, we were convinced that on some points he was in error. So, following our invariable custom in all cases where patent issues are involved, we appealed to our excellent counsel, Henry Howson, Esq. (who saved us all from seven years of "bromide" exactions), and asked him for a correct and exhaustive explanation of the patent law in respect to matters treated of by Mr. Bachrach, so that our readers might be fully informed how they may go right, and when they go wrong.

This has brought us the following letter from Mr. Howson, which every photographer should carefully read and study, if he would avoid trouble; or if he expects either to apply for a patent or to bargain for a license to work under one. It is as follows:

MR. EDWARD L. WILSON.

DEAR SIR: The article entitled "The Value of Photographic Processes and Patents," which appeared in the last number of the *Philadelphia Photographer*, is, as you suggest, incorrect.

I quite agree with the author of this article in his denunciation of the "numbers of worthless secret processes," and his caution to photographers about dealing with patent peddlers is just and to the point, but when he undertakes to instruct the photographic fraternity how to deal with vendors of patents, and how to test the value of their patents, he falls very wide of the mark. He says: "How many of you understand what a process patent is. I have given the subject a great deal of attention, both in theory and practice, having made application for others, and taken out patents myself, and am now tolerably well posted."

It is not a difficult matter for a man of ordinary education, and with printed directions before him, to prepare the papers for an application for a patent, but it is not an easy task to procure the very best patent which the nature of the invention and the patent law and practice will permit.

Any youth endowed with ordinary sense and power of imitation, can learn to make a photographic picture of some kind, and this accounts for the many pretenders and the hosts of bad pictures which we see everywhere, but patience, skill, experience, and an artistic training, are necessary qualifications for a good photographer, and this accounts for the fact that poor photographers far outnumber those that excel.

It is the same with patents: it is an easy matter to procure something called a patent, but long training, legal and technical knowledge, and a good education must be brought to bear on the procuring of the best kinds of patents, and the giving of general advice about patent matters. This accounts for the fact that men of high standing in the profession are comparatively few, while solicitors of mediocre attainments, and those with no qualifications for the profession, are many.

I mention all this to show that the mere ability to prepare an application for a patent does not qualify a man to give general advice

to the public about patents, and I think I shall be able to prove this by reference to the above entitled article in your April magazine.

It is hoped that the author of the article in question will accept what I have to say on the subject in the same temper in which it is written. His motives in writing the paper were the best; he has simply made the common mistake of relying upon a superficial knowledge of a subject which every thorough expert in patent matters would approach with caution.

The author of the paper says: "In the first place, this class of patents (process patents) are the weakest of all patents."

A patent for a process is always considered a stronger patent than one for the appliances by which the process is carried into effect; a competent adviser when an invention is submitted to him will always endeavor to ascertain whether the inventor has discovered a new process independent of his mechanism, and if he has he will secure that process in preference to the appliances, or in addition thereto.

Of course there are bad process patents, and I have no doubt that there are many such patents relating to photographic processes, but whether nine-tenths of the photographic process patents are, as the author says, not worth the paper they are written upon, would be a very difficult matter for the most eminent professional men to determine.

But the author qualifies this statement about the proportion of worthless process patents by saying: "Unless they are totally original and novel to such a degree as to involve entire departure from previous methods or principles," etc.

This is entirely wrong; a very slight change in old processes will sustain a patent if the results are important; many of the most valuable process patents owe their strength and value to very slight departures from long-trodden paths.

"A patent (says the author) only covers the specific objects in the claims, and they must be distinctly stated or they are valueless."

A patent may cover more than appears in the claim, viewed separately from the specification; the patentee may be legally entitled to equivalents of one or more elements

named in the claim, although the latter may be silent on the subject of equivalents.

"Even in case a patent," says the author, "has been granted in this country, and a publication can be shown two years previous, covering virtually the same ground, it will be declared void by the first tribunal that tries a case under it."

This is very delusive information, or rather mis-information.

A publication to invalidate a patent must be anterior to the date of the patentee's invention, for wherever a question of priority arises the patentee has always a right to go back to the date when his invention was made, as in the case of Cutting (very familiar to you, Mr. Editor), whose bromide patent was granted July 11th, 1854, after his application had been rejected in view of a work published in 1853, because evidence was forthcoming that the invention of Cutting was made prior to the date of the publication.

The author of the article appears to be totally ignorant of the terms of the statute which provide for the grant of a patent if the invention has not been "known or used by others in this country, and not patented or described in any printed publication in this or any foreign country *before the patentee's invention or discovery thereof*, and not in public use or on sale for more than two years prior to the application."

The limit of two years it will be seen does not relate to publication, but to public use or sale.

"It must be borne in mind," says the author, "that mere modifiers and improvers of the ideas of others are not inventors."

This is an extraordinary statement, and as mischievous as it is incorrect.

There is a statutory recognition of the rights of the improver in the following language: "Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful *improvement* thereof."

If improvements on the inventions of others were not recognized, there would soon be an end to inventions, and the patent office might close its doors.

There is not one of the many perfect machines and articles of manufacture which

attracted the attention of foreigners at our Centennial Exhibition which is not due to a succession of improvers on the inventions of others. To say that improvers of the ideas of others are not inventors, is subversive of our entire patent system.

The author goes on to instruct your readers as follows:

"The first step to take on examining a patented process is to send for the specification. After receiving the papers, examine with the utmost care the claims which are always at the end. Now be careful and see *just what is claimed*, for that is all which the patent covers, no matter how much verbiage may be used in the preliminary description, as that may include anything which is necessary to make clear what the invention really is. Only the actual claims are covered, and they must explain in definite terms what the invention is."

I have already stated that to determine the meaning and scope of claims without reference to the description, is a very unsafe proceeding, and it would be still more unsafe to be guided by the following statement of the author: "Any claim which attempts to include a general process previously described without stating any single step or combination of steps in that process executes itself."

Such a claim may be bad on account of vagueness, and failure sufficiently to distinguish the new from the old, but it must be remembered that the courts will so construe a claim, if possible, as to uphold the patentee's right to that which he seems really to have invented.

The reason which the author gives for the invalidity of such claims is, that "if any portion thereof has been published or publicly used two years previous, it invalidates the whole of such a loosely-worded patent."

If by this the author means that if any part of an entire process claimed be old, the claim is necessarily bad, he is greatly mistaken.

Men who are presumed to know even less about patent matters than the author of the article, are told to purchase a copy of a patent, and then pass judgment on it with no other aid than that contained in the above misleading instructions.

Let us see how a professional expert would

proceed in interpreting a patent, and then we can understand how dangerous and futile it will be for a man ignorant of such matters to undertake to perform that duty.

Probably the first step an expert would take would be to look for the name of the solicitor through whom the patent was obtained, and if he saw the name of a man of acknowledged ability, he might be satisfied that the patent was the best that the prior state of the art and other circumstances would permit. The next step would be to read the entire specification with the greatest care, measuring the meaning of every sentence, for the terms of the claims have to be determined by an interpretation of the whole specification. The next step is to find out what was described and claimed in the original application, and if he finds that alterations have been made during the prosecution of the case, he must ascertain why these alterations were made; why sundry matter was struck out; why certain claims were altered or abandoned.

When he has done all this he can form an approximate opinion as to the character of the patent, but much more remains to be done to determine absolutely its true nature. He must not rely solely on the action of the patent office; he must determine for himself the prior state of the art, and must examine prior patents and publications relating to the subject.

When he has done all this he may find that the patentee was not entitled to a patent, or that the patent covers the invention, or that the patentee was entitled to much broader claims than those originally granted. To form a correct judgment requires an extended knowledge of patent matters, legal acquirements, experience, and the command of an extensive library relating to patents.

In spite of all this, it is quite common for men without the slightest qualifications not only to undertake these duties, but actually to instruct, or rather *mis*-instruct others in relation to them.

A general mistrust concerning patents and patent property prevails throughout the country, and this is due in great part to the prevailing ignorance of the true spirit of the patent law; ignorance promoted by that of persons who assume to be advisers, and volunteer public statements which, like that

under discussion, are full of the most glaring blunders.

The general meaning of a patent may be easy of comprehension, but surrounding almost every patent granted there are intricate questions with which none but experts can grapple.

Intricate as patent matters are, it is a little curious that there is scarcely any other subject concerning which men are so ready to assume an intimate knowledge, and to arrogate to themselves the position of public instructors, and this in spite of such official caution as that contained in the *Official Gazette* of August 27th, 1878.

As an instance of the superficial way in which men will write or talk about patents, I may refer to a dispatch to the State Department from the United States Consul at Verviers, Belgium, a dispatch published in almost every newspaper of prominence in the country.

By this dispatch American inventors are advised to procure foreign patents, the cost of which is stated to be moderate.

The cost of patents in Russia, Spain, Denmark, and Switzerland, is set down at less than five dollars (\$5) each, whereas no patents are granted in Switzerland excepting in one of the small cantons, where special privileges may be obtained at a cost of from twenty-five to one hundred dollars, while a Russian patent for ten years costs, for government fees alone, three hundred and seventy-five dollars.

The cost of an English patent is set down at thirty-eight dollars, which will not much more than cover the government fees for the first step, leaving entirely out of the question the further costs which are necessary to secure the patent. The confusion and mistrust which such a widely published official dispatch as this will cause among our inventors is incalculable; it may prove to be of some slight advantage, however, if it induces the government to recall such a blundering official.

Much more might be said in relation to questions raised in the article in your April number, but I have already trespassed too much on your space.

Respectfully yours, H. HOWSON.

PHILADELPHIA, April 18th, 1879.

GERMAN CORRESPONDENCE.

Failures in Albumen Paper—Weak and Strong Printing Baths—Maybridge's Instantaneous Pictures.—The New Steinheil Lens—Gelatin Emulsion Plates.

IT is a long time since so many complaints have been heard about albumen paper as in the last few weeks, although there was never any scarcity of complaints about this subject. I do not know whether the same cause of complaint exists in America, but I should think that with your variable climate, you would be subject to the same annoyance, just as much as we here. The summer is pretty near at hand now; and with the rising of the thermometer an increase of the failures of albumen paper, and a consequent increase of spoiled pictures, will take place. It is a curious fact that the same defect appears often with paper of different manufacturers; and it seems to be a correct deduction from this fact, that one of the causes of the defects has to be looked for in the raw paper, as it is not likely that all the manufacturers work after one method and use the same albumen. Almost all the German manufacturers of albumen paper use Rives paper, and it is not improbable that the same has undergone some change. One of the main causes of the complaints now heard, is the formation of bladders, or blisters, in the albumen paper, and, in my opinion, this can only be caused by insufficient adhesion between the paper and the layer of albumen, a tendency to blister being thus developed in the albumen paper.

A proof of the correctness of my opinion is the fact, that paper which shows a tendency to blister is ameliorated by laying the same with the back in water, till the layer of albumen, which lies on top, begins to soften. Mr. Wenske first called attention to this fact; and paper treated this way, and dried afterwards, will not show any blisters. The water loosens considerably the structure of the paper, the albumen penetrates deeper, and combines mechanically more freely with the fibre, which prevents to a great extent the tendency to blister.

In proceeding in the above manner, it is necessary to add about one and a half per cent. of chlor. natrium to the water, as other-

wise too much salt is drawn from the paper. Many photographers, of course, will find this procedure too tedious, and, in fact, it ought to be attended to by the albumenizers themselves. Whenever I detect any blisters in albumen paper, I apply at once a weak fixing bath, about 1:25. Of course, the pictures must stay half an hour in the bath; but no blisters appear with such weak fixing baths.

There is another defect in albumen paper much complained about of late, viz., that parts of the pictures are loosened to such an extent in the several baths they go through, that they can be easily wiped off. Sometimes, also, the varnish gets off by itself on those places, and this seems to occur more frequently in the cold than in the warm season; and it is said that by keeping the baths and the wash-water at about 68° Fahr., this annoyance is avoided. Mr. Schaarwachter, here, has noticed the defect, however, also during the warm season, and avoided the same by somewhat longer sensitizing (four to five minutes). Mr. Brandt, here, asserts that the manifold defects in albumen, so much complained about now, and almost unknown formerly, are solely due to the fact, that now much weaker positive baths are used than formerly.

Fifteen years ago, printing baths 1:6 or 1:5 were in general use, but then a number of stockdealers put albumen paper in the market which, they asserted, needed only a silver bath 1:20; and, in fact, pictures were shown which had been produced with such a weak bath. A great saving of silver was expected; and the weak printing bath paraded in all the leaders of the photographic journals. But it soon became a well-known fact, that although a weak silver bath produces good pictures when fresh, the subsequent prints deteriorate very rapidly. In America, this defect was avoided by fuming with ammonia, which way of doing has never been introduced here.

Even in a strong bath, the sheets which are sensitized first are better than the last ones, but the difference is much less. The strong bath coagulates the layer of albumen better, and allows a more rapid sensibilization; and yet it is found that lately baths

1:10 are generally used, *i.e.*, weaker than formerly, and the cause of it is that the papers are now salted much less than formerly. One to one and a half per cent. of chlor. ammonium are taken now, against double the quantity formerly. The consumption of silver was, in former times, about fifty grammes per sheet, while now it is only twenty-five grammes at the highest; but considering the many defects of albumen lately complained about, it would seem to be advisable to use stronger baths, not under 1:8. Weaker baths require to be controlled, not by the ordinary argometer, which is always in the wrong with old baths, but in a chemical way, and by intensifying from time to time with fresh silver salt.

Those who want to avoid the chemical test will proceed in the following manner. Note the volume of the freshly-prepared bath, and the number of sheets which have been silvered in it. When the bath has been in use so long that only three-quarters of its original volume remain, add, for each sensitized sheet, 1½ gramme (25 grains) nitrate of silver, and dilute the bath till it has reached its original volume again. If the silver bath is always intensified in this way there will be few, if any, occasions to complain about failures in sensitizing.

I received, a few days ago, from Mr. Muybridge, of San Francisco, a series of his very interesting pictures of the "Horse in Motion;" and, at the same time, the Royal Ministry of Agriculture handed me the same series, with the request to render my opinion about it. The curious postures of the legs of the horse, which caused quite a surprise here, are interesting in the highest degree for the theory of animal motion in general; for the rest, similar curious postures of the legs are often seen in instantaneous pictures of people in motion. Maybe Mr. Muybridge will try with his apparatus to take the picture of a rapidly-walking person, when, probably, quite curious postures of the legs would appear. But more interesting yet would be the picture of a flying bird.

The new group lens of Steinheil, which I mentioned in my last letter, has been examined more thoroughly now, and has ex-

ceeded, almost in every respect, the expectations based upon it. Mr. Reichard made extensive experiments with the same, and reported about it to the *Verein zur Foerderung der Photographie*. He found that the instrument No. 3 had quite as much intensity of light as a good Hermagis lens of three inches diameter. The Steinheil lens has a very large field of view, and a very considerable depth, which enables the operator to come quite close to the subject; but also occasions very often exaggerated perspectives, which appear almost as distortions. For groups of a larger size, Mr. Reichard does not think the smaller instrument in question to be suitable, mainly on account of the perspective distortions, which are occasioned by the too close proximity which is required; but for groups of a smaller size, which are destined to be enlarged, the instrument is very appropriate. Mr. Reichard showed several cabinet plates produced with this instrument, which corroborated the above statement in every respect.

"Interior takings" of the atelier showed the very considerable depth and large field of view of the instrument. The takings are partly single portraits, partly groups. Among the portraits there is one which was taken from a distance of hardly three feet. Here, also, the astounding depth of the instrument was conspicuous. Of interest also was the simultaneous taking of the picture of the same subject (sitting) in the same size and posture, of which one was done with the instrument in question from a distance of about five feet, and the other with the Hermagis lens of three inches diameter, which required a distance of about ten feet. The latter picture made a more agreeable impression, on account of the less exaggerated perspective. The instrument proves, therefore, to be a very valuable addition to the accessories of the photographer.

The gelatin emulsion plates are yet the chief topic of the day, and the genuine sensation they caused is far from being subsided as yet; but, on the contrary, it seems to be increasing all the time. The fact that several English photographers have been making portraits already with gelatin plates, reaching satisfactory results with them even in the very worst kind of weather, is so re-

markable that it is the duty of every photographer to follow up this new process closely. The bare idea to do without the silver bath, collodion, and head-fastener is seductive enough; and it is, therefore, no wonder that the last number of the *Journal of the Photographic Society*, March 15th, contains, besides a very readable article on optical matters by Captain Abney, almost exclusively reports about gelatin plates.

The disagreeableness of preparing the gelatin plate seems to be easier surmounted than was anticipated. Captain Abney states that he lays the plates which have been prepared with fresh emulsion in alcohol, which absorbs a good deal of water from the plate, thus causing the same to dry very rapidly.

It seems to be assured that gelatin emulsion will be placed in the market, as it is just as lasting as collodion, and can be used by photographers just as well as the same. Obernetter prepared such an emulsion, which he offers for sale dipped in alcohol. The alcohol is poured off, the whole placed for a quarter of an hour in warm water, of 100° F., when the emulsion becomes soft. The plates are cleaned with diluted water-glass (1 water-glass, 250 water), and the emulsion poured on just like collodion. The excess is dripped off, and the plate is laid on a horizontal plate of glass, stone, or metal. The layer of gelatin hardens in from two to five minutes, and the plate can then be dried in a perpendicular position, in any closet which is well protected against dust and light, or it can be exposed at once; but then the sharpness of the picture is lessened.

The emulsion is prepared, according to Obernetter, as follows: Dissolve 25 grammes isinglass in 250 grammes water; add 28 grammes brome ammonium and (in the dark) 44 grammes nitrate of silver. The whole is kept warm and in a liquid state for twenty-four hours; then it is allowed to harden, and washed by a continuous stream of water a whole day long, when 25 grammes common gelatin, 20 grammes albumen, and 750 grammes of water are added. This kind of emulsion produces plates five times more sensitive than wet plates. Obernetter places great weight upon the addition of albumen, asserting that it exerts a very favorable influence upon the developing.

For developing, Mr. Obernetter recommends

Solution of Bromide of Potassium (1:10), . . .	2 c.c.
Alcoholic Solution of Pyrogalllic Acid (1:10), . . .	4 to 5 c.c.
Water,	250 c.c.
Ammonia,	10 to 15 drops.

The developer must be mixed only very shortly before use, as it decomposes very quickly. About the tenth part of it is sufficient for a stereoscopic plate. The picture appears, with correct exposure, in about half a minute. In case it appears quicker, some solution of bromide of potassium is to be added; and, if slower, some drops of ammonia, till it has acquired the desired strength. Fix as usual.

Obernetter is opposed to any further increase of sensitiveness, although the same is easily reached by longer emulsification; and he declares that the quintuple sensitiveness of the wet plate allows to work with passable bright red light in the dark-room, which makes it possible to control easily the developing process. With plates of higher sensitiveness, it is necessary to darken the dark-room to such an extent that it is almost impossible to see in them.

A very important question is raised now. Can the gelatin process be practically used in summer? I am afraid that in the hot days of July, in America, the gelatin layer will harden very slowly, if at all. I experienced, in Chicago, during the Centennial year, 100° F. in three consecutive days; and at such a temperature the emulsion will not harden, unless it is placed in an ice-box.

Yours truly, DR. H. VOGEL.

BERLIN, March 26th, 1879.

WAYMOUTH'S VIGNETTE PAPERS.—Photographers have at last found that the most delicate and beautiful vignettes are produced by using these cheap vignetting papers. They are graded to suit negatives of various intensity, and all ready for use at once. No troublesome vignetting boards to carve, and no gimcracks to get out of order. See articles by Messrs. Hearn and Vogeler in our back numbers.

FRENCH CORRESPONDENCE.

The Photographic Society of France—Mr. Woodbury's Photometer—Photographs from Mr. F. Gutekunst, Philadelphia—April Meeting of the Photographic Society of France—Generosity of Mons. P. Gaillard—Report on Russian Cotton—Gelatinobromide Plates—Presentation of Gelatinobromide Pellicle by Prof. Stebbing—A School of Photography required—Lectures on that Art by MM. Leon Vidal and Davanne—Mons. Leon Vidal Editor of the Moniteur de la Photographie—Lecture by Mons. Bardon on Solvents for Pyroxylin—A Novel Apparatus likely to be of Service in Photography—On the Cause of Blurring.

THE Photographic Society of France at its monthly meeting for March gave me some interesting items for you.

Correspondence and communications ran upon the subject of gelatinobromide emulsions, which it may be said is the hobby-horse at the present moment among amateurs in Paris.

It was remarked that a foreign journal had given the idea of the employment of wool as a filtering medium, which idea, said several members, is due to Mons. Ferrier. I do not wish to criticize his right; but I always imagined that a cotton or wool plug for filtering was employed by chemists or alchemists long before the use of paper filters was known. I have employed it for years for filtering syrupy liquids, and must say it is excellent for that purpose. Thinking it was known and employed by all, I never thought of mentioning it to the readers of the *Philadelphia Photographer*. Now I can say try it, and many thanks to Mons. Ferrier for making it public.

Mons. Jonte, manufacturer of photographic apparatus, received the award of five hundred francs, the prize offered by the French Society for the best travelling camera. The camera is well made, and will render much service. There is no swinging back; the action is obtained by the lensholder, which rises, falls, or takes an angular position at the will of the operator. As the *pro* and *con* of this system has been under discussion for a very long time in all the journals, I will not enter into it largely. I

will only say that for a short-focus lens it is unimportant, because the operator can easily reach the lens, and place it in the proper position; but how on earth can it be under his control if he uses a long-focus lens? If he has arms which can pull out like the tube of a telescope he may succeed, but for common mortals I imagine that it would be more difficult to arrange the image upon the focussing-glass by this system than it would by the *old fashioned swinging-back*.

Mons. Gayffier presented the Society with a collection of photographic proofs in fatty ink, representing a part of the last great international exhibition of Paris (*Les Forêts*). Great praise is due to Mons. Gayffier for the progress he has made in fatty-ink printing. Although an amateur, this gentleman has succeeded in producing some of the best specimens of fatty-ink printing I ever saw.

Mons. Bardy, who is ever disposed to render service to photographers, gave a lecture on the value of chrysoidin to replace yellow glass in the dark-room. He proved, by experimental demonstration, that all the substances proposed during the last few months having that object in view could not obtain the end for which they were proposed. A very powerful oxyhydric lamp was employed in conjunction with a prism, to decompose the light and form the spectrum, which was projected upon a white sheet. The rainbow colors were very bright and visible. A glass tray, containing a solution of bichromate of ammonia, was placed between the source of light and the prism, in such a manner as to hide the half of the spectrum. It was easy to see that the band of absorption did not cover the violet nor the yellow rays. A piece of yellow glass was then put in its place, and gave a worse result, allowing many of the indigo, as well as the violet rays, to pass; in fact, only weakening the power of the light in a great measure, without absorbing sufficient to allow one to work in a dark-room with sufficient assurance that his plates would be without fog. With wet collodion containing an iodide not much danger is to be feared, but with a bromide emulsion it is another thing. In taking a photographic copy of the spectrum alternately, upon a

plate prepared with iodide and bromide of silver, a great difference in the actinic properties of these two salts can be easily seen. The bromide is affected to a lower point of the spectrum—it reaches the green—whereas by employing iodide, it ceases in the blue space of the spectrum. This is why photographers rarely succeed with the gelatino-bromide plates; their windows allow a part of the actinic rays to pass, causing fog, “red fog,” etc.

In choosing a colored medium for the dark-room, a considerable difference will be found in the actinic qualities of the various shades of color. A blood-red colored glass will give absolute freedom from fog, but this color is injurious to the eyes. A light-yellow glass is more penetrable to the actinic rays than a dark orange-yellow color. Now chrysoidin has this color; and when Mons. Bardy poured a solution of it into the glass tray, and interposed it between the light and the prism, this color absorbed more of the violet yellow-orange rays than any of the other substances experimented upon during the evening. Mons. Bardy was highly applauded for his very interesting demonstration.

Mr. Woodbury, who was present at the meeting, exhibited his new photometer, a very compact little instrument. It is a little brass box, about the size of a five-shilling piece, and about double its thickness; on the top surface is a pane of glass, and under it is a piece of paper with a hole in the middle, of about one-quarter inch, and round this hole to the edge the paper is divided into segments, the first bearing a light color; the second, double in depth of shade; the third, treble; and so on, to the last. A very ingenious system of winding up the sensitized paper in a small compass is placed in the interior. The end of the paper hangs out of the box, and by pulling it on more or less, the sensitized paper is brought under the hole in the middle, and there receives the light, which changes its tone; it can be left until the paper gets to the required tint. It is then pulled on for another operation.

Mr. Woodbury told me that in this state it is very good to judge of the actinic power of light for dry-plate work. When it is required for carbon printing, a disk of yellow-

tinted gelatin is interposed between the glass pane and the tinted paper. Mr. Woodbury will not only render great service to carbon printers, but also to those who occupy themselves with the platinotypic process. Although Mr. Woodbury has the right to repose upon his well-earned laurels, his inventive genius has here once more awakened, to endow photographers with another instrument to assist them in their labors.

I received, yesterday, a very fine collection of portraits (album) from Mr. F. Gutekunst, 712 Arch Street, Philadelphia. These proofs were very much admired by the members of the Photographic Society of France. It always gives pleasure to our Society to see specimens of work done in foreign countries; the members are always enchanted to see progress in the photographic art, an art, in fact, which calls France its birthplace. I shall always be happy to act as an intermediate to present proofs, specimens, or anything likely to advance photographic art, coming from any of my American readers.

Mons. Boissonnas sent a letter to the Photographic Society of France, in which he denies that the formula for the rapid process published in many journals by Mons. Morgan is his, and therefore the non-success attending many who have experimented upon it is not astonishing.

Mons. Maquy sent a very lengthy communication upon the transfer of negatives. He says he had tried the system of gelatinized paper as proposed by Mr. Woodbury, but did not succeed. He prefers the following solution, which can be worked in cold water (to cover the paper).

Water,	. . . . .	100 parts.
Gum Arabic,	. . . . .	25 "
Gelatin,	. . . . .	$\frac{1}{2}$ part.
Glycerin,	. . . . .	3 parts.

The gelatino-bromide emulsions take up very much silver; and when bottles, vases, funnels, etc., are washed, and the washings thrown into the residue-tub, the silver does not settle, but remains in suspension. Can any of the readers give an easy means of precipitating said silver? A great favor would be conferred upon many.

The April meeting of the Photographic Society of France took place last evening,

the 4th instant, Mons. Piligot in the chair. After the reading of correspondence Mons. Davanne informed the Society that one of the members, Mons. Paul Gaillard, intended to place at their disposal the sum of five hundred francs, to be offered as a prize in a *concours* upon any subject the Society should choose. This gentleman, it may be said, was one of the founders of the Photographic Society of France, and was for many years one of the most active of its members. If his zeal has cooled down, and his absence been regretted by the Society, he has come forward most generously, and shown that the old Society and the photographic art were not altogether abandoned. May many follow in his footsteps.

Mons. Chardon read a report upon the Russian cotton which was confided to him to experiment upon. He gave as his opinion that no advantage could be obtained by Russian cotton in preparing precipitated emulsions; on the contrary, the film was void of cohesion, and gave very thin proofs.

Mons. Roger presented some negatives made by the gelatino-bromide process.

Prof. Stebbing laid before the Society several samples of his rapid gelatino-bromide pellicle and the new modified oxalate of iron developer. A committee will be formed to make experiments on the same.

Mons. Davanne informed the Society that the government intended to create a chair at the University for the teaching of photographic chemistry. Great strides have been made within the last year towards this end. Public lectures on the photographic art have been given by eminent men—Mons. Léon Vidal at the Decorative Art School, and Mons. Davanne at the Sorbonne. The former gentleman gave also a very interesting and instructive lecture on photography, last night, at the Place des Vosges, which lasted from eight to half-past eleven o'clock, without the audience being in the least fatigued. It is true the lecture was enlivened not only by the intelligent and cheerful manner of the lecturer, but by a great number of proofs sent round, and by a very beautiful collection of magic lantern slides.

I am pleased to inform the readers of the *Philadelphia Photographer* that Mons. Léon Vidal has taken the arduous post of editor of

the *Moniteur de la Photographie*. I am certain not only will the subscribers to that journal be contented that a difficulty is terminated, but that our photographic lore will be a gainer.

Mons. Bardy gave a very interesting lecture, with demonstrations, on the means to suppress the ether and alcohol used in making emulsions. He gave the names of a great number of liquids which can be employed as solvents for pyroxylin, among which he chose three to experiment upon—acetone, pure acetic acid, and alcohol methylic. He informed the Society that emulsions *a la Chardon* could be made with either of these solvents, without its being necessary to use precipitated cotton. In order to make a finished emulsion, or, in other words, re-emulsionify the powder, alcohol and ether must be employed. The pyroxylin precipitated from a solution of acetone presented a very flocculent appearance; three grammes only taking up very much room. The cotton precipitated from alcohol methylic appeared like long, thin transparent shavings, which, when dry, became rather hard to the touch. This precipitated cotton has great value, as it holds in its fibres (if that word can be employed) all the bromide of silver; whereas other cottons let some of this valuable substance fall, and so weaken the finished solution and make feeble negatives.

It appears that greater rapidity is obtained by the employment of acetone, also by acetic acid. In fact, it is of great value to know that emulsions may be made without the employment of ether, that dangerous product which, set at liberty in precipitating emulsions, causes so many deplorable accidents. The alcohol methylic employed in making the emulsion need not be lost, as is generally the ether. When the emulsion is ripe it is precipitated into about double its volume of water; this water, containing the spirit, is then put into a large bottle, and dry carbonate of potash added; this salt, being very deliquescent, draws the water from the spirit and dissolves, forming a dense liquid, which will not unite with the spirit, and sinks to the bottom. Two liquids can now be seen; above, the pure spirit; below, the liquid carbonate of potash. The

spirit is now drawn off and distilled; it is then fit for use. The carbonate of potash need not be lost; it can be put into an iron boiler, and left over a fire until all the water be evaporated; it is now broken up with a hammer. Put into well-corked jars until it is again wanted.

Mons. Bardy presented, at the same time, a very useful apparatus, and which will, I am certain, render great service for the future. It is a new and novel instrument, intended to obtain a great number of proofs without the aid of a lithographic stone. The apparatus is composed of two trays, in zinc, about 12 x 10, and $\frac{3}{4}$ inch thick, when placed together,—they close upon hinges,—and resembles a book when opened; the hinges are so made that the two trays can separate. Each tray contains a white substance, probably composed of gelatin, glycerin, and sulphate of baryta. To put it to work, the operator writes upon a sheet of common paper all that he requires. The ink that he employs is a trade secret, but Mons. Bardy supposes it to be a solution of *violet de methylaniline*. The written sheet is then turned face downward upon the composition in the tray; the back of the paper is rubbed with the palm of the hand; the ink makes its way into the composition, so that when the sheet of paper is raised from the composition the writing is visible upon the latter, the same as if it were a lithographic stone. Ordinary paper is then taken, without being damped, laid upon the design or writing, the back rubbed a little with the palm of the hand, lifted up, and the *fac-simile* is obtained. Mons. Bardy printed off twenty proofs very rapidly.*

Now what, it may be asked, is the use of such an instrument or apparatus in a photographic point of view? The answer was, in fact, made by Mons. Bardy, who said that a photographic process was known, based upon the property of certain salts to become deliquescent by exposure to the air, as in the dusting-on process for enamels. Instead of employing the different metallic salts, *methylaniline* could be used in its place.

* A process of this kind, known as the papyrographic, is patented and largely used in this country.—Ed.

A photographic image would be obtained which, transferred to the apparatus, dozens of proofs could be printed off in a quarter of an hour. Advice to the readers of the *Philadelphia Photographer*!

Mons. Davanne read an elaborate report of a committee chosen to give their opinion as to the cause of halation (blurring). It was proved, by many experiments, that the sole cause is the reflected light from the back of the glass. The lesson to be learned is, to paint the back of the plate with any anti-photogenic color, to have real optical contact, without which the object sought after (to avoid blurring) cannot be attained. Black paper, velvet, etc., placed behind the plate in the dark slide, have no power to prevent blurring.

PROF. E. STEBBING.

27 RUE DES APENNINS, PARIS, April 5th, 1879.

SOCIETY GOSSIP.

THE CHICAGO PHOTOGRAPHIC ASSOCIATION.—The regular meeting of this Association was held in their rooms (Chas. W. Stevens' Photographic Warehouse), Wednesday evening, April 2d, 1879. Meeting called to order at 8 o'clock; O. F. Weaver, President, in the chair. Minutes of last regular meeting read and adopted. E. R. Curtiss, Madison, Wis., was proposed for membership and duly elected. The President stated that the first business would be the consideration of the topic named in the call, "Carvalho's new Contribution to 'Lightning.'"

MR. DOUGLASS responded:

"MR. PRESIDENT AND GENTLEMEN: It is hardly expected that the Secretary's portfolio imposes other duties than to record the work of the members of the Association, and see that the minutes and accounts are properly kept and preserved. These duties are quite sufficient for the present incumbent of the office, whose leisure for the labor is quite limited, and could I feel satisfied with simply doing my duty, would not at this time claim your attention. A desire to urge, by force of example, a greater interest in our Society, and the enthusiasm for our art-science, born of twenty odd years' labor in the fraternity, impels me to devote time

to this work, which should be given to recreation and rest. With this explanation, I ask your attention for a few moments to

"CARVALHO'S NEW CONTRIBUTION TO 'LIGHTNING.'

"For the past few months we have been in an atmosphere of 'lightning'—man, woman, child, and horse have been passing before the camera, and their image secured in so small a fraction of time, that the hand has not been able to perform its accustomed duty of making the exposure, but ingeniously contrived shutters of swift action are brought into use, and, in some instances, placed under control of that marvellous agent, electricity, which is swifter than light itself.

"Chemicals, from secret laboratories, have been offered for the magic work, accompanied with license to use the same. Wonderful formulæ have been sold to the credulous and process-buying photographer, and after the fraternity has been thoroughly worked in both methods, the journals are filled with these same formulæ, brought from some hidden corner, which produce an active demand to the stock-dealer for a score or more of chemicals, new to the craft. We have no time to review in detail the numberless offerings, good or bad. Our inquiry tonight is towards the latest addition to the magic store. In Anthony's *Bulletin*, for January, appeared the following, contributed by Mr. Carvalho: 'Since the inception of and production of the photographic image, the efforts of all seem to have lain in one direction, viz., to be able to obtain, with a very short exposure, a full-timed negative. Chemistry has been peered into, wonderful discoveries productive of varied results obtained; but still the desired goal of being able to work and use all one had to work with, was as far off as ever, from the simple fact that there would be times when the chemicals would work slowly from other than natural causes.

"Working under a skylight, the room being painted a sort of brown, and which room the week previously had been of the 'orthodox blue,' found in most of the studios throughout the country, working with the same instruments, and under pretty nearly the same conditions, I noticed that it took

less time to make a negative in the brown than it had done in the blue room. Here was food for thought. Was this so? and, if so, why?—And right here let me make one remark. I think it would be well for *all*, to take unto themselves this habit of close observation, and in noticing any strange freak, to ask these same questions, and follow this habit of finding out the ‘whys and wherefores’ by study and experiment.—‘I then began a course of experimenting, with the following results: Of the various colors of the spectrum, the *violet* we find to be the most actinic,—that power in the sun’s rays by which chemical changes are produced,—and the yellow or orange ray the non-actinic. Now, take a clean wine-glass, filled with some transparent *blue* liquid, place the glass on a clean sheet of white paper, permit a ray of light to pass through it, and you will find the shadow cast by it to be orange.’

“I tried this experiment and failed. Filling a glass test-tube with *blue* fluids of various natures and densities, I allowed a ray of light to pass through, but I saw only the *blue* color reflected beyond the tube. My vision may have been at fault, as in color-blindness, or I did not have the right sort of medium.

“Likewise does a blue substance reflect orange, both being complimentary to each other—so that a gallery painted *blue*, reflected on the sitter *orange*, making it necessary to lengthen the exposure in order to overcome this *non-actinic* effect. The brown-painted gallery absorbed the light to a great extent, leaving nothing but what entered through the skylight.

“It then occurred to me that if I could find a color to reflect a ‘violet,’ I might thus be able to use advantageously all the light. I found not only the above result in experimenting, but that of the three colors, blue, red, and yellow, or orange, each and every one reflected a combination of those remaining; thus, if *blue* reflected *orange*, *orange* in return complimented and reflected *blue*, *red* reflecting *green*, and *green* red; then *green* × *yellow* reflects *red* × *blue*, or its equivalent, *purple*. The purple obtained, it was an easy task to obtain the *violet*, which was produced, or rather reflected from a color resembling somewhat an *orange pea-green*. I

had my skylight-room immediately colored as near as possible to what I had attained, and here is what happened: Where formerly it took thirty to forty seconds to make a large 4-4 head, by the ‘new departure’ fifteen seconds was more than enough, twelve seconds being ample time, and under very favorable circumstances six to eight seconds. Another feature in regard to this orange-green painted gallery—there is no complaint about the light being too strong for the sitter’s eyes, *green* being, as is well known, the restoring color. The reflection of this color, violet, also renders the high-lights more positive and the shadows softer.’

“Now here indeed was something for thought and investigation. The ‘orthodox blue,’ so dear to every photographer, was found to be an enemy in disguise. To tear away the mask was not enough for our bold investigator, but he offers something to take the place of this color which had been fooling us so long, and here we have it before you this evening for consideration.

“Dr. Eugene Lommel, in *The Nature of Light*, page 121, says: ‘Amongst the homogeneous colors complementary to each other, are *red* and *greenish-blue*, *orange* and *clear blue*, *yellow* and *dark-blue*, and *greenish-yellow* and *violet*. It is generally found that for each part of the spectrum, from the red end to the beginning of the green, there is a complementary spot in that part of the spectrum which extends from the commencement of the blue to the violet end. The green spectrum color alone possesses no simple color, but only a compound one complementary to it, namely, *purple*.’

“We are greatly interested in this discovery of Mr. Carvalho, as it incites us to a thorough study of color and the nature of light, acquainting us in our research with much that we should know, in order to intelligently pursue the paths of our profession. It startles us somewhat with its strange statement that *blue* does not reflect *blue*, but *orange*; thus conflicting with many authorities hitherto thought above question. Hardwick, in his *Chemistry of Photography*, page 173, observes: ‘Surfaces termed white, reflect all the rays; colored surfaces *absorb* some and *reflect* others; thus, *red* substances reflect only the *red* rays, *yellow* substances *yellow*

rays, etc., the ray which is *reflected* in all cases deciding the color of the substance.' And, viewed in the light of this authority, the blue surface of the walls, etc., of our studio would reflect *blue*; not so according to Carvalho, it reflects *orange*. Now, if a blue color or surface or substance reflects orange, why is it that any blue fabric, or a blue flower, or a blue background, which I used some years ago for vignetting, shows the effect of white light? The rays reflected from these objects and surfaces impinging on the sensitive plate, develops an opaque or semi-opaque mass. Why have we counselled our sitters to avoid blue drapery? If *blue* reflects *orange*, why is it that the chemical action on the sensitive plate from that particular color is so violent? Hardwick, page 174, notes: 'The chemical action of light corresponds more to the *indigo* and *violet* rays, and is wanting, as regards its influence upon iodide of silver, both in the red and yellow.' We note an exception here. Dr. Vogel, in his work on the *Chemistry of Light and Photography*, page 66, says: 'It is proper to observe, however, that by no means *all* shades of *blue* become light in photography. For example, *indigo* forms an exception, appearing as dark as in nature, and this is shown in the photographs of the uniforms of Prussian soldiers. The reason of this is, that indigo contains a considerable amount of red. On the other hand, cobalt blue and ultramarine produce almost the effect of white.' In fact all investigators point to the blue color as a *reflective* agent of *high actinic* power. While on the other hand, light *transmitted* through a blue media, loses its highest actinic power. Mr. Carvalho is attempting the analysis of reflected light for photographers, and doing the work in this direction that has been done by others in the matter of transmitted light, and as I think the members will feel some interest in this important question, I will note some examples of the changes wrought in the ideas relating to transmitted light.

"In Tissandier's *History and Hand-book of Photography*, translated by Thomson, on page 91 we find the following: 'The first condition in a good posing-room is, that it should face the north; if it is placed at the top of a house it should be glazed on one

side and on the roof like a conservatory. *Glass of clear blue*, colored with cobalt, should be chosen in preference to all other sorts.' And the translator, in a foot-note, says: 'Blue glass used to be greatly in vogue, but the pure homogeneous blue, which admits only the most actinic rays of the solar spectrum, is so difficult to obtain that its use has been for the most part abandoned in England.' It has the property of sifting the light, allowing the chemical rays to pass, and producing a soft and harmonious effect. This is only one example of the blue-glass fever as allied to photography. In my own experience, I offer the following.

"When the virtues of blue glass were first sung, the proprietor of a large gallery, in which I was employed, went to great expense in fitting up a light having a southern exposure, and glazed with blue glass of the best quality he could procure. The wonderful light, with its peculiar atmosphere, was viewed with delight by all, and it was thought that nothing could excel it; but it proved a failure, and ground-glass was put into the sash within a week after the light was ready for working. Later, in my own gallery, a very large skylight-room, with north exposure and clear glass, was painted wholly of a drab color; and we had no trouble, no objection found to the time of exposure, and the light gave satisfaction to several first-class operators. But, in an evil moment, I employed, as positionist, a gentleman coming from one of the New York galleries—Gurney's, I think—and immediately a change was made; everything must be *blue*; and so it was. Our trouble now began. We did not notice any very marked change in the time necessary for securing our negatives, but the cross-lights and reflections worried us greatly. Fortunately, we lost the services of our positionist, and returned to our Quaker habit.

"Thomas Gaffield, of Boston, a very high authority, in an article published in the *Philadelphia Photographer* for October, 1876, entitled, *Glass for the Studio and Dark-room*, says: 'I think I have heard or read of photographers who have placed *blue* glass in their studios, with the idea that they should thus obtain more of the chemical rays than by using colorless glass. This second print

proved that all colorless glass, even the whitest and clearest plate, will cut off a certain, although small, proportion of the chemical rays, while the *darkest* and *poorest* colorless glass will transmit more than the blue—the best or *most actinic* of the colored glasses.'

"Why the writer condemns the blue glass, and still calls it the *most actinic*, I do not understand. I can readily appreciate the advantage of the glass allowing the pure *white* rays to pass, carrying with it, to the sensitive plate, the ray having the *highest actinic* power alone; or it may be joined with the red, a heat ray, which possibly assists greatly in the chemical changes in the sensitive film. 'Colorless glass transmits easily, and almost completely, all the light, heat, and chemical rays of sunlight—a small percentage only being absorbed or reflected; while the blue cuts off a large amount of light and heat, and a very sensible proportion of the chemical rays.'

"The introduction of the subject of the effects and defects of transmitted light may seem out of place, where we are expecting to deal with Mr. Carvalho's theory and practice of reflected light; but it may serve a purpose, in calling your attention to the important subject of light in all its bearings relating to photography, and, when carefully studied, be better understood, and more intelligently and successfully used.

"Now all this was prepared before the *Bulletin* for March came to hand; and I feel a little as though my efforts were wasted, as Mr. Carvalho talks to us in this manner, under the head of 'Photographic Paint.'

"That my communication on the subject of an *orange pea-green* color, to be used on the walls, joiner-work, floor, etc., of the operating-room, replacing whatever color then in use, as a means of improving the quality of light, shortening exposure, etc., would lead to controversy and doubt as to the correctness of it as a *theory*, was to be expected; and likewise, that skeptics and others, should express their doubts of it, as a *matter of fact*, was also to be anticipated. All new discoveries, and more especially this one, in *direct conflict* as it is with all the accepted theories for the past thirty years or more, would, in the ordinary course of

events, be subjected to the "fire" of scientific and other opinions. This has in a great measure come to pass. "Authority" after "authority" have been placed before me, *all bearing against* the above statement; but notwithstanding all this, it still remains an *actual fact*, that a *gallery* painted of the *orange pea-green* already mentioned, will *absolutely shorten exposure* from thirty-three and a third to sixty per cent., *according to circumstances*. Not only this, but the shadows will be *softer*, the expression of the sitters' face more pleasant—there being no intense light to trouble the eyes; and, lastly, you need *no change* to be made in your regular chemicals, apparatus, etc.'

"Now, gentlemen, there is no further use for argument or authorities after this plain statement. The easiest, in fact, the only way I can see, is to test this new candidate for our favor, and 'join the army' with those who have already begun to extol its merits."

MR. HESLER.—"As to the value of Carvalho's paint, I see no easier way to satisfy ourselves than to test it. My idea would be to cover a side screen or reflector with the compound, and see if it has the wonderful properties stated by the discoverer; if it is apparent, why then I shall put the paint on wherever it is required in my skylight-room. I will take some with me to-night, and report my experience at our next meeting. I hope it will prove all that has been stated. Regarding the blue glass experiment, I can say a few words. I put in a light of that kind some years ago. I found that for daguerreotypes it worked in about half the time of clear glass; but for negatives, the time was increased, still it worked quicker than the clear glass. The actinic properties of the blue glass was greater on the sensitive surface of the daguerreotype-plate than upon the film of the collodion-plate. I found it produced a bad effect upon my sitters; the blue atmosphere gave a sort of blurring sensation to their eyes; they complained that they could not see. I found this complaint more marked in persons having very black eyes. Those having blue eyes never complained of the trouble spoken of. I removed the blue and put in ground-glass. It worked nicely in summer days, but in the dull

weather of fall and winter it worked slow. I took out the ground and put in white crystal glass, having white curtains next the glass, with blue below the white. I was satisfied that my last experiment was the best, and I think the whiter, or glass having the least color, the better."

MR. NELLIS.—"I think it will hardly pay to waste much time with the theory of this reflection of certain colors. What we want is the practical part, and as Mr. Carvalho offers us a medium that, he says, reflects a strong actinic color, we will try it; if found as represented, we will use it and give him due honor for his discovery; if it fails, it has done some good in creating a desire for further knowledge regarding color and its absorbing and reflecting powers. It may lead to valuable revelations."

As all the members seemed to agree that further discussion was unnecessary until the paint had been tested, the President declared further remarks on the topic postponed until the next meeting, when reports would be received and discussed.

REFLECTORS AND SCREENS.

MR. HESLER.—"Before taking up the other subject named in our Secretary's call, I desire to call the attention of the members to an accessory for the skylight-room I had in use many years, and which I think would be found of very great advantage at the present day. Several years ago, while operating at Galena, in this State, my light being a remarkable one for distance from the sitter, being eighteen feet at the lowest point and twenty-two feet at the highest part, I arranged a good-sized looking-glass in a portable frame, hung so it could be adjusted at any angle, and with it I controlled the high-lights on the eye and face—placing them anywhere I chose, and I think such a reflector, used with intelligence, a great advantage in any skylight-room."

MR. DOUGLASS.—"Noticing in the St. Louis *Practical Photographer* an article by Mr. Osborn, of Oswego, Kansas, on the 'Advantage of using Side-screens and Reflectors,' I wrote the gentleman for some examples of his work, at the same time writing Mr. Winsor, of Galesburg, Ill., who I knew did not use reflectors, for ex-

amples of his work, intending to place them before you for criticism. Mr. Osborn wrote me that as he is rebuilding his light he cannot comply with the request at once, but, when ready for work again, we may look for some specimens and a paper on the subject of reflectors, their use and abuse. Mr. Winsor sends us a nice collection of boudoirs, cabinets, and cards, and writes as follows: 'I send you a few samples of my work, made without any reflector of any kind; not so much that I think them superior in any way, but you ask them and I am willing to do all I can to assist in solving any of the vexed questions we have to contend with in photography. My light is 10 feet wide; side-light commences 4 feet from floor, and is 3 feet 9 inches high; top-light, 14 feet long, and at an angle of 40°. Operating-room, 23 by 35 feet. Light facing the east. Everything white; in the room is a small head-screen, which is not used as a reflector, but always over the head, and is never put over the light side of the subject. With standing figures, this even is removed and nothing of the nature of a reflector used. I use plenty of light, and still not all in the lightest days. I cannot see where I can use a reflector, without rendering the work flat and unsatisfactory.'

The work was handed round for inspection, and elicited a great deal of praise for its excellence. It certainly ranks Mr. Winsor very high as a photographer.

On motion, a vote of thanks was given Messrs. Winsor and Osborn, and the Secretary directed to place the letters and photographs on file until Mr. Osborn fulfils his promise, when they will be brought before the Association for criticism.

The Secretary offered for inspection a collection of cabinets, from E. H. Perry, of Battle Creek, Mich. The work was favorably noticed, and a vote of thanks tendered Mr. Perry for the exhibit.

THE GERMAN PRIZE OFFERS.

MR. ROCHER translated a circular from the Vienna Association as follows:

"The undersigned take pleasure in making known their intentions of having their annual prize competition, and ask your kind co-operation in their behalf, through your-

selves and the journal you issue. Any desired information, programmes, circulars, etc., will be furnished on application.

With highest esteem,

DR. E. HORNIG,
F. LUCKHARDT.
18 Jabor St., Vienna.

LIST OF PRIZES.

Voigtlander Medals.

1. Gold medal; value, 1500 francs, for heightening the sensitiveness of wet plates.
2. Gold medal; value, 1500 francs, for a process on dry plates, particularly commendable for surety of success and sensitiveness.
3. Gold medal: value, 500 francs, for the best treatise on the gelatin emulsion process.
4. Silver medal, for best collection of studies after nature.
5. Silver medal, for best collection of instantaneous stereoscopic pictures.
6. Silver medal, for a collection of lantern slides suitable for illustrating objects of natural science, art, and technique.
7. Gold, silver, and bronze medals, for scientific treatises, inventions, improvements that have been communicated in the meetings and through the organ of the Photographic Society of Vienna, and for very meritorious achievements in photographic practice.

For the medals 3, 4, 5, and 6, the offer is until October 1st, 1879. For the others, until May 1st, 1880.

MEDALS OF THE SOCIETY.

1. Gold medal; value, 1500 francs, for high or low relief plates to print in half-tones.
2. Gold medal; value, 1500 francs, for a monography on pyroxylin or collodion.
3. Gold medal; value, 500 francs, for the best analysis on asphaltum.
4. Silver medal, for *genre* pictures.
5. Silver medal, for carbon prints made in Austria and Hungary.
6. Silver medal, for collection of old architectural photographs.
7. Silver medal, for collection of ethnographic studies.
8. Silver medal, for collection of anthropological studies.

The detailed programme of the Society will be sent free through the President, Dr. E. Hornig, Vienna.

On motion, the same was placed on file.

MR. DAVIS exhibited some prints of an intense blue color made with ferrocyanide of potassium and ammonia-citrate of iron. Mr.

Davis, as draughtsman of the Illinois Central Railway, makes all duplicates required of his drawings in this manner.

The Secretary exhibited some prints made with the electric and oxyhydrogen light by D. Bachrach, of Baltimore. They received a great deal of attention.

MR. CURTISS, of Madison, Wis., desired information regarding the best brand of colorless glass to use in skylight.

MR. SMITH.—“I have tested quite a number of samples, putting the glass into the sash and using it for some months. I am satisfied that a crystal glass made by Wightman, of Pittsburg, Pa., is the most suitable, and have adopted it. I am now putting in a second skylight to meet the demands of my business, and have the ‘Wightman’ glass.”

The President stated that the Secretary's call had on it the subject of

NITRITE OF SILVER,

and he would now invite papers and discussion on that subject.

MR. DOUGLASS introduced it in the following short paper:

“MR. PRESIDENT AND GENTLEMEN: My attention was directed to the *nitrite* of silver particularly, by its introduction in the formula of Mr. Land, published in the *St. Louis Practical Photographer* for March. It has been held by many authorities that it should be avoided, and our various text-books, wherever they speak of it, tell us to avoid it. I quote from *Lake Price*, page 130: ‘An old bath has occasionally a tendency to fog from the accumulation of organic matter and presence of oxide and *nitrite* of silver.’ Dr. Vogel, on page 97 of his *Handbook*, speaks of it: ‘I never employ the fused nitrate, as it frequently contains silver combined with *nitrous* acid (this is *nitrite* of silver), which often gives rise to great annoyances.’ Hardwich calls attention to it on page 100 of his *Chemistry*, giving the formula for its preparation, etc. He says of its properties: ‘*Nitrite* of silver is soluble in one hundred and twenty parts of cold water; easily soluble in boiling water, and crystallizes on cooling, in long slender needles. A small quantity dissolved in the negative bath increases the sensitiveness and intensity of

the collodion surface, but it has a tendency to produce fogging.'

"Sutton and Dawson, in their *Dictionary of Photography*, page 314, speak of it: 'When present in a nitrate bath it fogs the picture.' In a certain formula for preparing 'lightning' chemicals, we are told to take 'any quantity of nitrate of silver, place it in an evaporating dish and heat, not merely until liquefied or fused, but to keep it at a red heat for two hours. This, if properly done, will burn out all impurities.' Here is the criticism of a thorough photographic chemist, Mr. G. Bode, of Milwaukee, Wis.: 'Any one fusing nitrate silver for two hours at a red-heat, as directed in the formula, would receive *nitrite* silver instead of nitrate, which cannot be used for bath.' When I read the formula of Mr. Land, who is, I believe, State Chemist of Georgia, and noted the addition of *nitrite*, which he produces by only ten minutes fusing, I asked further information of Mr. Bode, and here is his reply: 'So far as my experience goes, I would say that the *nitrite* of silver is not a good addition to any bath. I had formerly a great deal of trouble to keep it out of my silver, and am quite sure that in the basic form it is a failure. Nitrite of silver exists in two forms. The so-called basic is a yellow, almost insoluble powder; the neutral salt is very little soluble in cold water, but is easily soluble in boiling water, from which it crystallizes. In the latter form it may have some properties not known generally.'

"In a letter of more recent date, Mr. Bode gives us further light: 'In regard to the forming of *nitrite* of silver in making nitrate, my experience is that it is always formed during the fusing of the crystals. In making nitrate from chemically pure silver, it is not necessary to fuse at a high heat, and of course it will not be formed, but in manufacturing on a large scale, we have never the pure metal, but always more or less impurities, consisting of copper, lead, and other metals. To get rid of the copper, the easiest, and I believe the way followed by most manufacturers, is to fuse the salt first received till all the nitrate of copper is decomposed. According to the heat and the time occupied by the operation, more or less *nitrite* of silver is formed. On dissolving

the fused mass in water, and filtering, oxide of copper remains on the filter, holding a part of the *nitrite*, which is but sparingly soluble. The other and largest part is, on account of the necessary washing, dissolved. To decompose it, it is necessary to add to the solution a large excess of nitric acid and heating, and as the excess of nitric acid has to be driven off, I evaporate to dryness, then redissolve, crystallize and recrystallize, the so-obtained crystals. The product will then be chemically pure, but will always be a little acid, as the crystals would not have a good appearance if they were received from a perfect neutral solution. Fusing these crystals would drive off the last traces of nitric acid, and will, if a neutral or almost neutral bath be necessary, be of benefit. Nothing else can be destroyed by the fusing at low temperature, as good nitrate ought not to contain organic matter or salts of copper and other impurities as nitrate of soda, or nitrate of potassa, or nitrate of lead will not be effected.' Mr. Bode made some of the nitrite of silver, and has kindly furnished me with a quantity, which I have put up in small bottles and labeled for distribution to-night. Mr. Bode says: 'It ought to be added to a plain silver bath in good working order, and the effect, if any, noted.' And without further observations I will distribute the samples to those who are curious to test its value, asking of each a careful trial, and noting the results of your experiments for report at our next meeting."

MR. EDGEWORTH.—"Regarding the benefits or harm arising from the use of *nitrite* of silver, I suppose little can be said to-night. The subject as introduced by our Secretary, and the distribution of samples for trial, will lead us to study the nature of this salt, and to determine by experiment whether we want it in or out of the bath."

THE PRESIDENT.—"I suppose the proper way will be to leave the topic until we have given it some little study, and had time to try the *nitrite*. And at our next meeting I hope all the members will be ready to take part in the discussion."

MR. HESLER.—"Avoiding the *nitrite* question, I would say as to the value of using fused silver for a bath, that I have a bath prepared two years this coming June, add-

ing to it as needed, and as yet I have never seen any fog. I fused two hours."

MR. GREENE.—"My experience in fusing is, that immediately after fusing and preparing the bath it works but a short time before showing trouble, when I boil it, and work with it for a time, then boil again, and it goes right along without further trouble."

MR. CUNNINGHAM.—"I have found that in fusing a short time I was troubled with fog, but when fused a long time, as recommended by Mr. Hesler, I found no trouble."

MR. GREENE, in answer to a question, stated that he removed the silver at the point of fusion.

MR. NELLIS.—"I fuse until it reaches the frothy state, and instead of going further and burning out the impurities, I add water, filter, boil again, and filter until clean, and, sometimes after this stage is reached, fuse. I have uniformly clean working baths."

MR. HODGES.—"I fuse my silver, and when at the point of fusion add for each ounce of silver used two grains of iodide of potassa, and fuse with the silver. I do not iodize my bath further."

THE LIGHTNING PROCESS.

The Secretary read the following letter from Mr. Immke, of Princeton, Ill.: "*As to My Experience with the 'Lightning' Process.*—The chemicals work very uniform in my hands, and about one-third quicker than with the old formulæ. I cannot obtain the rapidity some claim.

"Recently I tried the 'lightning' developer with my own collodion and bath, and find that the developer contains the quick properties. With the following developer I work as rapid as with the whole 'lightning' formula, and get finer results:

"Distilled Water, . . .	50 ounces.
Iron Sulphate, . . .	3 "
Acetate of Copper, in solution . . .	
of 10 per cent., . . .	1 ounce.
Glacial Acetic Acid, . . .	2½ ounces.
Alcohol, . . .	3 "
Pure Honey, . . .	½ ounce.

"I vary the collodion to suit the negative I wish to make.

"The action of the developer is slow, but brings out all the detail, and gives to the image a round and bold appearance. I find

the addition of acetate of copper also valuable to the ferrotype developer; it shortens the exposure and gives a picture that is round and bold. Have not tried the Land or Ormsby formulæ, but shall soon."

MR. HESLER exhibited some colored carbons on porcelain that were very fine. He stated that for the 1-6th size in oval velvet cases, he got \$10.00; 1-4th size, \$15.00; 4-4th size, \$25.00; 8 x 10, \$40.00.

Bill for notices of meeting, \$2.25, was ordered to be paid.

On motion, adjourned.

G. A. DOUGLASS,
Secretary.

THE BOSTON PHOTOGRAPHIC SOCIETY held their regular monthly meeting at the rooms of J. W. Black, on the evening of April 2d, and in consequence of the large number present, the reception- and skylight-rooms were used, and many were unable to secure seats. A large number of ladies were present, also many professional and scientific gentlemen, all assembled to hear the lecture by the great traveller and archæologist, Prof. H. D. W. Moulton, M.A.

The lecture was illustrated with many beautiful slides (made by the Professor in Peru), by the aid of Mr. Black's large stereopticon. Those present were much interested in the lecture, for few have had the opportunity of gaining access to the inner history of Peru such as the Professor has shown himself to be familiar with. Many of the pictures were obtained at the risk of the life of Prof. Moulton, who is, without doubt, in possession of valuable information in relation to Peru which has never before been given to the public.

Those present were also entertained by Mrs. S. E. Richardson (of Cambridge, Mass.), with selections from some of our best authors, the reading of which were pronounced equal to any heard in Boston this season.

At the conclusion of the above, Professor Clark, of Cambridge, and a number of professional and scientific gentlemen experimented with the wonderful Euryscope lens, and all were of the opinion that with this lens most wonderful revelations of microscopic objects could be thrown on the screen, and Mr. J. W. Black stated that the Eury-

scope lens surpassed any lens he had ever seen used in connection with the stereopticon; all were surprised and pleased at the successful demonstrations made with the Euryscope, which had been loaned by Mr. Benjamin French.

Mr. C. F. Conly, one of Boston's most successful operators (who is at present making the celebrities for Mr. G. K. Warren), informs me that he has lately had many inquiries in relation to streaks, etc. His remedy is, use only one grain of bromide of cadmium (or its equivalent), and four and a half grains of iodide to the ounce of collodion. He is of the opinion that many troubles are caused by too much bromide, and an overdose retards the action of light on the sensitive film. Much more brilliant effects are produced by using only one grain of bromide, if we can judge from the work produced by Mr. Conly. We should advise all to try one grain, for the photographs made at Mr. Warren's compare with any made in New York.

B.

PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.—The stated meeting of this Society was held on Thursday evening, April 17th, 1879; the President in the chair.

The minutes of the last meeting were read and approved.

Dr. Seiler said that in attempting to use a five-inch microscopic objective for photographic purposes, he had experienced difficulty from the small angular aperture of the combination, but by using a plano-convex lens immediately behind the object, to change the direction of the rays, he had been able to successfully photograph much larger objects than would have otherwise been possible.

Mr. Pancoast exhibited an excellent photograph made with a Zentmayer lens.

Mr. Browne called attention to a carbon print which came into his possession some months ago. It was then perfect, but now, as could be seen, was ruined by the cracking of the gelatin film. He said that this raised again in his mind the very serious question as to whether it were possible to work the carbon and similar gelatin methods of photography as successfully in America as in the moister and more equable climate of Europe.

Mr. Browne then referred to some carbon photographs by Braun, of Dornach, which had hung upon the walls of the Society's room for years, without showing this defect in the least.

Mr. Wallace said that when in Paris he was told by M. Rousselon that the trouble in working the carbon process in America was probably due to some want of knowledge or skill upon the part of the operators. This seemed to him to be likely, as some of the earlier English work showed this defect, which has since been entirely remedied.

Dr. Seiler thought that the dryness of the air in America, and the excessive changes of temperature, were sufficient cause for the trouble in question.

After some informal conversation relating to the Spring excursion, the meeting was, upon motion, adjourned.

D. ANSON PARTRIDGE,
Secretary.

OUR GOLD MEDAL PRIZE AWARD.

THE gentlemen who kindly acted for us as judges of the pictures sent in competition for the gold medal offered by us for the best six negatives sent us by March 15th, 1879, have unambiguously awarded the prize to Messrs. Gilbert & Bacon, Philadelphia, Pa., for the six "etchings" used to embellish our last number.

In this decision we most cordially accord, and having already commented upon the merits of these excellent pictures, have only to add that duplicate copies may be had from the negatives, as usual, by those who wish to study them, at the customary low price named in the advertisement.

The other competitors were Messrs. R. E. Atkinson, G. M. Elton, E. D. Ormsby, J. P. Spooner, E. A. Scholfield, Irving Saunders, Edward B. Rodgers, Samuel V. Allen, E. B. Core, J. H. Scotford, R. F. Elliot, and J. C. Brewster, from whom came altogether seventy-eight negatives of nearly as many subjects.

Our readers have already seen in our March issue prints from Mr. Atkinson's negatives, and we are printing from those by Mr. Elton and others, for our future numbers. Even the *worst* of these pictures is full of good

lessons, and we wish they might all be carefully and largely studied.

We have received some excellent hints, formulæ, etc., from the various competitors (to each of whom a series of the prints has been sent), which will appear in our next number.

We regret that so few compete for our medals. We do not offer them merely to secure negatives for our embellishments. It would prove an expensive policy—rather. Our hope and desire was to excite a generous rivalry, which would result in the improvement of your productions, and in the introduction of new ideas, as well as to bring within the reach of our readers worthy examples for study.

What little we have accomplished we share with them, and regret that it is so *very* little.

OUR PICTURE.

OUR picture this month represents a class of subjects ever a *power* in every photographic studio, which must and will have attention. There was a time when such were handed over from one photographer to another, it being a common joke with some to send such little would-be patrons to a more amiable friend to take, as though the time when

. . . . "Civil faction
Raged like a fury through the fields of Gaul,
And children, in the general distraction,
Were taught to curse as soon as they could
squall,"

had returned; and the infantile members of society were given but little good attention by photographers. Now, however, the tables are turned. The *business* photographer understands the *policy*, to say the least, of spending his best efforts upon the children, for he has found out that they are the means through which the old folks are reached, and their favors secured. Make a good picture of the baby, and its "sisters and its cousins and its aunts" all become as affectionate relatives of the photographer, and treat him with genuine nepotism.

None understood this earlier, or understand it now better than Mr. J. Landy, of Cincinnati, Ohio, from whose excellent nega-

tives the present pictures are made. His pictures of "Laughing and Crying Babies" are world-renowned. He continues to have his full share of these little patrons, and some days they do overwhelm him in such numbers that he is prone to feel, with the author of "The Inverted World," that

"Things go so contrary, so queer, nowadays,
That sometimes I fear all good fortune has
fled;
And all things will soon grow so perverse in
their ways,
We shall turn upside down, and each stand
on his head."

The little nobleman whose portrait is before us, caused him no such dismal thinking. He sat so remarkably well that Mr. Landy kindly thought of us, and made us six negatives, all off-hand, without any "lightning" or other special preparation unusual in such cases, one immediately after the other. The little fellow was only fourteen months old, and is certainly an uncommonly good child, both in looks and nerve. Certainly if he becomes a photographer, he will be able to resist the most saccharine-lipped process-tramp possible to exist, even if he has the *real* "process of the future."

We are greatly indebted both to Mr. Landy and our kind little friend for the pleasure and instruction afforded us from such a sweet little picture.

The prints were made for us by Mr. H. C. Bridle, in the *Philadelphia Photographer* printing-rooms. The quality of the negatives being excellent, we were able to print them with great ease and regularity.

ABOUT ARTOTYPE.

"WATER-GLASS, or *no* water-glass, that is the question." A correspondent who claims to be *inside* with an artotype license, says that no water-glass is used in the artotype process whatever, and he sends us the notes on page 129 obtained from his friend as proof, averring at the same time his belief that the water-glass idea is only used *as a blind* by the Artotype Company.

Mr. Carbutt claimed that the plates prepared for our February issue were by his process, without water-glass.

There are but few of our readers who desire to experiment in this direction, since they find that the mechanical print is not of service to them in their regular profession. For those who do, we have given ample instructions, and we now propose to drop the subject, except when we can suggest anything useful to workers, or it is needful that we should head off any further attempts to mislead or take advantage of our readers by any one.

"A second bromide war," sooner or later, it is predicted, will arise from these artotype claims. We hardly think so. Those who try to work in a small way will rather step out ultimately, and, as with solar printing, resign it to a few of the larger operators.

We have been requested to print the following, which we do most willingly, since Mr. Carbutt feels that he was misrepresented in our last:

"I notice in this month's number of your journal, among the remarks on artotype and my adoption of it, you distinctly say that the process was 'given' to me. Permit me to say you are mistaken, and that the process was anything but a gift, but through a straightforward business transaction, and in no other way would I have adopted it. By inserting this you will oblige

"Yours truly,

"JOHN CARBUTT.

"PHILADELPHIA, April 8th, 1879."

"It is the dim haze of mystery that lends enchantment to pursuit," and that is why photographers *take* so to secret processes. "Where there is mystery," says Byron, "it is generally supposed that there must also be evil."

It has been said to us that we are paid by them for our opposition to the Artotype Co. That it is "all an understood thing" between us and the company that we should prosecute this method of "advertising" them. If our readers have one bit of such an idea as this, let us once more ask them to believe that our whole motive throughout in this matter has been to *benefit them*. They only are capable of judging how completely we have overthrown, as far as they are concerned, the prospects of the Artotype

Company for doing business with them. We have worked singly and alone, and are assured by many that we have done right.

Seeing nothing else that we can do to serve you, we shall hope to occupy our space with the usual variety of useful matter hereafter.

The policy of the *process-sharps* is to *appear* to be what they are not, as their actions show. They give way to many poetical similes in their attacks upon us, and seem to say, in the language of the ancient bard:

Say not my art* is fraud—all live by seeming.

The beggar begs with it, and the gay courtier
Gains land and title, rank and rule, by seeming:

The clergy scorn it not, and the bold soldier
Will eke with it his service—all admit it,

All practice it; and he who is content
With showing what he is, shall have small credit
In church or camp or state—So wags the world.

Yea, "so wags the world" when its intent is to deceive and take advantage.

A review of the various process swindles during ten years past, was prepared for this issue, but crowded out.

The last issue of the *Vienna Correspondenz* was embellished by a lichtdruck portrait of Mons. A. Poitevin, the father of all pigment printing in photography. A venerable looking old "father" badly libeled by one of his children; for the print, though done by M. Berthaud, in Paris, is very poor.

We have received from Mr. Romain Talbot, 68 August Strasse, Berlin, Prussia, an eight page price-current of all the articles, paper, chemicals, inks, presses, drying-ovens, and utensils used in the artotype and kindred processes. No doubt he will soon bring them to the attention of our readers, so they may obtain them through him or his agents here.

Some four not very enthusiastic testimonials as to artotype appear in the *Bulletin* for April; but not one of the parties seems to have discarded silver printing. We suppose we ought to give them time.

That "wet finger" seems to have rubbed out the prospects of "the process of the future" somewhat. Well, ———.

* (O-type).—Ed.

Any way, is it not rather early to say that the artotype process is "the process of the future?" We should feel sorry if there is to be no advance upon it—that photographic progress is ended. The *Bulletin* editor is in a bad condition, and needs recuperation.

"THE PROCESS OF THE FUTURE."

WE have just received from our friend Sig. Ottavio Baratti, a humorous paper published in Rome under the title of *Fanfulla*, in which is given a description of a new and most amazing discovery. We translate the writer's own very graphic description thereof.

"A most portentous improvement in picture-making has been discovered in Lima, Peru, by Senor Carlos Steinback, who, after twelve years of intense and patient study and indefatigable experiments, has finally been rewarded with success in the preparation of chemicals which will make a life-like and colored impression of the image in the camera. The manner of operation is this: A plate (glass) is coated with a preparation of mercury and other chemicals; an oily substance is then applied to the other side, and

the sitter placed in position. Little by little this oily substance disappears, evanesces, and, as if by enchantment, the image of the sitter comes out in all its beauty of light and color. The glossy hair, the scintillating eye, the vermilion lips, and all the thousand lights, shadows, and flesh-tints are *there* on the glass plate as if painted by the wonder-working hand of some artistic magician. The picture is then placed in a bath and finished."

The writer further adds:

"I have seen one of these marvellous pictures, and was completely stupefied with amazement." The name of "Spiegel photography," or mirror photograph, has been given to this new process. The discoverer has sold the privilege to a wealthy capitalist for the sum of \$400,000. Present owner will soon open agencies for the sale of its use in all the leading cities in South and North America.

[Photographers need not begin *just yet* to save up their money to buy this "new process." We do not think it *will take* in its natural colors. No doubt it is a beautifully-tinted canard, but most too transparent, though painted as if by the master-hand of a Corregio.—E.D.]

Editor's Table.

A GOOD CHANCE is offered in our "Specialties" column by Mr. H. L. BINGHAM, San Antonio, Texas, to any one seeking a good business in a milder climate. We believe Mr. BINGHAM's statements can be safely relied upon.

OUR esteemed contemporary, Mons. LEON VIDAL, by arrangement with Madame LACAN, has assumed the editorship of *Le Moniteur de la Photographie*, Mrs. LACAN, widow of the late and lamented editor, being proprietress. This is an excellent choice, and we wish Mons. VIDAL much pleasure in his new vocation. He is well known as a contributor to photographic literature.

THE *Photographic Society of Philadelphia* makes its annual excursion early in June, for six days, along the Juniata Valley, from Huntington to Harrisburg, *via* canal. This is a very picturesque section, and we wish that many fine things may be secured. We shall give our readers a full report.

WHAT is "a practical photographer?" Will some one please define?

THE *Philadelphia Photographer* has a big foothold in the West, and such orders as the following are very common, viz.:

"CHICAGO, April 9th, 1879.

"Send one dozen additional copies of April issue.

"N. C. THAYER & Co."

PICTURES RECEIVED.—From Mr. E. B. CORE, Lincoln, Ill., several cabinets, one of which is a little boy with a dog. The latter does not seem to have moved a "whisker," which shows the exposure must have been very short. Mr. FRANK G. ABELL, of Portland, Oregon, sends a variety of medallion cabinets; one of a baby a few months old, is particularly good. These are accompanied by two prints 15 x 20; one a three-quarter, the other a full-length portrait; these are made with a Voigtlander view lens, which must be an unusually fine one. Every detail is

clear, sharp, and well rounded. Mr. S. H. PARSONS, St. Johns, N. F., has forwarded us a large batch of cabinet photographs, which show considerable taste and skill; some of them are really fine compositions, being of actors in various costumes and attitudes, such as they took in certain plays. This goes to show that photography is sure to succeed even in that remote island, when good judgment, skillful manipulation, and careful perusal of the *Philadelphia Photographer* are all combined. Mr. PARSONS has acknowledged that he finds our journal a most valuable assistant, and we believe he would make good pictures even though he had nothing but codfish and icebergs for his subjects. Two beautiful stereoscopic views of natural clouds, from Mr. CHARLES BIERSTADT, Niagara Falls, New York. From Mr. THEODORE LILIENTHAL, New Orleans, La., some specimens of carbon work, cabinet portraits. Mr. LILIENTHAL has been the most persistent worker in this branch in the South that we know of, and he seems bound to make a success of carbon printing. From G. SPERRY & Co., Iowa City, Iowa, five very excellent "seashore" pictures, with a good cloud background, a view of the ocean with a ship in the distance. The subjects are all admirably posed. Mr. BRACY, Jackson, Mich., sends a very fine cabinet of a young lady. Well lighted, gracefully posed, and tastefully retouched, it makes a specimen of work *no one* need be ashamed of. From Mr. E. E. SAWTELLE, Biddeford, Maine, two cabinet portraits. Two samples of photographic visiting cards from Mr. GORDON, Indianapolis, Ind. Very tasteful, and no doubt draw custom.

A NEW CATALOGUE of stereoscopic views of the Centennial Exhibition has just been issued by the Centennial Photographic Company, Philadelphia.

This will be found far more convenient to persons wishing to order by mail, inasmuch as all private exhibits and uninteresting views have been left out, though all these still remain in the old and larger catalogue.

Sent free on application. 116 North Seventh Street.

OBITUARY.—R. A. ROBINSON, a photographer of Chicago, died recently, of consumption; age, thirty-nine. Mr. ROBINSON was born in Canada near Toronto. First engaged in photography in Toledo, Ohio, with SIMON WING, nine years ago. Had charge of Mr. WING's Gallery on Clark Street; and lost everything in the fire of 1871. Had been in business for himself in Chicago and at Denver, Col. Was a gentleman well liked in

the profession, a good operator, and of most excellent character.

It is with deep regret that we announce the death of Mr. JACOB W. HUSHER, by suicide, at his home in Greencastle, Ind., on the 6th inst. Many of the members of the National Photographic Association will remember Mr. HUSHER as a very active member; always amiable and genial, and ready to forward any beneficial movements in photography. His friends will hear with surprise of the manner of his death, for he was the last man one would suppose likely to commit suicide; but he was perfectly insane at the time.

WE hear that Mr. J. B. PELGRIFT is now making a tour of the Western States in the interest of the SCOVILL MANUFACTURING COMPANY, in whose employ he has been for several years past. We wish him success in his trip.

PHOTOGRAPHIC HALL.—Holders of Centennial stock are now entitled to a further dividend of sixty cents per share; to be had on application to F. FRALEY, Treasurer, 308 Walnut Street, Philadelphia.

THE *Daily Post*, Atlanta, Ga., gives a very nice notice to its townsman, Mr. IVIE, who has recently opened a new photograph gallery on the principal street of that city.

THE inferior and low-priced apparatus which has been placed upon the market in imitation of the AMERICAN OPTICAL COMPANY's goods has induced the SCOVILL MANUFACTURING COMPANY to issue a circular of warning. While the SCOVILL MANUFACTURING COMPANY are fully able to meet the lowest prices in the market, they still prefer to issue only first-class goods; and we would advise any one, on purchasing, to look well that the AMERICAN OPTICAL COMPANY's brand is affixed to the article in question and not accept it on the *bona fide* assertion of the dealer.

OWING to the large space occupied by the report of the proceedings of the Chicago Photographic Association, and several other lengthy communications, we have been obliged to lay over a number of letters which would come under "Voices from the Craft," and some inquiries addressed to "Sphynx." We regret to have these crowded out, but they shall have due attention in our June issue.

SOMETHING like an association has been organized again in Chicago, under the leadership of our friend Mr. G. A. DOUGLASS, who, by being

Secretary, assumes the hardest work. A noble report is given us by him elsewhere, and we commend it to the attention of all of our readers. The last meeting reminded one of a regular N. P. A. Convention, and the attendance was large. One old "father of photography" who was there, announced that he could not attend the meetings regularly, as he lived out of town. He let the 9 o'clock train go by, however, and at 11 P.M. was hotly engaged in a discussion; moreover, before he left he took an appointment for the next meeting. If this sort of feeling keeps up, Chicago will have the head association of the world.

MR. VAN LOO, of Toledo, Ohio, has received a very nice testimonial in the local paper for his success in photography.

MESSRS. GATCHELL & HYATT would call attention to their recent removal. They are now prepared to receive orders and fill them on an enlarged scale in their new house, No. 168 Race Street, Cincinnati, Ohio.

WE have received from Mr. F. JAY HAYNES, Moorehead, Minn., a catalogue of his stereoscopic views of the Northern Pacific, embracing all important places between Lake Superior and the Missouri River on the line of the Northern Pacific Railroad.

MR. WILLIAM MYLES, Wheeling, W. Va., who suffered the loss of his gallery by fire, is already rebuilding on the old site, and expects to be prepared for business in his new rooms by the middle of July. He shows pluck and enterprise, and we trust he will meet with increasing prosperity after his recent troubles.

MR. E. D. ORMSBY, photographer, has removed from his old place in Oakland, Cal., to 914 Market Street, San Francisco, where he has opened a new studio with every convenience, and is now ready to receive all his old friends and patrons, and as many new ones as will favor him with a call.

MR. G. W. PACH, 841 Broadway, N. Y., sends us a copy of *Harper's Weekly*, April 5th, containing a wood-cut of his photograph of President Hayes and Cabinet, taken while in session. The photograph was made on the block, ready for the engraver. We congratulate Mr. PACH on his success.

MESSRS. HOWE & BEECHER, Columbus, Ohio, are meeting with very gratifying success with STIGLEMAN'S solar retouching process. They have favored us with four very fine full-sheet prints from STIGLEMAN negatives, some full fig-

ure, and some life-size heads. They have issued a circular of testimonials from photographers who have tried the process, and express themselves greatly pleased with the result.

OUR friends still speak well of us, and we give below a few more extracts from their pleasant letters.

"Your journal, the *Philadelphia Photographer*, is the only one that stands as the acme of perfection."—J. PAUL MARTIN. "I have been early and long a subscriber to the *Philadelphia Photographer*, and I have always recognized you as a true friend of the craft."—H. LYMAN BINGHAM. "I think the *Philadelphia Photographer* grows better all the time; lots of good things in the last two volumes."—R. F. ELLIOTT. "I cannot afford to be without the *Philadelphia Photographer*. I have found out, by experience, that money spent for any book or journal on the art is *well* spent, and comes back with large interest."—A. B. PAXTON, Albany, Oregon. "I have taken your journal nearly fourteen years."—A. H. PARKER. "The *Philadelphia Photographer* comes regularly every month. It is worth ten times its weight in gold to every practical photographer. Would not be without it. Hope to be a life-long subscriber."—LON BLACKBURN. "I would be lost without the journal, and feel as though I was cut off from the rest of the world."—N. P. JONES. "I commence to see what I have lost by not taking your journal sooner."—JOHN W. ALLDRIGE. "I also tender you my sincere thanks for the many good things you gave us in the past year. Long may the *Philadelphia Photographer* continue in its present path."—OTTO LEWIN. "Of all photographic literature I have read, I think I would rather dispense with them all rather than be without your valuable magazine. The *Philadelphia Photographer* is a household word with me."—U. R. HAWKE. "I have been a subscriber for over thirteen years, until last July I felt too poor to pay for it; but I really think I will be poorer yet if I don't subscribe for it and keep posted."—WM. L. TENSH. "I would as soon be without a camera as without your journal; every number seems to surpass the former in excellence."—LOUIS DE PLANQUE. "Another splendid number; send us two more by mail."—GATCHEL & HYATT. "I have fully decided *which way*."—H. W. BROWN.

MR. F. M. LACEY, Indianapolis, has been elected as class photographer by the seniors of Wabash and Asbury Universities. Mr. LACEY'S operator, Mr. S. D. WAGER, made fifty-six negatives in two days recently.



MORA.

Boston Public Library.

NEW YORK.

T H E

Philadelphia Photographer.

Vol. XVI.

JUNE, 1879.

No. 186.

Entered according to Act of Congress, in the year 1879,

By EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

PRACTICAL POINTS FROM THE PRIZE COMPETITORS.

A GREEABLE to the promise made in our last number, we give below useful hints from some of the gentlemen who competed for our last gold prize medal. It is always interesting and of service to compare notes with our co-workers, especially with prints before us, and here is an opportunity.

I HAVE no particular formula by which I work. I am not sure what collodion I used to make the negatives sent in competition, but think it was a mixture of George Murphy's "Eagle" and my own, made with

Iodide of Ammonium, . . . 5 grains.
Bromide of Cadmium, . . . 2½ "
Ether and Alcohol, equal
parts, 1 ounce.
Cotton, about 5 grains.

DEVELOPER.

Iron and Ammonia, . 15 grs. to oz. of water,
hydrometer test; acid as necessary to make
flow.

Bath, 40 grains strong, quite acid.

Nothing new in my formula. The main beauty of the work sent lies in the lighting, if there is any beauty. My idea of using light is partially expressed in my article in *Mosaics* for this year. I look with interest for the coming of the prize set, as there will be a very fine chance for the study of differ-

ent ways of working, as pursued by each contributor.

I wish you success in obtaining a rich reward for your offer.

IRVING SAUNDERS,
Alfred Centre, N. Y.

YOURS of March 24th received, and in answer would say that the negatives were decidedly ordinary, and I should not have sent them only the time was up; and will say the same by the prints—decidedly too foggy. The collodion used was the double iodized, per Elbert Anderson's formula.

Iodide of Ammonium, . . 250 grains.
Iodide of Cadmium, . . 250 "
Bromide of Cadmium, . . 200 "
Bromide of Potassium, . 100 "
Cotton, 400 "
Alcohol and Ether, . . . equal parts.
Tincture of Iodine.

Bath, 40 grains, decidedly acid.

DEVELOPER.

Sulphate of Iron, . . . 1½ ounce.
Sulphate of Copper, . . . ½ "
Nitrate of Lead, . . . ½ "
Water, 32 ounces.
Alcohol, 1½ ounce.
Acetic Acid, 1 "

Take one half of water, dissolve iron and copper; take the other half of water, dissolve lead; pour the iron and copper into lead, and filter; lastly, add alcohol and acid. Do not know as there is anything new about it, but it *works well*.

I think the *Philadelphia Photographer* grows better all the time; lots of good things in the last two numbers.

R. F. ELLIOTT,
Georgetown, Colorado.

I FORWARD the formulæ as requested; as I told you, they are nothing new.

COLLODION.

Iodide of Cadmium, . . . 2 grains.
Bromide of Cadmium, . . . 1½ grain.
Iodide of Ammonium, . . . 3½ grains.
"Delicate Cream" Cotton, . . . 5 or 6 grains.

DEVELOPER.

Iron, 1 ounce.
Sugar, 1 "
Acetic Acid, 1 "
Water, 10 ounces.
Alcohol to make it flow.

Bath, 40 grains.

Printing plain silver 60°, made slightly acid with nitric acid, and neutralized with ammonia; add a little alum by placing a lump in the filter.

Toning, acetate bath, S. & M. paper; a little anilin blue in the last water, I think is quite an improvement; I wonder it is not more used.

The negatives were made in fifteen seconds' exposure, one after the other. My subject, and the "artist" who whitewashed my operating-room ceiling, both came the same afternoon, and I had just taken down my screens from my skylight. I think I could have greatly improved the picture by having them in this particular case. I ordinarily use them but very little, only to keep out the sun. I use a movable screen (that rests on the floor) covered with yellow book-muslin, but the one I have is too low for standing figures.

I sent one negative that I should have liked to made over, but circumstances would not permit.

E. B. CORE,
Lincoln, Ill.

My negatives were made with a very old, and, of course, highly iodized bath, forty grains strong when made.

COLLODION.

Iodide of Ammonium, . . . 5 grains.
Bromide of Cadmium, . . . 3 "
Pyroxylin, 5 "

DEVELOPER.

Iron, 4 ounces.
Acetic Acid, 4 "
Alcohol, 4 "
Water, 64 "

Time, from 10.30 A.M. till 11.20 A.M.; rather dull light first part; latter part, sun came through clouds very bright, making it rather difficult to keep run of time. We are making negatives now that please us very much better.

And in spite of "hard times" commence our tenth year here to-morrow morning, in better shape than any year since we have been here. Demand for higher price work, and, of course, have better subjects, so can more easily do nicer work.

I thank you and yours for your kind words and your vigorous *push* in the literary line.

J. P. SPOONER,
Stockton, Cal.

I HAVE been too busy of late to devote much time to the *literary branch* of photography; however, I generally run the *Philadelphia Photographer* through on the evening of the day of its reception, and review at leisure, marking with pencil each article of *special* import, for future reference.

My operating-room is 36 feet long by 16 feet wide; height of ceiling, 9 feet; use north sky- and side-light. Top-light at an angle of 45°; size, 11 x 8 feet, in conjunction with side-light, 8 feet wide by 6 feet high. West margin of light, 8 feet from end of room. Use thin coat of blue frosting on side-light, also an adjustable or movable curtain. In summer I stretch strands of twine from north to south (12 inches apart), underneath the skylight, and hang thereon sheets of tissue paper to prevent the sun from striking the floor.

My subject was Senorita Isabell Marris, a Spanish-American lady from Santa Barbara. Negatives made with No. 3 B Dallmeyer lens (No. 2 stop.) Time of exposure, 15 seconds; used Bigelow's revolving background.

Bath, 45 grains strong, made with pure nitrate of silver (fused) and rain-water (filtered through double-thick paper), caught in a *clean* vessel under skylight (no wood contamination). Iodized by mixing with old bath *remnants* that have previously been renovated either by filtering, sunning,

or boiling down to dryness (fusion), as the *stuff* may require; never have any trouble with my bath; always keep several made up.

COLLODION.

Ether and Alcohol (95 per cent.) equal parts.
 Anthony's Snowy Cotton, 5½ grs. to the oz.
 Iodide of Ammonium, . 5 " " "
 Bromide of Potassa, . 2½ " " "

First put the cotton into the alcohol, let stand for half an hour, then add the ether; shake vigorously until the cotton is all dissolved. Then dissolve the ammonia and potassa in a little pure water, and place in an empty bottle large enough to contain the collodion, and pour the latter into it. In a few hours it will be ready for use.

DEVELOPER—STOCK.

Iron (broken in a mortar), . 20 ounces.
 Granulated White Sugar, . 20 "

Place the above in a half-gallon bottle, fill it up with boiling hot water, shake until dissolved. For use, take six ounces of the above, four ounces acetic acid No. 8, and twenty ounces of water. Fix with cyanide (not too strong).

J. C. BREWSTER,
 San Buena Ventura, Cal.

I HAVE made a change in my location. Am going to try and shake the San Francisco people up a little on photography. Please send my journal in future to 914 Market Street, San Francisco.

Here is the formula, etc., they (my photos) were made by:

Silver bath, 40 grains to the ounce, slightly acid with nitric acid C. P.

COLLODION.

Alcohol and Ether, . equal parts.
 Gun Cotton, . . 5 grs. to the oz.
 Iodide of Ammonium, 5 " " "
 Bromide of Potassium, 1 gr. " "
 Bromide of Cadmium, 1 " " "

DEVELOPER.

Water, 16 ounces.
 Iron, 1 ounce.
 Sulphate of Copper, . . ¼ "
 Acetic Acid, 1 "

North sky- and side-light combined, sixteen feet long; side-light, six feet wide, three feet from the floor, inclining into the room, eighteen inches at the top; skylight,

eight feet wide, thirteen and a half feet at the highest point, nine feet high where it joins the side-light; semi-translucent blue curtains, on spring rollers that roll down from the top of skylight, and up from the bottom of side-light. The instrument I used was a No. 6 Voigtlander & Son.

E. D. ORMSBY.

P.S. The process-mongers seem to feel bad.

YOU ask for formula with which the pictures were made. I will try to answer candidly, for exactness is of importance in matters photographic. The collodion was an unknown mixture of Anthony's, Stevens', and Montgomery's, three kinds of rapid, and a good healthy sprinkling of my own. The make-up of the bath was not materially different, so far as its mixed character was concerned, while a similar "merging" took place with the various samples of developer on hand, which included ordinary, lightning, double-sulphate, etc. It was a sociable sort of photographic unification, you observe. I was in a great hurry when I resolved on the desperate mixture; and really, I wanted to smile, but that was not in order, for *eyes* were upon me; but I was often convulsed with a grim sort of subcutaneous mirth as I watched the fluid representatives of the gentlemen who hated each other so cordially, go lovingly together through the not over clean neck of a common filter, and come out bright and happy looking on the other side.

One thing, however, may not be uninteresting. To me it was vastly interesting, I can assure you. You will remember that, some time since, a photographic diver into the unfathomable, wanted to know the cause of fine, *transparent* lines forming on, or eating out, the negative film in the process of varnishing. I think I can answer his question. When I was ready to varnish my negatives (I had about a dozen of them), I thought, as they might require much printing from, I would use *very heavy* varnish. I commenced with the ones in your possession, and *concluded* with the ones I considered the best. After varnishing the last one I picked up the first, and found to my chagrin the film had a slightly washed-out appearance, which increased in every negative I had

flowed, until (the varnish growing thicker with each plate) the last few were utterly ruined by being eaten into fine lines. These last were my best "six." There was no time to make them over. And then I wanted to die. I was obliged to send my second best "six," and even those slightly "washed-out." You will observe a peculiar weakness of the shadows.

I will send you a piece of one of the more heavily varnished negatives, which you will perceive is washed into fine transparent lines; others are washed away into broad transparent lines. What caused the trouble? Simply heavy varnish!

Once before I had a similar difficulty, and did not suspect the cause. I will send you a piece of *that* negative. When I thinned the varnish the difficulty was *absolutely gone*. The cause *seems* inadequate to produce the effect. Few will accept the explanation. I have no theory to offer.

SAMUEL V. ALLEN,
Freeport, Ill.

BALTIMORE CORRESPONDENCE.

HAVING a little leisure, I thought a few lines might be of interest to you. In fact, the fraternity here are having a surfeit of leisure this fine weather. The cause—well, no fellow can find out. *They have got it*; I mean the Germans, and have caught it bad; the process fever, I mean. The contagion must have come from the vicinity of St. Nicholas Hotel, on Broadway, by its symptoms. Well, this week our establishment was surprised, and somewhat amused, at receiving a circular emanating from "Carl Groll," Guben, offering a process for producing "beautiful everlasting *magnifications* (?) of any size, without extra apparatus, even in *poor daylight*" (?), etc., etc., for the modest sum of 200 marks (about \$47). They are evidently waking up over there, even if behind time. A few lessons taken from the process-mongering fraternity on Broadway, might make them more adept at it. The circular still bears a little mark of the old conservative German methods, but they are evidently becoming imbued with some of our *accomplishments* in such matters, not the least of which consists of

slightly departing from dry facts, and going into the regions of fancy (called, by common people, lying), in order to create a movement of *finances* from other people's pockets to their own. Among other things, the circular states positively that it "is sure to take the place of all other magnifying apparatus, specially used," and full sheet samples sent for the modest sum of twenty marks. Also, "those negatives will answer best which furnish good prints when being copied with the help of *albumen*." But they sadly lack in the way of testimonials, which, though numerous, have not near enough *gush*, and not one of the senders complains of "making more money by it than he knows what to do with." They have not advanced to that stage. I will leave my German friend with the following quotation from his circular, which is evidently translated in the most approved "Germanized English."

I, the subscribed, hereby vouch to keep the method of enlargement received from Mr. Carl Groll at Guben a secret and to use the same exclusively personally and in my photographic hall.

Should I break this promise, I would make myself liable and responsible for any damage arising by it to this gentleman, and I furthermore am willing in this case to pay a poena of One Thousand Mark to him.

.....d.....th.....18

Well, I do not know how business is elsewhere, but here there is what the Germans would call a general "katzenjammer" among photographers this spring. It is difficult to find the cause. There are more good photographers, and better work done here, by one hundred per cent., than there was three or four years ago (and no lighting or any other *patent* process is used, either), and yet the general cry is dulness. I believe it is the case all over the country now. The cause of it, if properly probed, might lead to a remedy, as times generally are no worse than they were a year ago. There certainly is no lack of new sizes or styles, especially as the public are now well supplied with cabinet albums, and this size is gradually crowding out the *carte-de-visite*; and, in spite of rivals, the "Promenade" and "Boudoir," are evidently the

VOUCHER.
CARL GROLL, GUBEN.

pictures of the present, as well as of the future, for some years to come. The reasons are that the albums will have to be filled, as in the case of the carte, and that they are both artistic and convenient; being free from the objections of the carte, and as large as can be handled well without framing. Large work is evidently becoming divided up more among the numerous artists, who are not photographers, on account of the convenience of solar enlargements, and photographers must make up their minds to retain but a small portion of that kind of work; for as yet no enlargements can be made to stand the test of criticism, without a great deal of manipulation by competent artists; it is probably not within the possibilities of photography, to make *perfect* life-size portraits without such aid.

This city remains, as yet, far behind in outdoor photography. The community is essentially conservative in almost everything, and does not seem to offer much encouragement to landscape photographers, and consequently but few make a specialty of it. In portraiture, so far as quality both of patronage and work is concerned, Mr. Busey and Messrs. Kuhn & Cummins keep the lead. There is no doubt that the class of patrons has a great deal to do with quality in an artistic sense, for among the ordinary class of people but few good subjects are found, and in many cases their taste is in direct conflict with the artist's, who, in most cases, finds the task of educating them to his ideas a thankless one, and he must work for pecuniary returns. We have no association here, which is certainly to be deplored. Some years ago I made a very strong effort, and, aided by a few others, succeeded in getting the majority of the fraternity together, and forming an association, strong in numbers at least, but after a few months, interest lagged, and the association finally *petered out*. As that had been the third effort within a few years, no one has had the courage to make another attempt. In proportion to other interests in this community, however, photography has fully held its own, and perhaps more.

I cannot close this letter without respectfully remonstrating with Mr. Howson, against a portion of his article in the last

number of the *Photographer*, in which he puts me in a false position. He quotes from my article in the April number, where I say that "mere modifiers of the ideas of others are not inventors, and not entitled to the benefits of such," as if I meant to say that they *are not entitled to patents*. Of course every one knows better; I should have said "and *adapters* of others' ideas," etc., which would have explained my meaning better. But I meant it in a moral sense, being perfectly aware of the unfair vagaries of our patent laws.

But I must also object to his very extreme interpretation of the value of patents. According to his ideas, there would be no end of litigation, and no way for a judge to determine the validity of a "process patent." To give an instance: Obernetter, Albert, and all other photo-mechanical inventors and patentees, in their descriptions, give certain proportions of gelatin, bichromates, etc., to be used in making the film. Now, under his strict interpretation, either one of these patentees (or any other of the numerous American inventors) can claim the making of such a film on glass, and printing *thereon or from* exclusively for themselves, and thus create an endless conflict. Now, Mr. Levy and myself, as well as Mr. Numler, have patents prior to Obernetter, giving also the method of making such films, and which, *if combined with a proper substratum*, give precisely identical results to those of the former. Now we all know that that procedure is a *principle*, discovered and perfected by Poitevin and others, and *is not patentable*. The *substrata* in the first-mentioned processes are all the essential points really covered, but according to Mr. Howson, *the whole thing is patented*, if I understand him right. This certainly is not so; only such proportions as they give are their own, while the *principle* of making and using a film of bichromated gelatin on hard surfaces remains free. Now it will be seen how easily such patents can be evaded, and that is why I say that process patents, in photography, at least, are weak, *unless they cover an entirely new discovery or principle*, which these do not. Why, under this interpretation, Poitevin, the father of all these processes, could not practice his own inven-

tions in this country. How could the patent office have granted patents for the same thing virtually to Obernetter, M. Leon Vidal, and others, after Albert had obtained his, if that principle had been covered? In fact, the authorities never granted a patent covering such ground, as we were informed by the examiner himself, when granting our patent, that it was only allowed in the description of our and other similar processes, *and could not be thought of as a claim, because as a principle it was not patentable.* Paul Pretsch's patent is almost identical with ours in the first steps, and only the *subsequent steps which were departures from the old methods published* were patented, and embodied in the claims. In fact, only a thorough acquaintance with the whole history of photography can enable one to determine the value of any of these "process patents." They cannot be decided by a court on mere technical construction or interpretation. It will be noticed that the decisions of the courts have been less favorable to such patents in late years, and the publication two years prior to a patent of such a process, makes a *prima facie* case against the patentee, *and the burden of proof is thrown upon the latter as to priority of invention*, a very difficult thing in most cases. In fact, our entire patent laws are too loose, and need revision, for it is evident that where so many patents are granted in conflict with each other, none can be very sound, unless some one of the many on the same subject has undoubted priority. However, we have all had patents *ad nauseam*, and I have no doubt the fraternity are sick of them for a long time to come. Meantime I hope every one will carefully read my pamphlet, and they will, no doubt, save some money in future, even if they do not agree with me in my views. I hope at least that all will credit me with being sincere and not selfish in my opposition to arrogant scoundrels and humbugs, who have flourished too long already by swindling the fraternity with useless processes. My mistakes may be kindly overlooked in the sincerity of my efforts. With thanks for the space given, and best wishes, I am,

Fraternally yours, D. BACHRACH, JR.
BALTIMORE, May 10th, 1879.

THE SOLAR-CAMERA PATENTS.

IT having been erroneously announced that the patents on the solar camera had expired, we wrote Prof. Woodward for full particulars on the subject, and received the following in reply:

DEAR SIR: In reply to your favor of yesterday, I inclose circular and price-list of "improved solar cameras," containing a full list of the patents that have been obtained, with their several dates, all of which (except the first) are in full force. It is quite apparent that any one can readily learn when they each will expire by referring to the printed dates.*

The first patent was for a term of fourteen years, with a privilege of an extension of seven, and has expired. Patents are now granted for a term of seventeen years. It may be proper to say in way of explanation, that the solar camera of to-day *is quite a different thing from that of earlier date.* It has kept pace in improvement with the advancements achieved in all the other departments of photography. Many additions have been made, and all that ingenuity could suggest, and skill impart, has been availed of in order to meet the requirements of the photographic world, in its most advanced developments, and to render the solar camera of to-day wonderful in its accuracy and rapidity of action, simplicity of movement, with compactness and great durability. All these additions and essentials in the constructions of the "improved solar cameras" are protected amply by several letters-patent, the dates of which are contained in all advertisements for the information of the public. The gist of the original patent as defined by the patent office at the time of its extension, consisted simply in the use of a condensing lens, negative and object lens for enlargement; the latter being placed at or near the focus of the former, so that the light from the former might pass through the latter. It is quite evident that any one *now* may construct and use a condensing lens and object-glass, for enlarging from small negatives, providing he is careful *not to use* any of the

* February 24th, 1857; July 10th, 1866; February 23d, 1871; May 26th, 1874; August 4th, 1874; September 18th, 1877.

parts or points, devices or designs, contained in the apparatus or described in either of the letters-patent that have been granted for improved solar cameras.

The low prices that have been adopted for the sale of improved solar cameras, is owing to the great facilities possessed, and which enables the optician to place in the hands of the photographer an instrument that can be relied on, and will do the work in perfection at a less cost than he could possibly construct one himself.

D. A. WOODWARD.

BALTIMORE, MD.

COLORING AND FINISHING BRASS WORK.

TO prevent the every-day rusting of brass goods, the trade has long resorted to means for protecting the surface from the action of the atmosphere, the first plan of which is to force a change to take place. Thus, if brass is left in damp sand, it acquires a beautiful brown color, which, when polished with a dry brush, remains permanent and requires no cleaning. It is also possible to impart a green and light coating of verdigris on the surface of the brass by means of dilute acids, allowed to dry spontaneously. The antique appearance thus given is very pleasing, and more or less permanent. But it is not always possible to wait for goods so long as such processes require, and hence more speedy methods become necessary, many of which had to be further protected by a coating of varnish. Before bronzing, however, all the requisite fitting is finished and the brass annealed, pickled in old or dilute nitric acid till the scales can be removed from the surface, scoured with sand and water, and dried. Bronzing is then performed according to the color desired; for although the word means a brown color, being taken from the Italian "*bron-zino*," signifying burnt brown, yet in commercial language it includes all colors.

Browns of all shades are obtained by immersion in solutions of nitrate or the perchloride of iron; the strength of the solutions determining the depth of the color. Violets are produced by dipping in a solution of chloride of antimony, or of permuriate of

iron. Chocolate is obtained by burning on the surface of the brass moist red oxide of iron, and polishing with a very small quantity of black lead.

Olive green results from making the surface black by means of a solution of iron and arsenic in muriatic acid, polishing with a black-lead brush, and coating it, when warm, with a lacquer composed of one part lac-varnish, four of turmeric, and one of gamboge.

A steel-gray color is deposited on brass from a dilute boiling solution of muriate of arsenic; and a blue by careful treatment with strong hydrosulphite of soda.

Black is much used for optical brass-work, and is obtained by coating the brass with a solution of platinum, or with chloride of gold mixed with nitrate of tin. The Japanese bronze their brass by boiling it in a solution of sulphate of copper, alum, and verdigris.

Success in the art of bronzing greatly depends on circumstances, such as the temperature of the alloy or of the solution, the proportions of the metals used in forming the alloy, and the quality of the materials. The moment at which to withdraw the goods, the drying of them, and a hundred little items of care and manipulation, require attention which experience alone can impart.

To avoid giving any artificial color to brass, and yet to preserve it from becoming tarnished, it is usual to cover properly cleaned brass with a varnish called "lacquer." To prepare the brass for this, the goods, after being annealed, pickled, scoured and washed, as already explained, are either dipped for an instant in pure commercial nitrous acid, washed in clean water, and dried in sawdust, or immersed in a mixture of one part of nitric acid with four of water, till a white curd covers the surface, at which moment the goods are withdrawn, washed in clean water, and dried in sawdust. In the first case, the brass will be bright; in the latter, a dead flat, which is usually relieved by burnishing the prominent parts. Then the goods are dipped for an instant in commercial nitric acid, and well washed in water containing some argol (to preserve the color till lacquered), and drain in warm

sawdust. So prepared, the goods are conveyed to the lacquer-room, where they are heated on a hot plate and varnished.

The varnish used is one of spirit, consisting, in its simple form, of one ounce of shellac dissolved in one pint (imperial) of methylated spirits of wine. To this simple varnish are added such coloring substances as red sanders, dragon's blood, and annatto, for imparting richness of color. To lower the tone of color, turmeric, gamboge, saffron, Cape aloes, and sandarac are used. The first group reddens, the second yellows the varnish, while a mixture of the two gives a pleasing orange.

A good pale lacquer consists of three parts of Cape aloes and one of turmeric to one of simple lac-varnish. A full yellow contains four of turmeric and one of annatto to one of lac-varnish. A gold lacquer, four of dragon's blood and one of turmeric to one of lac-varnish. A red, thirty-two parts of annatto and eight parts of dragon's blood to one of lac-varnish.

Lacquers suffer a chemical change by heat and light, and must, therefore, be kept in a good place and in dark vessels. The pans in use are either of glass or earthenware, and the brushes of camel's hair, with no metal fittings.—*Ironmongers' Review.*

GIHON'S GATHERINGS.

COMPILED BY THE LATE JOHN L. GIHON.

III.

COLLODION FOR PORCELAIN PICTURES.—

No. 1.—Negative Gun-cotton, . 60 grains.
Alcohol, 2 ounces.
Ether, 3 “

“Put three ounces of pure alcohol in a small bottle, add to this 120 grains of nitrate of silver, very finely powdered. Set the bottle in water, and heat to boiling-point; keep it there *until all the silver is dissolved in the alcohol.* As soon as this is done, pour the silver solution, still hot, into the collodion, stirring up all the time to secure a perfect solution.

No. 2.—Chloride of Strontium, . 32 grains.
Citric Acid, 24 “

“Reduce to a fine powder, and dissolve in four ounces alcohol; add

Ether, 4 ounces.
Gun-cotton, 60 grains.

“These two collodions will keep for any length of time, and when mixed in equal proportions will produce brilliant prints.”

To Print on Porcelain.—“Coat the porcelain with albumen from *fresh* eggs and water, equal quantities. After the plate has dried (without heat), warm it and let cool again.

“Coat with the collodion (mixture of Nos. 1 and 2), in a moderately dark room, and dry the plate perfectly over a spirit-lamp. Lay the negative on the prepared porcelain, being sure to have it in the right place; protect the back of the porcelain with yellow paper, and put plenty of patent clothes-clips all around the edge to secure a good contact.

“This is better than any porcelain printing-frame. Put out in the light at the same time a silvered piece of albumen paper under a negative of the same intensity as that for the porcelain, and as soon as this paper print is dark enough, the porcelain picture is dark enough too.

“The negative should never be moved to inspect the proceeding of the printing, which moving is unnecessary in this way.”

Toning Porcelain Prints.—“Wash first in plain water, next in water containing a very little salt. Tone in

Water, 8 ounces.
Gold Solution (1 grain per ounce strong), 1 drachm.

“After toning and washing, fix in

Hyposulphite of Soda, . 1 ounce.
Water, 10 or 12 ozs.”

A Good Negative Varnish.—“Bleached shellac is dissolved in alcohol in the proportion of

Alcohol, 24 fl. ozs.
Bleached Shellac, . . . 3 ounces.
Gum Sandarac, 1 ounce.
Oil of Lavender (essential), 1½ ounces.

“Dissolve the shellac in the alcohol, which will take one or two days; filter to get out the insoluble shellac, then add the sandarac and oil; filter, and bottle for use.”

To remove Varnish from a Negative.—

Alcohol,	5 ounces.
Water,	5 “
Potassa,	2 drachms.

“Immerse the varnished negative in this solution; as soon as the varnish has all dissolved off, wash the plate carefully with water containing a little alcohol, and finally coat it with a very thin solution of gum arabic, and set the plate away to dry.”

Retouching Varnish.—

Alcohol,	2 pounds.
Gum Sandarac,	4 ounces.
Gum Camphor,	1½ ounce.
Venice Turpentine,	1 ounce.

“Warm the negative slightly, and dry by artificial heat. Nos. 2 H to 6 H pencils should be used, without rubbing up the surface.”

To Preserve Sensitized Paper.—“Dip sheets of blotting-paper in a saturated solution of bicarbonate of soda; hang up, and dry.

“When your day’s work of printing is over, lay your surplus sensitized paper between these sheets, in a large book; the paper will keep as pure in color as when first silvered, and will not turn if left so for a week. This simple method may prove a great economizer, especially when after silvering a good lot of paper, the day suddenly grows dark, and the light slow and almost devoid of printing power.”

Bold Prints from Flat Negatives.—“Cut a piece of tracing-paper about the size of the negative; with a little dab of paste in each corner, attach it to the *back* of the negative. With a No. 2 Faber pencil lightly touch up the lights *on the paper*, softening the strokes by rubbing with the ball of the finger. Great care must be used in doing this to avoid harshness or unnaturalness in the lights. Turn the negative over, and by looking through you can decide whether there is enough or too much lead on the paper; in the latter case, remove the surplus with a common pencil-rubber; cut this to a sharp point, and you can obtain the utmost accuracy and gradations in your retouching on the paper. A negative thus doctored should be printed under ground-

glass; and thus a soft, bold print can be obtained from a weak, flat negative.

“Care, practice, and judgment are the chief necessities to obtain success in this manner of manipulation.”

Test for Hyposulphite of Soda.—“When a batch of prints is supposed to be sufficiently washed, their purity can be tested in the following manner: Take about a pint of the last water through which the pictures have been passed, place it in a white earthen jar, and drop into it *one drop* of a very strong silver solution—say, one hundred grains to the ounce—taking care to let it fall as near the centre of the water as possible. A precipitate will be produced in a white, opalescent, cloud-like form as the silver solution descends into the liquid, and will remain of this color if the water is *absolutely* free from hyposulphite. If, however, the *merest* trace of this salt be present, the opalescent deposit instead of remaining white, will, in two or three seconds, become blackened in color, the amount of discoloration depending upon the quantity of hyposulphite remaining in the solution. If this latter is the case further washing should be given the prints.

“This test is simple and accurate, and the materials for using it are sure to be found in every place where photography is practiced.”

To Mount Prints on Toned Cardboard.—

“After many failures, the following means of overcoming the greasiness of the surface of toned cardboard was discovered; it is done by adding to every hundred grammes of paste five grammes of ammonia; this hurts neither the paste nor the pictures. The grease of the mount is slightly dissolved, and the picture adheres closely to the board. The volatile alkali evaporates very quickly.

“The ammonia used for this purpose must be perfectly pure, and free from any trace of sulphuretted hydrogen.”

Perpetual Paste.—“Dissolve a teaspoonful of alum in a quart of warm water. When cold, stir in it as much flour as will give the consistency of thick cream, being particular to break up all the lumps; stir

in as much powdered rosin as will lie on a dime, and throw in half a dozen cloves to give a pleasant odor. Have on the fire a teacupful of boiling water, pour the flour mixture into it, stirring well all the time. It will now become of the consistency of mush. Pour it into an earthen vessel, let it cool, lay a cover on, and put it in a cool place. When needed for use take out a portion and soften with warm water. Paste thus made will last a twelvemonth."

ABOUT PREPAYMENT.

SOME three years since you had the kindness to publish a letter from me, wherein I advocated the abolishment of the system of demanding prepayment for photographs. By a preamble and resolution, I also attempted to bring the question before the N. P. A., at Philadelphia, in 1876. In its wisdom, that convention very promptly laid the said preamble and resolution on the table. The object of this letter is to offer to you, and the fraternity, an apology for advocating a system which can only be maintained, as I now believe, by submitting to frequent losses, and impositions from the public, which ought not to be borne, nor will not be suffered by any man with a grain of self-respect.

For many years I had seen and felt the disadvantages that continually crop out, from demanding pay in advance. I thought if it could be stripped of any dead weight, that photography would be benefited. I thought the "Tinkering Jim" class of artists had their whole existence on advance payment, and that if the good galleries would place their business on the pay-on-delivery system, that it would work a revolution, greatly to the advantage of photography. The theory which I mentioned was that the public would place its support to those establishments which embraced good skill, abundant facilities, and conducted business on a basis similar to ordinary business enterprises. This is the theory which I entertained. In discussing this subject something over a year ago, the *St. Louis Practical*, referring to my side of the question, represented me as offering photographs to the public on approbation, *i. e.*, after sittings and pictures were made,

acceptance of the pictures or otherwise was at the option of the sitter. Nothing could have been more foreign to my views or practice; I required a definite order, specifying number, size, style, etc., but required payment only on delivering of photographs.

In the beginning of 1874 I publicly announced "prepayment system abolished," and for a year or more I had a most flattering business, and the facts compel me to say that the basis has its advantages, while it grieves me to acknowledge after a trial of three years it proved to be a snare and a delusion. Troubles began to come, and they grew thicker, and came faster month by month. About that time the celebrated case of Pearsall was published, who resorted to the courts to collect a bill of \$25 for photographic work, and succeeded in collecting it. (I would like to inquire of Mr. Pearsall, if the collection of the \$25 did not cost him \$100; and if after it was all over, he did not think it impolitic to proceed in that way?) Every one remembers how Pearsall was championed for his pluck. I had numerous cases where I had to resort to a law suit; one man refused to take the inked copy of his dead baby made from a card I had made from the baby while living. I obtained a judgment for \$20. It was appealed from, and at one of the subsequent trials it was in proof that the picture was a difficult one to copy; whereat the judge said if the artist knew he could not make a good picture from it he ought not to have undertaken it! This suit cost me \$75 and I did not collect a cent.; another time I sent the photographs to a lady who threw them into the street. I brought suit against her father; it resulted in two suits, \$20 costs, and no judgment in my favor. I had other cases fully as unproductive. A few collections were successful, while about twenty worthless judgments in my favor now lie on the dockets, where I have had to pay the costs.

The lesson of three years, spent in trying to place photographic business transactions upon an equal basis with other commercial transactions, has taught me that the public is not worthy of such confidence, and that an artist can only be successful and prosperous, and protect himself from imposition and losses by requiring, *invariably*, payment in part or in full, before sitting is made. Said

a lady to me the other day when she brought her child to be photographed: "Pay in advance! I'll pay when I get the pictures, if they suit me; if they do not, I won't take them." She left my gallery in search of a more accommodating artist.

JOHN CADWALLADER.

A SELF-FEEDING AND SELF-REGULATING FILTER.

BY J. H. KUHNS.

I HAVE long felt the want of some contrivance for filtering the silver bath with, the ordinary way of filtering, by pouring the solution into the filter, being very troublesome, particularly when one has something else to do, and cannot stand by and watch it all the time. I have tried a large number of different ways of filtering with siphons, and none of them would work right, as I could never regulate the flow of the solution. They would work well a while until the filter became clogged with organic matter, when the solution would run over and waste, if I happened not to be on hand at the time. I have a plan now that I have been using for the last six months, and it works all O K.

A is a piece of plank about six inches square and one inch thick, with a piece sawed

out about two inches wide, or large enough to admit the neck of the bottle to pass through, as shown in the cut.

The top edge is rounded out with a knife, as shown by the dotted lines, so as to prevent the bottle from slipping when resting on it. This piece of wood is fastened

to two bracket pieces, B B, and is fastened to the wall at a suitable height from the shelf or table on which your bottle or filter stands. E is a piece of soft wire fastened at one end with a screw-eye to the wall, and bent at the other end so as to hook in a screw-eye, and thus keep the bottle, D, in place.

The bottle, D, which should be capable of holding the entire solution, is provided with a cork, through which passes a glass tube (I

use a reed) five inches long and one-quarter inch in diameter. F represents the cork with the glass tube through it; the tube must fit perfectly tight in the cork, so as not to admit any air. Your bottle having the solution in it and the cork (with the tube) fastened in tight, is inverted over the funnel containing the filter and placed in the shelf A; you will observe that the instant the bottle is inverted the solution commences to run out of the tube, and air-bubbles passing back through the tube as soon as the solution in the filter reaches the end of the tube, and prevent the air from getting in, the solution will stop running; then as soon as the solution in the filter has filtered through sufficient to admit more air in the bottle, the solution will then run out again, and in this way keep your filter full all the time, until all is filtered.

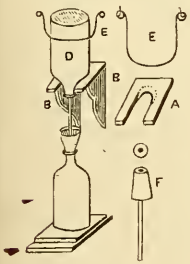
I have a couple of blocks to put under my bottle in which I am filtering the solution, so as to regulate the flow into the filter and keep it from running over; by placing the blocks under the bottle you raise it, and it should be sufficiently high to have the solution in the filter come nearly to the top before it touches the tube.

This is a good apparatus, and if you once work it you would not be without it for anything.

WRINKLES AND DODGES.

IF you can spare a small corner in your valuable journal some time, you can, if you think proper, publish the following simple method of producing retouched photographs by means of the solar instrument. As yet I have not seen this plan spoken of or published anywhere, although some may have thought about it. I do not intend to *patent* or *peddle* the idea, so all are welcome to it, if they choose.

The plan is as follows: First cut an opening in the upright focussing or perpendicular board, as large as you want; over this opening *firmly* secure a good clean piece of glass, previously varnished; then insert a piece of paper from behind. This can be pressed up in perfect contact with the glass by means of, say, the piece taken from the opening, and hinged—the intelligent work-



man or operator will soon discover a means to fix that matter—but first divide it in equal parts, so as to form two small doors. Now having drawn a correct focus through the glass on this paper, remove it and then by means of rosin or whatever you like, grind the glass surface (from behind, of course). You will then have the solar image or negative, which can be touched upon with as much facility as any other negative. A defective background can be improved, and retouching generally carried on to whatever extent is required. All that remains to be done now, is to insert the sensitive paper on the negative and turn on the sun and print. If the print cannot be seen from the front, let down half or one of the doors at the back, and examine as often as you please. The printing goes on nearly as rapidly as usual; of course, there is a slight difference in this respect, as there is between any untouched and retouched negative. I have no ground-glass substitute; probably this would answer better. Let some one report progress.

It suits me *grand* to see you pitch into these pedlers and swindlers. We have them down here, too.

I trust that your valuable journal may still continue to advance our noble cause.

JAMES McLAUGHLIN,
Halifax.

WE received your information with many thanks. We thought we would wait until we had given it a good trial before acknowledging it, and that we have done and find no trouble in getting rid of streaks; but they are not right, that is, not always right, and after watching everything that would be likely to give us a clue or find out the cause, I think we have got it. We have heard a great many say it was in the weather, but could not tell why they thought so. Now we have come to the conclusion that it is in the weather, but we do not think dampness has anything to do with it. We attribute it to keeping the paper in a room, in or out of a box, where there are sudden changes. For instance, I have known of three having this trouble, and in every instance they kept their paper where it would be as cold as ice through the night, and in the morning would heat it up warm again, and thus sweat

the paper, and cause those spots or mottled appearances, that so much softness of albumen accompanies, by having albumenized plates in the same room. We discovered the cause; they do not stain by sweating or steaming once, but by leaving for a few times; the effect is quite visible on the plate where you could not distinguish it on the paper with the naked eye. Now, I think by keeping paper in a room not heated, but what you would call a warm room, that no trouble of the kind would ever occur. We find that by going by the advice you gave us, that by giving the paper lots of elbow grease and persevering, that it will come out good most of the time; of course, you run across a piece once in a while that was not rubbed enough. The plates, we find we could not rub that effect off, except by breathing on them first. We find that by not rubbing it well off with a good-size piece of cotton, taking care and not let the hand touch the surface of paper, we cannot get rid of it; by rubbing well and toning in not too strong bath, we have got rid of it. Great care should be taken in acidifying prints; let them just get the red tint, then throw out, and they will redden up well. We find by having them in toning ten minutes they come out best; hypo, six minutes. Respectfully yours, with many thanks, and long may the *Philadelphia Photographer* exist,
BENTON & ROGERS.

BENNINGTON, VERMONT.

P. S.—Do not think by the length of this letter that we are certain of our being right.

PASTE FOR ALBUMEN COPIES.

THE following paste is very satisfactory and durable for a considerable time: 40 grains arrowroot are dissolved in 100 grains water, and 1 grain gelatin added to it; then the whole is heated to the boiling-point, while stirring all the time. After cooling, add about 10 grains alcohol, and some drops of carbolic acid.

KLARY'S NEGATIVE VARNISH.

200 c.c. ether, 15 grains pounded sandarac, and 15 grains elastic. To 100 c.c. of the filtered liquid, add 30 c.c. pure benzole. After the benzole has been added, no more filtering. The washed negative is twice

coated with eight per cent. solution of gum arabic, and after drying the gum arabic layer, the varnish is laid on. The varnish layer appears dull; let the same dry a few hours.—
Correspondenz.

This formula was given to me in 1873 by Schrieber & Sons; they use it in their business for porcelain pictures; have seen some beautiful prints from it. They say it *will not keep*, and must be used as made. To each ounce of plain collodion, add, viz.:

- Chlo. Strontium, 2 grains.
- Nitrate Silver, 5 “
- Citric Acid, 1 grain.
- Nitrate Uranium, 1 “

This formula makes fine work, and should it be altered so as to keep, it would find a good market with stockdealers. H.

PHOTOGRAPHIC VISITING-CARDS.

WE give below a representation of a novel visiting-card, which has become quite popular in certain localities.

The mounts are manufactured by A. M. Collins, Son & Co., of Philadelphia, and for sale by all dealers. They are made with one

you some business. They would be very appropriate for photographers and others, both as business- and visiting-cards. Also, suitable for invitations to receptions, weddings, or opening-days in business places. The photographs, from their small size, and the quantities in which they will be ordered, will not be expensive to make.

VOICES FROM THE CRAFT.

WHY IS IT SO?

FRIEND of photography, and friend indeed, as is plainly shown by your journal, allow me, if you think proper, to say a few words through your pages.

Nowadays a great deal is written through swindlers not only, but also through our wholesale houses, about “lightning” processes. Our wholesale dealers are offering the receipts free; but you have to buy part of the chemicals from them, which they prepare, and for which they charge a full round price that, if mixed by ourselves, would be much cheaper. What seems to me the hardest thing to explain, is that the biggest swindlers in our beautiful art can always get some of the best photographers to sign

their names to their advertisement. Is not this wrong? Ought you not to be more careful? as you not only help them, but also, through your name, cause many poor photographers to lose a dollar. Think of this.

Last week, a photographic artist stepped in our gallery, and claimed to be a brother artist (but



CHLORIDE & CO.

Photographers,

174 Argentum St.

SUNBURY.

THIS STYLE FURNISHED AT \$10.00 PER 100.
OR WITH SINGLE PORTRAIT, 6.00 “ “
—ORDERS SOLICITED.—

or two openings, as the purchaser desires, and the little paper print is pasted on the back of the mount, so the face will show in the opening.

In our cut we represent the card with two spaces for portraits, one with the portrait in, the other as it appears before pasting on the picture.

These are very pretty, and ought to make

look out for oily-tongued ones) who never had any trouble with blisters; *think of it, “never.”* But it was “a secret, and worth money.” Such artists we do not like to see here. It will not pay an artist who gets every year so much of good sound advice out of the *Philadelphia Photographer* and other books, to buy secrets. In what way can we elevate our art more than

by helping each other. Through many is strength.

Now, as I have spoken about lightning and blisters, I get along nicely, and have no trouble of any consequence of blisters, by keeping all the changes of water about the same temperature, and salt water after they come from the hypo. For quick work, I use bath full strength, and when I put the silver in the water I also put in a quantity of nitrate of baryta, more or less; too much seems not to affect it, as I have tried it. Develop as usual, full strength; and I warrant you you need no Lambert nor any other quick process. I can take babies in one second. It works too quick for me in everyday work.

J. H. REUVERS.

INCLOSED are four dollars, for which please to send me the *Philadelphia Photographer* for 1879. Please send the numbers each in separate wrappers, as I believe any package over eight ounces goes to the custom-house first, where an entry fee of twenty-five cents is exacted. I do not subscribe to the *Journal* for fear of being taken in by Lambert, that having already been done by the photo-crayon process.

Although the carbon and artotype processes are no doubt good in competent and skilful hands, still I think very few photographers have an opportunity to profit by them. I, at least, prefer a process which I know pays at present, instead of acquiring one that will perhaps pay in the future. It is chiefly on account of the illustrations that I subscribe; for the reading of the many different ways of doing the same thing I find somewhat *confoozling*.

P. DOBEREINER,
Caledonia, Ont., Canada.

YOUR bill received, and I inclose P. O. order for the same. I must say that to-day I feel towards the Artotype Company pretty much as you did about carbon some time ago, which then I announced was the cause that influenced me to discontinue my subscription to your journal, because I was then, as I am now still, convinced of the great value of the carbon process, which is corroborated by still greater authorities than myself in Europe. I do hope you will use your influence not to allow this interesting

process to drop into disuse. I inclose you my subscription, and it is my intention to be a continual one in future. I much regret to see that there should be such bitter and useless controversies to prejudice the minds of people who ought to be progressive in our interesting art. We might rather be banded together, to carry out improvements that would put our profession on a firmer and more solid basis, which would then make us more appreciated by the public.

For my part, I am well pleased to possess a process that enables me to furnish pictures to my patrons that will give, in the future, more satisfaction than the evanescent silver print.

I am, yours truly,

THEODORE LILIENTHAL.

NEW ORLEANS, March 28th, 1879.

YOUR journal comes to hand in due course of time, but always too late to answer any inquiries in time for next issue of the *Photographer*. Very often questions are asked which I think I could answer, but consider hardly worth the while, as so many answers will reach you previous to any from far-off Oregon, and probably nearer the point, from older and more experienced heads.

"Which Way" is full of rare sentiments, to which every true artist should give more than passing thought. Our pet art is making rapid strides; but how much more rapid it would be if this despicable jealousy among artists could be done away with, and all work in harmony, and a feeling of pride, to see how fine and faultless work each can make for the benefit of photography and patrons of the art. I have yet to see a *faultless* photograph; all will bear criticism, and scarcely two will agree as to the merits of the work. Truly, "which way" are we drifting, when brother chips in the same location hardly speak, and *seldom*, if ever, see a meritorious point in the works of another. May God help the man who is thus blind, to see the error of his way, that he may depart from it and travel the way that leads to a pleasant life, a clear conscience, love for the art, and a kind and helping hand to those trying to rise in the profession.

I herewith give to your readers the best dodge for trays, for all uses in the gallery

but nitric acid. It consists of a rough wooden box lined with carriage oilcloth. Paste the cloth to the tray with thick flour-paste, neatly folding the corners, and fasten on the outer edge with tacks. I know from experience that this is the best and cheapest tray made. \$1.50 will cover the expense of a tray 20 x 24 inches. I have used them constantly since opening here, for silvering, hypo, etc.; and they are as bright to-day as when made. One-half inch stuff is plenty heavy, and you can handle it without fear of dropping or breaking. Try it once, and you will use no other.

FRANK G. ABELL,
Portland, O.

"A RAPID PROCESS IN FULL," as given in March number of *Philadelphia Photographer*, is the process sold by G. W. Hutchings, and by which it is claimed negatives can be made in one-quarter second, one-eighth second, etc.

I have used the process for the last three or four months, and like it very much; in fact, never would give it up. *But* I do not think there is a man in America, or any other country, that can make a negative in one-eighth second under the skylight, with full time. It works very quick; I get children, easy, in from one to two seconds. I have used several different brands of cotton; and, so far, I cannot see very much difference, if any, in the time required. I inclose card of child; negative made with one-quarter Darlot tube, in (as near as I could tell) one second.

HEMINGWAY.

I SEE our "Editor and Publisher" at the mouth of the "big muddy" is getting bilious. I think he is taking too much muddy water in his tippie. I see by his last *P. P.*, he has carbon for sale. The statement he makes about "our young occidental friend" is made out of whole cloth; not one word of truth in it. He did not travel *hundreds* of miles, nor one mile, nor any part of a mile to learn to make permanent proofs in imperishable gelatin. Oh, no; he understood the process of making them years before Lambert was hawking it through the United States, and he had a practical demonstration of Lambert's process by C. Gentile, before the Chicago Pho-

tographic Association, at Gentile's Gallery, while he was President of that Society, and he was so stupid he could not see anything in it for a regular portrait business, except a great deal of uncertainty of results, and he made no effort to get carbon, for he did not want it, although Mr. Gentile asked him to make one of a pool to buy a certain number of room rights, which he proposed to sell in the city of Chicago. Has our friend anything else to sell beside carbon and artotype and cabinet pictures (no medal you know)? How much does he get for puffing? Oh, he is too good for this wicked world; they ought to stuff him and put him in a glass case.

I remain,

"Our occidental friend,"

ORMSBY.

SAN FRANCISCO, CAL., May 13th, 1879.

THE CARBON SURFACE FOR COLORING.

MR. WENDEROTH, in his interesting article, "On the Fading of Silver Prints," in your magazine for May, while commenting on some remarks made by the editor of the *Photographic News*, that "when permanent printing processes exist, it is amazing that another silver print is made," says: "Reading this, I wondered what he meant; certainly not the carbon process, which, for general use, is impracticable." While admitting that as regards small work he is probably right, he is in error in asserting "that the use of carbon prints, either painted in india-ink or crayons, is out of the question, as its surface being either collodion, or non-absorbing gelatin, water colors mixed with gum crack off as soon as dry. *I wonder* if Mr. Wenderoth expects water colors mixed with gum, when dry, to stop on the waved surface of a collodionized print, or on any print made by *double transfer*, that has not had the slight trace of wax remaining on its surface removed, any more than it would on a glass plate? If there is any one fact in connection with carbon prints (aside from their permanency) firmly established, it is the facility with which they can be produced on canvas, porcelain, or any kind of paper, rough or smooth, and worked on with brush, pencil, or crayon, in oil or water colors. Perhaps a study of the abrading

properties of powdered pumice, when applied to paper in the proper manner, may help Mr. Wenderoth to solve the enigma how to finish a carbon print in crayons.

E. H. D.

SOCIETY GOSSIP.

THE CHICAGO PHOTOGRAPHIC ASSOCIATION.—The regular meeting of this Association was held in their rooms (Chas. W. Stevens' Photographic Warehouse), Wednesday evening, May 7th, 1879. Meeting called to order at 8 o'clock; O. F. Weaver, President, in the chair. The Secretary stated that the minutes were published in full in the May *Philadelphia Photographer*, and as most of the members had read them, he would move that they be approved as published; the motion prevailed. The President, noticing the large attendance of members and visitors, invited those present not members to hand their names to the Secretary and join the Association.

The Secretary read the following list of names as corresponding members, and on motion, they were elected:

Samuel V. Allen, Freeport, Illinois.

E. H. Perry, Battle Creek, Michigan.

Theron Crispell, Battle Creek, Michigan.

T. H. Ivie, Atlanta, Georgia.

H. R. Marks, Austin, Texas.

G. L. North, South Norwalk, Conn.

F. B. Clench, Lockport, New York.

The President announced that the reports on the Carvalho paint was in order, and Charles Aiken responded:

"MR. PRESIDENT AND GENTLEMEN: I have made some experiments with this Carvalho color, but regret to state, that in my practice, facts do not support the gentleman's theory and claims. There are so many conditions to consider in reflected and transmitted light, that we are apt to overlook some of the cardinal points. I need not call your attention to the fact, that all transmitted light partakes of the color of the medium through which it passes, and as all glass is *green* or *green-yellow*, we have, of course, a *yellow-green* light upon our sitters. As light is continuously passing and being absorbed by the objects on which it falls, and only *partly* reflected back, and further, the vol-

ume of transmitted light (in our case) being so much greater than the reflected light, that reflected light loses its power of coloring objects. Allowing the gentleman the advantage of a doubt, we will suppose his reflected light has the power of coloring objects; what then will be the result? We will then of necessity have an admixture of violet and green-yellow light, and as a green-yellow and violet intermixed loses all virgin color, and becomes a dirty gray, and still worse, a warm dirty gray, we have the climax of all bad light reflected upon our sensitive plate; and right here I wish to call your attention to the experience you have had in photographing gray and blue drapery, and what disappointment has been felt at the want of vigor and contrast. Further, if we would know of the evil effect of photographing muddy color, we have only to refer back to the old dirty backgrounds in vogue before such artists as Seavey and Paul Brown gave to the profession their knowledge of color in their beautiful clear backgrounds. How do these artists obtain their beautiful tones and shades of color? Surely not by heterogeneous mixture of all the primary colors, but with that great boon given by nature to art, *raw umber*. This color alone stands without a rival for purity of tone, and for photographic purposes is the peer of all colors. There are two tones of the color, warm and cold. I would recommend the cold tone (of course lowered with white), as the reflection would be green-yellow, and in perfect harmony with the light transmitted through your glass. By this means we obtain a clear light without confusing color, for it is an old maxim with painters, "much mixing, much muddy." Of all colored light, the green-yellow is the most favorable for good results in photography. This may be a new departure from the old and long conceived idea of non-actinic light, but it is not the outcropping of dogmatic theory, but evil fortified with practice. Of course I do not recommend the glazing of your light with positive green-yellow glass; this, of course, would be death to our purpose; but happily the best window-glass used has just the amount of color needed. Some little time may be gained with blue-white or gray-white light, but what is gained in time is lost in quality. It

is folly to consider any other light than the green-yellow, as long as we use glass as a transmitting medium. If perfect white glass can be made, it soon decomposes under the solar rays and becomes yellow."

MR. KLEIN.—"As I did not hear the first of Mr. Aiken's paper, I would ask the gentleman if, in his opinion, the Carvalho paint is a failure?"

MR. AIKEN.—"I found no advantage whatever in its use; in fact, think a studio better without it, as it has a tendency to produce hard shadows. It did not in my hands shorten the exposure. Such photographers as Ryder, Estabrooke, and Decker give it their approval, and as yet I am in the minority; possibly I had made a mistake, but as several here to night have tried it, we shall see."

MR. SMITH.—"I have tried the Carvalho paint, and tested it fully. I bought the color as prepared by the party introducing it, and must have secured the Simon-pure article. I painted the interior of my skylight-room as directed. It was not a handsome color, but illuminates well. I gained nothing in time, and found that the light reflected gave hard shadows."

MR. HESLER.—"That was my experience."

MR. SMITH.—"The combination with the color of the flesh of our sitters is not correct."

MR. GREENE.—"On what surface did you lay the color? If on a kalsomine, it is very possible the color was affected by what was on the wall."

MR. SMITH.—"I don't think any fault exists there. I put on two coats in oil."

MR. HARWICH.—"What was the shade of color when on?"

MR. SMITH.—"A dirty green."

MR. GREENE.—"I don't exactly understand the philosophy of this new color; here we have the 'dirty green color' as it is called by those who have tried it, reflecting, it is claimed, a very strong actinic or chemical light; and I go out on a viewing expedition, I find just this shade of green many times in the foliage, but it requires longer time. Why should it exert such a strong actinic force when laid on the walls of our studio, and act so much different when supplied by nature in foliage?"

Mr. Hesler then read the following paper.

"MR. PRESIDENT AND GENTLEMEN: At the request of our Secretary, I give you a few items of practical experience that have lately passed under my hands. First, as to the Carvalho paint. The two pounds I bought of Messrs. Stevens & Co., I spread over movable screens, as they might be used in cutting off all other reflections, and I found that, instead of shortening the time of exposure, it was very much increased by the use of the screens, reflecting the orange-pea-green color or violet, supposed to be. I used the reflectors in every possible way, but the only result was, the lengthening of the exposure. I would say here that my walls and ceiling are colored a warm light-bluish purple-gray (as near as I can express it), known in art as neutral tint; the floor of hard wood, darkened (with a coat of oil and asphaltum varnish) to a light chestnut color.

"I have to report also, since our last meeting, that I have given the much-advertised Levy dry plates a trial. The comparative results I place before you to night. (Mr. Hesler distributed for examination some prints.) The exposure for the dry plate was fifteen seconds, and that for the wet plate five seconds. I exposed six 5x8 dry plates in all, for which I was charged and paid the modest sum of \$2. Exposures from five to ninety seconds. Every plate came out spotted, as you see in the prints before you. The spots showed before exposure or development. Nearly all the plates showed crapy lines in the direction in which the emulsion was drained from the plate. The developer I received failed to develop a picture at all, but some I prepared according to instructions developed all right, as far as they would go. None of the negatives would make acceptable prints on account of the spots, crapy lines, want of strength in high-lights, and partial veiling of the shadows. I was careful to exclude all possible light from the dark-room during the changing of the plates from the package to the plate-holder, and only used the faintest possible dark orange light to develop by. I have not yet given the emulsion a trial, but will do so before next meeting. You will see that the print from the wet-plate negative shows full time, clear and full of detail, both in shadows and high-lights,

while that from the dry plate lacks detail in shadows, and strength in high-lights, and is covered with radiating spots. I have tried the *nitrite* of silver obtained from our Secretary at the last meeting. It was claimed that a small quantity added to the silver bath would increase the sensitiveness. I added thirty grains to a half-gallon bath, but have failed to discover any difference in its working qualities. The bath worked well before adding the *nitrite*, and works equally well now—no quicker than without it, and no signs of fogging as some writers claim will be the result after a short time.

“I wish to call the attention of the members to an article published in the *St. Louis Practical Photographer*, page 512—an error in the print, as it should be 612—from which it seems that Wm. R. W., of Princeton, Ind., has got ‘completely stalled’ of fogs, and applies to the editor of that journal for aid to solve the mystery. Although editors are supposed to know everything, I think in this case the diagnosis of the disease is incorrect, and the remedies will not cure the complaint. My impression is that *sulphur* of *lead* is at the bottom of our friend’s trouble. He is using either a rubber bath or a rubber dipper, or may have a bath with rubber edges or ends and glass sides. The use of rubber in any form about a bath (unless it be the pure gum) will surely produce the trouble complained of. My advice to our friend, as the shortest road to get over his trouble, and keep out of it, is to use only the German glass baths for his silver solutions, and *wood* dippers. For his present bath solution, having satisfied himself that the acid and alkalis added are doing no good, let him pour it out into a large mouth bottle or an evaporating dish, and add to it strips of pure copper—I find copper wire to answer the purpose—make a loose bundle of it, and keep it in the solution as long as there is any deposit of silver, which will be seen to form in bright gray crystals. When no further deposit is perceptible pour off the solution, and test for silver with muriatic acid; if none is found take out the copper, allow the silver to settle, pour off the copper solution, and either throw away, or allow it to crystallize for future use. Wash the silver in several changes of water, and dissolve with C. P.

nitric acid. By using heat (a steam or hot-water bath) to set the evaporating dish in, will give a more rapid action. Complete solution will occur with less acid than if dissolved cold. Care should be taken to add only a little acid at a time, as the action on the fine particles of silver is very violent. When all is dissolved, dry down and fuse completely; when cold, dissolve with pure water, and make up to required strength in the usual way. You will have a bath that will work clear. If on trying the first plate it shows alkaline fog, add dilute C. P. nitric acid very sparingly. I might enlarge on this, but think the hints given sufficient for the intelligent worker.”

MR. NEIDHART.—“I infer from Mr. Hessler’s remarks that he considers the Carvalho paint a failure.”

MR. HESLER.—“That is just what I found it in my hands.”

MR. EDGEWORTH.—“I tested the *nitrite* of silver, and was rewarded with fog.”

MR. RONEY.—“I do not know what Mr. Levy claims for his emulsion or dry plates, but I can indorse the emulsion of Newton; it is a success in every way.”

MR. WHITNEY.—“I found Newton’s emulsion perfect for view work, and shall try his emulsion for portraits when I return from my trip South.”

The Secretary proposed the following for membership and, on motion, they were duly elected: G. W. Collins, D. A. Collins, R. R. Akerly, and G. W. Secord.

The Secretary, on behalf of Edward L. Wilson, presented the Association with a year’s subscription to the *Philadelphia Photographer*, and the set of six boudoir studies from etched negatives, for which the 1879 gold prize medal was awarded to the artists, Messrs. Gilbert & Bacon, Philadelphia.

On motion, a vote of thanks was tendered Mr. Wilson for his generous donation, and the property placed in the care of the Secretary for the use of the members.

The Secretary stated that the journals received by the Association would be loaned to the members on demand. Already quite a number had availed themselves of the privilege; also of the library. The books and other property were for use, and those who desired them should call on the Secretary.

The Secretary read the following letter :

"On the person of an unknown suicide was found a photograph of a lady, with name and address of the artist obliterated, but the trade-mark remained intact. The initial 'W' was made out only. The trade-mark is engraved and gold bronzed. It is a small round table on which is a large album closed, and a small picture-case in an upright position. Can your Society give us any light on the matter?"

"DELAVAN, ILL."

No one present knowing such a design, the Secretary stated he would send the address of Messrs. Collins, Son & Co., who might have such a design in their possession.

Cabinet portraits, and two new sizes, sent from C. C. Packard, Kalamazoo, Mich., were distributed, and engaged the attention of the members. Mr. Packard's work was favorably criticised. The new sizes were $5\frac{1}{4} \times 2\frac{1}{2}$, and $3\frac{1}{4} \times 1\frac{5}{8}$. No name was sent with them, and if adopted by others, they can be christened to suit.

A communication from the Belgian Photographic Association was translated and read by Mr. Vidal, relating to a prize offered by the Association for emulsion work.

On motion, the communication was received and placed on file.

The formula for the Carvalho paint, as received direct from the originator, was read as follows :

"Mix chrome yellow two parts, and vermilion, or other red of like character, one part; this forms orange. Take of this two parts, and of some deep green one part. You will then have orange-green, with orange predominating; reduce with white, in the ratio of two ounces to sixteen ounces of white. Use same as other paint or kalsomine."

The Secretary read J. Traill Taylor's article relating to this new paint, as published in the April *Bulletin*.

It was thought by several of the members that Mr. Taylor would find reasons to change his views if he could test the color.

MR. DOUGLASS offered the following, from a correspondent: "In one of your letters you wanted to know if I had tried the Carvalho paint. I have just tried it, and I think it a nice humbug. When I first read the

article I thought it a humbug, by the way it was written. He says at the bottom, 'if those that wish to try it will send me their name, I will forward formula for mixing, etc.' Now this reminds one of the old advertisement of the retired clergyman, who, wishing to benefit mankind, will send *free* the receipt (which no druggist can compound) to cure all diseases; but we find in the end that he has medicine to sell at thirty-seven and a half cents per pound. Why did not Carvalho give his formula in his article, so that all who wished could try it, and not annoy him by writing, as proposed? He wanted them to write so he could sell the paint at a good price. As for his theory, a wine-glass of clear water will give orange, or any other color on the paper under it, but if you color the water you will find the same on the paper; and I think our theory will not be disturbed very much by the gentleman. I bought a can of the paint, and covered two screens about five feet square; one I put on the floor next to the side-light, and raised it about eighteen inches on the outside; the other I used like an ordinary side reflector; the shadow of the sitter showed the color of the paint very strong. I exposed a double plate, first exposure thirty seconds, then put a white cloth over the painted screen, and exposed the other portion. After several exposures, I found that the ordinary reflectors (white) produced the negatives in twenty seconds that required thirty seconds when the Carvalho screens were used. Now if we want 'lightning' in our operating-rooms, why not use white paint? I could see no difference in the quality of the negative made with the white reflectors in twenty seconds, and the Carvalho screens in thirty seconds. I think it a subject that needs our attention. I think seriously of painting my room white."

JOSHUA SMITH.—"I am very glad to have our Secretary give us these different views as they come from his correspondence. It seems, to-night, that all the opinions agree as to the failure of Mr. Carvalho's paint. It has done a good thing, however, in agitating the question of color for our skylight-rooms, and I think it will lead to valuable additions to our hitherto vague ideas of what was best for this purpose."

SECRETARY.—“As Mr. Smith calls attention to items in my correspondence, I will give the following, from Mr. Bode, of Milwaukee, relating to the formula of Mr. Hodges, given at last meeting, for preparing the silver bath:”

“The iodide of silver, as you say, is very sparingly soluble in a solution of nitrate of silver, but is more soluble in a concentrated solution than in a diluted, and more soluble in a cold solution than a hot one; at least, this is my experience; and we all know that by diluting a bath with water, a part of the iodide is separated. The little nitrate of potassa formed by the double decomposition, is of no consequence to the bath. If it has any effect it is the same as the nitrate baryta, which is sometimes added.”

J. B. Medlar, Rockford, Ill., desiring information as to the best glass for the skylight, the Secretary stated he had recommended the Wightman glass, made in Pittsburg, Pa., and that as this glass was gaining a large reputation for photographic skylights, he had written to Mr. Wightman for information as to the ingredients used, and had received the following reply.

“Yours to hand. In reply, would say that our glass is made of best pure white rock sand, well washed, and perfectly free from foreign substance, sulphate of soda, hydride of lime, the purest and whitest we can find. These are the solid chemicals, arsenic, pulverized charcoal, all of which is subjected to an intense heat, which brings out the bright, brilliant color, for which our goods are celebrated.”

MR. COLLINS.—“Is the Wightman glass more expensive than the other brands?”

SECRETARY.—“No; the same price as other brands of American glass.”

MR. HALL.—“I can see nothing in the formula as given that would be effected by the solar rays, consequently we would have a light with this glass that would remain unimpaired.”

MR. KIHHLHOLZ.—“I would like to ask how many photographers are in the habit of using a thermometer in their dark-room? I think it is of the greatest importance to keep the atmosphere of this room at a mean temperature of 70°.”

The President called the attention of the

members to the dangerous illness of Mr. J. H. Abbott, and requested as many as possible to call.

SECRETARY.—“Since our last meeting, death has taken from our number our associate, Roland A. Robinson. Born near Toronto, Canada, he had been engaged in the profession of photography nine years, beginning his studies with Simon Wing in his gallery at Toledo, Ohio. Mr. Robinson had charge of Mr. Wing's gallery, on Clark Street, at the time of the fire; immediately after, starting a new gallery on West Lake Street, near Union Park, which gallery he left to go to Denver, Colorado. Returning after a few months' absence, he located again in our city. Early in the past winter he was obliged to relinquish business on account of failing health. Consumption soon did its work, and he died peacefully, surrounded by his family, at his residence, 317 West Randolph Street, on Monday, April 7th, aged 39 years. Mr. Robinson leaves a widow and two children.

“Mr. President, I move the adoption of the following resolutions:

“WHEREAS, In view of the loss we have sustained by the decease of our friend and associate, Roland A. Robinson, and of the greater loss sustained by those who were nearest and dearest to him; therefore be it

“Resolved. That it is but a just tribute to the memory of the departed to say, that in regretting his removal from our midst, we mourn for one who was in every way worthy of our respect and regard.

“Resolved, That the family of the deceased have our heartfelt sympathy in their affliction.

“Resolved. That this sincere testimonial of our condolence and sorrow be forwarded to the widow of our departed associate by our Secretary.”

Adopted.

MR. SHAW called attention to alabastine, something new, to replace kalsomine for the walls and ceilings of the studio. This preparation of color is made in all shades, and will neither crack nor scale off. He recommended it for preparing plain backgrounds. He desired also to have the members try his screen, to use between the light and the sitter. Cover a suitable frame with common

mosquito netting, and paint the netting with chrome-yellow and blue, as he had found the yellow netting to answer nicely. Try it.

The Secretary read the following formula for "lightning" chemicals, received from a correspondent. The first, he says, is a Lambert formula.

"Bath, 40 to 45 grains strong, and neutral; to 4 ounces of solution add $\frac{1}{2}$ ounce of a fresh 25-grain solution of cyanide of potassium.

COLLODION.

"Ether,	2 ounces.
Alcohol,	1 ounce.
Double Iodide of Cadmium and Potassa,	6 grains.
Iodide of Ammonium,	4 "
Iodide of Cadmium,	4 "
Bromide of Cadmium,	4 "
Gum Guaiacum,	2 "
Chloride of Calcium, C.P.,	3 "

DEVELOPER.

"Water,	16 ounces.
Sulphate of Copper,	$1\frac{1}{2}$ ounce.
Sugar,	1 "
Saturated Solution of Double Sulphate of Iron and Ammonia,	10 to 15 drops.
Alcohol,	1 ounce.
Acetic Acid,	1 "
Pyrogallic Acid Solution (5 grs. to oz. of water),	$\frac{1}{2}$ "

CONTINUATOR.

"Pyrogallic Acid,	10 grains.
Bromide of Potassa,	5 "
Water,	1 ounce.

INTENSIFIER.

"Water,	4 ounces.
Tincture of Iodine,	1 drachm.
Alcohol,	$\frac{1}{2}$ ounce."

"A developer giving better details than the Lambert, to be used with ordinary chemicals:

"Water,	16 ounces.
Sulphate of Iron,	1 ounce.
Epsom Salts,	1 "
Coffee,	$\frac{1}{2}$ "
Formic Acid,	1 drachm.
Alcohol,	1 ounce.
Acetic Acid,	$\frac{1}{2}$ "

"Dissolve the iron and other salts in the water, soak the coffee in the solution five minutes, and add the other ingredients.

Another developer:

"Formic Acid, Ether, and Alcohol,	$\frac{1}{2}$ oz. each.
Iodide of Ammonium,	20 grains.
Iodide of Cadmium,	20 "
Iodide of Potassium,	15 "
Nitric Acid, C.P.,	1 ounce.
Water,	2 ounces.

"Neutralize with bicarbonate of soda, about a teaspoonful; add until dark precipitate forms; let stand in a warm place over night, and filter.

"This last developer, when rightly made, works quicker than the ordinary, but is apt to work harsh."

A member remarking on the singular combinations, the Secretary stated that he read them more as a contribution to the curious things in photography, than from any supposed virtue or wonderful properties.

MR. JOHNSON called attention to Mossolo, and other "water varnishes," put in the market at high prices. "If any of the members want to use this varnish, they will find the formula for making it on page 36 of *Mosaics* for 1878, article 22, 'Shellac Varnish,' by Monckhoven; it is a good thing, and you can make it at a small cost."

The Secretary, being requested by a member, read Dr. Vogel's article on "Photographing the Spectrum of the Geissler's Tubes," published in the *Photographic Times* for May.

MR. KOOY asked for a good collodion formula for ferrotypes.

MR. AKERLY gave the following:

"Ether and Alcohol,	equal parts.
Gun-cotton,	$4\frac{1}{2}$ grs. to oz.
Iodide of Ammonium,	3 grains.
Iodide of Cadmium,	2 "
Bromide of Cadmium,	$2\frac{1}{2}$ "

To each ounce of plain collodion.

"This is No. 1. Make No. 2 as follows:

"Ether and Alcohol,	equal parts.
Gun-cotton,	$4\frac{1}{2}$ grs. to oz.
Bromide of Potassium,	1 grain.
Bromide of Cadmium,	$1\frac{1}{2}$ "
Iodide of Ammonium,	5 grains

to each ounce of plain collodion. Add them together."

The President called Mr. Hesler to the chair, and stated that "as he was about to leave the city, and take up his residence in another State, he desired to offer his resig-

nation. He thanked the members for honors conferred, and was proud of his membership in the Association. It was doing a grand work, and as the years progressed, greater usefulness was apparent. A member from its inception to the present time, he had watched with growing interest its borders expanding, and the members feeling a stronger attachment. A bright future awaits the Society, and with such a glorious attendance every meeting as we have here to-night, this Association will certainly rank with the best in the world. I shall be with you in spirit at each monthly gathering, and I trust many times during the year to come in the flesh."

THE CHAIRMAN.—"I regret the occasion of our President's resignation. He has been one of our most zealous and talented members and officers. The duties devolving on him in every position have been faithfully performed."

On motion, the resignation was accepted, and balloting for his successor was declared in order. Mr. P. B. Greene was elected President for the balance of the term.

The Secretary read the following resolutions, and moved their adoption:

"WHEREAS, The retirement of our President, and his intended removal from our city, presents a suitable opportunity for expressing the esteem in which we hold him as a faithful, courteous, and competent presiding officer and associate; therefore be it

Resolved, That the thanks of this Association are due to Mr. O. F. Weaver for the able manner in which he has performed his duties, and that we sincerely regret his determination of removal from our city.

Resolved, That he carries with him the regard and good wishes of all the members of this Association.

Resolved, That his associates, regretting his loss, sincerely hope that his future will be a bright and prosperous one, and his new location in business a great financial success.

Resolved, That our Secretary present Mr. Weaver the preamble and resolutions adopted."

Adopted.

MR. NEIDHART.—"I want to hear something about that blood albumen; I see it on the notices of this meeting."

SECRETARY.—"Some time ago, in the published minutes of one of the German societies, I saw a brief mention by one of the members of a suspicion that some of the manufacturers of albumen paper were serving the photographers with blood albumen, and possibly some of the troubles we were having might be laid to this cause. I gave the matter some little thought, and as I could find nothing published giving any light on the nature of this blood albumen, I thought it might be well to investigate a little. As a great deal of complaint had been made about the Dresden extra-brilliant paper under its various marks, I turned my attention particularly to this manufacture. I gave a sample to Dr. Piper, asking him to tell me whether it was egg or blood albumen. I also interviewed Professor Hirsch, who is engaged largely in making this blood albumen for the use of calico-makers and book-binders, his firm buying all the blood from the slaughter-houses at our stock-yards for this purpose. Professor Hirsch examined the paper, and pronounced it blood albumen. I saw Professor Siebel, a chemist, and he said the only sure way was to get a proper analysis made, which he would undertake for the Society at the cost of time and material, probably ten dollars. Nothing was to be had in the line of information as to the chemistry of this blood albumen, or whether it was of a nature that would cause any of the troubles we were having with albumen paper. I wrote to Mr. Bode, of Milwaukee, who has done so much for us in chemical investigations, and here is what he says in regard to blood albumen: 'The detection of blood in albumen paper is a very difficult matter. Egg and blood albumen are chemically the same, and can only be recognized by optical analysis. This requires an apparatus for polarization. If Professor Piper declares the sample you gave him to be blood albumen, it is undoubtedly so, as he is an authority in microscopical and optical analysis. Another question is, whether the blood albumen is not as good as egg albumen for making the paper; and I think, if of the proper purity, it will be just as good. The smell is no means of recognizing the blood albumen on the paper, as egg albumen smells just as bad when spoiled through dampness.

I have had considerable trouble this winter with the foreign papers, but the dissolving of the albumen could hardly come from the blood, albumen, but it might be that manufacturers use something else to cheapen the paper (blood albumen, of sufficient purity, has a high price), for instance, gelatin, which would account for the easy dissolving qualities of the albumen. I will make some further investigations.'

"I expected to have both Professors Piper and Hirsh here to-night, but Dr. Piper is busy with some court cases, and Professor Hirsh is out of the city. I will read you something bearing on this subject from the *May Philadelphia Photographer*, in its 'German Correspondence,' page 140. (Article read.) I hope to have something further on the subject to offer at our next meeting. The matter has been discussed at the meetings of the Berlin Association, the trouble of the softening of the albumen being laid to the low temperature of the silver solution, the atmosphere of the drying-room, and the freezing of the albumen on the paper. Herr Rolaff stated that, on good authority, he had learned that gelatin was used in the preparation.

"It might be well for the Association to have Professor Siebel or Bode to make an analysis of several samples of paper, and determine what we are using. The cost will be trifling compared with the value of knowledge gained."

MR. HESLER.—"As the hour is getting late, I suggest that the subject be laid over until our next meeting. I have some experience that would be interesting, and I presume many others here have much valuable information."

The President hearing no objections, said the subject would be called up at the next meeting.

The Secretary presented a bill for disbursements, \$4 18. On motion, it was ordered paid. An assessment of fifty cents on each member was ordered, and paid by those present.

George J. Klein was elected Treasurer to fill vacancy.

On motion, adjourned.

G. A. DOUGLASS,
Secretary.

PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.—Stated meeting held Thursday evening, May 1st, the President in the chair.

The minutes of the last meeting were read and adopted.

The Corresponding Secretary read a communication from the Belgian Photographic Association, announcing that a prize of 500 francs had been offered for the best emulsion work, and giving the conditions of the competition.

Messrs. Frank Howard, of London, and W. C. Russel, of Baltimore, were elected corresponding members of the Society.

Mr. Clemons described a method of treating prints with a blue dye, by which the yellow high-lights of old photographs could be greatly improved. Specimens of work so treated were shown. Mr. Sartain, referring to some portraits exhibited at a previous meeting of the Society, said that the light used was the ordinary pyrotechnic composition used in fireworks, etc.; length of exposure twelve seconds. After a short discussion upon the intensification of the gelatin emulsion plates, the meeting adjourned.

Stated meeting held Thursday, May 15th, Mr. Geo. W. Hewitt, Vice-President, in the chair.

After the minutes were read and approved, Mr. Jessie A. Graves was elected a corresponding member of the Society.

Messrs. Fox and Corlies exhibited some excellent results upon washed emulsion plates. Dr. Seiler described a method of preparing a dull-surfaced glass for focussing upon. A glass was varnished with ordinary negative varnish, and before it was dry it was breathed upon. This gave a fine opalescent film which had been found very valuable in micro-photographic work; it permitted a higher magnifying power to be used in focussing.

Mr. Bell exhibited two photographs of oil paintings, which were excellent examples of this very difficult class of work.

On motion, adjourned.

D. ANSON PARTRIDGE,
Secretary.

BOSTON PHOTOGRAPHIC SOCIETY.—The regular monthly meeting was held May 2d. After the regular business, Mr. D. K. Pres-

cott stated he had received a formula for negative collodion, which promised to work successfully, there being more brilliancy and snap, at the same time full detail with all the half-tones and middle-tints. The formula is as follows :

Plain Collodion, . . .	1 ounce.
Iodide of Ammonium, . . .	1 grain.
Iodide of Cadmium, . . .	3 grains.
Chloride of Calcium, . . .	2 "

It will be noticed there is no bromide, and the formula is similar to that published some years ago (during the bromide war) by Mr. H. J. Newton, of New York. One peculiar effect will be noticed ; that is, if the water which is used to dissolve the calcium is added to the calcium, it is almost impossible to dissolve it. The pulverized calcium must be put in the water, when it dissolves easily. Mr. T. R. Burnham is about trying some experiments with iodide of lithium. He thought lithium had never had a fair test. Mr. D. B. Vickery, of Haverhill, was using it, and has produced most beautiful results. Mr. Vickery thought a much finer deposit of silver was obtained, and in consequence better negatives. Mr. Bowers, of Lynn, stated he had experimented lately with the carbon process, and was much pleased with his success. He had made some very fine slides for his stereopticon, and intended to make some enlarged negatives very soon.

B.

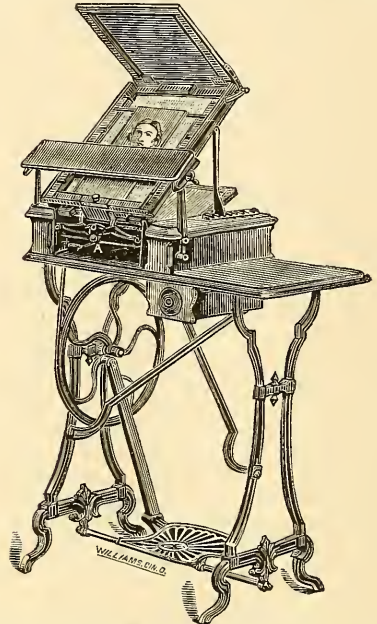
A RETOUCHING MACHINE!

"A RETOUCHING machine!" What under the sun is that? A machine, indeed, to do the most artistic work on the negative? Such were our mental ejaculations on first hearing of a "retouching machine."

How could all the fine stippling, the softening of shadows and increasing of highlights on the delicate surface of a negative be accomplished with a machine? The idea seemed too absurd for belief, much more absurd for actual practice. And we must confess our faith was not much strengthened on sight of the machine itself. At first glance one would have supposed a "sewing-machine agent" had been leaving some of his stock for trial. Experience,

however, soon convinced us that Messrs. Gatchel & Hyatt have in this a truly labor-saving, or rather a *time-saving*, machine.

We have carefully tested one, and also submitted it to several of our artist friends,



among them Mr. F. A. Wenderoth, who know much more about the subject practically than we do, and all unanimously join in pronouncing it a most excellent and useful appliance.

In working it, the negative is firmly fixed in an adjustable rack, the pencil held over it, and moved rapidly from place to place as the inequalities require ; the negative, meantime, rising to meet the pencil and falling away again with great rapidity, a steady motion being kept up with the feet on the treadle. The different styles of stroke or stipple are given by moving a thumb-screw in the lower part of the negative frame. These styles may be designated as follows: the "Horizontal," the "Perpendicular," the "Diagonal," the "Diagno-Horizontal," and the "Diagno-Perpendicular."

It will be readily understood that slight modification of sharp outlines, and delicate touches about the eyes must be done by the hand alone, but all the other general work

can be done on the machine, and an immense amount of time saved by it. We would say for it "it is well worth the price."

NOTE ON COLORED GLASS.

IN your valuable journal for May, page 150, Mr. G. A. Douglass, after kindly referring to some remarks of mine upon the superiority of colorless glass to blue glass in the transmission of the chemical action of sunlight, says:

"Why the writer condemns the blue glass, and still calls it the *most actinic*, I do not understand."

I know that Mr. D. will perfectly understand the matter, if he will carefully read again a sentence which he quotes. I do not say "the most actinic glass," but "the most actinic of the *colored* glasses." And he has quoted my explanation of the superiority of any colorless glass to any colored glass in the transmission of sunlight. It may do no harm, however, to repeat the statement, that as long as a part is less than the whole, and the whole is greater than any of its parts, just so long *any colorless* glass, which practically transmits nearly all of the light, heat, and chemical rays of sunlight, must transmit more chemical influence than *any colored* glass, which cuts off a large amount of these same rays.

Of course, Mr. D. knows that when I speak of "the darkest and poorest colorless glass," I mean glass having a dark-green or bluish-green tinge when looked at through the edges, as opposed to the light tints seen in what we call white plate or white sheet glass.

Yours truly,

THOMAS GAFFIELD.

MAY 17TH, 1879.

BACHRACH'S EXPOSÉ.

WE have before us a pamphlet with the above caption, which is one of the most remarkable publications in the history of photography, and which purports to be, as its title indicates, an "Exposé of Photographic Frauds and Process Swindles, together with the Lichtdruck Processes," etc. It is remarkable, because it is unusual for a private photographer to try, at his own

expense, to right a public wrong; remarkable, because the possibility of the existence of a state of affairs among photographers which calls forth such an exposé is remarkable.

Our readers are very familiar with the discussion which has been going the rounds of the photographic journals of late upon the artotype process, and of Mr. Bachrach's share in that discussion. Some of the papers are included in his exposé, as part thereof, and become the text for the whole. To these are added a few prefatory remarks, in which the author avers his determination that "*he is going to use his pen till process-swindling as a business is dead in this country.*"

He then, with the help of various photographers, co-sufferers at the hands of process-sharps, reviews "*The various swindles in their order*" as follows: "The Vanderweyde Process," "The Sarony Crayon Swindle," "The Carbon Process," "The Lightning Process," and withal "The Artotype Process;" and estimates the round sum which must have been taken from photographers by the notorious persons who sold them for "licenses," to use these processes and the "right" to buy their materials where—they had to.

The author then aptly says: "If this were attempted in any other business but ours, the fellow would be hooted out of the country. Just think of it, gentlemen; ought not all of us to be spanked and put on bread and water for a week for being such ninny as to submit to such gouging? The best part about all these swindles is, the fellow himself never invented anything, and never will, for the lack of the necessary brains."

And then asks Mr. Bachrach, "What remedy?"

"Now then, photographers, what course shall we adopt to check this wholesale swindling in future? The writer offers the following suggestions: Touch nothing which is in the hands of the present set of process-mongers, especially the fellow he has so thoroughly shown up in this pamphlet."

"Second, let the photographers of every city or community appoint a permanent standing committee, to be changed every six months, at a meeting held for the purpose,

to whom shall be submitted all questions relating to the purchase of processes, and by whose action all shall pledge themselves to abide. There may be some process offered which is only desirable for one or two, and this committee should investigate it for them the same as if all were interested. There should be on this committee the most expert and experienced of the fraternity—those most thoroughly able to form a cool judgment, and not liable to be carried away by a plausible and glib-tongued swindler. This is the most effective method to avoid being imposed upon, and it then puts the process-seller in the position he ought to be toward the buyers, and does not put the latter at his mercy, as when each is eagerly trying to outwit his neighbor *by buying ahead of him*. Then if the process is not what is claimed for it, or is too high in price, the seller must submit to your terms, or go away without your money. Is not this sensible, wise, and economical? We have tried it in Baltimore, and it has worked excellently, but if we had been still more cautious with carbon, it would have been still cheaper to us.

"Photographers, you ought by this time to know that it pays to act together in such matters. The swindlers make most of their money when you act merely from selfish motives. What city or town will start the movement?"

This conundrum is one which photographers must, sooner or later, take up in self-defence, and it should have their earnest consideration. Let it be discussed in our pages, if you will.

Now, dropping the special object of the pamphlet, a translation from Prof. Husnik's work of *The Lichtdruck Process* is given, followed by the author's method, and by a sensible article called "Does it Pay," from which we can only quote briefly, as follows:

"Will it not appear strange that the swindlers which the author has exposed, should of late years be backed up by such a respectable house as that of Anthony & Co.? Such a policy on the part of any house which publishes a journal must, in the end, be ruinous, and if they could hear the expressions of opinion on the subject on every side, they might begin to think that it does not even

pay temporarily. It only shows how easily the most respectable reputations are ruined by bad company."

After this is a useful article by the author's brother, Mr. Moses Bachrach, on "Retouching; its Abuse, and how to give Negatives a Good Tooth," which we hope to give in full hereafter; following this is a practical paper entitled "Printing on Canvas," ending with a paragraph characteristic of the whole, as follows:

"LOOK OUT FOR THE NEXT SWINDLE,

which will probably be some modification of the *gelatino-bromide dry-plate process*, now being perfected in Europe. Keep posted on the process, and you will avoid imposition. It will be developed within a few years into a good, reliable, and rapid process, from present appearances.

"*It may be of some comfort to swindlers to know that over 5000 of these pamphlets have been distributed to photographers.*"

We hope that much good will be done to the fraternity by this exposé. It has been sent everywhere, but Mr. Bachrach desires us to say that any one who has not received a copy, will be sent one on application to him, D. Bachrach, Jr., Eutaw and Lexington Streets, Baltimore.

MORE TESTIMONIALS.—They come so thick and so fast, that we haven't room to publish them. Even Mr. FITZGIBBON, in the last issue of the *St. Louis Practical Photographer*, devotes nearly seven pages to our personal affairs. We are grateful, and we are overwhelmed with such evidence of unselfish interest. We only wish half of what he says was true. The result of it all is, however, that "*we know* (italics are ours) that we have good paying subscribers that help bring grist to the mill, and would not beat us out of a cent, even if they had a chance." We are "happy," and grateful, too.

MR. H. SCHOENE, Santa Clara, Cal., sends us fifteen cabinet portraits of Chinese lepers in the Pest-house at San Francisco. They form a truly horrifying collection, and we shrink from imagining the photographer's sensations when posing these revolting subjects; it must take a steady nerve to do it.

OUR PICTURE.

IN furtherance of our promise to give our patrons examples of work from some of the noted studios of our large cities, we this month have pleasure in presenting as our embellishment, for your study, prints from negatives by New York's most famous and popular photographer, Mr. J. M. Mora. Almost all of our readers must, however, be familiar with Mr. Mora's work, for he is largely known through his admirable portraits of public characters, there being a large sale for them all over the world. We do not, therefore, bring these pictures before you to make popularity for Mr. Mora, or to offer them as something new, but as examples for you to study, of course, and as evidence of the fact that Mr. Mora, although constantly driven by a large and absorbing business, can and will take time to make negatives for our use, in order that we may be enabled to present to our readers the best of studies for their "pattern copy."

Mr. Mora is a public-spirited artist, and most thoroughly enterprising. He heads one of our very largest establishments with great ability and tact, being thoroughly practiced in every department of his work. He makes his own sittings, always with conscientious care and artistic judgment. He is assisted in the dark-room, most skilfully, by Mr. J. J. Montgomery, who has but few if any peers; while Mr. Atwood superintends the large staff of printers and finishers in the various apartments. The business of the reception-room is under the care of Mr. Terrington, and Mr. Rose is the general business manager, cashier, etc. In addition there is a large force of negative retouchers, whose forte consists not only in merely retouching the "flesh," but in greatly improving the negatives in a great variety of ways. On all this staff—in the whole establishment—not a single female is employed, except "Nellie," who is a distinguished bull-terrier, a useful member of the working force, and polite to strangers.

A stroll through this large establishment was most interesting (as made early one day last winter), from the grand reception-room, where the walls are thickly hung with elegant portraits, to the top of the roof, where

the poor printers were flopping their arms about their bodies, in order to keep their fingers warm. Mr. Atwood believes in the use of *sun and air* for printing, though he uses tissue-paper too. He uses the Dresden paper supplied by Scovill Manufacturing Company.

We found nothing peculiar in formulæ, or in the methods of working them. All was conducted economically, systematically, promptly, and with the utmost cleanliness. Each person had his special work assigned him, and was held responsible for its performance. Every man, too, was expected to keep the apparatus and requisites of his department in good order; hence the notice that any one handling it would meet certain death, was posted over the wall coffee-mill, used by the varnish-maker for grinding his gums.

Mr. Mora was here, there, and everywhere, and always haunted by printers with proofs from new negatives, which he must always "pass" before the printing could go on. We were much interested in the room where the spare backgrounds and accessories are kept. It looked like the property-room of a theatre. Many a Seavey background stood there, with wings and flies and props and what not in superabundance.

In the business department, the system of keeping the large stock of cabinet portraits of "publics" was complete. The prints are kept in locked drawers, and in the bottom of each section is pasted a print of the particular portrait which belongs therein. The sample-albums are also a wonder, and help secure a system of numbering which makes it easy for a dealer to order just the position of any actor he may want, and to be sure of getting it and nothing else.

It is altogether a most admirably regulated establishment, and is bringing a well-deserved reward to its conductor.

Of the pictures you may judge; they are full of technical excellence. We are prevented from making any general remarks concerning them, because of the necessity of using negatives of various subjects. Therefore, in closing, we can only commend them to your study, with the hope that Mr. Mora may some day favor us again.

FRENCH CORRESPONDENCE.

May Meeting of the Photographic Society of France—Mons. Davanne on Emulsions—A New Funnel—Lectures on Photography—A New Artotypic Process by Leon Vidal.

THE Photographic Society of France held its monthly meeting on Friday evening last.

Mons. Davanne made a communication on the mode of fabrication of emulsions employed by Mons. Defollye. This was not listened to with so great attention, as the gelatino emulsion process was the topic which gained the most favor; in fact, the system employed by Mons. Defollye differed little from that of Mons. Chardon, which has been published and discussed so often in these pages. Mons. Defollye does not precipitate the emulsion in water; he lets it set in a tray, and then washes it to get out the sub-salts.

A new kind of funnel was presented, likely to be of service to those who have to filter emulsions or syrupy liquids. At the bottom of the funnel, and at the beginning of the neck, the glassblower has made a ball or swell, which is intended to be filled with cotton, or, what is better, the filtering-glass lately come into use. This idea of the ball or chamber in the funnel, will prevent the old annoyance of the cotton rising to the surface of the liquid, if not sufficiently compressed into the neck, and if too much rammed in to prevent its rising, thus preventing the liquid from filtering as rapidly as one could wish.

Mons. Davanne announced to the Society that the government had determined to create a school or lectures on photography, and that he had been named professor. He was very happy to announce that Mons. Chardon had volunteered to assist him as operator in said lectures.

Monsieur Leon Vidal, the sympathetic editor of the *Moniteur de la Photographie*, made a very interesting and instructive communication to the Society on a new process of phototyping which he had invented, and which he will fully describe ere long to the public; the object in view being to enable a photographic proof to be printed mechanically at the same time, and with

printers' type, that is to say, typographically.

Mons. Vidal has the opinion that no other mode of impression than typographic can attain the result required, that is to say, rapidity of production. The photographic image or block is inserted among the type, and printed off at the same time. In order to attain this object, he proposes to modify the photocollotypic or artotypic process in the following manner: Instead of producing the image in the film of gelatin, which acts as a support from which a multitude of proofs are printed, he proposes to divide the process into two distinct parts. He obtains an image by development in the same manner as in the carbon process. This image is formed upon a piece of ground-glass, the surface of which is very fine. When the image is complete in all its details, which can easily be seen, the eye being aided by a semi-opaque or colored mixture, inserted in the mixture in form of a powder, a frame is placed round it, of a trough-like form; into this trough, and upon the image, the following solution is poured:

Water, . . .	100 grammes.
Gelatin, . . .	20 "
Gum Arabic, . . .	20 "
Glycerin, . . .	40 "
Alum, . . .	$\frac{1}{2}$ gramme.
Acid Salicylic, . . .	2 grammes.

This must be poured into the trough so as to have about a quarter of an inch in thickness when set. This block of gelatin is then placed in a box containing calcium chloride, in order to accelerate its desiccation. The block bearing the image is now pulled from the glass support, and mounted on copper just to the height of the printing-type; thus a block is obtained, easily set up with the type, and a great number of specimens can be drawn off without wetting the block, as is required in the ordinary phototypic printing.

The image obtained by the new system is in relief, and can be made more or less so, according to the will of the operator; the hygroscopic block replaces the wetted lithographic stone, and thus gives great facility in the printing. Up to the present, no typographic process has been able to give the half-tones in a continual manner, without

having recourse to handwork. Here is a new process come to light, in which an artificial lithographic stone or block, hygroscopic in itself, is set up among the type, and printed with the latter; which block, if it requires sponging, will do so but very rarely. The value of this process can at once be seen, and we take notice of Mons. Leon Vidal's promise to divulge, ere long, all the manipulations required, hoping it will advance some of the readers of the *Photographer* in the admirable process of phototyping.

PROF. E. STEBBING.

27 RUE DES APENNINS, PARIS, May 5th, 1879.

GERMAN CORRESPONDENCE.

Lead in Iodide of Potassium—New Lightning Process—The Gelatin Emulsion Plate, and its Sensitiveness to Colors.

IODIDE of potassium is generally considered to be one of the purest photographic preparations obtainable in the market, and yet, according to E. Schering, proprietor of the well-known chemical works here, it is adulterated with lead, for under certain circumstances, the iodine in the market contains lead, which is consequently brought over to the iodide of potassium. If the percentage of lead is great, the iodide of potassium shows a yellowish color, while with a smaller percentage, the crystals of the iodide of potassium are mainly formed in octahedrons; pure iodide of potassium, however, shows a cubic or prismatic form. It is remarkable that the lead is precipitated only imperfectly from the iodide of potassium by sulphuretted hydrogen, in concentrated solutions, at least; and only in very diluted solutions is all the lead precipitated by sulphuretted hydrogen.

Some time ago I expressed the opinion that the new extremely sensitive gelatin plates made all lightning processes unnecessary, but to-day I have to modify my opinion, as in Vienna, another new lightning process has appeared. Mr. Moll writes to me about it:

"In Vienna the topic of the day is the 'negative process with extremely short exposure' of Mr. Kroh, a highly accomplished

photographer here. Two years ago already the story went round in photographic circles that Kroh worked with very short exposure, but only lately the latter seemed disposed to draw any benefit from his process; and as Mr. Kroh enjoys the full confidence of all who know him, humbug seems to be out of the question. Almost all the prominent photographers of Vienna, as Luckhardt, Angerer, Dr. Szekeley, Perlumtter, Loewy, etc., had their pictures taken by Kroh, with an exposure of from one to two seconds, and the high encomiums bestowed upon the new process by the aforementioned gentlemen, leave no doubt that there is something real at the bottom of the matter. Mr. Kroh is willing to reveal the secret of his process, upon receiving a benefit of 20,000 reichsmark, to be raised in subscriptions of 100 reichsmark each."

I am really anxious to learn what final course the matter will take; and there is no doubt that before long America will be blessed with this new edition of the everlasting lightning process, and those photographers who have already paid their \$50 or \$100 for a lightning process, will have the desirable chance to put their hands in their pockets again.

Gelatin emulsion plates are yet much talked about here, and many a photographer who never thought of dry plates is now obliged to have recourse to them, and although nobody in Germany has so far given up the collodion process in his portrait-studio, as has been done by some artists in England, yet nearly all the active and wide-awake photographers have given the matter a trial, and many an interesting experiment has been made, with surprising results. So far, it appears as if the intensifying of the plates, which is in some instances necessary, could not be done with such certainty of the result, as with wet plates, for one time the plates become too thick, and at another time too thin. In any case, however, continued practice will do away with these drawbacks, which seem to have their cause in the fact that the layer of gelatin is not so easily cleansed with water, from the chemical substances with which it is impregnated, as a layer of collodion. I myself have often intensified such plates

with iodide of mercury (5 c.c. solution of chloride of mercury, 1:50; 5 c.c. solution of iodine-potassium, 1:10; 40 c.c. water); they become thereby of a greenish color, and the solution has to be washed off at once, when the greenish color appears distinctly, as otherwise yellow iodine-silver is formed.

It is remarkable that the relative sensitiveness of the brome-silver plates fluctuates according to the degree of clearness. I have tested Obernetter's plates, which proved in clear weather to have about five times the sensitiveness of wet plates, while with an overcast sky they showed only twice as much sensitiveness as wet plates. The reason of this divergence is to be found in the fact that the quantity of the blue and indigo rays often varies considerably in different states of weather. Iodine-silver is more sensitive to indigo and violet rays, and brome-silver more to light-blue rays. When, therefore, the light of the atmosphere is rich in light-blue rays, brome-silver will show an especially strong sensitiveness, and when indigo and violet rays predominate, iodine-silver will be affected accordingly. Our eye, however, is unfortunately not able to determine which kind of rays, in regard to color, predominate or are absent in the rays of the light of the atmosphere; and it is the province of the scientist to furnish means to the man of practice, to aid him in his researches. A thermometer we have already had a long time, but a practical actinometer, which indicates the relation of the colored rays of the atmospheric light, is to be given to us yet. Yours truly,

DR. H. VOGEL.

BERLIN, April 28th, 1879.

ABOUT ARTOTYPE.

NOT much about it this month. Business is apparently dull in New York. "Photographers are either unable to come to this city" (say the "Co." in their circular), or are "incredulous as to the capabilities of the artotype process," and hence the "Co." has to "go West," among our "young occidentals" to hold seances, and try and stir up business. We *thought* they would, for when the mountain wouldn't

go to Mahomet, Mahomet had to go to the mountain.

The artotype process is to have "full practical demonstration" at the June meeting of the Chicago Photographic Association. Now when you witness it, keep a clear head and *think* well before you jump—for or against. The process and the results are pretty, but—can you work them out?

YOU or I made a great mistake in my article on the first page of your last number. In solution No. 1 the types made me say, viz.: Bichromate of potash, 150 grains, whereas it should be only 10 (ten) grains, since that would be sufficient.

AN OLD SUBSCRIBER.

CORRECTION.

EDWARD L. WILSON, Esq.

DEAR SIR: I notice in the last *Philadelphia Photographer*, that I am made to say that the artotype process cannot compete with the ordinary photograph in cheapness. You do me wrong to say so, for it is not in accordance with my belief. In my opinion, printing-ink will sooner or later drive silver photographs out of use. I told you that the price of stereoscopic views was at present so low, and the fact of my having several thousand negatives that could not be reversed, that I hesitated to go into it; but if I could begin business anew I would certainly adopt the artotype process. Please make this as public as you have done the erroneous statement, and oblige,

CHARLES BIERSTADT.

NIAGARA FALLS, April 25th, 1879.

The *Atlanta Daily Post*, Atlanta, Ga., gives a very complimentary notice to its townsman, Mr. C. W. MOTES, the leading photographer of the place. Mr. MOTES has been settled there for about eight years, and has labored faithfully to elevate his art, and now he feels the incoming harvest of prosperity. Perseverance is almost invariably sure to win success.

WE have received subscription for our journal and orders for HEARN'S *Practical Printer*, and other publications, from Dr. WM. J. WILSON, of the Physical Laboratory, South Kensington Museum, London. This is a most gratifying testimonial in favor of our publications.

Editor's Table.

"THE SCHULTZ TIE-ENVELOPE."—We have received from Mr. WILLY WALLACH, N. Y., samples of his new package envelope, and would add our approbation of the convenient little arrangement, and advise our readers to give it a trial. The manufacturer claims that this envelope complies, in every respect, with the rules of the Post Office Department, and has been approved by the same. Its superiority over all other tie-envelopes made heretofore consists in the facility with which it can be used. The matter is placed in the envelope at the open end, and the flap then sealed, which makes it as secure as an ordinary sealed letter, while the tie on the opposite end offers to the Post-Office clerks every facility for a thorough examination of the contents.

The transmission of photographs, stereoscopic views, engravings, etc., if wrapped in an ordinary wrapper, or even if packed in boxes left open so that the contents may be examined, subjects these articles to much risk and danger, so that many senders prefer to seal up the packages and pay full letter postage on the same.

One dozen photograph *cartes de visite* will weigh, on an average, two ounces; one dozen imperial photographs will weigh, on an average, seven ounces; the charges for postage on which would respectively be: on the former, letter postage, twelve cents; postage in Schultz Tie-Envelope, two cents; on the latter, letter postage, forty-two cents; postage in Schultz Tie-Envelope, seven cents; showing a saving of five hundred per cent. in postage, besides securing the safe and secure transportation of goods. Mr. WALLACH will send a diagram of sizes to any applicant. See advertisement.

It having been erroneously stated that "the Solar Camera patents had run out," we asked Prof. WOODWARD to give us the facts, which he does on another page. As it is cheaper to buy your own albumen paper and silver than to make them, the query is, whether it is not better to buy one's Solar Camera, with all modern improvements, than to try to construct one. Prof. WOODWARD supplies an excellent article, and making them in quantity, is enabled to give low prices.

KIND voices still continue to speak words of cheer in our ears; here are a few of the *warmest* expressions:

"The journal is superb, elegant, grand; seems to improve with each succeeding number; we do certainly get much more than we pay for; the subscription price is seed sown in good ground, bringing forth an hundred fold."—N. P. JONES. "Allow me to express my perfect satisfaction with the manner in which the *Philadelphia Photographer* is conducted, and the hope that you have sufficient backbone to maintain the *honorable position* you have taken on the 'process-swindle.'"—A. D. HARDING. "I have been a reader of the *Philadelphia Photographer, Photographic Mosaics*, etc., ever since I joined the fraternity of photographers, and hardly think at this day I should make such a foolish step as to discontinue the perusal of it."—THOS. H. BLAIR. "I think more of the journal this year than ever, and that is saying a good deal. I should feel as though I was in a fog without it."—W. G. C. KIMBALL. "You have done the photographers good service in showing up these process-mongers."—J. A. PALMER. "I can assure you there is no photographic publication published that I prize more highly than the *Philadelphia Photographer*."—JAMES E. GANSE. "*Philadelphia Photographer* to hand: well worth ten times the subscription price; would not give up an aid of so much importance to one in the photographic business."—E. CLARK HALL. "In future, instead of half dozen, please send us one dozen *Philadelphia Photographers* each month."—N. C. THAYER & Co. "Like wine, your *Philadelphia Photographer* improves with age, for each number seems better than the last."—A. HESLER. "Just received the *Philadelphia Photographers*; am *well* pleased with them. I *hope* and believe you *will* stand by the photographers, and if you do they will surely stand by you."—A. B. PAXTON. "I am so much in the habit of referring to *Philadelphia Photographer*, that I think there is nothing like it. I have been benefited by it an hundred fold, and could not think of doing without it a single month."—JOHN F. MILLER.

Mr. JOHN A. SCHOLTEN, St. Louis, Mo., sends us a tastefully illuminated invitation to his "tea-party," held at his new photographic rooms on the occasion of his opening, May 1st. Some of our readers may remember that Mr. SCHOLTEN was burned out in December last. Instead of succumbing to his misfortune, he at once, with admirable energy, set about to put up a new gal-

lery. Success has attended him in this, and he is now well started in his new rooms.

During the day of the "tea-party," a party of gentlemen connected with the Merchants' Exchange, waited on Mr. SCHOLTEN and presented him with a handsome gold medal, thanking him for certain fine portraits of the ex-presidents of the Merchants' Exchange, made and presented by Mr. SCHOLTEN, and congratulating him on his new start in life. We would add our good wishes to theirs, and hope the bright opening may be a promise of future success.

SINCE our last we have been shown by Messrs. HOWE & BEECHER the *original testimonials* given them by the gentlemen whose letters appear in our *Specialties* on the Stigleman Process, and not one includes the least bit of dissatisfaction. The process seems to be worked at once, and the resulting pictures to sell rapidly. It will surely bring money to those who manage it well.

MR. A. M. ALLEN, Pottsville, Pa., one of the disciples of artotype, has succeeded so well in the work, that the local paper of that town has given him a complimentary notice.

CERTAIN representatives of the press in Galveston, Texas, recently paid a visit to the establishment of Messrs. BLESSING & BRO., of that city. They were so pleased with the admirable appointments of the place, that they gave those gentlemen a very pleasing article. From their work and their standing among the fraternity, Messrs. BLESSING & BRO. are well worthy all that can be said of them.

AMIDST the general depression in business, and the ceaseless cry of hard times, it is very cheering to hear occasionally of *some one* who is prospering. Mr. GEO. M. BRETZ, Pottsville, Pa., seems to stand in this latter class. He has recently opened a second establishment in Pottsville, his increased business having necessitated such a step. We wish him continued success.

THE *Western Trade Journal*, St. Louis, Mo., gives a very flattering notice to Mr. WM. J. HAZENSTAB, proprietor of the new photographic stock-house, No. 302 Market Street, St. Louis. With them we would say, "give the new house a trial."

WE have received from Mr. CHAS. WEITFLE, Central City, Col., a copy of the *Weekly Register-Call*, the local newspaper, in which we find a very handsome testimonial to his success in photography, both landscape and portrait. Last year he received a silver medal from the Colo-

rado Industrial Association, for the *best views* of Colorado scenery. Mr. WEITFLE has a fine field for the exercise of his art. May he continue to succeed.

MR. J. A. PALMER, Aiken, S. C., sends us his catalogue of Southern views (stereoscopic). The titles sound very attractive, and as Southern life and scenery have but lately come under the photographer's camera, their novelty will doubtless secure them popularity.

MR. C. D. MOSHER, Chicago, Ill., is engaged in making an album for the next Centennial (1976), containing a portrait and short sketch of all the leading men and women. This album will be deposited in a memorial safe in the vault with the city archives, in the Court House. This is an immense work, and will prove a great curiosity to the people a hundred years to come.

MANY of our readers will regret to hear that the old firm of JAMES F. MAGEE & Co. have gone out of business, having sold their interest to Messrs. PHILLIPS & JACOBS, another well-known firm of this city. The business will still be carried on by the new proprietors under the old name, JAMES F. MAGEE & Co., at the old stand, No. 108 North 5th Street, while Messrs. PHILLIPS & JACOBS will continue to do business at No. 8 North 7th Street, Philadelphia. We regret the loss of the old firm, while we congratulate the new, and wish them the same success as their predecessors.

SAMPLES of work received from Mr. J. PAUL MARTIN, Boone, Iowa, and from Mr. HEMINGWAY, Cameron, Mo.; among these last we notice a card of an infant, made in *one second*; this is "lightning," surely. Mr. LOUIS DE PLANQUE, Corpus Christi, Texas, sends us a variety of specimens of his work. Some "boudoirs" are really *elegant* productions, showing great skill and care in lighting and posing. We know of no one at present who has made so marked an advance in improvement in photographic work as Mr. DE PLANQUE. His class of custom demands fine work, and this he has shown himself fully able to meet. Messrs. BACHRACH & Bro. send us some specimens of their work: several cabinet busts, and a couple of "promenades" of ladies, very gracefully posed and prettily lighted.

MESSRS. GILBERT & BACON, Philadelphia, send us their catalogue of "Celebrities," containing in all 348 subjects. These pictures are for sale by WILSON, HOOD & Co., No. 825 Arch Street, Philadelphia, at very reasonable prices.



Miss Public Library

T H E

Philadelphia Photographer.

Vol. XVI.

JULY, 1879.

No. 187.

Entered according to Act of Congress, in the year 1879,

By EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

VOICES FROM THE CRAFT.

I OFTEN mourn over the fact that our magazines, devoted to photography as an *art*, cannot work independently of the matters of *business* of a photographer. But I presume that their exacting patrons would not be satisfied with such a course, and our editors must go on and fight our battles in a way that must be very distasteful to them. The editor of *this* magazine assuredly deserves the thanks of every member of the fraternity for the plucky manner in which he has defended their interests, and every one whom he has saved money should be sure to subscribe for his magazine. I suppose, however, that for the same reason that photographers neglect to take this best of magazines, they purchase secret processes, strange as it may appear, namely, because of their love of the mysterious and the vague.

Bishop Sherlock hath said: "Most men take least notice of what is plain, as if that was of no use; but puzzle their thoughts to be themselves in those vast depths and abysses which no human understanding can fathom." And this is true of photographers, if it is of any class in the world.

Consider, ye who have listened to the voice of the tempter, and parted with your money and your sense for naught, whatever benefit have you had from the depths of mystery? After these two years or more of high-sounding advertisements, promising

great revolutions in photography, and immense benefits, what has been the result? Has photography made any advances other than the increased artistic taste and feeling of photographers have rendered? The fact is, those who are succeeding best in their business are those who have steadily held on to the *certainties* they had, and did not bother themselves about the uncertainties advertised by quacks and charlatans. They are the class who quietly read all photographic literature, and adopt new things only after careful consideration and tests. They are not in a hurry to throw their money at every swindler who advertises some new dodge, but patronize legitimate enterprises, and especially photographic and art literature. By this means they keep posted upon what is going on, and they are not bamboozled, as many are, by the charm of mystery with which every monger surrounds his process, but keep their heads clear, and believe in the gradual development of new methods. After all, it is the latter method by which any real advances have been made in our art. I defy any one to show me any sudden revolution which has succeeded, not only in our art, but in every department of existence. All good things are the result of *slow development*, not excepting even good negatives. Take only one for an example: the carbon process. It has been gradually developed in its cradle

(in England), until several large establishments, such as Swan, the Autotype Co., and others, have used it successfully; but for smaller establishments it seemed to have many practical drawbacks; I tried to introduce it here some years ago, *in a legitimate way*, but soon found that practically it could not succeed the simpler and more practical silver prints, and I believe now, and will prophesy, that the latter will be made practically permanent within a few years. I speak advisedly, and permanence seems to be the only reason of carbon being adopted anyway. Now every one remembers the splurge that was made by certain parties, who advertised certain *great improvements* they claimed to have made, and forthwith proceeded in a grand onslaught on the pockets of photographers. Now watch the result. *Out of several hundred high-paying licensees, I know of but three or four who practice it for regular prints.* Now why is this? It is not because the process in itself was not good, but because it was misrepresented, and claims were made for it that were false. *It will run its course of slow development here, as in England, and may become practical for everyday use about the time all the patents expire, and then it will be free to all;* and thus it should be. No one has originally invented these processes; they are the results of gradual development of the theories of Poitevin and others, just as modern acoustics has been aided by such men as Tyndall and others, in their experiments on sound; and this will apply to nearly all photographic processes. Then there have been others which are actually useless to the majority of photographers, and yet good in themselves, but have been pushed with false claims and worthless patents to a fearful extent. Now mark my words. *In about a year, nine-tenths of those who have invested their hundreds and thousands of dollars in artotype (?) will be sending what little work can be done by such methods to Carbutt, Bierstadt, and others, who make a regular business of that kind of work, and the money which ought to have gone into accessories, backgrounds, improved skylights, etc., where it would have paid tenfold, will have been spent on an empty dream.* Yours,

JUSTITIA.

FRAUDS IN PATENT RIGHTS.

Wouldn't it do us all good to ponder a little over the following extracts on this subject, which I cull from a local paper? They seem well worthy of study at this very time. If you agree, please let us see them in "Voices."

'OFTEN A VICTIM, NOW A WISER MAN.

"There are in Washington many firms of patent attorneys. Of these, of course, there are firms that are honorable in their transactions, but the general ignorance has brought to the front men who prey upon the patentee. They are known about the Patent Office as machine attorneys, and they make their practice very profitable. This class of swindlers advertise throughout the country that they will get a patent on anything, and so they will. An inventor sends them a model or drawing of his invention; they make out their claim for a patent, and file it in the Patent Office. This claim is so worded as to secure from the examiners a favorable report, because it really claims nothing; it is a claim that 'will not hold water.' The patent is granted on what is claimed, and the letters-patent are sent to the inventor, who pays his fee to the office and to the attorney. These patents never stand a judicial test, and the patent attorneys know they never will. If, in framing his claim, the attorney makes it anything like as broad as the inventor intends his patent to cover, and the officials make an objection, the attorney, instead of taking time to argue the claim before the officials, drops the disputed point and hurries through a worthless patent. His object is not to serve his client, but to get his fee. The inventor has simply thrown his money away. Patent Office officials state that probably one-third of the claims allowed by the departments are of this class. One of the alluring dodges of this class of attorneys is to advertise that they will exact no fee unless a patent is secured. It is a safe rule for the inventor never to send his case to an attorney who makes such a promise."

Such attorneys doubtless have done photography much harm in both ways; first, by enabling unprincipled parties to get patents, and thereby cheating innocent ones.

PRINTING PERPLEXITIES.

BY H. C. BRIDLE.

HAVING been applied to frequently during the last two months to give some method for preventing the albumen softening, and leaving the paper during the fixing or washing, I thought a few words on the subject might be useful to some of your numerous readers. To make the matter perfectly intelligible, I will describe the whole process of silvering, toning, etc.

First, as to the treatment of paper: Keep the paper from twelve to twenty-four hours before silvering in a damp, cool place. This applies to every brand of albumen paper. It gives greater ease in silvering. The paper will take the silver better, and will also lessen the tendency to blisters to which the "Brilliant" papers are especially liable. Prepare a plain silver solution, 35 grs. nit. silver to 1 oz. pure water; test with litmus-paper. It should be just alkaline. If it is not, make it so by adding a few drops of dilute ammonia, till the pink litmus-paper just, and only just, turns blue. Float the paper sixty seconds; draw over a glass rod. Carefully examine the first sheet you silver each day, as it begins to get surface dry. If it looks as though the surface was greasy, reduce the strength of your silver solution. Dry as quickly as possible. Fume with ammonia until the paper prints a rich purple. Ten minutes will probably be sufficient. Be sure that, when the paper is once dry after silvering, it does not get damp again until it goes into the washing. In damp weather see that the fuming-box is dry. If damp, light a lamp, and leave it burning in the box for a quarter or half an hour before putting in the paper. The paper should show a little, but very little bronzing in the deep shadows when fully printed under a good negative. When the printing is finished for the day proceed to tone. Place the prints one by one in water, made slightly acid, and leave them till they begin to lose the blue color. Pass them through at least three changes of water, and then into the toning-dish. Use any good formula for toning. I prefer the sal soda bath, made every day, about half an hour before you want to use it. The prints should tone

in about six minutes, certainly not longer than twelve to fifteen. Tone till the lights look rather blue, and then place the prints in a dish of water till all are toned. Now proceed to fix. See that the hypo is not *acid*. It should be neutral, or even slightly alkaline. The hypo should be made up fresh every day, especially during the summer.

Drain the prints well from the hypo, and place in strong solution of salt for five minutes, moving them about all the time, and then put them in running water for three hours. It is better to make the hypo and salt solution two or three hours before using it, as both hypo and salt make the water several degrees colder. The neglect of this is one common cause of blisters, etc. Any of the American brands of paper will work and give good results if this method is adhered to. The German "Brilliant," such as the "Dresden Brilliant," "S. & M. Brilliant," or "Cross-sword Brilliant," will need a stronger silver solution, especially if the solution is *new*, as a new bath needs to be at least five grains per ounce stronger than an old bath to give good results. If the German "Brilliant" paper is silvered on a new bath of not more than thirty-five grains strength, it is quite probable the albumen will soften and rub off. If this does occur, strengthen the bath by adding more silver. Test the strength of the solution every day. Do not use the hydrometer, but use "Pile's Test-tube." This is the only reliable means of testing the strength of silver solution. The hydrometer registers everything that is held in solution, while the "Pile's Test" only takes account of the quantity of silver in solution. Doubtless to the largest portion of the readers of your valuable journal there will be nothing of service in this letter. The desire to benefit those who have had but little experience in this very important branch of our business must be my excuse for occupying so much of your space.

WE would call the attention of our readers to the advertisement of "The Photographer to His Patrons." These very popular little leaflets are still continuing to grow in favor with the fraternity at large.

THE THEORY OF PHOTOGRAPHY.

BY HENRY M. M'INTIRE, M. E.

(Continued from page 134.)

AND now as to the various kinds of lenses. The two classes, converging or convex lenses, which are thicker in the middle than at the edges, and the diverging or concave lenses, which are thicker at the edge than in the middle, together consist of six different shapes of lenses, which are so well known that they require naming but not describing. They are double-convex, plano-convex, and concavo-convex of the converging, and double-concave, plano-concavo, and meniscus or convexo-concave of the diverging lenses.

As it is a rather common supposition to suppose a circle to be a polygon of an infinite number of sides, and then commencing with a square, double the number of sides and have an octagon, double this to a sixteen-sided figure, and so continue until for all practical purposes a circle is obtained; commencing thus with simple figures, of which certain facts are known, making the figure more and more like the desired figure, modifying the facts for each step until the desired end is reached. So in the case of the lenses, we may proceed in this way, and suppose each one to be made up of an infinite number of prisms. Now remembering that a ray of light is bent by the prism *toward* its base, also that if a lens is made up of an infinite number of prisms, that the bases of these prisms will be toward the widest parts of the lens; hence a lens will always bend the ray of light towards the widest part. With this fact in mind, it is easy to see how the double-convex, the plano-convex, and the concavo-convex lenses will render parallel rays of light converging, and also why with propriety they should be called converging lenses; and on the other hand, why the double-concave, plano-concave, and meniscus lenses should render parallel rays diverging, and why they are accordingly called diverging lenses.

Let us now take a double-convex lens. It can easily be seen that this is made up of the intersecting portions of the spheres. These spheres can have radii of any length, but as it is but very seldom that they have radii of

different lengths, we will suppose the radius of each sphere to be equal to that of the other. The line connecting the centres of these two spheres is called the principal axis of the lens; the centres themselves are called the centres of curvature; the point situated on the axis of symmetry, midway between the two faces of the lens, is called the optical centre (it must be remembered, however, that the optical centre of *every* lens is not midway between the surfaces of the lens). There is a peculiar thing about this optical centre, and that is, if a ray of light so strikes the lens as to pass through this centre, then the lens will have the same effect as a plate of glass, that is, a ray of light will emerge from the lens in a line parallel to that in which it entered. If the rays of light that pass through the optical centre would continue in a straight course after they enter the lens (as they do not, of course), they would meet in a point, and after they leave the lens if the lines representing these paths were continued backwards, they would also meet in a point; these two points are called the nodal points. Any line that passes through the optical centre and is inclined to the principal axis is called a secondary axis.

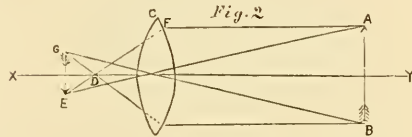
And now having thus glanced at two or three terms employed in regard to lenses, let us look at the working of these lenses with the rays of light. Let us take a double-convex lens and parallel rays of light. The rays being parallel to each other and to the principal axis, as has been mentioned before, the lens having the tendency to bend the rays inward, and the surfaces of the lens being parts of spheres, perfectly uniform bodies, the rays would be refracted uniformly and would have a tendency to cause the rays to meet in one point. This point is called a focus, and, because it is the point to which parallel rays are brought, the principal focus. Both sides of the lens being alike, it follows that each lens has two principal foci and (in the case of the double-convex) at equal distances from the centre of the lens upon each side.

That point to which a lens collects *parallel* rays is then called the principal focus, and the distance of this focus from the lens the principal focal length, or simply the focal length. Now suppose the rays of

light were not parallel, but came from one point, as, for example, from a candle, the lens would exert its influence on these and bend them inward, so that they would meet in a point. These two points—the one at which the candle is placed and the one at which the lens collects the rays—are called conjugate foci; they always lie on the same axis; that is, if the candle is placed on the principal axis, the conjugate focus will be on the principal axis; if the candle is placed on a secondary axis, the conjugate focus will be upon the same secondary axis. When the rays of light are parallel, that is to say, when they come from a focus placed at infinity, they will be collected, of course, at the principal focus. Now suppose the incident rays from being parallel, become slightly inclined to each other, that is, suppose they come from a point a little this side of infinity, they will then not be collected at the principal focus, but at a point slightly beyond that focus. And so as the point from which the rays come approaches the lens, the point in which they will be collected will recede. At length a point will be attained which will be at the same distance from the lens as the point upon the other side. These two points are found by experiment or calculation to be twice the focal length from the centre of the lens, and consequently four times the focal length from each other. Now if the point from which the incident rays come persists in its approach toward the lens, the point on the opposite side, of course, will be forced to recede. The approaching point will at length arrive at a principal focus; most obviously the rays will then emerge from the lens parallel to each other, and we will have the focus at infinity. But now if the one point still approaches the lens, coming nearer than the principal focus, what will happen? Evidently the rays will emerge *diverging*. Where then will their focus be; at a distance greater than infinity? Well, hardly, since such an idea is not only impossible, but absurd. The rays, being divergent, will not meet in any actual focus; they must be produced backwards when they will meet in an imaginary focus, or, as it is called, a *virtual* focus, which will be upon the same side of the lens as the other focus.

Putting all this in a word, we can say that the conjugate of the principal focus is at infinity, and the rays will be parallel.

For a focus nearer the lens than the principal focus, there will be no actual conjugate focus, but an imaginary or virtual one on the same side of the lens, and its rays will be diverging. As a focus is moved beyond the principal focus, its conjugate leaves infinity, and assumes a finite distance, decreasing more rapidly than the other increases, until they become equal, when they will be separated from each other by four times the focal length of the lens; after this the receding focus will recede more rapidly than the approaching one approaches, and will reach infinity when the latter arrives at its principal focus; if this continues to approach nearer than the principal focus, the rays of the other will become divergent, that is, the focus will become virtual, and will be situated upon the same side of the lens as its conjugate.

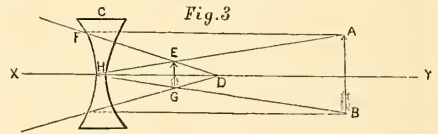


It should be an easy problem now to find the image of an object produced by a lens. In Fig. 2, $A B$ is the object of which it is required to find the image that will be produced by the lens C , which has a principal focus at D . From what has been said before it will be known that the rays coming from A will be concentrated upon the other side of the lens upon the same axis. $A E$ is the axis upon which A is situated; therefore the corresponding point of the image will be somewhere upon $A E$. So much we know. Now if we draw $A F$ parallel to the principal axis of the lens ($X Y$), the ray represented by this line will pass through the principal focus of the lens, so we draw its representing line through the principal focus of the lens. Now the point A of the object will be formed in an image somewhere on the line $F E$; also the same point will be somewhere on the line $A E$; being on both of these lines, it must be at their point of intersection, which is E . We now know that A will be reproduced at E ; by the same

method we may find that B will occur at G , and so we have the image EG of the object AB . In this problem the object was situated at a distance greater than twice the focal length of the lens from the lens, and we find the image smaller than the object. If it had been placed at a distance of twice the focal length, both would have been of the same size, and if it had been at a distance less than twice the focal length, the image would have been *greater* than the object; all of which may be seen by drawing a figure similar to the one given above, and placing the object in its various positions. If, however, we place the object nearer the lens than the principal focus, we obtain a still different result. When we try to obtain the conjugate focus of a point of the object, we find that there is no real conjugate (and consequently no real image). Still, however, by producing the lines backward we will obtain the virtual focus, and by this means a virtual image, which will lie on the same side of the lens as the object, but will be much larger. This property of the lens is the one that is utilized in the microscope.

It will be noticed that the preceding remarks apply only to the double-convex lens; with but slight modification (which may be seen by substituting any of the other forms in place of the double-convex in the figures given) they will apply to all converging lenses. Typical of diverging lenses, we may take the double-concave; this lens, like the double-convex, has its optical centre midway between its two surfaces (the plano-convex and plano-concave have this centre on the curved surface; in either meniscus lens—the concavo-convex or convexo-concave—it lies without the lens). The double convex lens takes parallel rays in at one side and sends them out at the other diverging; hence the principal focus of the lens is not real, but virtual; if it makes *parallel* rays divergent, it will make diverging rays more divergent; so it cannot ever have two actual foci—one will always be virtual; hence it can form no real but only a virtual image. Also, as it renders rays more divergent, the virtual focus will always be closer to the lens than the actual, and so the image will always be virtual, diminished, and erect.

To find the image of an object, we proceed in the same way as with the double-convex lens. In Fig. 3, C is the lens, D ,



its principal focus; A , of the object. AB will be produced somewhere upon the same axis upon which it lies, that is to say, somewhere upon AH . A ray of light from it parallel to the principal axis will pass through the principal focus. AF is such a ray; it will emerge from the lens in an outward direction, but as the focus is virtual, if continued backward it will pass through the principal focus. FD represents the ray produced backward. Now as A must lie somewhere on AH , and also on FD , it must be at their intersection, E . In the same way we find the point G corresponding to B and the image EG of the object AB , which we notice is, as has been stated before, virtual, diminished, and erect. By substituting the other diverging lenses for this, and pursuing a like course of reasoning, we will arrive at like conclusions for the other lenses.

(To be continued.)

A SCHOOL FOR RETOUCHING.

GERMANY was the birthplace of retouching, and has ever stood first in the art, for nearly all of the best retouchers now in this country have come from the "Fatherland." This spring, a school for teaching retouching in all its branches has been opened at Leipzig. The following "Prospectus" has been forwarded us by our German correspondent:

Director, Oskar Krotzsch, portrait painter, retoucher, and photographer.

The establishment contains a studio with the best and newest apparatus.

The opening of school was on April 1st, 1879.

Price of instruction, equivalent to about \$25 to \$150. For smaller remuneration, a short course can be had.

Boarding at the establishment.

Lady students are also taken.

Plan of Studies.—1. Drawings of heads with lead-pencil, black chalk, and brush. 2. Positive retouching on albumen and paper. 3. Negative retouching with graphite pencils, brushes, etc. 4. Aquarell retouching. 5. Oil retouching on photographs. 6. Chromo-photography on paper. 7. Chromo-photography on convex glass. 8. Real portrait painting on canvas, from photographs.

THE STUDY OF PHYSIOGNOMY.

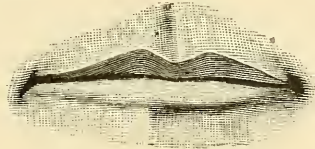
WE have grown much interested of late in the subject of physiognomy, a study as boundless and varied as the number of faces we see surging around us in our daily walk in life. Our interest was greatly deepened by the course of able lectures delivered at the schools and institutes of this city during the past season, by Prof. A. E. Willis, of Chicago.

Prof. Willis is a photographer, and as such has improved his opportunity of studying up this subject from the living models who daily sought his studio to have their features brought under the truth-telling influence of the sun and camera.

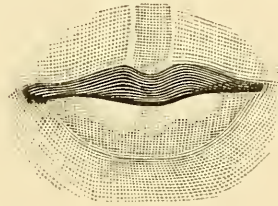
This study of physiognomy should be specially attractive to photographers, both as a matter of art-training and a means of measuring a customer at a glance. We all know how much the value of a photograph depends on the *expression* of the sitter. A careful study will soon enable a man to see the way to draw out the best. Perhaps the eyelids are inclined to droop, giving a dull expression to the whole face. Raise the point of sight for the sitter, and the whole face is lighted up. The chin may be too prominent, giving a look of undue obstinacy; a little judicious retirement of the lower part of the face will obviate the matter. And then the *noses*; every one knows how much skill is required of the photographer to gain a nice *arrangement* of this organ. Too much thrown back, it becomes a "pug;" tilt the head too far forward, and a sinister droop is the result; a crooked nose will bear neither a profile nor yet a full face. But to comment on all the variety of noses would be an endless task. Study the features of

your customers, and learn to judge at a glance how to give the best position to every face.

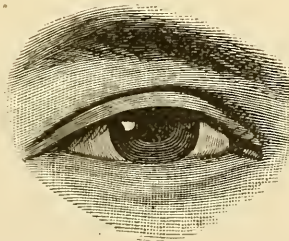
The accompanying cuts are taken from Prof. Willis's *Physiognomical Chart*, in which he gives a number of drawings of eyes, mouths, and noses, with descriptions of the leading characteristics of the possessors thereof.



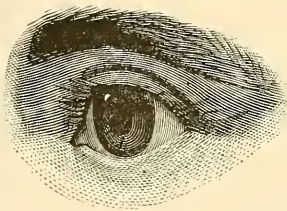
No. 1. "A mouth with thin compressed lips, denotes a disposition to moroseness; is crusty, stringent, self-important; not easily imposed upon; cold and unsociable; much self-control, and not inclined to dissipation."



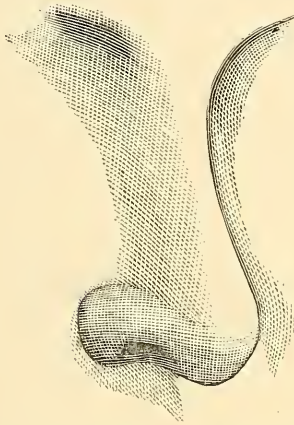
No. 2. "Showing the under lip protruding beyond the upper. The fulness of the lower lip represents strong active affections; but its protruding condition signifies a tendency in the disposition of such persons to draw others to them, to cause them to succumb to their terms, desires, and requirements; a kind of holding back on their part, keeping in reserve; though at the same time aggressive in spirit."



No. 3. "The dreamy eye. Full of pleasure and animal enjoyment, but good natured and thoughtful. Can love more than one."



No. 4. "Quick to perceive, wide-awake; impassible; observe rapidly, but do not retain impressions long, or think intently. Good eyesight."



No. 5. "A well-formed nose, indicating strength and development of character; long-headed. Observe the sign of originality, as seen in the drooping septum. It renders a person rather odd, and unlike any one else in the way of saying and doing things. Are particularly interested in anything new, new theories, plans, sciences, etc. Quite reformatory in character."

Prof. Willis's chart contains no less than twenty-nine illustrations and descriptions of traits of character typified by these various features.

The work is very interesting, and can be obtained from the Professor by addressing him at his office, No. 73 Lake Street, Chicago.

The few hints we have given, we trust, may be sufficient to act as leaders in prosecuting this study of the "human face divine," and no doubt every photographer who does make it his study, will find his full reward in obtaining more pleasing expres-

sions on the faces of his patrons, by thus being able to give them a *scientific pose*.

The chart before us recalls an amusing story, having for its basis the peculiar formation of the mouth. Here it is:

"Once upon a time (in the days of candles) lived a loving old couple. Blessed by Providence with a fair share of the good things of this life, there was one thing they lacked, and that was the gift of *blowing out a candle*. Many a time have the old pair taken the candle between them and puffed away for dear life, with no visible effect on the candle; and many and lively were the discussions as to the cause thereof. To an outsider the reason was obvious. They both had *crooked mouths*. On no condition could they emit a direct blast from their lips.

"When Mr. B. blew at the candle, the breath coming from the *right* corner of his mouth, flew away at right angles with the flame. When Mrs. B. exerted her lungs, the air driven from the *left* corner of her mouth also passed away without in the least disturbing the light at whose extinguishment she *meant* to aim. Thus the old couple were apt to play at this odd sort of cross-purposes."

RETOUCHING SOLAR NEGATIVES.

BY H. D. WEBSTER.

THE *Photographer* for June is at hand, and full of good things; among others a receipt for retouching solar negatives. I will give you another that is much easier to work. It is as follows: Make a varnish of

Alcohol,	16 ounces.
Gum Sandarac,	3 "
Camphor,	$\frac{1}{2}$ ounce.
Oil of Cinnamon,	a few drops.

Varnish the negative on both sides. Then grind by drawing the ball of the finger rapidly over the surface of the negative, from one end to the other, on the negative side, grinding the entire surface. Then grind the back crosswise in the same manner, being careful to move the finger in straight lines, as grinding in circles would spoil it. Then retouch the negative in the usual manner, and you have one that will print better than any contact print of the

same size. If the varnish should grind too coarse use less camphor, or more camphor if too fine.

OBITUARY.

WE have learned with regret of the death of Mr. James M. Hoag, at his home, Adrian, Michigan, May 13th.

Mr. Hoag was but forty years of age, and the last twenty years of his life had been devoted to photography, in which he won great success. A man of great social powers, kind and generous in his private life, and honest in all his dealings with men, he was beloved as a man and highly respected as a citizen.

The following "memorial" was adopted by the Adrian Social Club, of which Mr. Hoag was a member :

"The first half year of our corporate existence as a club is darkened by the death of one of our youngest members. The truth that death is close to every one is impressed on us by the loss of James M. Hoag, who endeared himself to us by his genial, whole-souled nature, by his manhood, his integrity, his singleness of purpose. A good man, a good citizen, a good husband, and a good father, his death will create a void in the community and in the ranks of this club, which will long be felt. To the fresh and poignant sorrow of his distressed family, to that of the fatherless children, the bereaved wife, and the grief-stricken parent, no stranger hand can minister. As a club we can only extend to them our heartfelt sympathy in their deep affliction. The pure and manly life of our deceased friend is one that all may worthily strive to emulate, and his many virtues will be held by us in honored remembrance."

The report of the committee was unanimously adopted, and it was further ordered that an engrossed copy of the memorial, authenticated by the signatures of the President and Secretary, be presented to the family of the deceased member.

It was further resolved that a portrait of deceased be procured and hung in the club parlors.

CODDINGTON'S ILLUMINATING APPARATUS.

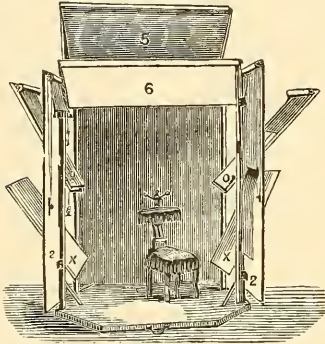
BY G. W. CODDINGTON.

I AM perfectly aware there have been various styles of illuminating screens and platforms described and published in the several photographic magazines and journals from time to time. Among the most prominent are Adam Salomon's Concave Reflector, and Kurtz's Counter Reflector, all of which seem to be excellent for the purpose intended; but somehow none of them seemed to be exactly what I wanted, or would fill the bill, as far as I was concerned. So, some three years back, I set my wits to work to get something up to suit myself, and the platform here described is the result, to which the readers of the *Philadelphia Photographer* are welcome, in return for the many favors received.

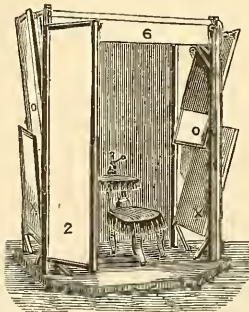
I have had it in use ever since, to my entire satisfaction. It is only intended for busts and the general figure, although children can easily be taken full length. Neither is it intended for a very small operating-room, for it would only be in the way, and the light in such small rooms can be easily regulated by top- and side-screens and blinds. In using the platform I generally let in all the light I can get from the sky- and side-light (but not sunlight), and then regulate the screens, blinds, and reflectors attached to the uprights on the platform, and by moving it to different positions under the skylight, in conjunction with screen, etc., I can get any light I want with very little trouble. Everything is almost under your thumb, and you can keep your eye on your subject all the time while making any necessary changes, and do not have to run all over the room to pull this string or that blind, and by the time you have got back forget or cannot see any change in the effect, without it is outrageous, and very likely just what you do not want; and by the time you have everything to suit, you are all in a "fidget," and your customer, too, for that matter.

The platform, or floor, is made of six-inch fencing-boards, one inch thick, planed off on one side, and are two layers, running crosswise, and nailed firmly together. It is five feet square, with the four corners cut off

and set on common bedstead castors three inches from the edge on each side. Near the corner are bored four two-inch holes three feet apart, into which are put four uprights two inches square, with stanchions at the bottom; the uprights are seven feet high, and are framed together at top by pieces seven-eighths by one and a half inch, to hold all steady; they are also braced at top and bottom, as shown in the figure.



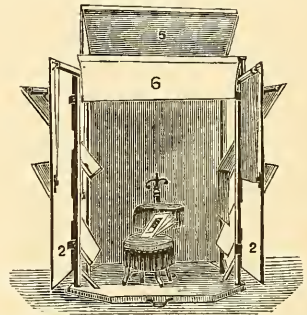
Between the uprights on each side are two movable frames two feet ten inches by two feet three inches long; the four screens or reflectors are inserted between the uprights, and a two-inch wood screw passes loosely through them six inches from the bottom, and screwed firmly into the upright post. Fifteen inches from the platform is the bottom frame, marked X, and four feet from floor, are the two top frames marked O. In front, hung on the face of the first are two long frames eighteen inches by six feet long, hung on common door-hinges.



The background is five by seven feet, painted as described in *Mosaics* for 1877, page 48; on top is a frame, marked 5, two

feet ten inches by four feet six inches, and turned on two screws at the back, the same as side-screens, and acts as a head-screen. This screen is raised or lowered to suit with a notched stick; all the top frames are covered with thin, bleached, yard-wide muslin.

The two bottom side reflectors, which are opaque, and painted a light blue, act as reflectors to light up the shadows under the eyes, nose, chin, etc. On the two, side top and long front screen, marked 2 and O, are four green opaque curtains, that roll up the same as a common window-shade, and can be pulled down to the floor, shutting off all light from the sides. On the back corners of the four reflectors, marked O and X, is



fastened a small band that passes over a small pulley fastened in the upright post, and at the other end is a small weight to counter-balance the weight of the frame when thrown back, and makes it stay in position. In front is also a thin white curtain, marked 6, which can be pulled down three feet, or rolled entirely up. The background sets back one foot from the back part, and is fastened to a two-inch post behind, which fits in a two-inch hole bored in the platform, and turns on a pivot, so that the background can be turned freely around to or from the light, and thereby graduate it more or less, and leaves room to go in to arrange the head-rest, etc., which is no small item. All the frames are made of stuff seven-eighths by one and a quarter inch wide; the whole is very light, and can be shoved or pulled about at pleasure.

Here we have a set of frames so arranged that they are reflectors, counter-reflectors, transparencies, or non-reflectors, at will, and

all under your thumb. Here you have the control of direct, diffused, and reflected light, and you ought to be able to control with it any kind of light, front, top, side, or back light. The whole is easily and cheaply made, and should not cost outside of fifteen dollars.

PHOTOGRAPHIC NEWS.

THE Paris *Moniteur*, in its last number, gives to its readers two photographic prints of the solar disk, taken at Mendon, at an interval of fifty minutes, under the direction of Mr. Janssen.

This celebrated astronomer has published in the *Annuaire du Bureau des Longitudes* for 1879, a very interesting article, giving the details of the process used by him for making these pictures, and which will prove highly useful to those engaged in solar photography.

Solar photography had proved hitherto powerless to reproduce the details given by powerful instruments. The most remarkable photographs of the sun up to the present time, and among which we may mention those made by Mr. Warren de la Rue and by Mr. Rutherford, show the spots and *fabulæ*; but they only give the marblings on the surface, without any of the details of granulation revealed by optical instruments.

By means of special apparatus, and extremely short exposures (from $\frac{1}{3000}$ th of a second to $\frac{1}{10000}$ th, and even $\frac{1}{50000}$ th), Mr. Janssen obtains images of the photosphere showing the rapid transformations continually going on in the reticulation, and in the photospheric granulation.

PHOSPHORESCENT DOOR-(BELL-) PLATES.
—Dr. I. Schnauss, in the *Correspondenz*, says: "Everybody is familiar with the glass tubes, which when filled with phosphorescent salts and placed in some dark place, after having been exposed to the light, show pretty nearly all the colors of the spectrum. The Paris Exposition brought to notice a very nice and practical application of this phenomenon, in the shape of door- or bell-plates. A strong, oblong, quadrangular glass plate covers a paper, soaked in a violet-blue phosphorescent salt, and is fastened with a little fancy metal frame. By fastening an non-transparent stencil on the glass-

plate, and exposing the same a short time to the daylight, the name will appear in the dark with a phosphorescent violet light upon a white ground, after taking the stencil off. The phosphorescing, however, only lasts about half as long as the time of the exposure to the light; at least a somewhat superficial observation showed me such to be the case, otherwise the plates might do good service under the night-bell of a physician or druggist. But, even without practical application, the whole is a very interesting physical toy. I have examined this phosphorescent light, in regard to its photochemical qualities, by placing upon it, for about a minute, a silvered collodion plate in the dark, after it had been exposed to the light for about a quarter of an hour. Upon developing, such an intense picture of the stencil appeared that it could be easily copied without magnifying. There is hardly any doubt, that with sufficient length of exposure, a photographic picture, say of a lace pattern, which would be placed over the phosphorescent plate, might be taken in the dark. This experiment reminded me of my photographic experiments, which I made many years ago, with phosphorescent animals (*Lampyrus*), which experiments were, among others, also published in the public organ of the Imperial Royal, *Leop-Carol*, Academy of Natural Sciences, and which were a pretty fair success, the little actinic quality of the green-yellow light notwithstanding."

THE TELESCOPE.—M. Senlecq, of Ardres, has recently submitted to the examination of MM. Du Moncel and Hallez d'Arros a plan of an apparatus intended to reproduce telegraphically at a distance the images obtained in the camera obscura. This apparatus will be based on the property possessed by selenium of offering a variable and very sensitive electrical resistance according to the different gradations of light. The apparatus will consist of an ordinary camera obscura containing at the focus an unpolished glass, and any system of autographic telegraphic transmission; the tracing-point of the transmitter intended to traverse the surface of the unpolished glass will be formed of a small piece of selenium held by two

springs acting as pincers, insulated and connected, one with a pile, the other with the line. The point of selenium will form the circuit. In gliding over the surface, more or less lightened up, of the unpolished glass, this point will communicate, in different degrees and with great sensitiveness, the vibrations of the light. The receiver will also be a tracing-point of black-lead or pencil for drawing very finely, connected with a very thin plate of soft iron, held almost as in the Bell telephone, and vibrating before an electro-magnet, governed by the irregular current emitted in the line. This pencil, supporting a sheet of paper arranged so as to receive the impression of the image produced in the camera obscura, will translate the vibrations of the metallic plate by a more or less pronounced pressure on that sheet of paper. Should the selenium tracing-point run over a light surface, the current will increase in intensity, the electro-magnet of the receiver will attract to it with greater force the vibrating plate, and the pencil will exert less pressure on the paper. The line thus formed will be scarcely, if at all, visible; the contrary will be the case if the surface be obscure, for, the resistance of the current increasing, the attraction of the magnet will diminish, and the pencil, pressing more on the paper, will leave upon it a dark line. M. Senlecq thinks he will succeed in simplifying this apparatus by suppressing the electro-magnet, and collecting directly on the paper by means of a particular composition the different gradations of tints proportional to the intensity of the electric current.

BROMIZED GELATIN — ENLARGEMENTS.
—In the Paris *Moniteur*, Mr. Durand gives the result of numerous successful experiments made by him, for the enlargement of photographic negatives by means of plates prepared with bromized gelatin.

The mode of operation is very simple: A negative is made in the camera, in the ordinary manner, upon a plate prepared with bromized gelatin. The print, developed, fixed, and washed, in the usual manner, is placed in a dish full of water, containing from seven to eight per cent. of ammonia. After having remained about two hours in

this bath, the edges of the print begin to shrivel; numerous blisters show themselves over the whole plate, and finally the pellicle detaches itself from its support and floats on the surface of the water, considerably increased in size. By the action of the ammonia, the gelatin has become distended uniformly in every direction, thus enlarging the print, as is the case with the instrument used by lithographers for enlarging their drawings. This instrument is an india-rubber disk, to which is transferred the drawing to be enlarged; then by means of a special arrangement the india-rubber disk is stretched in every direction according to the size described.

In the experiment above alluded to, it suffices to pass under the floating pellicle a plate, sufficiently large to withdraw the whole from the water, and dry. The result obtained is a very fine print enlarged four-fold in surface, and which may be strengthened as desired. It is evident that the thicker the gelatin film, the larger will be the final print; but the dimensions that I give, of four times the surface, are obtained with thin films, such as are used for making landscapes.

It is sometimes necessary to assist the operation with an ivory or bone paper-knife, or even with a simple sheet of paper.

It sometimes happens that the print, although detached from its support, has not been enlarged; in this case it suffices to raise the temperature of the bath by progressive additions of water, the temperature of which is to be increased at each addition.

This process of enlargement, which is truly original, is entirely due to the investigation of Mr. Blachon, and demonstrates two things: one, that it is important, either in the preparation of the bromized gelatin plates, or in the sensitizing of carbon paper, to obtain a rapid and complete desiccation, to get the greatest possible adherence of the gelatin to its support; and the other, that the films of gelatin should not be allowed to remain too long a time in alkaline solutions, or in those in which the temperature is too high.

Adopting this idea, I have never had any reticulations or blisters in my carbon prints since using the sensitizing bath containing

alcohol, due to your learned co-laborer, Mr. Boivin, in the March number, 1877, of your estimable journal.

THE following may be useful to those who are about to choose new lenses: I received for examination two systems of lenses manufactured by Mr. Ross in England, which, however, I could retain only a few hours in my hands, as they had to be returned to England without delay. The lenses are quoted in the price-list as "rapid symmetrical," and "portable symmetrical."

A. Ross's rapid symmetrical lens consists of two equal symmetrically placed achromatic lenses, the shape of which resembles Steinheil's Aplanatic, without, however, showing the inner ring which covers the margin of the lens. The instrument in question had a diameter of 44 millimetres, and a focus of 326° millimetres, and I found it to be almost analogous in regard to working capacity to Steinheil's Aplanatic, No. 4, of 43 millimetres diameter, and 283.38 millimetres focus.

The relative aperture of the rapid lens appeared to be $\frac{1}{7\frac{1}{4}}$, so that it does not exceed Steinheil's old style Aplanatic in regard to intensity of light, and the denomination "rapid" is, therefore, somewhat out of place. Also in other respects it did not offer any advantages whatever in comparison with Steinheil's Aplanatic and kindred lenses. The price of the instrument is quoted at £8 10s., or about \$41.50. There was no distortion.

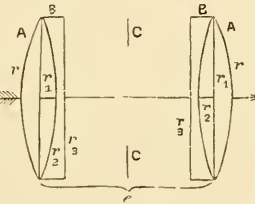
B. Ross's portable symmetrical lens is composed of two symmetrical lenses of a diameter of 20.5 millimetres and 171 millimetres focus. The instrument had a revolving stop, the largest aperture of which was about half as large as the diameter of the lens. With this largest stop the lens produced upon an 8 x 10-inch plate an architectural view sufficiently clear to the corners, and with no distortion. The serviceable field of view with the largest stop was, therefore, $64^{\circ} 40'$, or actually more than stated in the price current. The field of view of the instrument, however, was materially larger, and fully covers a plate of fifteen inches square, so that it reaches in reality more than ninety degrees. With the largest stop the instrument produced an 8 x 10 inch plate of almost

equal sharpness as Steinheil's No. 4 with smallest stop; but the intensity of light was twice as strong under the circumstances as that of the Steinheil lens thus stopped off. The price of the instrument of Ross is about \$33.

For views which require a pretty large angle, the instrument appears to be suitable, but, much to my regret, I had no time to compare the same with Steinheil's wide-angle lens.

According to the statement of the Baron Von Granges, Mr. Ross's lens is superior to the wide-angle lens in regard to intensity of light, while the latter has a larger field of view.

C. *Voigtlander's New Lens.*—Voigtlander's new lens, which will soon appear in the market, consists of two pair of symmetrical lenses, in the following shape: A is a bi-convex lens of crown glass. B is a concavo-convex lens of flint glass, and between both is air-filled space. C is the central stop.



The focus of the lens is 340 millimetres, its aperture 52 millimetres, and it produces, even when fully opened, a pretty sharp picture, without any distortion. The field of view was seventy degrees, and with the shortest stop the lens produced a plate of 12 x 14 inches, from an architectural view, sufficiently sharp to the corners, which brings the working capacity of the lens very near the standard of the Aplanatic and Euryscope, while it is superior to the latter in regard to intensity of light. I also examined a new lens of Steinheil, about which later.

SCIENCE FOR THE PHOTOGRAPHER.

A NEW MUCILAGE.—The *Journal de Pharmacie* states that if to a strong solution of gum arabic, measuring eight and one-third fluid ounces, a solution of thirty grains sulphate of aluminum, dissolved in two-thirds of an ounce of water, be added, a very

strong mucilage is formed, capable of fastening wood together, or of mending porcelain or glass.—*Newark Echo*.

TO PRESERVE WOOD.—The following method is used in Germany for the preservation of wood: Mix forty parts chalk, fifty parts resin, four parts linseed oil, melting them together in an iron pot; then add one part native oxide of copper, and afterwards one part of sulphuric acid. Apply with a brush; when dry, the varnish is as hard as a stone.—*Newark Echo*.

NEW DISINFECTANT.—An Australian physician, Mr. Day, recommends a mixture of one part of rectified oil turpentine, seven parts of benzine, and, to every ounce of the mixture, three drops of oil verbena, for disinfecting cloths, furniture, carpets, wall-papers, books, papers, etc., claiming that it does not injure the latter, while the oxidizing power is sufficiently great to cause the articles to retain the disinfecting properties for some time.

PURE SALICYLIC ACID AS A PRESERVATIVE OF DRINKING-WATER.—Hugo Schiff states that three-tenths part salicylic acid, added to one thousand parts of drinking-water, containing much organic matter, and kept in a stoppered bottle, which was opened from time to time, entirely prevented its decomposition, it tasting perfectly fresh at the expiration of three years. Water can also be prevented from decomposing, by adding a minute quantity of bisulphide of carbon to it, or of phenol in salt water, but will then not be fit for drinking.

PRESERVATION OF SOLUTIONS OF GUM, GLUE, AND GELATIN.—M. Regensburg recommends adding to one litre of the solution, in hot rain- or distilled-water, from sixty to seventy drops of silicate of soda, and stirring the mixture well for five minutes. If the solution has already commenced to decompose, it is heated, and to every one-tenth litre, fourteen drops of soluble glass added.

TO JUDGE OF THE FRESHNESS OF EGGS.—An egg is said to be fresh when in the summer it has been laid only a couple of days, and in the winter three to six. The shell being porous, the water in the interior evaporates, and leaves a cavity of greater or less

extent. The yolk sinks, too, as may be easily noticed by holding it toward a candle or the sun, and when shaken a slight movement is perceived if the egg is not fresh. To determine the exact age of eggs, dissolve about four ounces of common salt in a quart of pure water, and then immerse the egg; if it be only a day or so old, it will sink to the bottom of the vessel, but if three days old, it will float in the liquid; if more than five, it comes to the surface, and rises above in proportion to its increased age.

TO MAKE CORKS AIR-TIGHT AND WATER-TIGHT.—A German chemical journal commends the use of paraffin as the best method of making porous corks gas-tight and water-tight. Allow the corks to remain for about five minutes beneath the surface of melted paraffin in a suitable vessel, the corks being held down either by a perforated lid, wire screen, or similar device. Corks thus prepared, the writer says, can be easily cut and bored, have a perfectly smooth exterior, may be introduced and removed from the neck of a flask with ease, and make a perfect seal.

A NEW TEST-PAPER.—M. Lacour, an army *pharmacien*, prepares this by adding to rhubarb double its weight of liquid ammonia, which produces a magnificent red-purple. After a quarter of an hour, the liquid is separated by filtering, and strips of filter-paper dipped in it are then dried. Under the influence of acids the paper becomes a lemon-yellow, and with alkalis it regains its former color. It is a very sensitive test.

STRONG AND DURABLE IRON CEMENT.—Three parts of sodium chloride, one part of powdered sulphur, and thirty parts of fine iron-filings (preferably powdered iron), are mixed and rubbed into a soft mass with sulphuric acid, diluted in the proportion of six parts of the acid to eight parts of water. This cement will get as hard as stone in one to two days. All grease and rust should be previously removed from the article to be mended.

CLARIFYING OF WINES, LIQUORS, ACETIC ACID, ETC.—A powder which renders animal charcoal entirely unnecessary, and

which is recommended for clarifying turbid, and, at the same time, bleaching colored liquids, is made by Dassori, by mixing albumen thirty kilogrammes, neutral potassium tartrate three hundred grammes, alum five hundred grammes, and ammonium chloride seventy kilogrammes. This powder is used in the proportion of sixty grammes to two hectolitres of the liquid, like albumen, being beaten up carefully with water, but not directly with the liquid to be clarified; when once clarified, the latter will not become cloudy again.

CELLOIDIN, an unexplosive substitute for gun-cotton for making collodion, is patented by Sehering, who claims that, while making an excellent preparation, it being entirely soluble in the mixture of ether and alcohol, it has the advantages over gun-cotton of neither being capable of igniting spontaneously, nor exploding when rubbed or pounded, thus being entirely safe for transportation. Its only objectionable feature is the length of time required for solution, which, especially when very dry, far exceeds that necessary for dissolving gun-cotton. It is probably made by partial evaporation of collodion.

COLOR-BLINDNESS.—"M. Delbœuf," says *La France Medicale*, "has found that when a person afflicted with color-blindness looks through a layer of fuchsin in solution, his infirmity disappears. M. Javal has made this discovery practical by interposing a thin layer of gelatin, tinted with fuchsin, between two glasses; the latter is said to correct the difficulty."

NICKEL-PLATING OF IRON OR STEEL WITHOUT A GALVANIC BATTERY.—After adding to a dilute (five to ten per cent.) solution of pure chloride of zinc, in a porcelain dish, sufficient sulphate of nickel to produce a dark-green coloration, and heating to the boiling-point, Prof. Stolba immerses the metal, previously well cleaned, into this liquid, and boils for thirty to sixty minutes, when the metal is washed off with chalk-water and carefully dried, when it is covered with a durable, but thin, plating of nickel.

PASTE FOR POLISHING PRINTS.—Into

melted white wax pour enough turpentine to make, when cold, a paste about as stiff as hard pomatum, to which is added a little oil of lavender, spikenard, or any scent to suit you, in order to remove the disagreeable smell of the spirits of turpentine.

"A little of this paste is applied to the surface of the mounted print, and briskly rubbed with a piece of canton flannel or chamois skin. This gives a beautiful polish, and will be found very useful for those who do not use the burnisher, or in restoring old pictures that have become scratched or rubbed."

GERMAN CORRESPONDENCE.

Hartmann's Lecture on Anatomy for Photographers—English Edition of Dr. Falke's Book, "Art in the House"—Dry Plates for Diapositives and Enlargements—Steinheil's Wide-angle Lens—Gelatine-Emulsion Plates and Amateur Photography—Holtermann's Mammoth Negative—Paper Negatives—Fluoric Acid for Cleaning Plates—Sensitiveness of Fluoride of Silver—Reproduction of Oil Paintings.

IN one of the last meetings of the *Verein zur Foerderung der Photographie*, Mr. Hartmann offered some interesting remarks upon anatomy. "Anatomy!" you will no doubt ask; "what has anatomy to do with our art?" It almost appears as if too much is expected nowadays of the photographer—chemistry, optics, picturesque arrangement, posing, lighting; he is supposed to have a knowledge of painting, and now he is wanted to study anatomy. No doubt, many an overburdened photographer, who sighed in this strain before hearing Mr. Hartmann's comments upon anatomy, changed his tune afterwards, for he learned that the construction of the human head cannot be understood without anatomical knowledge, and that only by acquiring some knowledge of anatomy, he is enabled to avoid the many unpardonable and ridiculous mistakes which are now made in retouching. Mr. Hartmann gave the following amusing illustration of his remarks:

"Some time ago, in conversation, a sculptor mentioned to me that he had been en-

gaged to make the bust of a deceased person, of whom several 'good' photographs were placed in his hands, to guide him in his work—a task which any first-class sculptor can well accomplish. There was one drawback, however, for the predicate 'good' could not stand in an artistic point of view, but was only accorded by the modern judgment of the public. The photographs in question were clean, sharp, glossy, and duly retouched, had been worked in the cameopress—in one word, were excellent pictures, in the opinion of the public; in any case they were idealized and flattered. The task of making a bust after them, was, apparently, a thankless one. The sculptor, however, had some dim recollections left from his anatomical studies, which pointed strongly to the assumption that the human head contained some bones. But, according to the picture, the head of the deceased person had none at all. The forehead looked like a smooth billiard-ball, round, without any disturbing details, no prominent parts, plain surfaces, etc., and it was impossible to determine whether it represented a 'short head,' an angular forehead, one with concave or convex eyebrows. Was the forehead furrowed with strong or weak muscles, and were they bedded in fat, or were they lean? No answer to be got from the photograph! Were there any wrinkles on the base of the nose? Were the wrinkles of the apparently old head horizontal? Did they follow the form of the muscles and their movements, or did they cross them? No answer! Everything smooth, very clean, very prettily retouched and hot-pressed—the modern photography had surpassed itself; bones, muscles, and skin had disappeared, and only a beautiful, clean, and smooth tone had remained, from which the sculptor could make twenty-five foreheads, if needs be, with the slight exception only of the old, real, individual and characteristic one.

"The nose, also, was spoiled through injudicious illumination. The eyes, which in reality had, perhaps, through age become somewhat soft and diffused, appeared on the picture with sharply-defined pupils, and, too, more boldly than happily-placed high-lights. The deep-set eyes, which probably could not have shown any high-light, ap-

peared, therefore, bloated and swelled out, like those of a lobster. The wrinkles near the mouth, the barrenness of the chin, even the characteristic expression around the corners of the mouth had disappeared to the last trace.

"In spite of these deficiencies, there existed a certain resemblance to the original, as, of course, the contours of the head, and the settled relations of the whole could not be retouched away, although the smooth, youthful skin on a relatively old head looked queer enough.

"Now, had the retoucher of that picture had even some slight inkling only of the construction of the human head, he would not have fallen into the grave error of making certain parts of the head disappear, which are indispensably necessary to a man of life, and blood. Or is it pardonable to round by retouching a forehead which is bulky and square? and are traits of the features, which have been formed by the lifelong influence of the character, and the underlying muscles, to be thoughtlessly retouched away, in order to make the picture appear smooth and clear? The picture can be clean in spite of these necessary little details, which impart life to a head, and all that is necessary in this respect, is not to destroy the anatomically-correct aspect of the head."

We are indebted to Mr. Hartmann for other interesting publications about negative retouching, which have also found much favor in America. Mr. Morgenier translated his articles, about three years ago, into English, and sells the same at a high price, and surely the more recent publications of this excellent artist are worthy to attract the same attention.

As I am just speaking about the artistic part of photography; I will not omit to mention a new work of excellence, published by Prang & Co., Boston, and which offers the highest interest to all refined and well-educated people. *Art in the House*, by Dr. T. von Falke, translated by Charles C. Perkins, is the title of this wonderful work, which is embellished with sixty full-page illustrations, eight of which are chromos, and a large number tinted Albertypes; besides one hundred and sixty-six woodcuts, and much instructive matter relating to the

industrial arts. It has for its object, not alone the manufacture of objects related to the industrial arts, but also their decorative arrangement, when it is desired to arrange reception-rooms, drawing-rooms, libraries, etc., in effective and pure style, and in this connection the book is almost indispensable to the photographer. How often we meet a picture in which all possible and impossible nondescripts are thrown together; here, with a *renaissance* background, is a so-called Gothic chair, with horrible carvings, beside a rococo table; from above fall down draperies in the loudest patterns, which spoil the whole picture. What use are the best chemicals when such nonsense is indulged in?

America has the fortune to possess in Mr. Seavey the first background painter of the world (and he is it yet, in spite of the Paris bronze medal). Mr. Seavey knows exactly what style is and means; everything he paints is style; everything is in its place, and in harmony with the surroundings. But the furniture, and other accessories, which many photographers often place before his backgrounds, do very often not match with them at all. Many cannot see this incongruity; but those who want to learn how to produce a harmonious arrangement, will do well to read and study Dr. Falke's book.

For instance, the article, "The Floor and the Wall," page 185, or "Movable Wall Ornaments," page 215; the index of the chapter, "Proper Tone of Color for the Wall;" grouping of pictures; architectural and decorative division; picture-frames must be taken in account; best methods of framing a picture; style of frame recommended; gilded frames and their effect; how engravings, photographs, etc., can best be made use of, etc. These are only a few examples.

The whole book is such that everybody, intent upon improving his taste and knowledge, will read it to the last page with interest and pleasure. Every photographer will find very valuable hints in regard to the really elegant arrangement of his reception-rooms and studios.*

The carbon printing process, the general introduction of which seemed to be pretty well assured two years ago, is now, after having been tested by almost every practical photographer of note, very seldom used, except for the production of larger pictures, especially for those of life-size, for which latter purpose it is extensively employed.

Many photographers print from their negatives transparent diapositives in carbon, from which they obtain in the camera an enlarged collodion negative, and from which, again, they print in the usual manner mostly in silver, and only seldom in carbon.

The employment of the carbon process is therefore narrowed down very much, and it seems that recently another rival of it has come into the field.

The advantages of the carbon process for the production of the diapositives lie mainly in the wonderful rendition of the half-tones, which were never obtained with such an excellent success with the customary collodion process, or with the chloride of silver collodion. Recently, however, Mr. Wilde, a well-known dry-plate man, placed some dry plates in the market, which in the printing-frame lighted under the negative, produced directly, without developing, a picture, far surpassing in brilliancy the most beautiful carbon transparent positives.

The carbon prints show, not unfrequently, some grain, while the new plates never showed the slightest trace of that defect. They are so soft and beautiful, that a picture enlarged from them cannot be distinguished at all from one taken direct from the subject. It is to be regretted that Mr. Wilde has not yet published the receipt for the production of his plates. He asserts that he uses collodion and gelatin emulsion, mixed together, which declaration sounds somewhat mystic. More about this in my next letter.

I learn that the Steinheil lenses find much favor in America. This indefatigable optician is just now busy experimenting on a simplification of the portrait lenses, on which experiments I base great expectations. Some time ago I received from him a sample of his new wide-angle lens, the smallness of which instrument (diameter only one-quarter of an inch) made me some-

* We have prepared an extended review of Dr. Falke's capital work, which our want of space compels us to lay over until our next.—ED. P. P.

what distrustful of its efficacy, but which instrument nevertheless produced an excellent picture on a 7 x 9 inch plate, and, in fact, its field of view exceeds 90° considerably, showing a remarkable flatness of the field and clearness up to the margin.

The science of optics makes, no doubt, fair progress, but it will hardly make such colossal strides in rapidity as the gelatin emulsion plates made lately. Of late the feverish excitement in regard to those plates has quieted down somewhat, as with the warmer season some difficulties arose, which have to be overcome yet, and I do not doubt that this can be done, as Colonel Dawson, in India, produced in 90° F., with success, gelatin plates, according to the report of the *Photographic News*; and I do not see why this could not be done also here and in America. The gelatin plates in the market have given a new impetus to amateur photography, and oftener than heretofore amateurs are met now at desirable points of view.

A very clever amateur here, Mr. Wight, explained to me the other day that he manages to get along in his travels without a dark-room, by simply using a clothes-closet, as it is found in every room of the hotels in Europe; but whether the landlords liked this novel use of the closets he did not state, and I doubt if they were overly pleased with it. In Switzerland, at one time, landlords only reluctantly took photographers in their hotels, because, they asserted, the chemical preparations were very injurious to the room and furniture.

You will remember the colossal panorama of Linden, taken by Mr. Holtermann, and which was on exhibition in Philadelphia. The same, 32 feet long, is now in Berlin, and has caused a great sensation here. Of equal interest is the enormous negative plate (probably the largest negative in the world), which was taken by Mr. Holtermann. It is 5 x 3 feet, and a copy of it was also in Philadelphia. I saw the original negative at Mr. Holtermann's place myself, when I had the pleasure to meet the gentleman at San Francisco. He brought it over with him to Hamburg, where he was born, and later on to Berlin, when he placed it, to my great pleasure, at my disposal; as

he did not want to take it back with him to Australia. It represents part of the city of Sidney; and in regard to clearness and purity, the plate is very fair and satisfactory, which is the more remarkable, as Mr. Holtermann is also only an amateur; and hardly any other amateur will dare trying his skill on such an enormous plate.

As you well know, Mr. Warnerke, in England, has tried to supplant glass as a sub-layer for dry plates, with paper, and similar experiments have been made by a Mr. Sandtner, of Teschen, who uses paper instead of glass in the wet process. The samples of his process, which I had the chance to examine, answer every requirement, and are of special interest to licht-druckers, who want to copy the negative on both sides. The process has been patented, and will shortly be published in the record of patents.

The same Mr. Sandtner lately recommended a substance for use in the photographic laboratory, which, till now, has been almost a stranger in it, namely, fluoric acid. He says that old and oft-used plates, which it was heretofore impossible to get clean again by any means, are cleaned so thoroughly by a treatment with diluted fluoric acid as to produce excellent negatives. The plates, which have been used several times, are first placed in strong potash lye, left there twelve hours, then washed well, and rinsed. Then they are put in diluted hydrofluoric acid (30 to 40 grammes liquid acid to 1 litre of water), which quantity suffices for more than one hundred plates. The hydrofluoric acid is furnished by the trade in bottles of caoutchouc, and, when cautiously handled, it is not so dangerous, as generally assumed; and Mr. Sandtner states that he has often employed it in etching on glass, without meeting with the slightest accident.

Before handling the bottle it is well to put on a pair of old gloves, which have been soaked well in wax or turpentine. By bending the edges of a plate of lead a cup is made for the acid, in which the glass plates are placed, and rocked to and fro a couple of times. In a quarter of an hour the glass plates are taken out again, rinsed in pure water some time, dried with rags in the cus-

tomary manner, and the plates are ready for use. Some brands of glass become somewhat dull by being cleaned with hydro-fluoric acid, but this does not injure the transparency of the glass in any way whatever.

Speaking of fluoric acid, I will not omit to mention that Dr. Wolfram, in Dresden, lately made some very interesting experiments on fluoride of silver. This fluoride is, unlike chloride, bromide, and iodide of silver, easily dissolved in water. In regard to its sensitiveness to light the opinions differ very much.

In Monckhoven's *Compendium of Photography*, it is stated that fluor-silver shows a stronger sensitiveness to yellow rays than the above-mentioned silver salts.

Evrard asserts that fluor-silver sensitizes the iodine-silver plates to such an extent that instantaneous pictures can be obtained with them, and he adds that fluor-silver is sixty times more sensitive than iodine-silver. These statements must be erroneous, according to the researches of Dr. Wolfram.

Fluor-silver superadded to iodine-silver produced neither shortening of exposure nor wrought any other advantage, and Dr. Wolfram even denies that in mixing nitrate of silver and fluoride of sodium fluoride of silver is formed, stating that both substances remain unchanged side by side in the solution. Mr. Wolfram also did not perceive an increased sensitiveness to yellow rays in the fluoride of silver.

DR. H. VOGEL.

BERLIN, May 29th, 1879.

A NOVEL WAY OF OBTAINING A PLEASANT EXPRESSION has lately been successfully tried by Mr. C. W. Davis, Athens, Ga. Mr. Davis has trained a canary to sing, upon a given signal. When about to remove the cap from the instrument, he gives the signal to the bird, which at once bursts forth in a sweet song. The sitter forgets all about the head-rest, the trying light, the wearisomeness of keeping a fixed position, etc. (all of which complaints are familiar to the photographer's ear). A pleasant and unconscious expression on the face of the sitter is the result of the little bird's melody. The idea is a good one, and we think might be put in practice by others.

FRENCH CORRESPONDENCE.

June Meeting of the Photographic Society of France—Presentation by Prof. Stebbing of Negatives by the Gelatino-bromide Process—Intensification of Gelatin Negatives—Statue of Niepce St. Victor—A New Steinheil Lens—Photo-lithography—Colored Photographic Pictures—A New Travelling Camera—Mons. Cros on the Effects of Colored Lights on Tinted Collodion Films—Communication on the Gelatino-bromide Process by Mons. Chardon—Gelatino-bromide Emulsions on Pellicle, by Mons. Ferrier.

THE Photographic Society of France held their monthly meeting last evening, the 6th instant, Mons. Davanne in the chair.

The correspondence of the evening was absorbed by what has, is, and will be done by the gelatino-bromide process. I made a presentation of negative proofs, etc., made by that process, which obtained a legitimate success. The rapidity of production is astonishing. I have succeeded in obtaining a rapidity ten times that of wet collodion; in fact I have completely abandoned all other systems of preparing plates, thoroughly believing that ere long all the profession will employ but the gelatin plate in their studio. For amateurs it is a "godsend." No troublesome manipulations, no unwholesome evaporation of ether, alcohol, iodide, etc., no stains upon the hands, ease and comfort combined with pleasure in seeing some lovely site "coming out," little by little, under the action of Willis's modified oxalate of iron solution.

I had the honor to make a communication to the Society on the different means of giving intensity to negatives on gelatin. My opinion is, that for that purpose a silver solution should be completely set aside, for with whatever care the negative has been washed after the hypo a little of this salt may remain, and so cause a great trouble in the manipulations. But this is not the principal difficulty; let us suppose that an operator by great care has succeeded according to his desire to intensify a negative with silver nitrate and pyro. He gives it to the printer. The first few prints are easily obtained, but the operator soon

perceives that the negative becomes more and more difficult to print from. Now why is this? The silver nitrate has combined with the organic matter of the gelatin, and has produced a surface sensitive to light. If the negative has been passed through a hypo solution a second time after the intensification, the light does not act so rapidly upon it, but if, as is the general custom, the negative has been simply washed, then, oh! then it is rapidly rendered unserviceable.

I will now give a means of intensifying a gelatin negative with great ease. Take of bichloride of mercury half an ounce. Put it in a glass flask. Add about four ounces of distilled water, and then put it on a slow fire and raise it to boiling-point. Let it cool, and decant it into a bottle, taking care not to disturb the sediment in the flask. This solution is then ready for use, and can be used over and over again.

2. Take 200 grains of carbonate of ammonia, and dissolve in 4 ounces of water. Then add 10 grains of bromide of potassium.

3. Take 5 grains of pyrogallic acid, and dissolve it in 100 grains of water.

We have now three solutions to work with: first, solution of bichloride of mercury; second, solution of carbonate of ammonia; third, solution of pyrogallic acid.

Manipulation.—Take a porcelain tray, of the size of negative. Lay the latter into it, gelatin side upwards. Pour in water to soften the gelatin (if the negative to be intensified has dried, if not, this washing is not required). Throw the water away, and cover the negative with Solution No. 1, taking care to keep it moving all the time. A milky tint will soon be seen to spread over the surface of the negative. The solution is then returned to its bottle for future use, and the negative is well washed in several changes of water.

Take 5 ounces of water. Add about 30 to 50 drops of No. 3, then the same quantity of No. 2. Pour this solution over the plate in the tray, keeping it in constant motion. The milky surface of the negative will now slowly change color, taking a brownish appearance, and the negative will gain in intensity slowly but surely, and can be followed up with ease to the necessary point of perfection. Its action can be stopped by

throwing the liquid away, and replacing it by water and well washing. This method of intensification is longer to write about than to perform. I am certain that if the readers of the *Philadelphia Photographer* will but try it for their gelatin plates, they will be satisfied with the results.

The great fear is to obtain too much intensity. Even then the negative can be modified and softened down by plunging it into a solution of perchloride of iron. This is very rarely necessary, if the operator is intelligent, and can judge of the value of a negative by its coloration; that is to say, how long it would take to print, the intensified parts of the negative being of a black, yellow, brown, or orange tint; that is to say, more or less photogenic. The deposit formed by this intensifier is of a yellow-brown color, and therefore non-actinic, so care must be given not "to do too much to a good thing."

The French commission, for the erection of the statue of Niépce de St. Victor à Châlon, informed the Society that the subscriptions already collected amounted to the sum of 5625.30 francs.

Mons. Carette presented some new lenses, constructed by the house of Steinheil, to be experimented upon.

Mons. le Prof. Stebbing presented a large collection of prints, printed in platinum salts (Willis's process). They were very much admired. Mr. Stebbing informed the Society that a company had been established in Paris to work and give licenses to work said process.

Mons. Matteroz presented a volume produced by photo-lithographic printing, which was very pretty.

Two pictures were presented to the Society. These pictures were photographic, colored by a new system. So said the inventor; but nothing superior results from his invention, so it is better to let it sleep in oblivion.

At our previous meeting, Mons. Clouzard presented a very pretty travelling apparatus. It appears that this gentleman has been over fifteen years in bringing it to its present state of perfection. Manufacturers of cameras would do well to visit him and take a few hints, which he says they are welcome to do.

Mons. Ch. Cros gave a very long communication on the effects of different-colored lights on the films of bromized collodion tinted by organic colors. This gentleman has been occupied a long time in seeking photographic plates sensible to all colors, especially to orange, green, and violet rays. He informed us that his collodion contains 3 per cent. of cadmium bromide; it is sensitized in a 20 per cent. silver bath; the excess of silver is washed out with care, and in order to be certain that no silver remains, the plate is allowed to steep a short time in a solution of potassium bromide, 3 per cent.; it is then thoroughly washed; an alcoholic tincture of the color chosen is then poured over the surface several times, until the film is sufficiently stained; the plate is then washed, to get rid of the alcohol; if an aqueous-colored solution be employed, this washing is unnecessary. After exposure in the camera or otherwise, the image is developed by any process applicable to dry plates, or it can be plunged into a 7 per cent. bath of silver nitrate, and developed by the ordinary iron solution.

The following substances have been employed: 1, an alcohol tincture of chlorophyl; 2, an alcohol tincture of black currants; 3, an alcohol tincture of carthamine; 4, an alcohol tincture of curcuma; 5, an aqueous solution of mauve; 6, an aqueous solution of hemoglobin (coloring matter extracted from blood).

If a plate be prepared with tinctures No. 1, 2, or the aqueous solution No. 5, and this plate be exposed to rays of light passing through a solution of chloride of cobalt and bichromate of potash (which solution has the property to absorb the blue rays and emit the orange rays), a negative can be obtained.

If the object to be reproduced be three bottles containing different colored solutions, say red, blue, and yellow, on the negative of the bottles containing the red and yellow solutions the image of these latter will be intense black, whereas the image of the blue solution will be white. Naturally giving in the positive the reverse, the blue will be black, and the red and yellow white, which is the exact reverse of what has been obtained up to the present day. It is to be

presumed that the studies of this gentleman will enable photographers to employ some dodge to obtain the green, red, and yellow colors, so rebellious to their chemicals. To landscape photographers it would be of immense value to be able readily to attain the end they seek, and get the foliage in all its details.

If a plate be prepared and colored by Solution 3, 4, or 6, and this plate be exposed to light, passing through a saturated solution of nitrate of nickel, the image of the red liquid (in the positive) appeared black, and the yellow and blue *incoloré*.

Through a solution of sulphate of copper ammoniac, the No. 4 tincture gave very good positives, in which the yellow liquid appeared black, and the red and blue *incoloré*.

All these experiments were made on pure bromide of silver plates. But a few years ago, Mr. Cros made the same experiments upon iodide of silver, and with the same results.

Mons. Chardon made a very interesting communication on gelatino-bromide emulsions, which he had studied in a very conscientious manner.

Mons. Ferrier presented some fine proofs on pellicle. According to what I could glean, he covered a commercial sheet of gelatin with collodion, and then poured over it his gelatino-bromide emulsion.

In fact, the gelatino-bromide process is driving other processes out of the field. I never saw such a rush as this has made before. Every amateur is working hard, and professionals are not behind. For many years I myself have studied and knew its value, but would not begin its fabrication, in a commercial point of view, until lately, having been compelled to do so by great competition.

PROF. E. STEBBING.

27 RUE DES APENNINS, PARIS, June 7th, 1879.

MR. E. D. ORMSBY, San Francisco, Cal., still keeps his name in the minds of the public by the superior class of work he is continually furnishing to his customers. He has lately finished a fine photograph of Judge Lorenzo Sawyer, of the Supreme Court, which has given most universal satisfaction, and won the highest encomiums from the friends of the Judge.

FOURTH ANNUAL EXCURSION

OF THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

ANY one who read Mr. Browne's description of the excursion of the Photographic Society of this city last year, will agree that to that staunch old organization, devoted to photography, belongs the credit of organizing the most extensive excursions ever gotten up in behalf of the interests of sun-printing.

Three of these excursions have now been had, but owing to various causes we were unable, until this season, to experience the advantages and pleasures of any of them. We therefore went as a novice, and came home with all of our doubts on the subject dispelled and our expectations of good realized.

The trip this year was, in its general features, much like the one of 1878.

The party consisted of fifteen gentlemen, all bearing apparatus but three, and our starting-point was the depot of the Pennsylvania Railroad Company, at 11.45 A.M., Monday, June 2d. After about six hours' ride through the delightful region so well known to all, we arrived at Huntingdon, Pa., where our staunch vessel, the *Zuleika*, lay awaiting us, with the same accompaniments that were employed for the good of the Society last year, namely, Captain Klogg; the trio of white "American mules;" "Pete," their driver, and "Charlie," the caterer; to say nothing of the dishes, and pans, and kettles, and bottles (of pickles, which served as torchlight processions down the throat), and barrels of provender, and what not, which belonged to the culinary department, all ready for the start early in the morning upon the raging canal.

Therefore, after a comfortable rest at the "Leister House" (preceded by a call from Mr. Kline, the photographer at Huntingdon), we embarked upon our excursion proper, which was to be *via* the Juniata Branch of the Pennsylvania Canal back to Harrisburg. A goodly thunder-shower had cooled the atmosphere for us, but it had also left a cloudy sky and a rollicksome wind behind, anti-photogenic and anti-photographic.

However, we at once plunged into the most beautiful scenery that mountain-tops, and glowing river, and raging canal, with all their attendant foliage combined, can supply, and began to look for "bits," and to practice making up compositions.

Coming to a locality which we thought full of interest we "hailed to," and in a moment a dozen eager photographers leaped ashore, and as many cameras were soon placed and focussed upon the chosen "bits." The wind was antagonistic, but there is a quiet spell after every gust, and watching our chances, we took advantage of what stillness there was and captured a number of pictures. Magnificent expanses surrounded us on every side, but generally they were too vast for photography ("limited") to reach, and we must be content with such fragments as were suggested to the more or less experienced eye, many of which were very beautiful. It was very interesting to see the variety of points chosen, and the varied methods by which the same point was often treated by different parties. It was for just such study and practice that the excursion was organized, and we can only say for ourselves, that we derived many useful lessons and found much to help us. We have no doubt that this was the experience of every member of the party.

When the wind was too intolerable for any hope of success in photography, the desires of three or four zealous disciples of the art piscatorial were yielded to, and sometimes we grouped them and exposed a plate, for want of stiller subjects.

And thus the days went on, and when night came we sought the best quarters we could get at the nearest town for sleep.

Our first anchorage was at Mifflintown, where the junior population made us welcome, and entertained us an hour or more with an athletic and acrobatic exhibition (the great incentive being some coins thrown into the air), while we awaited a special train, kindly sent for us by Wm. A. Ingham, Esq., President of the narrow-gauge railroad leading to Rockhill, twenty miles away, at which place we spent the night.

The next morning was beautiful, and after making negatives of the large iron furnaces at Rockhill, we returned to Mif-

flintown, and to our noble craft; started the mules, and were soon winding our way again down the canal, halting now and then for views.

Our third night was passed at Lewistown, which place we did not reach until nearly 11 P.M., owing to delays made on the way, and the necessity of making a certain distance during the day. After supper of that day a distinguished dealer in emulsion and other photographic requirements, with one given more to the driving of the pen, were engaged driving the mules over a "five-mile level," to make time and to give "Pete" a rest. It was found that all the characteristics of the "American mule" were fully developed in our trio. With their iron-clad heels they could fix any movable subject; tone down any intense shadow or substance; remove a dark-slide as exactly and quickly as need be; or drive it back after making an exposure of their views of matters and things (and they were not modest about showing their agility whenever any one came near enough or too near for mutual good); or draw a cork from a collodion vial. No lightning process was needed to secure a fully-developed image, whenever the proper opportunity was given, and yet these patient mules were always cheerful, and quite as ready to work as to resent a cross word or a blow.

Our third anchorage was made at Thompson's Locks. Here we found that a coal-barge, having been so loaded as to make it flare in the centre, had become diaphragmed in the lock, and no impression could be made upon her, although she was given plenty of time, and the whole crew of *H. M. C. B. Zuleika* focussed their strength at the block and tackle attached to her bow. She was "stuck" as badly as any photographer with pinholes in his plates or measles upon his paper. A tremendous thunder-shower then came up, and we concluded to accept the situation and cast anchor.

We were favored with quarters by W. B. Thompson, Esq., in his spacious farm-house, twelve of us slumbering upon his parlor floor, and the rest in such quarters as could be had. This was quite an adventure. The evening promised to be a very quiet one, until some one asked our hostess to see her

photographic collection. When it was produced the work of many familiar friends was found, and lively conversation followed until we retired to the seclusion which the parlor grants. Blessed be photography.

Friday morning was cloudy and windy, and we sailed on, each foot being a picture and a delight. Next to gondola riding in Venice must be riding in this way upon a canal-boat, though widely different the scene.

"This is breath,"

(as Byron wrote of Venice), often came to our mind as we slowly glided along amid the glories of nature. But our time was growing to a close, and we had not yet exposed nearly all of our plates.

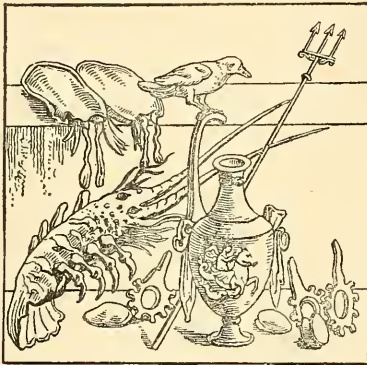
Watching the humor of the wind, we would go ashore again and again, and by cunning cajolery strive between the breezes to capture some choice composition to our liking. We were confined, however, largely to such subjects as were free from foliage, and did not always secure what we wanted.

Had we been provided with portrait requisites, we could often have made up novel and interesting life groups, for at whatever place we halted, soon the villagers gathered about us in numbers, curious to know who and what we were. Some guessed that we were surveyors, about to lay out a route for a railroad to take the place of the canal, a thing devoutly wished for by some of them. Others, again, declared we were a band of negro minstrels, and made bold to ask us for "dead-head" tickets. By some others it was concluded that we were a party of peddlers.

At one place our "*Noble Admiral*" Fassitously declared to the amazed citizens that we were "all lunatics, on our way to the asylum at Harrisburg." This assertion Sartainly startled them all, for nothing a-Bates the ardor of a crowd so soon as a real lunatic, and *this* crowd gradually "fogged" until there was no image left—the result of "photographitation."

In the afternoon our fishermen had a chance to put to service and trial a new appliance of art, called "*Heliogobenders*," which they had purchased at a fabulous price from the small boys on the route.

They worked, and a good dinner of Juniata bass was the result for us all.



Ye "Heliogabender" and his—awnts.

On Friday evening, having passed from the Juniata to the Susquehanna region, we rested upon the angry billows of the harbor of Dauphin, whose beauties Mr. Browne described in his account of last year's excursion. On Saturday we made effort to secure some negatives, but the wind opposed us, and many choice subjects had to be left behind, much to our regret. We sailed down thence to Rockville, and made the great bridge, and other things here and there, on to Harrisburg, where, as last year, the train homeward was taken, which brought us back to Philadelphia at 7.25 P.M.

The whole excursion was a most enjoyable one, not a thing occurring, except wind, to mar the pleasure of it. Much photographic converse was held, and it was agreed that on the 19th day of June a meeting should be held to compare results, good and bad, whence the lessons of the trip should be derived.

As a remarkable sign of the times, it will be noted that *emulsion* plates were used by the entire party, and exposures were given from thirty seconds to fifteen minutes, according to the subject.

Messrs. F. T. Fassit, William S. Vaux, and Joseph Zentmayer accompanied the party, but made no negatives, although they contributed much to the success and enjoyment of the occasion.

The number of plates exposed was as follows:

Name.	Emulsion.	No.
Chas. R. Pancoast.	Young's Stained.....	26
Carl Seiler, M.D.	Young's.....	38
F. M. Dealey.....	Young's.....	21
Joseph Wm. Bates.	Wortly's and Partridge's	12
Samuel Sartain....	McCullin's.....	16
F. Graff.....	Wratten & Wainwright's	18
T. H. McCollin....	McCullin's.....	21
Chas. Barrington..	Partridge's.....	16
S. F. Corlies.....	Young's.....	6
S. M. Fox.....	McCullin's.....	3
J. C. Browne.....	Young's.....	23
Edward L. Wilson.	Newton's and Bridle's...	12
	Total.....	212

Of apparatus, there was "home-made," English and American, the latter being mainly that of the American Optical Company, and of sizes ranging from $3\frac{1}{4} \times 3\frac{1}{4}$ to 7×9 inches. Of lenses, we remember Morrison's, Globe, Zentmayer's, Ross's, Steinheil's and Dallmeyer's, of various focal lengths. It was an interesting sight to see so many cameras at work, often five or six at one time on the same subject. Such an excursion cannot but be profitable, and adds much to photographic progress. Of the results we shall have more to say another time, if the wind has not blown them all away.

We found several of the party using a little book for recording their exposures, which may be found of service to others. The pages were divided as follows:

No.	Date.	Lens.	Aperture.	Exposure.	Subject, Process, Light, and Observations.	Time of Day.

At the last "collation" on board the *Zuleika*, a resolution of thanks was given to Mr. Charles Barrington, Chairman of the Committee of Arrangements, and captain of the crew, to whose care and untiring effort the enjoyment of the week was largely due.

SOCIETY GOSSIP.

CHICAGO PHOTOGRAPHIC ASSOCIATION. —A regular meeting of this Association was held in their room (Charles W. Stevens' Photographic Warehouse), 229 and 231 State Street, Wednesday evening, June 4th, 1879. The largest number of members and visitors ever assembled in the room of the Society was called to order at 7 o'clock, President Greene in the chair. No objections appearing, the minutes of last meeting were approved, as published in the *Philadelphia Photographer*.

Paul Brown and J. E. Beebe, city; G. H. Sherman, Elgin, Ill., and J. C. Gray, Centralia, Ill., were elected members. The Secretary read the following letter from C. A. Winsor, Galesburg, Ill. :

“Circumstances will not permit me to be present at your meeting, so I will avail myself of the invitation of your Secretary, and provide a short paper. My excuse, for intruding my views upon your notice is, that I see so much written by those who evidently do not practice what they preach, or who preach without any practice. In putting forth my experience, I do so at the risk of being classed an egotist; the more so, as I wish to speak somewhat by comparison, as the best way to express myself. I remember some years ago of reading with considerable interest various articles in the journals by a craftsman from Kentucky. But when we saw this writer's work exhibited at the N. P. A. Convention in Chicago, we were amazed and disgusted, and our confidence in the teachers of our art-science a little shaken. The majority of work done is too light, or the light is not properly balanced with shade. I endeavor to secure this balance, and to preserve the tone that exists in the face, keeping rotundity in view together with harmony, and making my composition conform to some of the art principles I have studied. I try to give animation to my subject, and shun all positions of rest, as, for instance, Mr. Osborn's leaning on the back of a chair, which is not a bit better than the “book in hand” he so loudly condemns. You must pass these old models and study nature, observe the lines of subjects as they are found in the street, at work, at play,

under all lights, and profit by what you see. This observation has been made by others, and it wants to be impressed often on our minds. We have been told not to light two faces alike; but I say light a thousand alike, if they are best adapted to a certain light. Many faces have little latitude to work upon, while others can hardly be turned without presenting some pleasing lines, and the best must be chosen, if we would please our patrons. I think we have a bad habit of catering to many foolish whims of our sitters. We should take them in hand, and have them understand that we are responsible for the picture, not they; and if we can have our way first we will probably please them; but if we fail, then allow them to have something to say. Most people, when shown a good picture, one with relief, not flat, and when told that the light, to be brilliant, must be correctly balanced by shadows that are transparent, are pleased to see them in an appreciative manner, and acknowledge your efforts and skill towards cultivating their tastes; and even if doubtful of perfect satisfaction at the time, will not rest until they are sure you are right. You then secure their respect and further orders. Mr. Osborn says you must place your sitter seven or eight feet from side-light, and tells you just how much to turn the face from the camera. We have tried this, and cannot make our work that way. The most pleasing results are those made nearest the side-light and under the sky-light. We make many sittings with the subject's back square against the side-light, and as close to it as possible, with the camera at every angle in the circle around the room, being careful to shade the lens, so that no light from the window falls on it. Many have tried this, but failed, because they did not properly light the head, and then did not time for the shadows, letting the lights take care of themselves. It is not easy to do this at first, but practice will enable one to do things that will surprise themselves in this direction. One point we too often forget is this: to get proper relief we must use plenty of light, and not have it *all* in the face of the sitter. The old way of putting our model back from under the light, and then putting a light ground on the dark side

of the face, to get relief, is wrong. This is not the kind of relief you see in the works of the masters. We often see a portrait receive the most flattering criticism which has no merit whatever, and people who do not know are compelled to judge from what others say. Graduates of institutions of learning sometimes imagine that because they are good in some one branch they are cultured in art, and in meeting their whims, if you do not happen to please them, you are written down a boor, and unworthy their notice. If you try to correct them, you are only abused for your pains. All our patrons are not of this sort; so live and learn. I hope to see a united effort to raise our loved art-science still higher, and I think such associations as ours help greatly in the good work."

A generous collection of cabinet photographs from Mr. Winsor was passed around, and favorably criticized.

The Secretary stated that he had written to Mr. North for a little more light on the formulæ given last month, and received the following:

"The water used in making the bath should be purified by silver and exposure to the sun. The nitrate of silver used should be fused, and no iodizing used; make slightly acid with C. P. nitric acid. I like to work a bath that gives a slight veiling or fog, provided the same does not come from impurities; and it soon passes away if the bath is properly used. I see the formula puzzles you, as it did me; but you have it as the chemist gave it to me. The following formula will work well.

Collodion.

Ether and Alcohol, . . .	10 ounces each.
Gun-cotton (Hance's Silver Spray), . . .	120 grains.
Iodide of Ammonium, . . .	80 "
Iodide of Cadmium, . . .	40 "
Bromide of Calcium, . . .	20 "

I have not tried the Carvalho paint; I am satisfied that blue is *not* the best color for the skylight-room. A short time ago I changed my color from blue to a sort of gray, and find it better in every way, both for the eyes and time of exposure."

Mr. Gentile operated the Cadett pneu-

matic shutter on a 4-4 camera provided for the purpose. He explained its advantages, and how it was the ready servant of the photographer, who, in any part of the room, could uncover the lens and make the exposure by a simple pressure of the rubber ball held in the hand or placed under the foot. The price, \$15, was the only objection to it.

Mr. H. C. Gager, representing the Stigleman solar retouching process for Howe & Beecher, introduced a few specimens from his exhibit in the hall below, and explained the advantages of the process. The large prints were as fine as from a contact negative, and came from the mounting-room ready to frame, no ink-work being necessary. He stated that it was very simple to work, cost but a trifle, the finest negatives, of course, making the best enlargements, and any negative could be used. The process is patented, and single or exclusive gallery rights are sold; the price being from \$35 upwards.

Mr. Haecker, representing Wolfe's solar retouching process, was introduced, and exhibited his work. The claims are the same as in the other. He stated that the advantages to be derived from the process are many. There is a class of people who do not wish an expensive picture like crayons, ink, water colors, or oil. The class of people who prefer large photographs of this kind is increasing, because in the "worked-up" pictures much of the likeness is lost. All we need for these pictures is any ordinary negative, if it is not full of holes or the film scratched. The expense of making these pictures is very little, and they can be sold for a good price. They have this advantage over contact work: the negative can be made in so much less time, and very few people can sit the length of time required for a large plate; add to this the saving of expense of a large camera and the necessary chemicals. Our claim of superiority for this process is the preparation we put over the negative, which gives a semi-transparent film, perfectly free from specks of any kind. The film can be made perfectly transparent if desired; but the best solar printing effects are from a half-transparent negative. Contact prints can be made from the same negatives. The terms

are \$35 for a single gallery right. If in a town of two good galleries, and the party wants the exclusive right, the price is \$50. If three galleries, \$75. Small towns, \$25.

MR. HESLER.—“Is this a patented process?”

MR. HAECKER.—“No; it is sold as a secret process. It does not infringe on any patented process, and we guarantee all purchasers protection.”

MR. GAGER.—“You have the exhibition of both these processes, and can judge of their merits. We claim that the Stigleman gives the best results, and is the cheapest to buy. The process is certainly found to do much towards a revival of business, bringing before the people something new in the way of fine large work at a small cost, and photographers at small outlay for the right to use the process have a means for greatly increasing their business.”

The examples exhibited by both the Stigleman and Wolfe processes were very fine, and the large number present were enthusiastic over the display.

Mr. Paul Brown then addressed the Association.

“MR. PRESIDENT AND GENTLEMEN OF THE PHOTOGRAPHIC FRATERNITY: In response to a suggestion made by some of my photographic friends, I have prepared a paper on a subject which has been of vital importance to the artist. Beginning with his earliest attempts, the necessity of a proper support to his crude figures early presented itself, whether it be the undefined mistiness of an atmosphere, or a well-defined landscape, or the interior of a palace, a wood, or a hut. He early learned that the masses of light and shade must be so arranged as to properly support, and thereby enhance, the value of the subject; my earliest recollections of art are intimately associated with the wonderful process of portraying nature by means of the sun-picture, and I well remember the many ingenious devices resorted to, to produce the desired aerial background effect. Among the most remarkable, I mention one composed of a series of gauze screens set a few inches apart. This, however, did not produce a perfect atmosphere. The screens were next suspended and made to oscillate in alternate directions with

each other. If my memory serves me, this nearly produced the desired effect, but was attended with disastrous consequences, inasmuch as the novelty frequently attracted the attention of the sitter, thereby spoiling the picture, which in the old daguerreotype times was no trifling matter, as some of you, I doubt not, well remember. It was soon found that certain colored coarse fabrics would produce the much-desired soft and delicate shade for the support of the figure, and at first were draped, but soon the flat surface took its place, hence the ‘plain ground,’ which soon became the accepted and only ground in general use for a number of years, the tint or particular shade of the ground always being in accord with the taste or peculiar idea of the artist which set it up. Scenic backgrounds began early in the history of photo-portraiture to attract the attention of the leading photographers in the East. As early as 1856, or about that time, an illustrated edition of Shakespeare was published in New York, embellished with the portraits in character costumes, of the then living celebrities of the dramatic profession. About that time there arrived in New York from Germany, a Mr. Henry Ulke, an artist who had made the improvement of the photo-portrait by means of retouching with india-ink his special study. This made him eminently the proper person to prepare those photographs for the engraver, and having been employed for that reason and purpose, not only refined the figure, but surrounded it with appropriate scenery, thereby making it doubly attractive. This suggested to the leading photographers a new industry, and one that must be employed and inseparably attached to the new art. Accordingly Mr. Fredericks, one of the foremost of the profession, secured the services of Mr. Ulke, at a salary of \$3000 per annum, an amount which, at that time, and for that purpose, was of such magnitude as to call not only the attention of the fraternity to his establishment, but of the entire country who had interested themselves in the new art. Then Mr. Sarony, at that time a young man, and an accomplished lithographic draughtsman, turned his attention to this new department in art; with what success you all know. He is not only emi-

ment as an artist, but has been awarded with a fair share of this world's goods. The embellishment of his photo-portraits are, in my estimation, amongst the very best ever produced. By this time, what was first looked upon as a novelty, had now become a necessity, so much so, that no first-class establishment could well hold its place, without the assistance of a cultivated hand to soften, with ink, the harsh and angular lines of the photograph, and embellish the background with an appropriate design. Thus, by this new art, a fascinating and lucrative employment had been created, which for twenty years has been enjoyed by thousands of our art-inspired young men and women, and for aught we can foresee, will continue for years beyond our wisdom to limit. In an interview with Mr. David Strong, a popular scenic artist of thirty years' experience, I learn that soon after Mr. Ulke's engagement with Mr. Fredericks, he began to be called upon to paint scenic backgrounds by the photographers through the various towns of New England, where his engagements called him. But, as it was not a legitimate business with him, Mr. Strong waives all claim to being first in introducing the scenic background as now used, but generously awards to Mr. Ashe and his associates the honor of first making scenic backgrounds a special business, and largely introducing them to the fraternity as an acceptable accessory, through his agents, the Messrs. Anthony of New York. Thus far, with all his success, Mr. Ashe has only for a more enterprising honor to sow and reap. To L. W. Seavey undoubtedly belongs the honor of successfully introducing and making the scenic background an indispensable accompaniment to any well-equipped gallery. His grounds combine the color and touch that make them prominently without a rival. To him also belongs the honor of making it possible to introduce into the photograph accessories of every description necessary to complete a composition of almost any character, by actually manufacturing the realty of a light and durable material, which admits of easy and safe transportation and long use without injury. His is familiar to all; his reputation is not alone national, but world-wide. When the new and wonderful discovery

was first proclaimed, that a perfect picture could be produced by the action of sunlight on certain chemicals, it was predicted that the occupation of the miniature and portrait artist was gone. Time has not verified the prediction; on the contrary, it has been to them of the greatest assistance. It has made it possible for thousands to engage in and pursue the art of portraiture who, without its aid, would not have tried the venture. The fact soon developed itself that none but men of æsthetic tastes could successfully manipulate this new art. What has, or may be said to the contrary, it has been, and is one of the greatest educators of the age we live in, and is nobly fulfilling its mission. In conclusion, allow me to add, this beautiful and scientific art has attained giant proportions. Among its votaries are numbered many of the ablest men of the world. To the amateur it is the most fascinating of the arts. Governments have captured it to mark the detailed progress in their internal improvements. It has become an indispensable ally of the astronomer and scientist. Its scope and use are too great to mention in a short paper like this. From its necessities have sprung a vast number of individual industries, and with few exceptions entirely unknown before its advent. If we are to judge its future by the past, we may safely say it is yet in its infancy. None are wise enough to determine the limit. These facts alone should be sufficient to inspire each of us to continue the reach for the highest possible excellence."

Mr. Brown closed his paper amid loud applause.

Mr. Floyd was introduced, with the Gatchel & Hyatt retouching machine, and gave an exhibition of its use, with a statement of its benefits to the retoucher. A very ingenious mechanism, attached to a sewing-machine table and treadle, gives a variety of motions to the negative, which, in a very rapid and perfect manner, performs all the mechanical work formerly done by the retoucher. The "stippling" and "hatching" stroke is perfectly imitated.

Mr. Teed now brought forward the Pierce & Hitchcock retouching machine. In this the pencil is given a rotary motion by turning a wheel with the hand, or having a

treadle attachment. The exhibitor claimed greater simplicity and more rapid work than with other machines, and that more or better work could be done with it in fifteen minutes than from an hour's work by hand.

A variety of opinions were expressed as to the necessity and value of retouching-machines, and the quality of work done with them. It was the impression that only an actual test for a few days of the machine selected would satisfactorily settle the question.

The President now introduced Mr. Cooper, of the Artotype Co., New York, who gave a short account of the picture, and called on Mr. Mueller, who stepped to the press and began work. Flat glass plates, with a film scarcely perceptible, but which showed the dim outlines of a picture, were placed on the bed-plate of a lithographic press, sponged with clean water, dried with rollers covered with some soft material, then carefully inked with rollers, and the material to be printed on placed in position, and the pressure applied. From various plates the skilful operator made "artotypes" on paper of different kinds, satin, and even on pocket-handkerchiefs for those who were anxious to carry away a souvenir of this process. While the work was being done on the press, and Mr. Cooper was answering all inquiries from the interested and curious spectators, Mr. Lambert was busy exhibiting the portfolios of the Company, filled with examples of all the different work done by this process. A full hour was given the Artotype Co. for their demonstration, which claimed the closest attention of those present.

The Secretary read the following letter from Mr. Owens, of Grand Rapids, Mich.:

"Your favor, wishing to enlist me as a contributor of photographic knowledge, received. I would gladly give you the benefit of my experience, were it not that it would be the same old story of fog and smoke, and streak and blister, with hard times and poor business, and thus I work and worry both body and brain, until I wish I were in some business with less perplexities. And now if I were to write the Association that I had any of these troubles, they would all say, 'So have we,' and if they should ask me how

I get out of them, I could only give their own experience, 'to wit,' through acids and alkali, the stewpan and kettle, and here I am met with 'we all do it.' For *blisters* I wash *first* in pretty warm to *hot* water, with a little salt, letting the prints stand for several minutes in the first washing from the fixing-bath, and then I cool gradually with running water. Who does the same? All! There is one trouble I have not been able to rid myself of, either by acid, alkali, or boiling, namely, the *hard times* and poor business. How many respond, 'Neither have I'?"

On motion of Mr. Drummond, a vote of thanks was tendered the Artotype Co.

On motion of Mr. Neelis, the thanks of the Association were tendered Messrs. Paul Brown and C. A. Winsor, for their contributions, and to Messrs. Floyd, Gager, Haecker, and Teed, for their exhibits.

The Secretary stated that Anthony's *Bulletin* was received by the Association regularly, and, on motion, a vote of thanks was entered for the same.

The Secretary called the attention of the members to the files of the journals, the *Mosaics* and other annuals, and copies of all the photographic text-books, the property of the Association, which would be loaned to any member on application to him.

The President thanked the members and visitors for their interest and attendance, and hoped next month to see even a larger number. On motion, adjourned.

G. A. DOUGLASS,
Secretary.

PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.—A special meeting of this Society was held on Thursday evening, June 19th, at their room, as previously agreed aboard the *Zulieka*, to see the results of the exposures made during the late excursion.

Nearly every member of the excursion was present, Mr. Joseph Wm. Bates presiding, and Dr. C. Seiler acting as Secretary. The names of the excursionists were called, and in turn each party exhibited his prints and reported his results, when the prints were handed around and inspected by all. It was a most interesting occasion. There were many beautiful pictures secured, both pictorially and technically. Many were

fully equal to wet-plate work; some would almost say superior. The work of some parties was uniformly good, or nearly so; while that of others, who failed mainly in exposure, and again in development (the two great bugbears in emulsion work), was uniformly indifferent. Some, again, had good and bad results intermixed, but there were comparatively few failures, as will be seen by comparing the table of results below with the number of exposures made. The various emulsions have all their enthusiastic advocates, and good results were produced by them all.

One fact has been established certainly by this excursion, namely, that the landscape lover can now go out into the field armed with a stock of emulsion plates, make his exposures with absolute ease and comfort, using the time once devoted to carrying about his heavy traps to the study and selection of subject, and rest assured that he can bring home in his plate-box that which may be developed into certain results that shall be satisfactory.

Thanks to Newton and Young and McCollin and Partridge and others, we now have emulsions and plates that are certain, and with more practice in development we shall be able to get what we want ere long with emulsion plates.

Of the negatives made, the following numbers of prints were shown: J. C. Browne, 23; S. F. Corlies, 8; C. R. Pancoast, 24; T. H. McCollin, 12; Dr. C. Seiler, 32; Edward L. Wilson, 9; S. Sartain, 15; J. W. Bates, 8. Four parties not heard from.

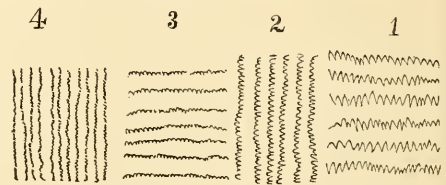
THE WORK OF A RETOUCHING MACHINE.

REFERRING again to the very ingenious machine for retouching negatives, described in our last issue, we quote the following remarks from the circular which accompanied it, since they embody what we have found by trial of the machine to be the fact, viz.:

"Every one who has practiced retouching is familiar with the motion required. The pencil must do more than simply touch the negative, it must be moved over the surface so as to leave a sufficient deposit to shade

out the bad effects that are to be removed. The direction of this motion must be varied in different parts of the picture to produce correct effects. In our machine the same results are produced by moving the negative instead of the hand, and the following-named motions can be made: A horizontal, a perpendicular, and a diagonal, from left to right or from right to left. The first two motions are used in stippling. In the diagonal motion, with which the effect of hatching is obtained, there is also a rolling one, so that the negative comes up to the pencil, moves a short distance, and drops away again, leaving a mark light at first and swelling to a maximum, then gradually diminishing to a point. Of course it is impossible to see this swell in a line that is but little more than a dot, but the soft, smooth effect is seen when the work is done."

We have tried to analyze these varied motions, and make an actual drawing of them by the machine.



The annexed cut shows a very much enlarged copy of such a drawing. No. 1 is the "Horizontal;" No. 2, the "Perpendicular;" No. 3, the "Diagno-Horizontal;" and No. 4, the "Diagno-Perpendicular" motion, all at the highest speed; which, with the fact that these strokes are greatly magnified, accounts for the coarseness of the drawing. If the drawing represented the actual size of the strokes secured by the machine, they would be so fine the eye could not see the difference. In No. 1 the greatest variations are shown purposely, because it must be remembered that although the negative is moved by the machine to meet the pencil-point, whenever it is applied by the hand, the hand controls the size and form of the touch. We were very much interested in the various combinations possible to produce with this machine. It seems as though every result desired can be secured by it, except the finishing touches,

in careful hands, after the workings of it have become well understood. It must be a great time-saver and a most useful helper.

OUR PICTURE.

AMONG the prize competitors this year was Mr. G. M. Elton, Palmyra, N. Y., whose beautiful "Panel" picture carried away the medal last year, and was issued with our April number, 1878.

This time he favors us with negatives of another new size and style, intended for children, and which he names "Little Ladies." Prints from these negatives appear in our present number, and will, we have no doubt, interest our readers very much. The prints sent us by Mr. Elton measure $4\frac{1}{2}$ and $7\frac{2}{3}$ inches, and are mounted on light buff cards, about one-eighth inch larger all around, with beveled gilt edges and round corners.

They are printed with tinted borders, medallion style, as we have printed them, and are very attractive and pretty.

Mr. Elton seems to understand the excel-

lency of the policy of devising and producing *new styles* for the patrons of his establishment, and no doubt he finds his efforts appreciated, else he would not repeat the experiment.

It was doubtless a good stroke when he devised a special style for the "Little Ladies," for the photographer who has best success in picturing these important branches of the happy households which shelter them, invariably secures the favors of the older members of the community. We thank Mr. Elton, therefore, for the idea, and hope he is reaping the reward due him for his thought in the matter, and for his generosity in sharing his discoveries with his confrères.

The prints were made at our own rooms, by Mr. H. C. Bridle, upon the excellent Dresden paper sold by Mr. G. Gennert, New York.

It is some time since we have published the formulæ used for printing our pictures, and at our request Mr. Bridle has prepared an article on the subject, which we believe it will pay you to carefully read. See page 195.

Editor's Table.

OBITUARY.—On Saturday, May 10th, Mr. R. T. CRAWSHAY, the wealthy "Iron King" of South Wales, died at Cheltenham, England, during a visit there. Mr. CRAWSHAY was one of the oldest and most distinguished amateur photographers of Great Britain, and a warm friend and earnest promoter of the art. A few years ago he offered a series of prizes for life-size heads made direct, and he himself demonstrated what could and could not be done in that direction.

Photography has lost a good friend, but the many who knew of Mr. CRAWSHAY'S personal benevolence have lost a greater.

ANOTHER SOLAR NEGATIVE RETOUCHING PROCESS.—We have received from Messrs. GATCHEL & HYATT, the well and widely known stock-dealers, an advertisement of another method of retouching solar negatives, accompanied by the following:

"We send you this afternoon two solar pictures made by WOLFE'S new process, for which we

are agents. We send also one made by the STIGLEMAN'S process. We wish you to put these where as many photographers as possible can see them. It is not usual for an interested party to exhibit a rival's work, but our willingness to do it shows that we do not fear comparison. We would call attention to the clearness of the whites and the brilliant shades in the drapery. But every one can see for themselves, and can form their own opinion. Will you please send them to Scovill Manufacturing Co., New York, on the 15th of July, and oblige,

Yours,

"GATCHEL & HYATT."

Did this come from parties not known to us as entirely responsible, we should refuse it admission to our columns. Two prints from negatives prepared by Mr. WOLFE'S process accompany this letter, which are of great excellence. One is of a yearling baby, which is as good as any contact print of a baby could be. The other is a full figure of a lady, which must be as good as anything the same photographer could make of cabinet

size or *carte de visite*. We know nothing of the process by which they are produced. It is a secret. The pictures, however, will be on exhibition in our office until the 15th inst., and then sent to New York, as desired. Come and inspect them. Whatever other information you desire concerning them can be had from Messrs. GATCHEL & HYATT, who, we are sure, will not misstate the facts.

MR. WELL G. SINGHI, Binghamton, N. Y., offers his complete and elegant gallery, Nos. 67 and 69 Court Street, for sale; terms, cash. He has a fine business, first-class customers, and a thoroughly fitted modern gallery. Send to Mr. SINGHI for circular and further particulars of the bargain he offers.

GLASS FOR THE DARK-ROOM.—A correspondent, seeing the remarks on the CARVALHO paint, tells us that a friend of his uses a sheet of green and a sheet of orange glass overlapped for the window of his dark-room, and secures thus not only a strictly non-actinic light, but a great and abundant flow of it, which saves the eyes and helps the results. Try it.

In the coming numbers of our magazine for a few months, we shall give some articles on "Photographic Art Composition," accompanied by drawings, woodcuts, and a copy of a very beautiful oil-painting called "The Village Photographer." This picture is certainly one of the most exquisite compositions it has ever been our privilege to see; every object in it, even the most insignificant, has been bent by the artist to serve in making up his composition in the most graceful and artistic manner. And yet the picture is utterly devoid of formality; on the contrary, everything seems in the most charming confusion. This "gem" is owned by a wealthy gentleman of this city, who very kindly loaned it to us for the purpose of making negatives to illustrate our subject.

We trust the picture, and the remarks that will accompany and follow it, may be a source of pleasure and instruction to our readers.

THE St. Louis branch of the tri-city stock-depot of Messrs. GATCHEL & HYATT has almost a column devoted to it in the *American Trade Review*. One scarcely realizes the extent of such a business until such a description is read, and how *tempus fugit*, for it is nearly ten years since these gentlemen took charge in St. Louis.

MESSRS. JEWEL, ELY, ORMSBY, COPELIN, and others, shall have attention in our next. Thanks.

PICTURES RECEIVED.—From Mr. ED. B. ROGERS, Hamilton, Ohio, seven cabinet bust pictures of a young lady; they are uniform in lighting, posing, and chemical effect generally, showing that what has been done once can be done again. So pleased were we with these specimens, that we asked Mr. ROGERS to loan us the negatives for illustrating our journal; to this he kindly consented, and we hope to soon have the pleasure of showing them to our friends. From Mr. WEBSTER, Lapceer, Mich., we have some interesting cabinet photographs, showing good work and clean manipulation. From Mr. A. BUSHBY, Lynn, Mass., some fine cabinets of babies taken in remarkably short time, and yet without "lightning." One to two seconds Mr. BUSHBY finds sufficient to secure any baby picture, and his results are fully timed.

JUST as we go to press, an immense catalogue of photographic goods comes to hand, from Mr. HIRAM J. THOMPSON, 259 Wabash Avenue, Chicago. We shall review it in our next; meanwhile, send for a copy.

MESSRS. CHAS. PAXSON & BRO., 612 Broadway, N. Y., announce in their advertisement that their business, in enlarging for the trade, has so enlarged that they are compelled to enlarge their facilities, and are therefore prepared to make enlargements by means of artificial as well as sunlight. Thus they fill orders promptly, and do splendid work.

THE CHICAGO PHOTOGRAPHIC ASSOCIATION, which met June 4th, at its rooms, 229 State Street, was graced by the presence of photographers from all parts of the country; from East, West, and South, men travelled hundreds of miles to attend this convention. Such an interest is truly remarkable, and speaks well for the public spiritedness of the fraternity of to-day. A full report of the meeting will be found elsewhere in our pages, from Mr. G. A. DOUGLAS, the Secretary and ruling spirit of the Society.

MR. ALBERT MOORE, the large solar printer at 828 Wood Street, Philadelphia, has sent us a picture of himself and a friend, four feet large. It would have been *tre-men-jus*, had there been another in the group, and had not two of the feet been out of focus, and thus defeated the hopes of the great enlargist. Judging from the drowsy expression of the subjects, the exposure must have been *longer* than four feet.



Boston Public Library.

T H E

Philadelphia Photographer.

Vol. XVI.

AUGUST, 1879.

No. 188.

Entered according to Act of Congress, in the year 1879,

BY EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

"ART IN THE HOUSE."



R. J. VON
FALKE,
Vice-Director of the Austrian Museum of Art and Industry at Vienna,

gives the above title

to a very elaborate work, edited by Mr. C. C. Perkins, and published by the well-known art publishers, Messrs. L. Prang & Co., Boston. It contains about 170 handsome engravings and 60 full-page illustrations, chromos, albertypes, and etchings, making it altogether a most beautiful and desirable text-book for all who desire to be cultured in matters of art and taste.

If you please, we shall for our purpose call it *Art in the Photographic Studio*, and in the very imperfect and incomplete review we are able to make of it, consider its usefulness especially to photographers.

The one thing above all others which photographers now need is *art* culture. They have attained to a high degree of excellency in their chemical effects, and generally show skill in their lighting, but in

the arrangement of the figure, and particularly in the introduction of accessories, they go many times very wide of the mark.

What the photographer needs to do is to introduce such articles only into his picture as will represent some natural, tasteful scene, harmonize with his subject and with each other, that the composition may be a picture, and not a "museum," as some photographs are.

And what Dr. Falke writes in his admirable book, for the purpose of guidance in furnishing and making tasteful and beautiful homes, comes into play for the guidance of the photographer in making up his pictures, and should be most carefully studied by all who desire to *grow* in that direction.

The work opens with a twenty-page preface, by the editor, who gives us an illustrated description of the ancient Egyptian and Assyrian house, and makes the whole complete. Following comes the author's preface and introduction. "The practical object of this work," he says, "is to show how beauty and æsthetic charm can be given to the house, and how the medium of artistic harmony, a feeling of comfort, peace, and pleasure may be generated within its four walls," and is addressed "to those who have to select and to direct, with the object of adorning their dwellings artistically and in good taste."

Now let us substitute the word *studio*—or, if you like it better, photograph gallery—for “house,” and see what the work contains for those who practice photography.

The succeeding chapters are devoted to the following subjects: I. The Greco-Roman House; II. The Mediaeval House; III. The House of the Sixteenth Century; IV. The House of the Seventeenth and Eighteenth Centuries; V. General Critical Observations—Style and Harmony; VI. The Floor and the Wall; VII. Movable Wall Ornaments—The Ceiling; VIII. Furniture; IX. The Decoration of the Table; X. Woman’s Aesthetic Mission.

In the first four chapters, and in the editor’s preface, every attention is given to all the details of the houses or households of the periods named, in most graphic and highly illustrated style, as to plan, construction, decoration, furniture, and objects of art therein, and how all are treated and arranged for the aesthetic harmony of the whole.

The next chapter takes up and critically considers all of these, and measures them, so as to see what is worthy of our acceptance.

“The house should express the character and tastes of its owner,” says our author. How true is it, also, that when a picture is made of a person the surroundings should be in harmony with his “character and tastes,” as much as can be. This Chapter V is the gem of the book. Though it cannot be separated from the rest, it is the keynote, and holds the whole grand composition together.

Of the greatest use to the photographer, however, are the succeeding chapters, for they bring right home to him the instruction he needs in selecting and using furniture, backgrounds, and accessories for his purpose. We should be glad to make copious extracts from them would space allow. As an example of the author’s clear and instructive style, however, we add one part of Chapter VI, on the subject of framing pictures. It will be found very useful.

“FRAMES AND PICTURES.

“In decorating walls with pictures, we are too apt, at the present time, to take no account of their frames. In saying this, we

do not mean that too little importance is attached to the beauty or the magnificence of the frames. On the contrary, it is too often the best part, sometimes even the only valuable part of the picture. But as regards its shape, artists have led us in a wrong direction. The painter thinks of the frame only as a means of isolating his picture, so as to save it from the possibly hostile influence of surrounding objects, which might lessen its effect. He, therefore, raises the moulding as high as possible, so as to inclose his picture in a sort of box, at the bottom of which it is seen by the spectator. With the intent of isolating it still further, he causes the frame to be entirely gilded, a proceeding which answers its purpose only too well. Deep frames have, however, one great disadvantage. If the picture is hung on a side wall, where it is certain to have the best light, a deep frame will throw a shadow across the canvas, so as to leave one-half of it, and sometimes even the whole, in utter darkness (Fig. 116). It will readily be seen that in this manner the good result which isolation was intended to produce is entirely precluded. For this reason we prefer the opposite method, by which the picture is raised to the level of the moulding, from which the frame recedes gradually towards the wall (Fig. 117). The picture is thus brought out into the light and placed nearer to the eye, while at the same time, in consequence of its form, the frame combines more readily with the wall, so that the ugly and abrupt transition from the one to the other is avoided. Many frames of this kind, and especially those intended for paintings of the smaller and finer sort, have come down to us from past times. If, however, it should be deemed inexpedient to imitate them too closely, we can at least return to the use of frames of a flatter pattern than those now generally in vogue, and more in accordance with the invariable practice of the ancients. The question as to whether the picture-frames should be gilded is a mooted one. A gilt frame is looked upon, so to speak, as a panacea; it is expected to heighten the effect of any picture, if not, indeed, to turn a bad into a good one. It is not, however, always advantageous, nor is it always an ornament to the wall. Gilt frames have a

lustre which is sometimes quite agreeable, and they are certain to captivate the ordi-

German pictures would appear to have been designed for red frames, for in old miniatures representing interiors we frequently see them hanging upon the walls in red frames, enriched with delicate ornaments in gold.

"It would be worth while to try whether frames of this color might not again be introduced to advantage. Under all circumstances, however, it is desirable to limit the use of gold, and to fundamentally change the principles upon which modern frames are constructed."

For the cuts which accompany this we are indebted to the courtesy of Messrs. L. Prang & Co. Moreover, in order to enable us to bring this matter before our readers more fully, they have kindly consented to our use of several fine illustrations from *Art in the House*, in a series of articles we have in preparation on "Accessories in Photography; their choice and their use;" to be accompanied by two or three photographic illustrations also. We begin this series in our current number. If our readers will, in the meantime, purchase Dr. Falke's work and study it, we are sure it will make them better artists, and result in increased popularity and prosperity for them.

In closing this, we most earnestly reiterate what Mr. Perkins says of the work in his preface, as follows:

"For clearness of plan and soundness of criticism, and for the lucid setting forth of the excellencies and defects of ancient and modern systems of house-building and decoration in an interesting and impressive manner, it has, perhaps, no rival among books of its kind."

We notice, also, that Dr. Vogel commended it most highly to photographers, in his correspondence last month, and that the Berlin Society is revived on the all-important subject of art principles applied to photography.

nary eye, as they impart an appearance of richness to the room; but they are very apt to produce a harsh effect, and to destroy its

ers more fully, they have kindly consented to our use of several fine illustrations from *Art in the House*, in a series of articles we have in preparation on "Accessories in Photography; their choice and their use;" to be accompanied by two or three photographic illustrations also. We begin this series in our current number. If our readers will, in the meantime, purchase Dr. Falke's work and study it, we are sure it will make them better artists, and result in increased popularity and prosperity for them.

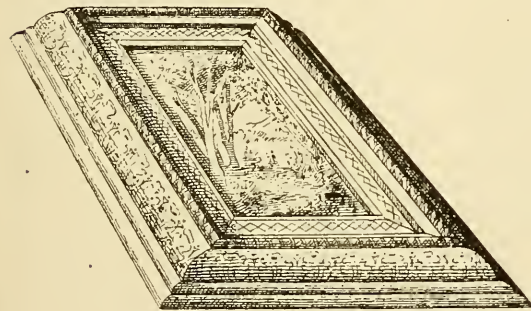


FIG. 116.

FIG. 117.

subtler harmonies. On the other hand, how agreeable, how quiet, how high-bred, indeed, under certain circumstances, is a well-profiled black or dark-brown frame, with perhaps a single gold line next to the picture. Every connoisseur of art knows that such a frame is by no means unfavorable to a picture, and that it is sometimes even decidedly preferable to a gilt frame. Our ancestors, who were well aware of this fact, adopted gilding with much caution. Old

WATER-BLUE.

I N the *Photographer* for June, I noticed that Mr. E. B. Core, in giving his formula for prize prints, recommends the addition of a little anilin blue to the last water. The recommendation is a good one, but the point I want to make is this. Mr. Core, like many others, is not explicit enough; he does not state in what proportions the anilin is mixed, nor just how to use it. I have used it, and am indebted to my friend John R. Clemons for it, who has been using it for years, in fact since 1868, and has given it to others as well as myself. He (Mr. Core) says, "add a little anilin blue in the last water." True it can be used in that way, and to very good effect, but there is still a better way to use it; first procure half an ounce of powdered anilin, known as water-blue No. 1, and dissolve it in sixteen ounces of water, and it is ready for use. Now when you make your fixing-bath, add from eight to ten drops of the blue to every forty ounces of fixing solution, and you will not only produce *pure* whites, but you will avoid blistering; then if you want to produce a bluish tint or moonlight effect, immerse the prints in a saturated solution of alum, and you have it. But should that make them too blue for you there is still a remedy for that; immerse them in a saturated solution of borax, and get the desired tint you wish.

I would like your readers to give this a trial, and if they find it, as I have, to be a good thing, give my friend Clemons credit. My main object in writing is to try and induce writers to be more explicit in giving their formulæ. It is easy for one to compound chemicals when he is familiar with the formulæ, but the way some of them give their formulæ, it is mere guesswork to try to work after them, hence there are many who are deterred from trying formulæ that would be of great value to them could they compound them with any certainty of their working.

I must congratulate you on the appearance of the *Photographer* for June. It is chock-full of good things, and is better and better every month. I am sure now that you are not in *doubt* about "which way." Will give a new printing solution in my next.

FRANK THOMAS.

CARD.

P LEASE kindly allow me space to announce to the subscribers to the semi-annual *Expose*, that from present appearances it cannot be published this year, on account of business engagements, which will prevent me from devoting my time to it, and giving it the attention required. The way I am fixed at present, it would not leave me a moment's leisure for experimenting on hobbies which I have from time to time; and I am unwilling to give them up. I hope to be in a situation to do it justice next year; and as I have given you my plans in regard to it, you can judge somewhat of their utility in such a work. I have directed the money to be returned to subscribers, and such of them as have not yet received it will please notify me at once. Advertisers, of course, are released.

In conclusion, allow me to thank the fraternity for the cordial and extensive support given me in the work of exposing rascality, and the effort to save the fraternity from pecuniary loss. My object has been most thoroughly accomplished, and nothing has since been done by my opponents to require any notice at my hands. Should it ever become necessary again to perform such a disagreeable duty, I will not shrink from it, and will endeavor to do it in a more thorough manner than I did the first time.

D. BACHRACH, JR.

ACCESSORIES IN PHOTOGRAPHY.

THEIR CHOICE AND THEIR USE.



NO one subject pertaining to photography seems to be more in need of study by the photographer at the present time, than the introduction of accessories into his pictures. That there is a necessity for the use of such articles it is generally agreed, for there is more or less attempt at it in the majority of pictures now put forth.

There is a sad want of taste displayed, however, both in the choice and in the introduction. Many times all laws are transgressed, and often the quantity is superabundant.

In the olden time, the chairs used were so elaborate and costly that only one would be found in a fashionable room. Now, unfortunately, a most gaudy one can be bought at any 99-cent store, and photographers use them recklessly. We have seen photographs of a young lady dressed in rural costume, with a sickle in one hand, a disturbed sheaf of wheat held in her lap by the other, seated on an elaborately carved and upholstered arm-chair; her feet upon a gaudy ottoman; a camp-chair standing near by as a receptacle for her rustic hat, and a chair made of twisted roots and twigs rusticated near by, with more disturbed wheat scattered upon and about it. The number of chairs and seats, doubtless, was to repeat the idea of *plenty* conveyed by the gatherings from the harvest-field, and to give the conception of *rest* in contrast with the labor of the harvest-field! The young lady was pretty, and the picture (?) was called "The Gleaner." Whether it alluded most to the quondam labor of the young lady, or to the photographer during his visits to the chair-shops, we know not. The picture was a vulgar one, because it sinned against all laws of art, and it evidently had a double meaning.

Now we have nothing to say against the variety of accessories offered by dealers and manufacturers, such as gates and windows and rocks and stiles and roots and stumps and balustrades and arbors and what not. They are good enough in their places if they are in harmony with the subject and with each other when introduced. They are of service largely, where pretentious compositions are to be made up; a direction in which we like to see effort made. It is not our intention at this time, however, to consider them.

The principal object in treating the model in portrait photography is to make him look natural or real, or as he is seen in his everyday life; employing art as a helper, and that greatest of all magicians, the golden sunlight, to secure the shadow of it all. To do this, it is a favorable and a laudable practice to represent him sitting or standing as

at home in some apartment of a dwelling. A proper background is employed, to which the greatest attention should be given; and then we come to the accessories. On the choice and use of these we offer a few *suggestions* only as to the articles most desirable, giving you drawings of some of the best models, that you may follow them in making your choice, or that they may teach you what to avoid.

We are largely helped in this matter by Messrs. L. Prang & Co., the famed art publishers, of Boston, who have allowed us to draw upon them for illustrations from Dr. Falke's splendid work, *Art in the House*, which was mentioned by Dr. Vogel in his last letter, and which will be found reviewed on another page. This much, however, only to excite your interest and thought in the matter. In our limited space, we can by no means exhaust the subject. If you are awakened, you will turn to Dr. Falke's work for further instruction; and if you do, you will be amply repaid and helped.

The article of furniture which seems to supply the most useful place in a picture is the chair. It may be used for the standing or the sitting figure, but it must, in every case, be carefully chosen. Of course there is no one style of chair that will answer all purposes, and two chairs varying in style should never be introduced as accessories into the same picture.

The material may be light or dark, and the covering, if upholstered at all, of cloth, or velvet, or silk, or of leather, with or without fringe, or elaborated with brass nails (which often catch the light prettily) or not. No stripes should be allowed in the material vertically or horizontally, and all large and gaudy figures should be avoided; moreover, attention should be carefully paid to the *lines* of the piece. For a fancy accessory, a chair with *pr  ty*, curved lines and choice upholstery is best, or a neat camp-stool of rich pattern (Fig. 1) may be used.

A most useful piece is that represented by Fig. 2. But for pictures of old persons, sitting or standing, and for younger ones standing, using the chair as a rest, or to catch the folds of drapery, and in many ways as an accessory, a style similar to that shown

by Fig. 3 is most choice and useful. Many other patterns are to be found in Dr. Falke's work, all of which are full of suggestion.

The Fig. 1 represents a folding camp-stool

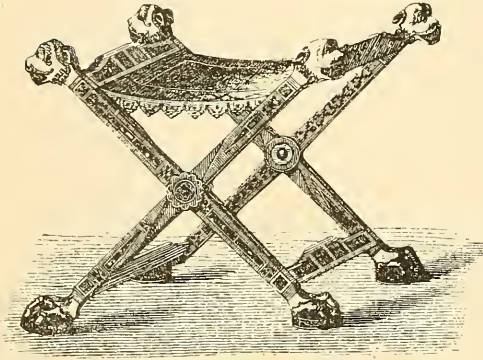


FIG. 1.

of the middle ages, when chairs were but little used.

Fig. 2 represents a chair of the seventeenth

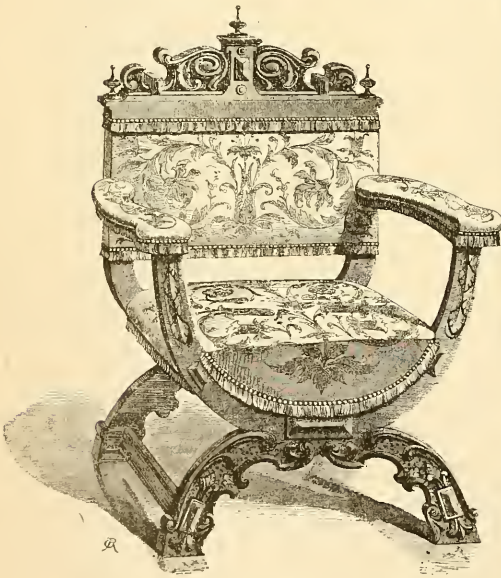


FIG. 2.

and eighteenth centuries, models of such as we often see in the paintings of Terburg, Metz, and others. If a little higher, and not quite so wide, it would be in better proportion for our use.

Fig. 3 is from a chair of the sixteenth

century. It may or may not be upholstered.

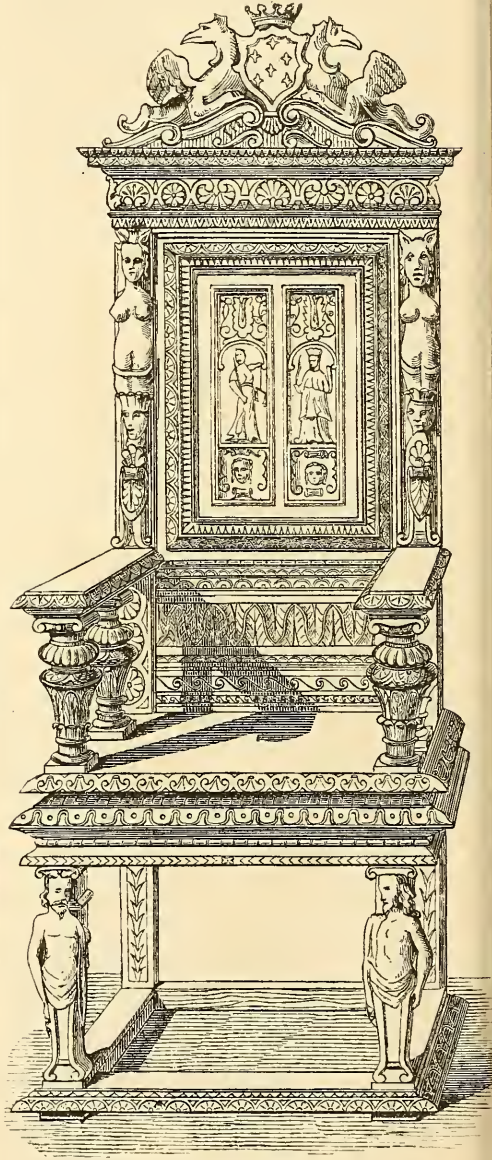


FIG. 3.

Similar chairs have long been used in photography with a great deal of effect.

Many times something besides a chair is wanted. Tables are always convenient, and the suggestions made for the choice of chairs may be followed largely in selecting and

using them. So we attempt no further suggestions concerning them.

What should go on the table, however, is of great importance. There are hundreds of articles of bric-a-brac which may be used to help extend a line or finish a composition. Such articles as flower-vases, water-pitchers, dishes, etc., all follow more or less in form that of the human figure, as is plainly shown by Fig. 4. Here you observe are the head,



FIG. 4.

and neck, and shoulders, and waist and feet, all more or less indicated as they are in nature.

So is it the case in Fig. 5, although the order is reversed. This last is a drawing of a candelabrum of the ancient Greco-Roman style. It suggests an accessory that would often be found very useful in photo-portraiture for obvious purposes. In the olden time they were of marble, but our manufacturers can readily follow them in wood and stucco, or carving.

As an example of the kind of lines to be avoided we introduce Fig. 6. It is elegantly

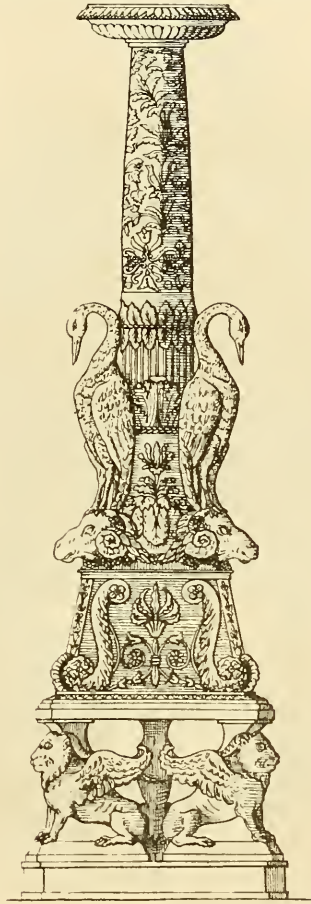


FIG. 5.

pretty and delicate, but its lines mainly are hard and flat, and it has a look that is "poor and thin, stiff and stilted," though in the seventeenth century the possession of such a cabinet was considered an evidence of wealth. Contrast it with the beautiful form of Fig. 5.

We believe you must now have caught the feeling we want to impart, and, dropping the subject, we close with a few remarks upon curtains and carpets.

The use of curtains is pretty well understood by photographers, and very fine ones are supplied by the dealers. We are sorry to see, however, some attempt to use them with scalloped edges with gorgeous fringe

and instead of making them serve only as drapery, they are hung in lines overhead

the background, should be changed to suit the occasion.

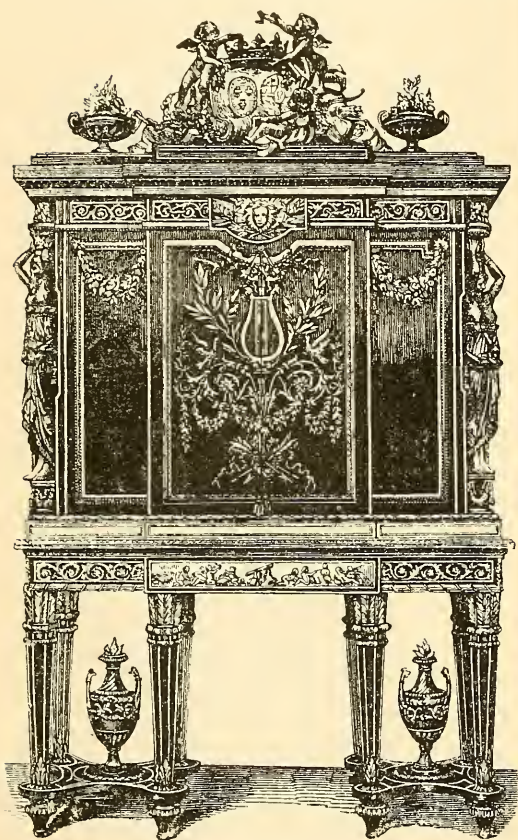


FIG. 6.

and in front of the backgrounds. In these, as well as in carpets, all decided and bold patterns should be avoided, and especially stripes. As Dr. Falke says, "the floor is nothing but the quiet basis for the rest of the decoration," and therefore the carpet should be of subdued pattern, and of colors to suit the light under which they are used. For many purposes, where a rich effect is desired, and fine accessories are used, a carpet and rugs similar to the pattern of Fig. 7 may be used. Avoid too great contrasts in color (*i.e.*, colors that will, when photographed, show too great contrast) and spottiness of pattern; have a care, too, that it be not too dark. Indeed, the carpet, like

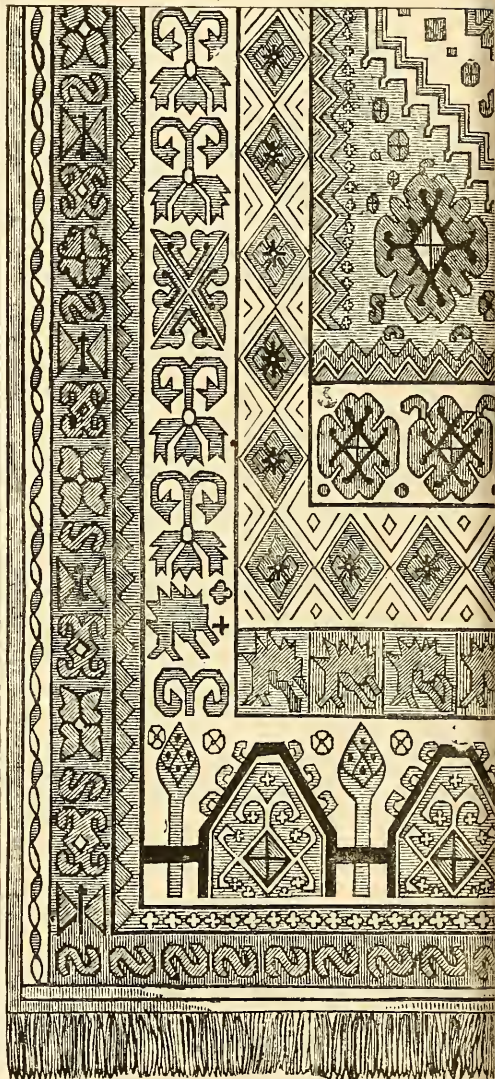


FIG 7..

The subject grows so upon us as we go on, that we reluctantly lay down the pen, trusting that what we have said may induce some of our readers at least to pursue the study further, and thus be able to improve their results.

READ *Burnett's Hints on Composition*, if you would improve in posing, etc.

BIBLIOGRAPHIC.

WE have received from M. A. Hartleben, Leipzig, Germany, copies of Prof. Husnik's two excellent works, viz.: 1. *The Lichtdruck*; 2. *Heliography and Kindred Processes*. Both of these works are of a popular series, edited by the most talented savants in their respective lines; explaining the latest inventions and experiments in practical technics, industry, chemistry, farming, etc., and are issued in a cheap form. Unfortunately they are in German. Those who can read that charming language will be glad to avail themselves of the chance.

The first-named work has already been received by us some time ago. It contains not alone a history of the development and perfecting of the lichtdruck up to the present day, but it also gives a thorough, theoretical, practical guide to practice it, and a reliable method for photo-lithography, and several other approved formulæ for the transferring and multiplying of negative and positive glass pictures, for enamel photography, and several other minor operations.

The manipulations are explained in plain and pointed words, so that any diligent new beginner can obtain the best results with no difficulty by following the formulæ.

A handsome photo-zincograph accompanies this book, from a woodcut, produced by I. Kaswick, on his photo-lithographic paper.

The second and newer work is a fitting supplement to the other. It is dedicated by the author to the "Society for the Improvement of the Industries of Bohemia." It embraces the latest experiences in the branch of heliography and pigment printing in short and plain articles. Six pictures accompany the book.

1. Represents the comic opera at Vienna. Produced after one of the chrome-salt methods explained in the book, from a negative in half-tones, printed with a low plate.

2. Reproduction of an engraving on copper (Sonnenfel's), of the same size, after another chrome-salt method. Printed with a low plate.

3. A reproduction of an engraving on copper (Prince Kaunitz). Produced after the same chrome-salt method. Low plate.

4. "The Comic Opera." Produced from an original negative with another chrome-salt method. Printed with a high plate.

5. Reproduction of an engraving on copper. Printed with a high plate. Produced with another chrome-salt method.

6. Reproduction of a chalk-drawing. Printed with a low plate, and produced with the chrome-salt method.

Inasmuch as our readers are recently interested in the subject of etching negatives, we make the following translation of the chapter on that subject, viz.:

"THE PRODUCTION OF ARTIFICIAL NEGATIVES BY SCRATCHING IN LINES WITH ONE OR SEVERAL NEEDLES.

"Prepare a thin negative collodion, containing much iodine, which is as usual poured over a glass plate and prepared in a silver bath. After having taken out the plate, and cleansing the same on both sides with water, it is dried and laid on a black cloth, with the prepared side on top.

"If the collodion contained much iodine, the coating will appear of a light-yellow hue, which in this case is just the thing wanted.

"Now make several instruments, with 2 to 8 needles ranged together in a straight line, with sealing-wax, with which a drawing can be scratched in the yellow layer of iodine silver. The diagram herewith represents the instrument, *a*

being the sealing-wax, and *b* the points of the needles. After tracing carefully the outlines of a drawing upon the yellow layer, so that the layer does not get injured, we proceed to the production of the whole drawing. For delicate details only an instrument of

2 to 3 needles is used; but large spaces are rapidly covered with an instrument of many needles. Each scratch appears black, as the yellow layer is removed, showing the black sub-layer.

"The picture is extremely pleasing, as the lines run beautifully parallel, and afford many very delicate gradations. The



scratched-off yellow dust must be often removed with a broad marten-brush. When the drawing is finished, pour on the plate a concentrated solution of fuchsine in alcohol, and wash off with water.

"The fuchsine colors only the porous collodion, but not the clean spots of the glass, and renders the picture more opaque, so that it is perfectly suitable for heliographic or photo-lithographic purposes.

"Finally the negative must be varnished, but a diluted solution of gelatin or gum arabic answers better, because an alcoholic varnish dissolves the fuchsine. The intensifying can also be done in other different ways."

GIHON'S GATHERINGS.

COMPILED BY THE LATE JOHN L. GIHON.

IV.

Collodion for Hot Weather.—

"Ether,	10 ounces.
Alcohol,	12 "
Bromide of Cadmium,	1 grain.
Bromide of Ammonium,	1 "
Iodide of Cadmium,	1½ "
Iodide of Ammonium,	3 grains
to the ounce of collodion.	

"Add to the ether and alcohol, and shake until all is dissolved, filter, and add the cotton. A reasonable amount of age improves this collodion."

Outdoor Photography Collodion.—

"Alcohol,	½ ounce.
Ether,	½ "
Iodide of Ammonium,	2½ grains.
Iodide of Cadmium,	2½ "
Bromide of Cadmium,	2½ "
Gun-cotton,	5-6 "

"This collodion keeps well, and is good for view and portrait work. If it should become too pale by long keeping, which it will do when the gun-cotton has been washed in diluted aqua ammonia, tint it with a solution of iodine in alcohol."

Developer.—

"Saturated Solution of Iron,	1 ounce.
Acetic Acid,	1 "
Water,	12 ounces.

"For light drapery or children's pictures use it a little stronger."

Solution for Bath.—

"Water,	8 ounces.
Glycerin (good quality),	4 "
Silver,	1 ounce.

"Sun it for a few days. Should there be any acid in the silver, put a drop or two of aqua ammonia into it. Then boil it for a few minutes, and give it, after cooling and filtering, a liberal dose of nitric acid. Plates prepared in this bath will allow you to go miles and come back with a *wet* plate."

Developer for Outdoor Negatives.—

"Glacial Acetic Acid,	1 ounce.
Water,	16 ounces.
Protosulphate of Iron, 15 to 30 grains	to the ounce of solution.

"The proportions have to be varied so much according to circumstances, that it is impossible to give them exactly. With a little practice one soon learns to regulate the strength of the iron and acid to suit the work in hand. In warm weather the developer can be diluted just before using; consequently one can carry as much in one bottle as when diluted will make two."

To Keep a Plate without Stains during a Long Exposure.—"Every photographer is familiar with the risks of stains from partial drying of the plate, when a long time elapses between exciting and developing the plate. Here is a method whose extreme simplicity will entitle it at least to a trial, and one trial will prove its utility. The plan is simply to flood the plate with a few drachms of distilled water previous to exposure, the water is then poured from the plate to a developing-glass, and must on no account be thrown away, for in this appears to lie the secret of success. After exposure, the plate is again flooded with the same water that was previously used, and which, after thoroughly moistening the film, is again returned to the developing-glass, and mixed with the required quantity of developer, and the development proceeded with as usual. Plates so treated will give pictures as clear and free from markings as if only exposed in the camera for a few seconds."

To Make Iodide of Silver.—"20 grains

iodide of potassium, dissolved in 1 ounce of water; 25 grains nitrate of silver dissolved in 1 ounce of water. Mix these two; a precipitate is formed, which is iodide of silver; wash the precipitate six or eight times, and it is ready for use."

Collodion for Immediate Use.—

"Alcohol, 5 parts.
Ether, 3 "
Iodide of Ammonium, to the oz. 5 grains.
Bromide of Potass., to the oz. 2 "

"The ammonium dissolves readily in the solution, but the potassium is dissolved in the least possible amount of water, and then added. This sensitizing solution may be made in any quantity, and kept indefinitely. Any good sample of cotton will dissolve in this solution, and the collodion may be filtered and used immediately."

How to Sun a Bath.—"The following method is far better than the old way of sunning in a clear glass bottle, as it saves much time. Having neutralized the bath with carbonate of soda, or otherwise, place it in a large, flat, white porcelain dish. After a few hours, a black scum will appear on the surface; this is removed by means of strips of blotting-paper, and the light is once more free to act on the solution in an unobstructed manner. The bath should be skimmed every few hours until it is found to remain permanently clear, or nearly so, when it is ready to be filtered and to have its strength diluted by the addition of water, for, as will readily be perceived, an exposure in a flat dish, such as that to which the bath has been subjected, necessarily causes a considerable quantity of the water to evaporate, carrying with it much of the ether and alcohol. After being diluted to the proper degree of strength the bath is filtered, and acidified, if necessary, when it will be found to work as well as ever it did, free from streaks, stains, and pinholes."

Developing Solution.—

"Sulphate of Iron, 4 ounces.
Water, 64 "
Acetic Acid, 10 "
Pulverized Rock Candy, . . 1 ounce.

"Mix with soft water, or you lose one-half of your intensity."

A Good Redeveloper.—

"Soft Water, 4 ounces.
Citric Acid, 30 grains.
Protosulphate of Iron, . . 12 "

"To be used with silver solution, 20 grains strong, and applied the same as pyrogallie acid."

Forcing Solution.—

"Pyrogallie Acid, 5 grains.
Soft Water, 1 ounce.
Acetic Acid, $\frac{3}{4}$ "

"Take enough of this solution to flow the plate, and add three or four drops from the silver bath; flow the plate with this, which will rapidly give all the intensity required."

A Good Intensifier.—

"SOLUTION No. 1.

"Permanganate of Potash, . . 5 grains.
Water, 1 ounce.

"SOLUTION No. 2.

"Bichromate of Potash, . . 10 grains.
Water, 1 ounce.

"These solutions are made up and kept separate, being mixed in equal proportions when wanted."

Solar Printing.—

"SALTING SOLUTION FOR CARTOON PAPER.

"Boiled Milk, 1 pint.
Glacial Acetic Acid, 10 drops.
Albumen from two large eggs.
Bromide of Potassium, . . 80 grains.
Iodide of Potassium, . . 160 "

"Mix thoroughly, and filter. The albumen should be well cut before adding it to the milk. Float or swab the paper with the salting for two minutes.

"SENSITIZING SOLUTION.

"Water, 1 ounce.
Nitrate of Silver, 40 grains.

"Swab this on evenly for two minutes.

"DEVELOPER.

"Water, 8 ounces.
Pyrogallie Acid, 2 heaping teaspoonfuls.
Glacial Acetic Acid, 1 ounce.
Bromide of Potassium, . . 4 grains.

"FIXING SOLUTION.

"Water, 10 ounces.
Hyposulphite of Soda, . . 4 "

Rose-colored Varnish.—"Soak half an ounce of red saunders in alcohol, until the

color is extracted; add to any good varnish until the desired shade is obtained."

Ferrottype Developer.—

" Water,	64 ounces.
Iron,	1½ "
Double Sulphate of Iron and	
Ammonia,	2 "
Acetic Acid,	3 "
Liquor Ammonia,	10 drops.
Alcohol,	2 ounces.
Nitric Acid,	16 drops.
Sulphate of Potash,	½ ounce."

Castor Oil in Negative Varnish.—"Varnish made after the following formula will never check nor split on the negative.

" Alcohol,	2 quarts.
White Lac,	12 ounces.
Gum Sandarac,	1½ "
Castor Oil, about one drop to each	
ounce of varnish."	

Cement for Porcelain.—"Soak a quarter of an ounce of isinglass in distilled water until it has swollen; pour off the water, and cover the isinglass with alcohol; the dissolving may be hastened by gentle heat. Next dissolve one-eighth ounce of mastic in three-eighths ounce of alcohol. Mix the two solutions, and add one-eighth ounce of gum ammoniac finely powdered.

"Evaporate the whole in a water-bath to the consistency of cabinet-makers' glue. Keep in bottles, and warm for using. Apply to the clean broken edges with a brush, warming the pieces before applying, and keeping the mended dish in a warm place for a time."

ABOUT SKYLIGHTS.

A GOOD many photographers at this season of the year are making inquiries of us as to the building of skylights. We have gone over this matter so thoroughly in our back volumes that we have but little that is new to supply.

It is a common error, we find, to build the sky- or top-light too high from the floor. Such a plan diffuses the light in such a way as to make its proper direction upon the sitter very difficult, no matter what hand-screens or flies are used, and moreover retards the working qualities. Much more

depends upon this than upon the size of the room. Of main importance, however, is the direction of the light. A north top- and side-light are considered best and easiest to manage; or a north top- and front-light, with an east or west (or both) side-light.

Several studios have been erected so that the glass, where the cornice usually is, is curved, thus gaining a great deal of light, preventing leakage and assisting the flow of water from the roof, the drain-pipe being at the bottom of the lowest sash.

When properly constructed, this ought to work finely. The curved glass is much used in Europe, and can be had at our glass stores.

As to the height, a little will depend upon the construction of the room in other respects, and the locality of the building and its surroundings.

CONSTRUCTING A SKYLIGHT.—A correspondent gives us the following:

In regard to the construction of my new gallery, I would say that the operating-room is 19 x 23 feet. At the east end of this room I have large folding doors, through which, when necessary, I can run my camera into one of my parlors, so as to have a distance of forty-six feet between subject and camera. At the west end I have a room running north and south twenty feet long and ten feet wide, for the purpose of running my scenic backgrounds out of the way when not in use, which I find to be very convenient. It gives me plenty of room to change accessories, and in keeping the operating-room clear of everything but that which is in use at the time of sitting.

My sky- and side-light is a pure north light. The side-light is 7 feet high and 12 feet long, the bottom of which sets 3 feet from the floor. The top inclines into the room at an angle of 25 degrees, and is glazed with ground-glass; the skylight connects it at the top, and runs back 16 feet, at an angle of 35 degrees, and is 12 feet wide, covered with clear white glass, situated in the middle of the room, so that in making bust or two-thirds pictures I can work all around my subject.

It is the best light I ever worked under. My object in having a ground-glass side-light and clear glass for the skylight is this,

that heretofore, according to my taste, I used too much side-light, and I have noticed the same fault in the work of some of the leading photographers of the country. As it is now, I am not troubled in that way, the light being very soft from the side, and very strong from the sky, which is very easily softened with the "Everlasting" head-screen, one of the most useful implements I have.

I also have curtains for sky- and side-light made of white sheeting, but I do not use them or side reflectors very often, as I can produce any effect in light and shade that I wish, by setting my subject well out under the light and judiciously using my head-screen.

E. D. EVANS.

BALTIMORE CORRESPONDENCE.

SINCE my last business here generally has brightened up a little, but it will not last long, as the "dog days" are not far off, and if the experiences of the last few years may be taken as a criterion, the photographers may then as well "go fishing." Those of us who pay any attention to outdoor photography may be somewhat of an exception to this rule, but July and August, in the large cities, may now be considered the "off time" for galleries. But then why should not photographers have a regular resting spell as well as others, and especially in those months when the dark-room is more stifling and unhealthy than ever? Now, while on this subject, is it not strange that most of us persist in shortening our lives and those of our assistants, by constructing and using regular "sweat-boxes" for our dark-rooms? We give the amplest space to our reception-rooms, *less space to our studios*, and infinitesimally small corners to the place where some of us spend at least one-third of our time; even those who have the best patronage not leaving the dark-room work to assistants. Now, why is this? It is one of those things "no fellow can find out," but it certainly needs reform.

I was very sorry (and so were hundreds of others) to see such a total collapse of Mr. Carvalho's theory in regard to the "orange pea-green" for studios, as evinced by the report of the committee of the Chicago

Association, which must be conclusive to all readers by the carefulness of the tests. I am personally acquainted with Mr. Carvalho, having been formerly associated with him in business, and hoped (though against my judgment) that there was something in it; but I felt from the first that he was mistaken; a victim of inaccurate tests, the cause of so many fallacious things being recommended in good faith by those in our profession, who rush out in praise of every new thing which they try, without that cool, mathematical accuracy necessary, and hence the contradictions and bad feeling engendered by apparently different results with the same processes in different hands. Do not the reasons accumulate for my recommendation to appoint "test committees" in the interests of the photographers of a community? When Mr. Henry T. Anthony showed me the proofs of Mr. Carvalho's first article on the subject last January (on that memorable visit to New York), at the same time with my article on salicylic acid (it was not the "braying of an ass" before I had shown up their pet with *the process*), I expressed my dissent both on account of the erroneous theory and because I knew from my visit to Mr. Carvalho's studio, that he worked no more rapid than the average photographer with the same light would, with chemicals in normal condition. The only point there is in it, is that a studio constructed so as to reflect actinic light from all points (and which may be light pink, light blue, light green, or even *white*, in fact any of the light colors except yellow, will *destroy the shadows cast* by the direct light to some extent, and thus a negative made in such a studio *will show less shadows* with the same exposure than if made without such reflecting surfaces, while the roughness peculiar to an under-exposed negative is not abated one particle by such means, and the face is full of false reflections, the eyes are ruined, and all brilliancy is gone. Experience has shown that the *less reflected light is used, the better are the results*. It should be used only with movable screens, and then only for subjects which will not bear full exposure. A careful test will convince any one. I must make one exception, however, to this, and that is, where there is one of the old, abomi-

nable, high top-lights, with no side-light, a room painted *all over*, and especially the floor, with any of the light colors mentioned, will be greatly benefited; as the extremely harsh shadows made by such a light are neutralized, and thus the exposure lessened, the high-lights in such a studio being always excessively developed in proportion to the shadows. But with a low light, in the well-constructed studios now generally used, such treatment is an abomination. Rapidity is caused by the *quantity and direction of the direct light*, and not by reflection.

The discussion has been of great benefit in bringing this subject to our attention, as certainly the old blue color is not as agreeable to the eyes of the sitter as green or other tints. I shall act on this matter in our own studio. But for gracious sake let us have no more hasty recommendations of everything new, whether useful or not, by those who are unable to make careful comparative tests, and thus lead others into mischief. *Let us develop slowly and surely both our negatives and ideas*, and we will be better both mentally and financially.

Let us all take a fresh start in the fall to develop our art, and let us hope that you will reap the reward due for the stand you have taken for the benefit of the craft.

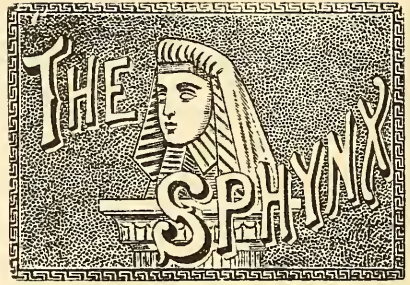
With many thanks for your kind notice of my efforts in that direction, I remain, sincerely yours,
D. BACHRACH, JR.

BAROMETER PAPER AND SYMPATHETIC INKS.—Dr. Bering makes a very delicate barometer paper, turning blue at a slight rise in the temperature, by saturating paper with a solution of cobalt sulphocyanide, made by mutual decomposition between potassium sulphocyanide and cobalt sulphate. Other colors are prepared as follows:

Brown.—Potassium bromide, one part; copper sulphate, one part; water, twenty parts; mix. This sympathetic ink turns brown on heating.

Yellowish-green.—Cobalt chromate, one-half part; nitric acid and sodium chloride, each one part; dissolved in twenty parts of water.

Yellow.—Dissolve equal parts of cobalt and sodium chloride.



Sphinx has been very neglectful, and much neglected, of late; but it was all due to our editorial inability to find room for all the good which sought admission to our pages. We will now endeavor to take up all the queries of importance on hand, and try to keep *Sphinx* up to its duty hereafter.

Queries.

CAN any one give me the formulae for, or tell me where I can procure, the gelatin films used for stripping the negative films from glass? When properly done, they are far superior to the glass negatives for storing and safe-keeping.

ANXIOUS INQUIRER.

THE copies of the *Philadelphia Photographer* came all right. I am much pleased with them; have got much good out of them.

I have a question I would like to ask through your journal. I have been troubled for the last month with my albumen paper. I used "S. & M. extra brilliant," and "Swiss extra brilliant." They seem to silver all right, and print well; but after toning, fixing, and washing out of several changes of water, the surface of the albumen would be like jelly, and the whole picture could be washed off. I first thought it was caused from using the water too warm, but using it at different temperatures made no difference; sometimes a few would turn jelly in the first washings. I have tried different strengths of baths, but to no good. Now, if *Sphinx* or some one can inform me as to the cause and the remedy, I shall be very grateful.

J. H. K.

J. H. K. is working his silver bath too weak for the temperature of his room, and should increase one or the other. (See Mr. Bridle's useful article in our last number.)

INCLOSED please find some samples, from which you can see how my paper works. It is filled with freckles and spots. Please examine it, and state the cause, leading me to overcome it.

J. Z.

YOUR silver bath is too weak and too acid. The remedy is obvious. SPHYNX.

Answers.

Sphinx asks, "What is the matter with him?"

Amateur gets a seemingly good negative, except that it is too thin. I had the same trouble for a few days, after making up a new bath; found the trouble to be bath too acid. Remedy: add, a drop at a time, of a saturated solution of carbonate of soda, until the bath is but slightly acid; filter, and the bath is ready for use. I had no more trouble.

"B. H." asks for a substitute for alcohol, to heat the burnisher.

Use a kerosene lamp with an Aladdin burner. It requires no chimney, and does not smoke. I think it heats quicker than alcohol. By having a tin lamp with two or three burners, time and expense are saved.

To "What can be used in place of alcohol to heat the burnisher?" Kerosene oil, as follows: Drill a hole through the butt of the burnisher, about $1\frac{1}{2}$ inch in diameter (or large enough to admit end of lamp chimney for what is known as the Argand burner), and cut a corresponding hole in the table or shelf on which the burnisher is fastened; set your lamp under raised till the top of chimney is within half or three-quarters of an inch of the burnishing-tool, and you will be surprised to see how nicely it will heat. To avoid heating the roll, I remove the burnishing-tool, and suspend it over the lamp till well heated; then readjust tool and lamp, and you are ready to do any amount of burnishing. One burner will generate heat sufficient for a six-inch burnisher. Two or more lamps may be used for larger burnishers, and so cheap that you feel that you are getting your burnisher heated free of charge.

I wish to thank "Gihon's Gatherings" of *Photographer* for February, for retouching varnish, and many other good ideas.

GIFFORD.

I HAVE recently been reading some back numbers of the *Philadelphia Photographer*, and have been made aware, in part, of the discussion going on with regard to the artotype process. What I wish to say to you is this, and to ask your advice in the matter. The process which Mr. ——— has patented is my own invention, while in his employ. I can prove this by three or four persons. I communicated, in part, my invention to ———, and wanted him to pay me extra. Instead of that, he appropriated the process, and patented it; and I now let the matter lie there, not having the means to fight for it, and thinking there would be time enough when the method should become a necessity to the general photographer. This may prove to be the result, if the artotype process should be adopted by photographers generally, or if photographers should adopt it as a better way to preserve their negatives.

What can I do?

JABEZ.

You can make application for a patent for the process patented by ———, and ask the Commissioner of Patents to declare an interference.

When a preliminary interference has been declared, each party must file a statement, under oath, setting forth the date when the invention was conceived, when completed, etc.; the statements being sealed, and opened only on a given day, when a final interference will be declared. Both parties will be held to the dates thus given.

Testimony must then be taken on both sides, and a day will be set for hearing before the Interference Examiner, from whose decision an appeal can be taken to the Examiners-in-Chief, and from them to the Commissioner. Should priority be finally awarded to you, the Commissioner has no power to cancel the patent of ———; he can only grant one to you, so as to place both parties on an equal footing before the courts and the public. Proceedings must be taken before the courts, to vacate the ——— patent.

The costs of the proceeding will be proportionate to the urgency of the defence.

If the testimony shows that the invention was practiced with your knowledge, and

without your protest, more than two years before the date of the patent, the case will go against you. In other words, although you might succeed in showing that — — was not the first inventor, a patent would be withheld from you on account of the delay in taking proceedings to assert your rights.

SPHYNX.

OUR PICTURE.

TEN or fifteen years ago our photographic fraternity were very much excited over some examples of photography which came from Berlin, because of their peculiar lighting, the careful retouching of the negatives, and the rich tones which were obtained from them. Thousands of such prints were imported, of card size only (cabinets then having scarcely an existence), and scattered about for studies. How to get such effects was a mystery to the majority, and it was some time before more than a few could "reach up to them." How different is the case now! We are reminded of this story of the past by the beautiful example of plain photography before us now, from negatives made by Mr. Edward D. Rogers, Hamilton, Ohio, which much resembles those "Berlin photographs" which caused so much wonder.

No longer does the ability to make such pictures rest with the most celebrated artists in our large cities. On the contrary, a man who cannot in any locality approach such results is forced to stand back (and he generally stands still), and take a second or a third place in photography.

Certainly Mr. Rogers deserves great credit for such work. He sent negatives in competition for our prize medal, among which was one of this present subject.

So pleased were we with it, that we wrote him if he could make six more negatives as good, of the same subject, we would like to use them for the *Philadelphia Photographer*.

His response was the six negatives. They are not excessively retouched. We preferred that they should not be. Mr. Rogers says he could do them "much finer." We know that both he and many others can excel this; but to those who cannot yet work up to it, it will be found an example worthy of study and imitation. It is only offered as

an example of good average American photography.

Now, strange to say, Berlin studies our work; and, at the present time, the head of one of our largest and most famed establishments is in Europe negotiating with agents for the sale of his splendid American photographs, where they already have a fine sale.

WRINKLES AND DODGES.

CHLORATE OF POTASH.—A contractor of Marseilles has just obtained a concession for the extraction of chlorate of potash from the Dead Sea. The salt is used in the manufacture of fulminates, and consumed largely in England as an ingredient of manure. The supply has hitherto been drawn from Germany, and the salt was sold in London for 160 francs per ton. Competition reduced the rates to 130 francs, but the production ceases to be remunerative below 120 francs. The chlorate of potash procured from the Dead Sea can, it is said, be supplied in London at 90 francs, and the quantity obtainable is practicably unlimited. The process of producing it will besides furnish other valuable chemical substances, such as the bromide and iodide of potassium.

DEVELOPING OF GELATIN PLATES.—It is of great advantage in developing gelatin plates to pour on first a mixture of ammonia and bromide of potassium, and then add slowly pyrogallie acid. With the first application of this variation from the old way I reached a very satisfactory result, and since then have always worked in this manner, which also obviates the tedious dragging along of a great quantity of diluted pyrogallie acid; instead of which the dry acid, or its concentrated lasting solution in alcohol is used.—RICHARD FORSTER in *Photogr. Archiv*.

MANY thanks to Mr. Howson for the very clear and satisfactory explanation of patent law in your May issue. I wish our fraternity had hold-together-ateness sufficient to agree to employ Mr. Howson as a national counsel, to examine every photographic patent that is issued, and give us his judgment upon them, we agreeing to make no purchase unless favored by him. It could be done, and money and lawsuits saved.

LUX.

I SEE a good many complain of trouble with their paper, and especially is one peculiar complaint common, namely, that of the paper becoming horny and repelling the solution. I get over it by using a tin case which is twenty inches long by three in diameter. In this I can put twenty-four sheets of paper, and, by hanging it in a damp place, my paper is always in a good and proper condition to silver.

S. L. ALLEN,
Marengo, Ill.

BAD VARNISH.

SAMUEL V. ALLEN, of Freeport, Ill., speaks of his varnish destroying the negative films, and lays the cause to "heavy" or thick varnish. I have had the same trouble with thin varnish; it generally occurred when the plate was quite warm. My remedy is to flow the plate with albumen (the same as is used to prepare plates with) as soon as fixed and washed, and before drying. It takes no time, and insures you against the loss of valuable negatives.

D. C. PRATT.

I HAVE seen complaints in the *Philadelphia Photographer* about paper seeming to be greasy when silvered, and the silver standing in drops on the paper when hung up to dry, and would like to say, for the benefit of those who have been troubled, that I had the same trouble for a long time last winter, and could find no way to prevent it, until I tried a warm silver bath in a warm room, when all trouble disappeared.

No one will be apt to be annoyed in that way this summer, but do not forget it next winter.

F. GILL.

GERMAN CORRESPONDENCE.

Study of Anatomy for Photographers.—What is Style?—On the Value of a Strong Printing Bath.—Photographing Oil Paintings.—Recent Investigations of Gun-cotton.—Gelatin Plates for the Printing Process.—Electric-light Engines.—Agitation against Photography.—Lœscher & Petsch's New Studies from Life.

IF, twelve years ago, it would have been intimated to any photographer that the study of anatomy was not out of his sphere, he would simply have ridiculed the matter,

although at that time anatomy had already its place on the line of studies in every academy of art; and the young painters had to study bones and muscles, not alone from models and pictures, but also from living bodies, and in the dissecting-room, in which they had to take a practical part. And now Mr. Hartmann, the well-known partner of the firm of Lœscher & Petsch, who, nine years ago, published the highly interesting article on the aim and scope of the retouch, finds his lectures on the anatomy of the head not only not ridiculed, but listened to with infinite interest. Everybody who was present at his lecture was convinced that only a thorough knowledge of the bones and muscles of the head enables the retoucher to avoid those ridiculous mistakes, which Mr. Hartmann points out in a very interesting example. Some knowledge of the anatomy of the head is therefore obviously of very great advantage to the thinking photographer, and I would like to suggest to reproduce the picture of the human head, with remarks, a part of which I gave in my last, by Mr. Hartmann, on page 39, in the May number of the *Photographische Mittheilungen*.*

In my letter which was published in the May number, I wrote about the strong printing bath which Mr. Brandt recently recommended to use, in order to avoid some defects caused by weak baths; but some experiments lately made here, did not sustain Mr. Brandt's assertions in all cases. The fact is that our paper is now salted much less than formerly, when up to three per cent. of salt was used, while now, only one per cent. is considered sufficient, which makes it that a much less quantity of silver salts is required to form the chloride into chloride of silver. For this reason alone no such strong baths are necessary any more, as were formerly in order; but it appears also that some papers resist strong baths (80 grains per ounce), a defect which can only be remedied by adding three per cent. of alcohol. Furthermore, it seems that blisters and bladders make their appearance

* Our readers will find this excellent paper translated and in the *Photographic Times*, page 179.

with a strong bath just as often as with a weak one. On the other side, a strong bath can be used up to the last drop, while a weak bath is soon used up, so that it produces only very weak copies; and only through fuming with ammonia this defect can be met.

I read lately, in one of our English contemporaries, the statement that the reproductions of oil paintings are on the continent much better than in England, and in explanation of this occurrence, the assertion was made that the most and the best copies from oil paintings on the Continent are not made from the original pictures, but from copies of one color, specially prepared for the purpose, and that not so many of such copies are made in England as abroad.

Now this assertion is erroneous. The two main establishments for photograph reproduction from modern oil paintings are, I believe, Goupil, at Paris, and the so-called "Photographische Gesellschaft," at Berlin; and both establishments photograph directly from the original paintings. Formerly, to be sure, sometimes copies were made in black chalk from the old oil paintings, and the photographs taken therefrom. Such was the practice, for example, in the celebrated gallery at Dresden.

But since the "Photographische Gesellschaft" has been granted the privilege to photograph oil paintings directly from the originals, this practice has been out of use, and I know of only one instance, that recently a one-colored copy was made from an original painting for photographic use, and this was with Makart's "Catharina Cornaro." All other reproductions of oil paintings, which were issued at Berlin, were made directly from the originals, and they owe their excellence to the skill of the operators, who are schooled in this branch, and to the judicious negative retouching.

Some time ago I reported to you the experiments on photographic pyroxylin by Dr. Wolfram, and recently the well-known photographic chemist, Dr. Eder, has published an essay on the composition of pyroxylin, which disputes some of the grounds taken by Dr. Wolfram. In the first place, Dr. Eder declares the different kinds of pyroxylin to be *nitrate*, not substituted *nitro*

compounds, so that pyroxylin contains nitric acid, instead of the nitrous acid (NO_2), in which assertion Dr. Eder diverges from all former views. He enumerates five different kinds of pyroxylin, of which the highest is cellulose hexanitate ($\text{C}_{12}\text{H}_{14}\text{O}_4(\text{NO}_3)_6$). It is insoluble in alcohol. All the others (cellulose pentanitate to cellulose dinitrate), however, are soluble in alcohol-ether, and become collodion.

Recently Mr. Wilde placed a singular kind of gelatin dry plate in the market, which differs from the other plates in that it is destined for the positive, and not for the negative, process. They are lighted in the printing-frame till the picture has appeared perfectly distinct and strong, and the picture is then simply fixed and washed, and represents then an excellent positive, free from structure and grain, which so often disturb in carbon diapositives. Such positives are very suitable for enlargements, as from them enlarged negatives are made in the camera with the collodion process.

The electric-light apparatus engrosses the attention here more and more of late, so that they are already manufactured in wholesale for laboratories, galvano-plastic, and photography. A Mr. Metzger, in Alt Breisach, now furnishes an apparatus which can be attended to by a couple of men, and producing an effect of light corresponding to three hundred candles (a common gas-burner of a gas-lamp in the streets has a strength of about four candles), for \$150. The whole machine weighs only one hundred pounds.

The other day, they held in Pomerania a monster pastoral camp-meeting, in which the worthies indulged, as usual, in fiery and ungrammatical tirades against everything and everybody, apart from the chosen few; but an unsophisticated tiller of the soil clapped on the climax, and became at once the cynosure of a thousand admiring eyes, when he thundered forth the immortal words, "The social misery and the wicked doings of the bad Socialists are solely due to the throwing of flowers in corso-processions, the drinking of beer, and the desire of people for having their portraits taken." It has been proposed to elect this honest gentleman to be the patron of photography,

and to vote him a beer-glass, a bouquet, and a head-rest, as emblems of his high office.

In spite of this Quixotic crusade against photography, there appeared, of late, some excellent productions, which caused deserved admiration in the public and in experts; I mean the pictures by Lœscher & Petsch, destined for the exhibition at Sidney. In contrast to the hitherto current practice to choose backgrounds of a very subdued hue, and reserving the main light for the person, Messrs. Lœscher & Petsch have taken quite bright, almost light, backgrounds, from which the figure stands out dark. To be sure, the effect of some faces will be like a negro's, which would not suit exactly an American, but this happens only in exceptional cases. Lœscher & Petsch put a window decoration on such a white background, and placed a lady in front of it, who is fairly drowned in the strong light coming from the back, without appearing dark in the least. The pictures appear altogether as if they were no photographs from life, but copies from oil paintings. An extremely bold idea it was, too, to photograph a group not in the atelier, but in the open country, right in the sunshine. It is a young lady, sitting before a wall, in the full glare of the sun, who makes funny gestures with her fingers, throwing the shades upon the wall, where they are watched with evident enjoyment by a nice little boy in a suit of black velvet. The whole idea is extremely bold, but the effects are a capital success.

As Mr. Hartmann said to me, the secret in these kinds of pictures lies in hitting the exact time of exposure; half a second already causes total overexposure. It would certainly be a daring undertaking to take portraits in this way; but such pictures are best capable of showing to the public at large to what a degree of perfection photography, as an art, may aspire.

Very truly yours,

DR. H. VOGEL.

BERLIN, June 29th, 1879.

WE would call attention to our advertisements of books. There is no other publisher in the world who offers anything like such a list of works to help the photographer.

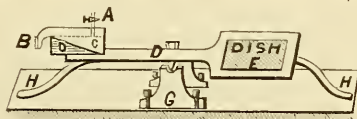
FRENCH CORRESPONDENCE.

THE Photographic Society of France assembled on Friday evening last, July 4th, Mons. Peligot in the chair.

Many negatives made by the gelatino-bromide process were exhibited, and remarked for their beauty of details as well as vigor in the full light.

Mons. Gabert presented a novel apparatus which he uses to develop his proofs in his laboratory at the Bank of France. It is, I may say, an hydraulic engine, and has the advantage over all other oscillating apparatus, that it continually goes on working without any aid from the photographer. I will endeavor to describe it clearly, hoping it may be of service to some on the other side of the "briny pond," as a similar one has been to me in my laboratories in Paris.

In looking at the figure, it can be seen that this apparatus resembles a large pair of



scales. *D* is the beam, supported by two bearings, *G G*, firmly screwed into a strong table; on one end of the beam is a flat space to stand the developing-tray, on the other end is attached the hydraulic box. When the lid, *A*, is opened, the water from a reservoir fills up the box to the dotted line, *C*; this end of the scale has now become the heavier and falls, and shoots out all the water; the other end of the beam, bearing the tray, now falls down, the water continues to fill up and causes the other end to go down, and so on every minute, or part of a minute, and so keeps the liquid in the developing-tray in constant agitation. The springs at each end of the apparatus are to soften the shock, and by their elasticity aid the end to rise. In order to obtain the proper equilibrium, a weight is laid upon the beam, *D*, and shifted at will towards or from the fulcrum.

Mons. Chardon read a paper in which he counselled to introduce sulphate of baryta into gelatin by double decomposition, in order to form an emulsion which, when poured upon a glass, could replace with a

very great advantage the focussing-glass at present employed in the camera. I would counsel my readers to "daub" over a piece of clean glass a little oxgall, and then pour a thick coating on it, allow it to dry, and then by cutting round the edge with the point of a knife, the coating would peel off in the form of a pellicle; this will stop the inconvenience of a broken focussing-glass when far from home on a photographic tour. A little chrome-alum added would prevent the atmospheric influence on the pellicle.

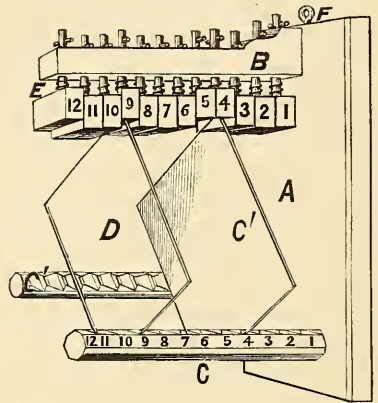
Mons. Andra asks the Society, and therefore the public, to give him some information on a phenomena which occurred to his collodio-bromide emulsion. A few weeks ago he made a certain quantity of emulsion by Chardon's process, which worked very well; he inclosed it in several little bottles and set it aside. What was his astonishment in visiting these bottles the other day to find three or four completely spoiled, emitting an odor of nitrous acid.

As to myself, I cannot discover the cause, and ask for light from the new world. I believe, to my knowledge, that this is the first time that spontaneous decomposition of pyroxylin has occurred, when in presence of bromide of silver in a washed emulsion.

I had the honor to present to my colleagues a new drying stand or rack for the dessication of gelatin plates. This I did as follows:

"Gentlemen, I have to draw your attention to this new stand, or plate-holder, which has for its object the rapid drying of gelatin plates. Some operators propose ovens and others drying apparatus, either by heat or a current of air; others prefer spontaneous dessication. I find the latter preferable, with a slight modification. As soon as I have covered my plate I lay it on a perfectly levelled sheet of patent glass, which is kept cold by a stream of cold water running under it. As soon as the gelatin emulsion has set I take it up, and insert it into the rack now before you. This rack or plate stand is easily made. *A* is a piece of wood into which is glued the support, *B*, and the two legs, *CC*. The support, *B*, holds one dozen pegs, which slide up and down with ease. A spring, *E*, is put on each peg, in order to keep it down. On the two legs, *CC*, are twelve notches corresponding to the twelve

pegs. The apparatus is hung up against the wall of the drying-room by means of the hook, *F*. As soon as the film of gelatin has



set, the plate is taken, and one of its corners is inserted into a hole at the bottom of peg No. 1; a little force is used to push up the spring, and the plate is then put into the notches; the spring now pushes down the peg, and the plate is firmly held. The same movement is repeated for the twelve plates, and the rack is hung up for them to dry, which is easy, as there is the space of an inch between each plate."

Mons. Bardy gave a very simple means of detecting impurities in alcohol. Take equal quantities of sulphuric acid and alcohol, and heat the mixture in a glass tube to boiling-point; if there be a coloration, it is not good for photographic purposes.

Mons. Leon Vidal presented a very ingenious dodge to make gelatin proofs in such a way as to have the portrait brilliant, and the other part mat. He pastes a piece of paper of an oval form, in the middle of a piece of glass of the size of the portrait to be covered, and grinds the glass with fine emery or sand, so that it is semi-transparent. The gelatin being put on this glass, and the proof dried on it when taken off, the part of the proof where the glass was polished is brilliant, the other part is mat. Many pretty designs in the border may be obtained in this manner, the name of the photographer, etc.

"Nothing new under the sun," it is said, but every new hint, be it ever so simple, is

worthy of note, and comes into service sooner or later.

PROF. E. STEBBING.

27 RUE DES APENNINS, PARIS, July 7th, 1879.

RETOUCHING FACILITATED.

BY JOHN H. HENNING.

I WAS for some time perplexed, during the practice of retouching negatives, to find a ready medium which should enable me to use my focussing-glass to better advantage. I had found that to merely hold the glass by the handle, and resting my arm upon the stand or table, and thus regulate the angle and distances as required for the purpose, was altogether an uncertain mode of working, inasmuch as the arm and hand soon became tired and unsteady, thereby giving to the glass a continued vibratory movement very deleterious to the eyes. It is true that from time to time I had seen instruments purposely adapted to this kind of work, but always found them so unpracticable, through a complication of rack movement and set screws, which always required one to lay down the pencil or brush, and readjust the glass to suit each and every other occasion, that I finally concluded to produce what I wanted myself.

The photograph I inclose is of a "Simon Pure simple" contrivance which has worked so charmingly, and leaves nothing to be desired, that I at once concluded to give it to the readers of the *Philadelphia Photographer*; and I feel certain that, although it looks so simple, and is easily constructed, it will work with such satisfaction that those who will try it shall wonder why a patent had not been secured before the artotype was born. The upright contains four one-half inch holes, into which the handle of the focussing-glass is inserted, is three inches high, and of one and a half by one half inches hard wood. The base piece, which is fastened to the upright by means of two thin one-inch screws, is one and a half inches long, and same in width, etc., as the upright, also of the same material. After being screwed together as indicated, the whole is fastened to the movable hand-rest from below by a one-inch screw, in such a manner that it will move around as on a pivot. The handle of the focussing-glass

(which should be about six inches long, and just thick enough to pass readily through the holes in the upright), is now held in the left hand during the operation and practice of retouching, and all readjustments may be made without even raising the pencil from the negative.

[The retouching frame used by Mr. Henning is in principle the same as that described on page 359 of *Philadelphia Photographer*, October, 1870, but differs in the method adopted for holding the magnifying lens, as described by him. It is certainly on a very good plan.—ED.]

COWARDICE AND PERSONALITY IN JOURNALISM.

PERMIT me, as an occasional reader of your valuable journal, to express my gratification (doubtless shared by all who know its pages *con amore*), at the very admirable position you have of late occupied in avoiding both the extremes indicated in this heading, while yet taking unmistakable ground against the horde of adventurers who have for years, in various ways, made the fraternity their prey.

In editing a journal devoted to science, there need be no departure from a proper dignity, and ordinarily there is no excuse for animadversions of a personal nature. Abnormal conditions, however, exist at times; crying evils which call for vigorous denunciation, in language which will admit of no double construction; and under such circumstances it is far better to err on the side of truth and of the interests of the craft, than to show a supine and cowardly weakness in the presence of sheer rascality. Among our journals, as well as amongst the press in general, there are those who plume themselves on what they complacently term their "conservatism," which is often but a synonym for indifference, inaction, or sheer cowardice, and who are apt to give expression to their "conservatism" by rapidly sneering at, or impertinently questioning of, the motives of those whose sense of right impels them to step boldly forward and "speak out."

These are the thoughts suggested to me by

the perusal of an article which made the transparent pretence of chiding both parties to the late squabble (which I deprecated in advance, and still deplore), is made the vehicle of low innuendoes, as false as they are malicious and contemptible, against the motives of a man, an intimate and valued friend, who lately enacted a prominent part in exposing some growing evils in the profession. Of the gentleman in question, I will say that his reputation, among a very extended circle, is such as might be envied by either the writer or the publisher of the article referred to; that he is noted among the photographers of this city as the embodiment of candor and straight-forwardness, and that he owes his marked success in business solely to himself, and to the exercise of these and other kindred qualities.

The most absurd phase of this matter is the fact that the person who impugns his motives, with the ascription of vanity and selfishness, dubs himself "*Prof.!*" Further comment is unnecessary.

I have a great relish for consistency and fair play; these qualities have so often asserted themselves in your columns that I look to them instinctively when I see the truth abused elsewhere.

I am, fraternally yours,

LOUIS E. LEVY.

PHILADELPHIA, July 15th, 1879.

VOICES FROM THE CRAFT.

I SEE by our occidental *P. P.*, "Little Carbon" calls in question the truth of my statement in June *Philadelphia Photographer*. By his own statement, "Little Carbon" stands a self-confessed fraud. He is too "little," and the "carbon" in him is too much of the nature of lampblack, to make it worth while to trespass much upon your valuable space to show him up. I will merely say, for the benefit of those who know him not, that he is one of them (process-mongers), and smells to heaven of silver waste notoriety, formerly a tool of Shaw, the waste man, and is now trying to peddle carbon out West, in Kansas. I would advise him to buy a charcoal wagon, stock it up, and be respectable. He has such an overstock of "good sense and experience," I

presume the benighted region through which he is travelling will rival in *cultyah* "Bosting," the hub of the universe.

In regard to "his motives being stigmatized as mercenary, and a creature to be bought and sold," I think he could be bought for a "bit" any time; but it would be mighty hard work to dispose of him at such a high figure.

I wish to say right here, I never thought carbon was a failure, but I do think it is not practical for small work by the dozen in the gallery.

E. D. ORMSBY.

WHERE IT BELONGS.

ONCE in awhile I have a chance to read Mr. Fitzgibbon's monthly (*must*, you know, to get the news), and in the July issue I learn that an extensive lithographic firm in Cleveland, O., have bought the exclusive license to work artotype in that city. Now, that is just where it belongs. Artotype prints *are lithographs*, and you cannot pass them off for anything else, be they ever so *like* photographs; and the process of printing is so essentially lithographic that it cannot be pretended that there is the least photography about it. Our good friends, the Heliotype Printing Company, in Boston, will soon be printing them on a steam lithographic press. It is not a process for the ordinary photographer at all. *I know*, for I have long worked at kindred processes, and speak with actual experience.

The Artotype Company are of course "generous" (in going about and showing their process to photographers) to themselves, for business was doubtless dull in Broadway among photographers.

The lithographer, though, may do well to work artotype. The negative making can be done by willing photographers, who will find that branch of the work to pay better than trying the foolish experiment of making artotype take the place of silver printing.

GEO. WM. WALLACE.

UPHOLD HIM.

I INCLOSE you a new subscription, and the money for it. I hope *every one* of your subscribers will do the same, to show you that they mean to uphold our editor in his course in our behalf.

A SIXTEEN-YEAR SUBSCRIBER.

A HARD CASE.

I HAVE taken the *Philadelphia Photographer* for a number of years, but always through my newsdealer, and know that I cannot do without it; the best is the cheapest, and the *Photographer* is just what the fraternity needs to post them concerning the coming of new frauds, in which the notorious L— and crew are at the front, swindling photographers out of their hard-earned cash, that they may roll in wealth, and laugh at the many that can never get value received out of the valuable licenses they bought, wherewith to make a fortune. But by reading the *Philadelphia Photographer*, I have not suffered by these frauds, for which I return thanks.

Now I have something to contribute to your pages, which I think ought to, and will, be of interest to photographers in general. It is a suit of replevin brought against me by a person to recover an original picture left with me to be copied (and the copy to be finished in ink), which I held until there should be some settlement of account, *or, in other words, as a lien*. The case was tried before a justice of the peace, and there being nothing provided by statute law to protect a photographer in this or similar cases, and as there was nothing of this kind on record that we could find out about, the justice decided against us. We did the best that could be done in the matter, but our evidence was ruled out; the plaintiff's attorney claiming that we could not (or would not let us) establish the fact that it had, and was still the custom of photographers in general, to hold the original picture until the copy was taken and paid for in full, making custom law by general use in this part of our business.

Having stated the facts of this case, I do not think it best to go into a lengthy description of fine points pertaining to it, for fear of making too long an article, but will ask what shall we do in cases like this; shall we let the people run over us or not? I say, "never;" and yet how is this trouble to be overcome? Are we not of as much consequence as other persons in their different trades and professions? They have statute laws to maintain their rights; why cannot

we have the same? I have come to this conclusion, that if we cannot (or are not to have) resort to law in extreme cases and win, that I will have printed contracts with every one, and payment in full in advance, to secure myself from losses from parties that never expect to pay anything.

Let us hear from any one concerning this matter, and by so doing help along the cause of reform, and greatly oblige

H. V. BROWN.

CLYDE, OHIO, July 5th, 1879.

NOTES AND PRACTICAL SUGGESTIONS.

FROM time to time, it is my intention to contribute a few notes and *practical suggestions*. Judging from the numerous and varied questions asked me during the past few years, I am inclined to believe that a correspondent is supposed to know everything; to have at his disposal the means, appliances, and time to solve every problem set before him; to be a model of patience, perseverance, and charity; and to be able to stand any amount of abuse.

I believe it does one good to be asked questions sometimes; it sets one out on new trains of thought. What deep thought has been stirred up by the questions of very little children, and yet, how often are they slighted! How many plod along in trouble, who are afraid to ask advice, lest they should be thought ridiculous; and yet the column devoted to the "answers to correspondents" is a most valuable, and, oftentimes, entertaining part of the journal. By intercommunication, the wisest and most accomplished are frequently taught by those of humbler capabilities; and here I might mention that it seems a pity to see so many of the names of our most valuable correspondents long absent, or gradually falling off, from the journals, occasioned principally by the abuse unfortunately too frequently indulged in by a very small minority. The only way to overcome this is to brave it out, not in a war of words, but to plod on manfully for the general welfare, and treat with silent contempt all scurrilous attacks.

Photographers are, with their lenses and their formulae, very much like the fishmen

of the African coast with their gods. Should everything be favorable, and consequently their catch of fish satisfactory, they praise them up, and make much of them; but should it prove otherwise, they abuse them soundly, even to throwing them overboard, without once attempting to consider the reason of their shortcomings.

We frequently read the testimonials (and who does not?) written by some solid, good, reliable men "who know;" while others are highly flavored, enthusiastic, misleading, and unreliable. I will give you an instance how "testimonials" are sometimes gotten up. A friend of mine, some six years ago, had decided to purchase a new lens. Everything was prepared in splendid order to receive it. The bath was overhauled; the collodion, made with especial care, was at its best; he had even gone to the trouble of overhauling his camera-box, in order to be sure that the lens worked "to focus." As luck would have it (for the lens), the first subject selected was most favorable, and the negative was faultless. My friend was delighted. The upshot of it was that in his happy moments he wrote to the house from which he had purchased it, expressing his entire satisfaction with the lens. It was not only "very rapid and covered well," but "couldn't be bought for twice its cost."

A little later, my friend's lens didn't please him so well; it wouldn't do *everything* for him; and yet it *was* an excellent lens, as lenses go. This testimonial was honestly intended, although, perhaps, rather too enthusiastic; and no one could blame the agents for publishing it.

It is not necessary that a man should study algebra, rack his brain with calculus, and dive deeply into optical science, in order to know a good lens when he tests it; but it is necessary that he should "compare notes," whenever the opportunity offers; should read up a little the many practical articles written from time to time in the journals and "year-books." He will thus be enabled to find out what lenses are *intended to do*, and to judge whether they be good or otherwise.

I was, a few weeks ago, employed to make two pictures of a long, dimly-lighted room, furnished and decorated in colors most diffi-

cult to photograph. Everybody knows that in order to "get anything in" in close quarters requires a lens having a comparatively short focus; and this necessitates also the use of a *comparatively* small stop, a long exposure being the consequence. I have written "comparatively small stop," the ratio in proportion to focal length of the largest of the lens in question (a Dallmeyer wide-angle doublet) being 15; while in the Dallmeyer rapid rectilinear it is $\frac{1}{2}$; in the Euryscope of the Voigtlanders, about $\frac{1}{6}$; but neither of the latter two would have answered my purpose, and so I was compelled to make the *best use* of my wide angle, with its small stop. This I did by placing my camera a little to one side of the centre of the room, thus bringing the nearer objects, the sides, on to the margin of the plate, thereby helping out the *curvature of field* of the lens, and securing *passable* marginal definition with its largest working aperture. Had I attempted to have taken a "broad-side" view, it would have been "nowhere," unless I had used a stop requiring four times the exposure, which would have been almost impossible with a rapid wet plate, the exposures being, one two hours, the other two hours and three-quarters.

I have written this simply as illustrating the good and bad sides of what is really a very excellent lens for the purpose it was intended by the optician.

The opticians advertise lenses as "including 90°;" but the optician's "angle" is altogether different from the photographer's; the first measures the diagonal, the latter the longest side of his plate, which would, for 90°, be twice the focal length of the lens.

A. M. DE SILVA.

NEW HAVEN, July 7th, 1879.

(To be continued.)

STARCH PASTE, or mucilage for tinned iron surfaces, is usually recommended to be made with the addition of a little ammonia, glycerin, or tartaric acid. Sulphate of alumina (not alum) has since been used with great success; but the addition of antimonious chloride (butter of antimony), in the proportion of twenty drops to eighty-three of paste, is found to be still better.

THE THEORY OF PHOTOGRAPHY.

BY HENRY M. M'INTIRE, M. E.

(Continued from page 198.)

HERETOFORE we have been looking at lenses as they *ought* to be, which is not, unfortunately, as they *are*. Optics is, like most other things on this earth, simple and easy enough on paper, all plain sailing, perhaps, as the theory; but when it comes to practice, we find that it is a different thing, and that there are other things besides "poor human nature" that are weak, and that, likewise, human ingenuity must be exercised to circumvent these failings and shortcomings.

It will be remembered that previously a lens was supposed to consist of an infinite number of prisms. Now the special mission of the prism upon this earth seems to be the decomposing of white light into its primitive or prismatic colors. If a ray of sunlight be passed through a prism, and the emerging ray caught upon a screen, it will be noticed that the white light has been broken up into violet, indigo, blue, green, yellow, orange, and red. This is caused because each primitive color has a different refrangibility than the others, and so, in being refracted, is of course separated from the rest. The violet rays are those that undergo the greatest refraction, and the red the least. This unequal bending of the different colors is termed dispersion, and is measured by the distance between the violet and red rays. This property of the prism is the one that is made use of in the spectroscope.

The lens, bearing such a near relation to the prism, it cannot be a cause of surprise that it should be afflicted with the same property; but while it is very useful in the prism, it causes a very troublesome and grave fault in the lens; for the lens, showing its prismatic origin, decomposes light in a first-class style. Now, the focal length of a lens depending upon the index of refraction of which it is composed, and if white light is broken up on account of the different refrangibility of its composing colors, and each of these colors refracted to a different degree than the others, it is certain that a lens will not bring them together in one focus, but will have a separate focus for

each color; the violet being the nearest to, and the red the farthest from, the lens, the others being arranged in their order between the two. In this way, a white object will not give a white image, but a series of colored ones, arranged one behind the other; and if the image be received upon a screen, there will be thrown upon it an image of one color, and upon this image an image of another color,—but slightly larger, and hence overlapping,—and upon this another still larger, and so on.

Now, while white light can be decomposed into its primitive colors, these primitive colors can be united again to form white light; hence with the image upon the screen, the centre, where all the various colored images fall together, will be white, but the edges, when they overlap one another, will be a fringe of various colors. The screen, to receive the image, cannot be so placed that it will avoid this; whatever position it occupies, it will be the correct position for only one color. Thus a blurred image will be obtained; thus it will be impossible to obtain a distinct image. This is called chromatic aberration, and is an aberration which it is impossible *completely* to overcome. With a lens where no correction has been made for it to obtain the sharpest outline, the only way is to place the screen, or to focus, to the sharpest part of the spectrum. The distance from the focus of the color nearest to the lens to the color furthest from the lens is called the longitudinal chromatic aberration. This fault of a lens is one of no small importance. It was supposed, and in good authority, too, for a long time, that it could not be remedied. Sir Isaac Newton had made some trials with prisms to overcome it. He made use of a compound prism of glass and a weak solution of sugar of lead. These he combined in every way that his ingenuity could suggest, but was not able to produce a prism that would produce deviation of light without decomposition also. Meeting with this result with these two substances, he did not extend his experiments to any other, but concluded that an *achromatic* prism was an impossibility; and an achromatic prism being an impossibility, an achromatic lens was doubly so. This conclusion of Newton's was ac-

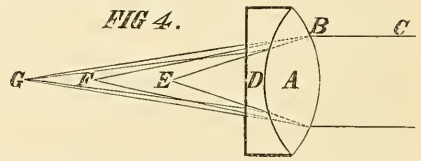
cepted, and believed for a long time. At length, however, a Mr. Hall, of Worcester-shire, England, showed that an achromatic prism was a possibility. This gentleman constructed some achromatic optical instruments. His discovery does not seem to have become generally known—certainly not profited by—until an eminent London optician, Dolland, rediscovered the same principle, and introduced it, with great success, into the instruments of his manufacture.

In this problem, to obtain achromatism, we start with the knowledge of the fact that a prism decomposes white light into its primitive colors. We know, also, that a piece of glass whose opposite sides are parallel transmits light without change. Now, since a piece of glass whose opposite sides are parallel may be imagined to be composed of two prisms, precisely similar placed side by side, but with bases in opposite direction, it must be that when the ray of light enters the first prism, it is broken up into the prismatic colors; but when it leaves this, and enters the second prism, placed in an exactly opposite position, this second prism takes the dispersed ray, and, exercising dispersion in an opposite direction, reunites the component parts, and sends them forth upon the other side. So chromatic aberration could be overcome in this way, but, while overcoming the dispersion, the refraction would be overcome as well, and we no longer would have a lens.

Now, if we believe with Sir Isaac Newton that the dispersive power and refractive power of a substance are always equal, then we will be fully convinced, like Sir Isaac Newton, that achromatism is impossible. But we will not believe with Sir Isaac Newton that the dispersive power and refractive power of a substance are necessarily equal, because we know better. And this difference in the refraction and dispersion of some substances is the very thing that gives us a way to obtain achromatism; for if we take a prism of, say, crown-glass, and pass a ray of light through it, we will obtain a spectrum. If we place a precisely similar prism upon this one, in a reverse direction, we will no longer obtain the spectrum, but a ray of light parallel to the entering ray, as has been mentioned before.

What we evidently require for the second prism, then, is one of equal dispersive power to the first, but of a smaller angle; in a word, we must make the second prism of some material that has a greater dispersive power than crown-glass; flint-glass is such a substance. Combining two prisms, then, one of crown-glass, and another of flint-glass, of equal dispersive power, but of a different angle, we obtain achromatism; but the angles of the two prisms being different, the sides of the compound prism will not be parallel. Hence the ray of light will emerge in a direction *not* parallel to that in which it entered; that is to say, we will still have refraction. Following up this idea, and changing the prisms into lenses, we obtain achromatic lenses.

In Fig. 4, the method is illustrated. *A* is a double-convex lens of crown-glass, and



D a plano-convex of flint-glass. A ray of light, *BC*, entering the lens, *A*, will be decomposed, and its violet rays would be collected in a focus, at *E*, its red in a focus at *F*; that is, when the second lens, *D*, was not present. Now, when the second lens, *D*, is present, the light as it emerges from *A*, would enter *D*; this lens, being a diverging lens, would refract the light in a direction opposite to the dispersion performed by *A*, and, as has been mentioned before, the violet would undergo the most refraction, and the red the least of the primary colors. The lens *D*, being so constructed as to refract just sufficiently, all the various colored rays would be collected at one focus, *G*.

The distance between the red and violet parts of a ray, after passing through a lens, is equal to the deviation the ray undergoes in passing through the lens, multiplied by the dispersive power of the material of which the lens is constructed; and the deviation which a ray undergoes in passing through a lens is equal to the distance of the ray from the lens, divided by the focal length of the lens. The dispersion produced

by each lens must be the same, so that one may neutralize the other; hence the dispersive power of each lens, multiplied by the distance of the ray from the lens, and divided by the focal length of the lens, must be equal the one to the other. But let us not regard the thickness of the lenses, and suppose the distance of the ray from each lens to be the same, then we would have the fact that the dispersive power of one lens divided by the focal distance of that lens, must be equal to the dispersive power of the other lens divided by its focal length, which is but another way of saying that the focal lengths of the lenses must vary as their dispersive powers; and accordingly the focal lengths are made in this proportion. The dispersive powers of crown- and flint-glass bear a relation to each other about .033 to .052, and it is in this proportion that the focal distances of the component parts of the achromatic lenses are made. In place of the plano-convex lens of the combination, a diverging meniscus is often substituted, the result evidently being the same.

As has been hinted at before, *perfect* achromatism is impossible. If spectra be obtained, one with a prism of crown-, and one with a prism of flint-glass, it will be observed that even when the total length of the spectra are equal, the relative length of the various colors will not correspond in the two spectra. So, if one spectrum would be superimposed upon the other, their total length being the same, one would completely cover the other, but owing to the difference in length of the various colors, this latter would not exactly correspond; hence, in correcting chromatism, it becomes impossible to *completely* overcome the dispersion of the first lens by the addition of a second. Fortunately, however, the colors that then appear, and which are often called a secondary spectrum, are quite weak, so weak that they seldom cause any inconvenience. When the only colors that appear by bad focussing are purple and green, the lens is understood to be good as regards achromatism. This chromatic aberration is only another example of the fact, which may be tersely expressed in the old saying, "There's no rose without a thorn."

The tendency of the prism to cause dis-

persion, which is the basis of spectrum analysis,—a science which enables us to analyze the stars of the heavens, and furnishes so many and so delicate and distinctive tests for substances upon the earth, that its value is almost unmeasurable,—causes, when applied to lenses a most obstinate and troublesome aberration. What spectrum analysis thrives on would, if it could not be overcome, almost kill its sister, photography. What may be considered as a God-send in one way, may be looked at as just the reverse when looked at in another light. Still, however, it does more good than it does harm; and even if dispersion could be abolished by an act of Congress, there would be, probably, but very few people that would sign a petition to that august body to have it so abolished.

(To be continued.)

SOCIETY GOSSIP.

CHICAGO PHOTOGRAPHIC ASSOCIATION.
 —A regular meeting of this Association was held in their room (Charles W. Stevens' Photographic Warehouse), 229 and 231 State Street, Wednesday evening, July 2d, 1879. Meeting called to order at 8 o'clock, Vice-President Gehrig in the chair. Minutes of the last regular meeting, as published in the *Philadelphia Photographer*, adopted.

Mr. Joshua Smith read the following paper:

"During the year 1876, while pursuing some experiments on the development of the latent image, I noted some very interesting and useful results, which to-night I will place before you as the sequel to the demonstration I made before the Association during the autumn of that year. I was using bromide of copper for intensifying, and it occurred to me that the negative might be converted into a positive with nitric acid, but on trial the acid produced no effect. I then prepared another plate with the bromide of copper, and placed it in a dish containing hyposulphite of soda, when the image entirely disappeared, leaving nothing but the clear glass. I now began to experiment to recover the lost image, and after

washing the plate, flowed upon it a solution of pyrogallic acid and silver. The image immediately appeared, and was brought to a full printing strength without trouble, having all the detail it possessed originally. This same plate was again treated with the bromide of copper solution, the image dissolved again with the hyposulphite of soda, and again developed, and I continued the same treatment for at least six times, and without in the least endangering the film; the only precaution necessary being the careful washing of the plate to avoid stains. The pyrogallic acid solution used was twenty grains strong, with about two drops of silver solution to the ounce. This method offers something for those who are in search of a way of producing "spirit" pictures. It is also very useful for reducing the negative for solar work, as the strength of any negative can be reduced to any point required. It is also a very pretty and useful experiment in the lecture-room, as the demonstration can be made in a glass bath, and in either gas- or daylight. I have tried various other methods, but this in my hands gives the best results."

The Secretary exhibited a new electrical retouching machine, in which the pencil, metal, or graphite to suit the retouch, is made to revolve at a greater or less speed at will, the motor power being supplied by a two-cup battery, the holder, with the magnets, being very light, and adjusted so the operator can feel the slightest touch of the pencil-point to the face of the negative. With this machine all the labor of retouching is done for the operator, all that is required being the guiding of the pencil. The cost of running the machine is trifling, about fifty cents a month paying all expense.

MR. COLLINS.—"I like the machine; it is just what we want. I think I see from the operating of it that it will be a grand success. Now what is the price?"

SECRETARY.—"They will, probably, be sold, all complete, for fifteen dollars."

Mr. Gehrig introduced Mr. T. H. Hughes, a former resident of Chicago, but now of Havana, Cuba.

Mr. Hughes exhibited some of his work made on the island, which received marked attention. It is all "glacé," and shows

skilful printing, and neatness in mounting. His examples of "statuesque" portraits were a novelty. They show the head and bust, with "toga" drapery, posed and lighted to give the effect of statuary, using a black background; then, in printing, the figure is marked to cut off and fit a pedestal, which is printed in to suit. Mr. Hughes stated that the prevailing size for portraits was the cabinet, and the price thirty-four dollars per dozen, and plenty to do.

Cabinets from Messrs. Ormsby, of San Francisco, and Winsor, of Galesburg, Ill., were passed around for inspection. They were up to the usual high standard of merit.

MR. HESLER thought it about time the Association had a "picnic;" not a slim affair, but a general holiday for the photographers, and as many of their patrons as they could induce to go. Close up the galleries for a day, advertise the occasion, and prepare a programme, and have it carried out.

MR. SMITH.—"I hope Mr. Hesler's suggestion will be carried out, and I trust the photographers of our city will enter heartily into the scheme. It will pay to close up the galleries one day, and advertise the occasion. Let us have a day in the woods with our cameras, and a friendly test of our skill as 'outdoor' photographers, making groups, views, etc."

MR. SHERMAN, Elgin, Ill.—"I like the idea, and move that the Chair appoint a committee of three to get the matter in shape, and report at our next meeting."

Having a second, the motion prevailed, and the Chair appointed as such committee Messrs. Hesler, Smith, and Douglass.

The Secretary exhibited samples of egg and blood albumen.

MR. MARKS stated "that without taking issue with Mr. H. T. Anthony's muriatic acid treatment, he thought more care in albumenizing the paper would lessen its tendency to blister. I find that when I am careful to have my solutions and water for washing of an equal temperature, I have no large blisters, and less small ones; but when this precaution is disregarded they invariably come, and I find this trouble greater with the S. & M. extra brilliant paper."

MR. STEWART, Carlinville, Ill.—"I had

a conversation on this subject with Mr. Hlingworth, of St. Paul, Minn., who has had a large experience in using and preparing albumen paper, and his opinion is that the blisters are the result of faulty albumenizing; the egg does not adhere to the paper. Now it appears to me, from the numerous faults that are centred in this necessary article, that the manufacturers are not alive to their own or our interests. They should give the subject more study, find out the reason of these troubles, and, if possible, correct them. It seems to me that it is possible to make this high-gloss paper so it will work all right. The age of the albumen, kind used, methods of putting it on the paper, may one or all exercise an influence in our troubles. Some enterprising party who will give this important matter sufficient study, and produce a paper that has the surface of the Dresden and other high-gloss papers, without their faults, will reap rich returns for his labor."

MR. GRAY.—"I find considerable trouble with tinted papers. The coloring matter does not appear to be thoroughly incorporated with the albumen, and many times gives bad results."

MR. FRANK.—"I hear a great deal of these troubles with albumen paper, but seldom meet them. I am in the habit of using different brands of paper; and with the following formulæ: I make a plain silver solution 40 to 50 grains strong in cold weather, and run it as low as 30 grains in summer; make it slightly alkaline with liquid ammonia. I float the paper half a minute in summer, and a full minute in cold weather. Time, 30 minutes, usually. I redden the prints with acetic acid when washing, and tone with water, 48 ounces; borax, 1 ounce; $\frac{1}{2}$ ounce of a 10-grain solution of chloride of gold; this bath will tone 10 or 12 full sheets of paper. I fix in plain hypo soda and water, 1 to 5."

The Secretary read a letter from Mr. Martin, Boone, Iowa, in which he noted the value of Carvalho's paint for covering the windows of the dark-room; it gives a very pleasant non-actinic light. He had tested it in his skylight room, but it proved of no value.

Mr. Davis exhibited a stereo negative, his first attempt with emulsion made after a

formula in the last *Photographic News Almanac*. He pronounced it a success.

Mr. Fitzgerald, in calling attention to the solar enlargements exhibited before the Society, made by the Wolfe and Stigleman processes, thought he had done as fine work in his way, which, for the benefit of the members and others, he would briefly state. If a new negative is to be made, have some glass, one side of which is ground very free; make your negative then for the solar in the usual way, flow it with a water varnish, easily made, as I will explain further on. After the negative is dry, retouch it in the usual way, and then varnish the ground side with any alcoholic varnish; Mountfort's is excellent; heat the negative slightly. As usual when varnishing, this makes it translucent, and the enlargement will be as fine, if your negative is good, as any contact print. You can also use the same negative for usual contact prints by printing under ground-glass or tissue-paper. If you want to enlarge from a negative from your collection, take off the varnish by laying it in a dish of alcohol, then reduce the intensity by any of the usual methods. I use mercury and cyanide, varnish with the water varnish, and laying the negative on a clean blotting-pad, face down, take flour of emery and water, with a small piece of glass, and rubbing briskly, grind the smooth surface fine and even; wash carefully, and dry; retouch, varnish the ground side as before, and use in your solar; the negative can be used for contact prints also. To make the water varnish, which, by the way, is the best retouching varnish made, as follows: take orange shellac, 5 ounces; borax, 1 ounce; water, 1 pint; digest at nearly the boiling-point until dissolved, then filter.

The Secretary distributed packages of Richardson's sensitized albumen paper, sent by the manufacturer to the members for trial. A report on the merits of this paper is requested at the next meeting.

Mr. Cunningham called attention to the death of Mr. J. H. Abbott, a former member of the Association.

Bill for advertising meetings, \$2.25, was ordered to be paid.

On motion, adjourned.

G. A. DOUGLASS, Secretary.

Editor's Table.

THE National Photographic Association has now had three years of rest to get over '76. Why should it not be resuscitated? Probably the Executive Committee will have something to report in our next issue, if they can be got together. Members, what say you? Let us have *your* views on the subject for our next issue. Do you want the N. P. A. in full force again?

THE Appalachian Mountain Club held its seventh field meeting at the Crawford House, White Mountains, N. H., on Wednesday, July 9th, and continued until the 11th July. Lectures, addresses, social greetings, and mountain scrambles, made one of the most enjoyable occasions it has ever been our pleasure to attend. We trust to see the *art* section of the Club flourish grandly, and that being the department which we specially work in, we take the liberty of saying to our readers, as a member, that we will be glad to receive and present any mountain or rock photographs for the Club museum that they may be pleased to send us for that purpose.

A HARD CASE.—The laws were created before photography was born. This fact comes up before photographers very disagreeably sometimes, when, owing to the unreasonableness of their patrons, they have to go into the courts for justice, and find there are no laws to protect them. A hard case of this kind is described by one of our correspondents on another page. He is late in learning the lesson that people are prone to leave their old daguerreotypes, etc., with photographers for copying, "just to see how they will look."

The photographer makes a mistake who feels secure of his pay because he holds the "valuable original." It is often of no value even to the owner, and the pay for *copies*, at least, should *always* be exacted *in advance*. This is the general custom, and is fair.

AN INVITATION TO OUR READERS.—Photographers at this season of the year, with long days and a great rush of business, are better enabled to make experiments, and test the new formulæ offered to them in the pages of our journal. To these we would say, please send us some of the results of your efforts. Every experimenter must of necessity make *some* discoveries, whether great or small, and this discovery will be valu-

able to some one else; therefore we say, let us have them to circulate among our readers from East to West. To some the "Dodge and Wrinkle" column may seem to contain much that is stale; but remember "the story, oft' told, yet ever new," is sure to reach some ear to which it comes with virgin freshness; and because a thing is *old* is no reason why it should be discarded so long as it is good. New things grow out of the old, and a "good tree cannot bear evil fruit." So to our readers at large we issue the invitation, send us *something*, no matter in what department of the studio, from cleaning a bottle, or emptying a bath, to the most complicated chemical composition.

SCOVILL MANUFACTURING COMPANY, N. Y., are given almost two columns in a late number of the *Courant*, wherein are described the well-known extensiveness of the manufactures of that greatest of photographic supply-houses in the world. These facts are so familiar to the public we need not repeat them. The world knows it all.

N. C. THAYER & Co., 250 and 252 Wabash Avenue, Chicago, sends us a variety of papers, including formula for working their rapid chemicals, price-lists, announcements, etc., which are up to the times. *Backgrounds* seem to be a speciality with them.

MR. HIRAM J. THOMPSON, Chicago, has favored us with a copy of the most elaborate and extensive catalogue of photographic requirements that has been issued as yet. It is a perfect marvel of its kind, and includes, seemingly, *everything* the photographer needs to buy. It contains about 120 pages, and averages at least one illustration to the page, many of them new and handsome, including the most modern articles in the trade, from all sources. It was gotten up with great care and thought, and must prove very acceptable to all users of such goods.

PROSPERITY seems to have attended Mr. E. A. SCHOLFIELD, Mystic River, Conn., who has opened a second establishment at Westerly, R. I., with his brother, A. A. SCHOLFIELD, as partner. We shall soon show our patrons an example of Mr. SCHOLFIELD'S work, as he was a prize competitor.

WE notice, by the *Tribune*, Denver, Col., that Mr. W. H. JACKSON, ex-photographer of the United States Geological Survey, has settled in Denver, and will continue to follow his profession in that city, both as portrait and landscape photographer. His long experience has peculiarly fitted him for the latter branch, he having served in that capacity for some ten or fifteen years in the employ of the survey corps. We wish him all success in his new field.

THE *Sunday Gazette*, Atlanta, Ga., gives a most glowing description of the gallery of Mr. C. W. MOTES, who has been the leading photographer of Atlanta for the past ten years. Mr. MOTES has lately been refitting his rooms in the handsomest styles, and now invites all old patrons and new friends to give him a call to inspect his improvements. This is a fair sign of prosperity, and we congratulate Mr. MOTES, wishing him a long continuation of the same.

WE are glad to see by the *Berkshire Courier Annex*, that Mr. JULIUS HALL, Great Barrington, Mass., has received the diploma, giving him the highest award ever made on photographs in western Massachusetts. Mr. HALL has won this by patient, painstaking industry, and well deserves the prize. Again we say, we are glad of it. Another number of the same paper speaks of the fine collection of Berkshire views now exhibited at Mr. HALL'S studio.

WE have before us a copy of the New York *Daily Graphic* of May 22d, in which we find four full-pages of illustrations of the city of Scranton, Pa. These cuts are made chiefly from photographs by Mr. FRANK JEWELL, of Scranton. They comprise the principal public buildings, churches, manufactories, street views, and some of the finer residences of the town.

Mr. JEWELL has made very marked progress in his profession as photographer, and we are glad to see him chosen for such important work.

THE Oshkosh (Wis.) *Daily Northwesterner* gives a very pleasant congratulatory notice to its townsman, Mr. COOK ELY. Mr. ELY is prospering in his business, we judge, from the fact that he has just been refitting and improving his handsome gallery, making it all the more attractive for his numerous customers. He seems to fully understand how to please, and well deserves the success his efforts have won. We would add our congratulations to those of the *Daily Northwesterner*.

THE *American Trade Review* interviewer has been to see the new studio of Mr. A. J. W. COPELIN, of Chicago, and praises it (almost) to the skies, for Mr. COPELIN now battles with old Sol away up where he gets the clear light from Lake Michigan skies; but he takes you up in an elevator, and does the very best of work.

PICTURES RECEIVED.—Mr. JULIUS HALL, Great Barrington, Mass., sends us some cabinets of children, and one of a fine-looking dog; also some stereo views of the Twin Lakes, and other attractive points in his section of country. From Mr. LEISENRING, Fort Dodge, Iowa, a few cabinets and stereos of interiors. Mr. C. A. PALMER, Cornwall, N. Y., sends some stereos of "Idlewild," the home of WASHINGTON IRVING, and of the ruins of an old fortification on the Hudson; also some Florida views. Mr. ISA BLACK, Franklin, Pa., has been trying the "etching-in" process, and sends us some specimens thereof. He is following up the example set in our prize picture. We are glad to see this, though considerable taste and skill are required to etch in a background, and plain surface is better than a badly executed etching. Mr. C. D. ROSHON, Harrisburg, Pa., who lately presented the State with an album containing portraits of the members of the Legislature, sends us some cabinets containing groups of these portraits; also, a cabinet bust of Governor HOYT, and one of ex-Governor HARTRANFT. Mr. ORMSBY, San Francisco, Cal., sends us specimens of his cabinet work. One of these, a bust of a lady, shows most exquisite chemical effect and beautiful lighting. From Mr. COOK ELY, Oshkosh, Wis., samples of cabinet size. One of these we might call "The Old Folks at Home," or "Uncle Tom's Cabin." Further description is useless; these titles are sufficient to tell the story.

Our last subscriber, in sending in his order, writes thus: "I have just taken in a partner, and we think we want the *best journal in America* to help us."—THOMAS SHAW.

GIBON'S *Colorists' Guide* is the most popular and most recent book instructing in the art of painting photographs. Recently the editor of the Chicago *Inter-Ocean*, in answering the questions of a correspondent as to how to finish photographs in color and india-ink, closed his instructions by saying: "But for further information get GIBON'S *Photographic Colorists' Guide*." \$1.50, per mail, free.

THEY continue to come in—good words we mean: "I wish to be a subscriber in *perpetuo*."—

G. G. ROCKWOOD, 17 Union Square, N. Y. "I inclose you subscription for another year of the *Philadelphia Photographer*. It would be hard to give up the *Photographer*. I expect to get more than that much good from it, of course; I always have, every year since 1867 or 1878, and I have no reason to think I will fail in the future."—A. W. CADMAN, Jacksonville, Ill. "I shall send an order soon for a thousand of the *Photographer to His Patrons*. Dr. VOGEL'S *Handbook* is truly the best book for photographers published at the present time. HARDWICK'S I consider an invaluable work on the science, but VOGEL gives the art principles of the very greatest importance to the photographer who desires (and all should) to practice his calling in excellence and beauty. I sincerely wish you Godspeed in your laborious, annoying, and all-important work of disseminating valuable knowledge to the photographic fraternity through your very valuable, and now so more than ever, *Philadelphia Photographer*."—D. A. CLIFFORD, St. Johnsbury, Vt.

AN IMPORTANT TRADE-MARK DECISION.—For some time past a suit has been pending in the New York Supreme Court, in which Messrs. A. M. COLLINS, SON & Co., the well-known cardboard manufacturers of this city, were plaintiffs, and the Reynolds Card Manufacturing Co., of New York, defendants. The suit was to prevent the latter from imitating or copying the well-known labels upon the packages of the former in such a way as to deceive the buyer; the defendants having adopted certain of the plaintiffs' numbers as designations for its own cards, claiming that such numbers are common property, and are well understood in the photographic card trade as indicating different qualities of cardboards.

Judge LAWRENCE decided the contrary, and, after quoting a similar case, says:

"In the case at bar the labels do not contain the name of the plaintiffs as makers, but the evidence satisfies me beyond doubt that the figures 35 were known to and recognized by dealers when employed as designating *carte-de-visite* mounts as referring to the particular kind of card which was manufactured by the plaintiffs. And under the authorities, I am of the opinion that the plaintiffs have a trade-mark in those figures, and are entitled to be protected from its infringement by a court of equity."

We do not hesitate to congratulate both the plaintiffs and photographers upon this just decision, for it is important to every user of the long well-known cards of A. M. COLLINS, SON & Co., to know that he is getting the genuine fabric,

free from hyposulphite of soda or other deleterious matter, as those of our favorite maker always are.

As APROPOS of the controversy of—we were going to say *authors*, but not that—of a certain party who seems to have the highway to himself, we quote from Mr. PHILIP JAMES BAILEY'S "Festus," as follows:

"Some do steal a thought
And clip it round the edge—
Then challenge him whose 'twas
To swear to it."

ITEMS OF HISTORY.—The *American Carbon Manual* was published by Scovill Manufacturing Company, New York, who employed the Editor of this magazine to prepare it. The title-page was copyrighted, and full acknowledgment made in the preface by the editor, of all the sources from which he drew for information. Please refer to the book for confirmation of these statements.

The *Philadelphia Photographer* was first issued January, 1864 (really November, 1863), while the Editor was an employee of F. GUTEKUNST, Esq., Philadelphia, where he had been for some years, and where he remained a year or more longer before he committed the daring crime of setting up a stock-house in competition with the Broadway would-be monopoly.

MR. LOUIS DE PLAQUE, Corpus Christi, Texas, sends us some very fine examples of photography, and says his success comes from reading our magazine and various publications. Good.

THE SHAW SILVER-SAVING PATENT (re-issue dated July 9th, 1872, No. 4970, Division B.), our readers will be glad to know, expired July 8th last, and the "licenses and agreements" made under said patent, are now no longer lawfully in force.

No doubt all are glad to know of these facts, for this patent and the patentee have been more persistently and odiously pushed against our craft than any other, the "Bromide" not excepted; for although Mr. SHAW'S claims were often set aside by the courts, he as often obtained a re-issue, and went at it again. His last defeat was by Mr. W. J. BAKER, of Buffalo, N. Y., we believe.

"The National Photographers' Chemical Company" are at this time pushing their claims for breach of contract. We regret that there are any who were so unwise as to make such contracts, and hope they will be able to "compromise" easily if called upon.



E. D. ORMSBY.

Boston Public Library SAN FRANCISCO.

T H E

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By EDWARD L. WILSON,

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OUR PICTURE.

FOLLOWING up our remarks last month upon "Accessories in Photography—Their Choice and Their Use," we give our readers an example of photography illustrating our meaning practically.

The prints for our issue were made from a set of competing prize negatives from Mr. E. D. Ormsby, then of Oakland, but now of San Francisco, California, and formerly of Chicago.

Unfortunately the negatives used were of six different persons, and the subject and composition, and the accessories used, were in each case widely different from the other, hence we cannot apply to them any special remarks, or make any special suggestions concerning them.

We have reserved their publication, however, in order that we might follow the article alluded to with a practical example, showing how *pictures* can be made by photography, of high quality, and in harmony with the rules of art and taste. We do not mean that we have never done this before. We have only to refer our readers to the *many* admirable studies we have been enabled to give them through the kindness of the artists and their models, who have been willing to favor us with excellent negatives for the purpose. But the majority of these have little or no furniture in them, and therefore do not illustrate our present remarks so well

as do Mr. Ormsby's admirable pictures. He has made the German pictures of Luckhardt and Lœscher & Petsch (of which our readers have had several examples) his careful study, and with them the principles of art, and then choosing judiciously his accessories, has produced real works of art.

We place them before you, and beg the careful study of them by you in connection with the paper on page 228 of our last number.

And we do not mean to drop the subject here. We have other things in preparation for you which shall further illustrate the principles of art in photography, which we so much desire you to study more carefully, and want to make our pictures do what they all *should* do, *i. e.*, teach you each month some good and useful lesson.

To enable us to do this, we have gained access to the art collection of one of our wealthiest citizens, and have been permitted to copy such objects as will serve us in illustrating the subject in hand. The first of these we hope to give in our next number, which will be a copy from an admirable oil painting, in which photography has been specially honored by the talented artist, and from which we expect you to draw some useful ideas in composition, and much encouragement in your studies of the principles involved.

This will be followed by a photograph

from a magnificent *plaque (paté sur paté)*, just finished by one of the most skilled European artists, which shall amuse, delight, and instruct you—a charming subject, full of suggestion.

And after this will follow a photograph from nature, wherein a most elaborate use of accessories is made, such as will astonish you, and yet from which we shall try to bring out many useful lessons and comparisons.

If you will only interest yourselves in the matter, we shall try our best to serve you.

If another convention of the National Photographic Association is held, you will want to exhibit work that will do you credit. Let us help to prepare for it, and then we can share and delight in the honor and fame you will receive.

Mr. Ormsby is on the right track, and we have no doubt he is making far better work to-day than he was last spring, when these negatives were sent us.

The prints were made on the S. & M. Dresden paper, supplied by Mr. G. Gennert, New York, at our own rooms, by our excellent printer, Mr. H. C. Bridle.

LET US HAVE THE N. P. A.

I HAVE promised myself for a long time that I would write a few lines upon some of the leading topics connected with photography, but, until now, have managed to put in all of my time at something else. There is just now, however, a stir-up of the N. P. A.; and, being one of the faithful, I step up to "speak my piece" upon the subject. No one institution ever produced more good to its members than the N. P. A. For the proof of this assertion I appeal to every thinking member of the fraternity. I was not present at the Boston gathering (wish I had been), but was in attendance upon all the others. I went to learn something pertaining to the profession, and did not fail in that respect. I saw some fine work at the Cleveland Exposition, more at Buffalo, more yet at Philadelphia and St. Louis, and yet more at Chicago; and at the last one, upon the Centennial Grounds at Philadelphia, it seemed that the climax was reached, for all the work shown there was "good, better, best;" none of it bad.

This result was accomplished in the short space of six years. Previous to the organization of the N. P. A., only in large cities could fine work be obtained, and only in a few galleries at that. At the close of the third year of its existence, good work could be had in nearly every small city; yes, even in country towns now and then was it made. All of this was the result of "comparing notes" *viva voce*, and getting instruction through the visual organ at the same time. Nor was the improved work all the benefit obtained; many impositions that were being practiced upon the fraternity were exposed and stopped through the individual and collective efforts of its members. The "Stamp Act," which not only was expensive, but troublesome, was wiped out; the manner of making up packages for mailing was simplified; the "Bromide Patent" was squelched, and many other troubles shelved. Then three others attempted, and were only foiled by the knowledge of the N. P. A. members—knowledge gained by "social confabs" while in attendance upon these conventions. For instance, what befell the great Edwards? Sarony? Lambert & Co.'s enlarging process? and how was their attempt to foist that "stale old transparency process" upon the photographers at the Cleveland meeting met? Why, they simply "sat down on it." They must have done so, for I saw one that was broken. Thereby hangs a tale. The thing was exposed. What was it? It was simply a transparency backed up with a lithographic ground; too thin by far. They only charged \$25 for instruction and the right to make—what? Simply a transparent picture in your own gallery, and the "right to buy," *only of them*, the lithographic backgrounds, at five hundred per cent. more than such wares could be bought for elsewhere.

The introduction into this country of this wonderful process had been extensively advertised; and their agent, having promised to be at the Cleveland meeting, where he would show off its many beauties, many photographers went there to take that in with the other novelties. Unfortunately for him, but fortunately for the photographers, that broken picture let the cat out, and many dollars were saved to the fraternity. This

same agent has had better luck with the carbon, with the artotype, and with the lightning process, just because there was no N. P. A. to sit down on him, and for no other reason. Both the carbon and the artotype are advertised in this city, and yet the silver print predominates. Why is this thusly? If they are so *very* good, and so *vastly* superior to silver, why go on and cheat the people with that so *very* bad, so *vastly* inferior?

I saw, twelve years or more ago, at Anthony's, beautiful carbon prints, and wished I had a business that would warrant the using of that material; not that I feared the fading of silver prints, but because those prints I saw then were so beautiful. I knew then that the business of an ordinary portrait gallery would not justify any one in attempting to introduce the carbon printing into it; and the more I see and learn of the process, I have cause to rejoice that I refrained then from dabbling in it. And yet there are men in this State who have stowed away upon their shelves, and in their desk, "the right to use, and the supplies to waste," which were bought with their hard-earned money. I have one in my mind's eye now, and a member of the N. P. A. at that! I know of another who threatens to sue in a court of justice for redress. The fault is their own; they ought to read the *Philadelphia Photographer* constantly. I venture to say that they dropped their subscription just long enough to let Lambert get at them; if not in person (very small at that), then one of his imps. Be faithful if you would succeed. Then here comes the "lightning" man (same one) with "bottled secrets," and the privilege of buying all of your chemicals at one house; and last of all comes the "artotype" (same fellow again).

Well, now, it does seem strange that this fellow Lambert should be the *cat's paw* for all of these tricks. There must be a reason for it. These process-mongers are not altogether unknown to fame. For ways that are queer, etc., they are, as a class, peculiar; no doubt about it. The way they approach a photographer is worthy of note. Generally flashy in costume, pompous in manner, grinning in expression, over-polite at the start, with tongues hung in the middle;

knowing, to a fault, they come in with the assurance of a sheriff, as much as to say "you are my nut;" and in case you do not bite the bait thrown out to you, they begin to bluster and threaten and bulldoze. If none of these have the desired effect, then the monger brings to bear his "great gun" (held in reserve up to this moment), BLACK-GUARD! If that does not bring you, your goose is cooked, and the jig's up. There are plenty of these fellows around, some of them greatly experienced. Why did they not have a show with some of these goodie goodie processes? Echo answers, why?

Now, do not understand me as saying aught against the carbon or artotype process, for I never have, nor ever expect to. The manner in which they have been introduced is the point I raise. To tell a photographer that he ought to have it, that it is the process of the future, that silver printing is a thing of the past, and will fade, that any boy ten years old can work these,—and that, too, when the processes, as taught by them (the mongers) are anything but complete, impossible even for one in twenty of their licensees to work (a fact beyond controversy),—is all wrong; and photographers should avail themselves of every opportunity to study their profession by reading, and by communion with each other. The lightning process is simply ridiculous, and one who buys it is just that much out.

Call a meeting of the N. P. A., for the process-monger is out, who will destroy all with whom he comes in contact. It is time for action. Every one practicing photography ought to attend, and with loud huzzas uphold the hands of all who would beat out the monger, and especially hold up the hands and encourage the editor of the *Philadelphia Photographer*, who singly and alone fought what he believed, what I believed, and what photographers *know*, was against all their interests—*vs.* the process-monger.

I. B. WEBSTER.

LOUISVILLE, August 12th, 1879.

Photographic Mosaics for 1880 is in preparation, and we invite all of our readers to send practical articles for its pages, as usual. Please let us have them *at once*.

NOTES AND PRACTICAL SUGGESTIONS.

(Continued from page 248.)

IT will soon be time again to take up in earnest landscape work; in these parts we haven't had any decent weather for landscaping worth mentioning this year; we had August weather in May—haze, haze, and nothing but haze; it being impossible to obtain anything presentable where distance was included in the pictures.

Only recently I read a paragraph praising a lens for its wondrous depth of focus, near objects, and those ever so far—miles—away, being sharply defined. That might be all very well in the particular case of the correspondent; but in a *picture*, it is woefully inartistic. We find "authority," and very good authority, too,* for getting "some object, animate or inanimate, as near the camera as possible, on which alone to adjust the focus, entirely discarding the distances, as one of the best means in assisting to produce a truthful stereoscopic effect of *relief* and *AERIAL PERSPECTIVE*, the want of the latter especially having constantly afforded an excuse for the enemies of our art to deny the possibility of *artistic effect* being produced in the camera."

"Doctors differ," and "things oftentimes work by the rule of contrary." A good deal has been, and will continue to be, written about blurring, thick films being recommended, in order to reduce it to a minimum. My experience the past winter has proved the very opposite to be the best. During the winter I have, for several years past, had occasion to make a great many interior views. Where the exposure is protracted, a thick (wet) film is much easier to keep than a thin one; but finding that it was impossible to obtain good definition (on which a great deal of the success of the picture depended, the rooms invariably being filled with small photographs), with the thick films, I was obliged to abandon them and return to my former method—a rather thin film, when the definition was always most perfect. My experience has been the same with dry plates; more depending on the

quality and the *color* of the film than on the thickness. More anon.

At this season of the year, "chain lighting" and "oyster-shell" markings are the bane of photographers; they both appear *on the same side of the film*—the thinnest. The former appears to me to be caused by a separation of (*at least a portion*) the cotton and haloid salts, leaving insensitive places on the film. Sometimes a very vigorous shaking of the collodion will mend matters; but it can be effectively cured by diluting the collodion a little, and after flowing it over the plate, before pouring the surplus into the bottle, lowering the upper corner of the plate so as to allow the collodion to pass in a steady wave *over* the first coating. The "oyster" shell (as recommended by Mr. M. Carey Lea years ago), can be avoided, to a certain extent, by keeping the plates cool and the collodion *cold*, coating as rapidly as possible, and losing no time in getting them into a *well-kept* silver bath; draining the plates carefully, and keeping clean the corners of the kits.

I had doubts as to the matching of the *new* back cells for portrait lenses issued so long ago by the Messrs. Voigtlander; I have recently had an opportunity of testing one. Here I might mention that the original objective and the "new back cell" were not sent out together; the latter (through the kindness of Messrs. Benjamin French & Co.) having been loaned to substitute for the original back cell of a portrait lens made several years ago; the equivalent focus of the lens, a No. 7, being 18.5 inches, its largest stop about one-fifth of the focal length. The focus of the *new* lens—that is, the front of the old combination, with the new cemented back cell (in place of the original one), measured nearly fifteen inches. It worked nicely, covering *well* a 6 x 8 plate with the largest stop $-f\frac{1}{4}$; the definition being perfect; the depth of focus sufficient to satisfy the most exacting. By separating the cells a little, the field was much flattened; and it would "cut" considerably more. Taking it altogether, it will be found a most useful attachment for those already possessing Voigtlander tubes, enabling them at half the cost to have a practically much quicker working lens, either for full lengths

* R. Manners Gordon, in Photographic News.

or smaller pictures; while the original, on account of its longer focus, is better adapted for the large heads.

A. M. DE SILVA.

(To be continued.)

THE THEORY OF PHOTOGRAPHY.

BY HENRY M. M'INTIRE, M. E.

(Continued from page 251.)

SPHERICAL aberration, or axial aberration, as it is sometimes called, is due to the unequal refraction caused by different parts of a lens; that is to say, the rays of light that strike the inner parts of a (converging) lens are relatively not refracted in the same degree as those that strike the outer parts of the same lens, and therefore are brought to a different focus upon the axis, further from the lens than the outer rays. The result of this will most obviously be to cause a want of sharpness in the object produced by a lens; for when one part of a lens sends its rays to one focus, and another part to another focus, when there are what might be called "opposition foci," it is but natural not only that the focus itself will not be as sharp, on account of only a part of the light being collected at that point, as well as on account of the rays that find a focus at another point, and which produce no distinct image upon the screen, but only serve to blur and render indistinct the image formed upon it. This aberration is called spherical or axial; the distance upon the axis between the focus nearest the lens and the one furthest away is called the longitudinal spherical aberration. The distance between the object on the screen, when the sun is focussed, for example, and the outer "halo," is called the transverse or lateral aberration, and the halo itself a circle of aberration. In seeking to correct this aberration two methods are to be pursued: first, to ascertain if it may be obviated by any peculiar shaping of the lens, and, failing this, second, if it may be eradicated by any "external applications" or modifications of the lens. It is evident that of two lenses with equal openings, but unequal focal lengths, the lens with the shorter focal length will have the greater spherical aberration, that is, of course, other things being

equal; and, on the other hand, of two lenses of equal focal length, but different openings, the one having the larger opening will have the greater aberration; and, again, it is evident that the material of which the lens is constructed will have much to do with the aberration. Thus, of two lenses, of the same focal length and opening, but of different materials, that one made of the material having the higher index of refraction will have the less aberration; for the lens, constructed of the material having the higher index of refraction, with longer radii for the spheres of which its surfaces are parts than the other, and for this reason evidently the less aberration. Of the various forms of lenses, the double-convex is found to be affected to the greatest extent by spherical aberration, and the converging meniscus the least. There is, by the way, one of a still better shape (atha), very difficult to grind; it resembles a meniscus very much. One surface is an ellipsoid, and the other a sphere, having its centre situated at the further focus of the ellipsoid; or, in plain words, if a section be made of the lens, one line, representing one surface, will be the part of an ellipse, and the other line, representing the other surface of the lens, will be part of a circle, drawn with its centre at the focus of the ellipse further away from the lens.

The whole cause of this aberration is, as has been mentioned before, the unequal refraction of the rays of light by different parts of the lens, the difference increasing as the rays pass through the lens nearer the edge. Hence it seems plausible that if we could cut off the outer parts of the lens, and use only the centre, we might avoid much of it; and this we can do by the use of diaphragms or stops, which cut off all the outer parts of the lens, and leave only the central portion available. This amounts, in the end, to the same thing as using a lens of a smaller aperture, equal to the diameter of the opening of the stop; all that is gained in correcting the aberration is lost in the amount of light. The smaller the lens, the less the aberration, the less the light; besides which it only removes the aberration from the lenses when the light is parallel, and parallel to the axis of the lens; for if it comes inclined to this, it will pass through

the opening of the diaphragm, and, not being parallel to the principal axis, will not strike upon the centre of the lens, but upon one side of it. So this method, while it is all very well for telescopes, and such like, will not exactly suit, will not exactly "fill the bill," for photographic lenses. We know very well the cause of this aberration. It might be said different parts of the lens do not work in concert; each part collects the light in its own focus; there are too many foci. With the saying, "too many cooks spoil the broth" in mind, we can say "too many foci spoil the lens."

Now, for converging lenses, the outer parts collect to foci nearer the lens than the inner parts do; this is called positive aberration. For diverging lenses the fact is the reverse, and receives the name of negative aberration. Now, in the case of the converging lens, where, as the rays pass through the lens further from the principal axis they find their focus near the lens, it seems quite plausible that if we could combine with this lens another that would bend the rays passing through the first lens near its axis slightly outward, and those passing through it further from its centre further outward, and so on, and have this outward bending of the rays passing through the first lens by the second so nicely regulated that they would all be collected in one point, then we certainly would have this aberration corrected. It is very evident that this second lens must be a diverging lens. We have seen that a method like this corrects chromatic aberration. So we have this secondary lens fulfilling two missions—the correction of spherical and chromatic aberrations. If the second lens does not bend the rays sufficiently outward, so that the various rays approach, but do not actually meet on one point, we have what is termed under-correction. As this thing may be underdone, it may also be overdone; and we may have the rays going past the common focus. Such a lens is said to be over-corrected.

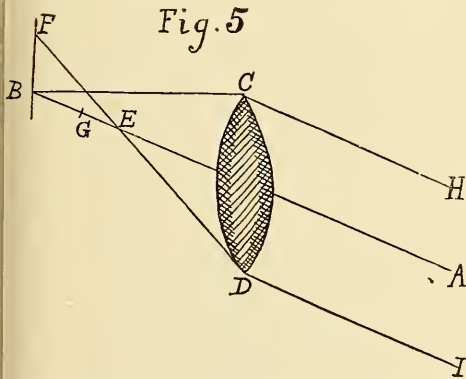
There is still another method used for correcting this aberration. It is known that longitudinal aberration varies as the square of the diameter of the aperture, while the lateral, as the cube of the diameter of the aperture. Again, that the longitudinal

aberration varies inversely as the focal length, and the lateral inversely as the square of the focal length; that is, if we have lenses similar in other ways, the longitudinal aberration of one lens will be four times that of another, if its aperture has twice the diameter of the other, or nine times, if its diameter is three times; and the lateral aberration will be eight times as great if its aperture is twice as wide, or twenty-seven times, if three times as wide. Or if lenses have the same aperture, the lens whose focal length is twice another will be but one-half its longitudinal, and but one-fourth its lateral aberration, while one that is three times as long will have one-third the longitudinal, and but one-ninth the lateral aberration. Now, if we combine two similar lenses of the same focal length, we will have a compound lens, with a focus one-half the length of the focal length of each lens that forms it; that is, it will be equivalent to a simple lens of one-half the focal length. Each of the component lenses, having the same aperture as such a lens, but twice the focal length, has but one-fourth the lateral aberration of the latter lens, and the two together therefore would be but half of the lateral aberration.

When rays that are parallel to each other, but not to the principal axis, pass through a lens, they are collected in a focus which, when the rays are not much inclined, is practically equal to the length of the principal focal distance, but as the light becomes more inclined to the axis, the focal distance is rapidly shortened. On account of this, the image formed by a simple lens does not be on a plane, but upon a curved surface. A lens under such conditions cannot form an image distinct in every part; if it be sharp in the centre, it will be indistinct at the edges, and *vice versa*. This may be corrected by the use of diaphragms, which cut off the outer parts of the lens, and force all the rays of light to pass nearer the centre of the lens. Suitable curves to the lens, or a correct combination of lenses, are still better methods for correction, however, as then so much light does not have to be cut off by diaphragms.

In Fig. 5, where the parallel rays fall obliquely upon the lens, *CD*, and parallel

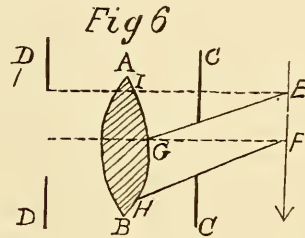
to the secondary axis, $A B$, we will have the ray, $A B$, passing through the lens,



without change of direction; $I D$ will be refracted and cross the axis at E , while $C H$, being refracted, will cross at B . Now all the rays parallel to $A B$, and on a level with it,—that is to say, those that lie directly in front of and behind $A B$ in the figure,—all strike the lens, so that they will not be bent either up or down, but simply inward, and each ray on one side of the axis striking the lens in a way exactly similar to the way a corresponding ray strikes upon the other side of the axis; these all will be collected in one point at G (that is, not considering spherical aberration). So from this, it will be seen that when the lens is focussed upon some object containing horizontal and vertical lines, when the horizontal lines are in focus, the vertical lines will not be, and when the vertical are, the horizontal will not be. This failing is called astigmatism, from the Greek, meaning without a point, or not coming to a point, for what reason is obvious. The remedy for this may be by particular curves to the lens, by combination of lenses, or placing of a diaphragm. There is another fault that must have been noticed by Fig. 5, that is, the rays, lying in the same plane as $H C$ and $I D$, will not be collected in a single point, but will be distributed over a small space. This is another kind of spherical aberration, and may be corrected or lessened by the same means as those mentioned for the astigmatic aberration.

We have yet distortion to deal with,

whereby a straight line of an object is rendered curved upon the image. This is due to unproportional refraction by different parts of the lens. It is affected in a peculiar way by different positions of the diaphragm. Thus, when with a single lens, with the diaphragm in front of it, is used to focus, say, a square, it will form an image resembling a square, but with sides curved outward. Again, if the same lens be used, but the diaphragm placed behind it, the curved sides of the square will be bent inward. This is caused by the different portions of the lens through which the rays are made to pass by the diaphragm. Thus, in Fig. 6, $A B$ is the lens, $E F$ the object. Now, with a diaphragm placed in front of the lens, as



at C , the ray from the outer part of the object, as E , would be caused by the diaphragm to pass near the centre of the lens, as at G , while a ray from the inner part of the object, as at F , would be caused to strike near the edge of the lens, as at H . The rays near the inner part of the object would thus be refracted more than those further out. Thus, in an object like a square, the middle of the sides would be more distorted than the corners, and hence the side would appear curved, and curved outward, because the corners would be nearer their true position than the middles of the sides, which would be too far out; that is, the line representing the diagonal of the square would be nearer its true length (the length it would have if not distorted) than the lines connecting the middles of the opposite sides. Now, on the other hand, if the diaphragm is placed upon the back of the lens, as at D , a ray from the end of the object would pass near the edge of the lens, as at I , while one from F would pass near the centre of the lens. Thus the case would be reversed. The lines from the outer parts of the object

would be distorted more than those from the inner parts; the square would thus appear with sides curved outward; that is, the lines connecting the middle points of the sides would be nearer their true length than the diagonals of the square. This aberration is dependent to some extent upon the shape of the lens. The meniscus, with concave to object, makes least, and the biconcave lens the greatest, distortion. It may be lessened by peculiar shape of the lens, but the best way is by combination of lenses.

From these various ills that lenses are heir to, it becomes quite evident that a single lens will answer for but very few purposes photographically; for cases only where there are but few straight lines to be produced, for landscapes, while for portraits, groups, and architectural objects, a combination of at least two will be required. Thus, by combination of various forms of two lenses, and of more, we obtain the various lenses now in the market. Comparing any of the best of these with a plain lens, "pure and unadulterated," one can form an idea of what difficulties human ingenuity can overcome. At one time one could have said, without any hesitation, that a perfect lens would be an impossibility; but, viewing what progress has been made of late, and remembering with what kind of imperfections opticians have had to deal, such a remark at the present time would be rash, if nothing else.

The equivalent focus of such combination of lenses, which is usually called simply a lens, is the focus resulting from the combination of the foci of the various lenses that go to make up the combination. Speaking of focus reminds one, however, that some method for determining the focus of a lens should have been given previously; but, for want of a more suitable place, will be given here. There are several instruments, termed focometers, that are constructed with great care, for the accurate determination of the exact focus of a lens, but for "all practical purposes" these are not required.

By holding a lens opposite to a window, in front of a white wall, and moving it backward and forward until the image of the sash becomes distinct, and measuring the distance of the lens from the wall, we

may approximately determine the focal length. When the distance does not exceed about two feet, it may be taken as the focal length, but if it be greater, then the distance from the lens to the window must also be measured. Multiply one distance by the other, and divide the product by the sum of the distances; the quotient will be the true focal length. Or multiply the observed focal distance, or the distance of the lens from the wall, by itself; divide this product by the distance from the wall to the window, and subtract the quotient from the distance between the lens and the wall; the remainder will be the focal length. In place of the window, a hole in the shutter can be used with success, while for the wall, a piece of white paper may be held in the hand.

A candle and piece of white paper may be used, and so placed, that when the image is quite sharp the paper will be as far on one side of the lens as the candle is on the other; one-half of the distance from the paper or candle to the lens, or one-quarter of the distance from paper to candle, will be the focal length. With the sun's rays, by obtaining the burning-point, where the point is sharpest, its distance from the lens will be the focal length. Or, again, with the sun's rays: cover the lens with paper, and have two similar and equal holes in the paper, at an equal distance from the centre of the lens, and upon the same side of a diameter; hold the lens now so that the sun's rays will strike it perpendicularly, and hold a piece of white paper below it. If the images of the two holes do not correspond, move the lens in that direction, which will cause them to approach each other; continue this until they exactly correspond. The distance from the lens to the paper is the focal length. By continuing to move the lens in the same direction, the images of the holes will recede from each other upon the other side.

Focus an object of known length, measure its length upon the image formed, and also the distance from the object to the lens; then the size of the image multiplied by the distance of the object from the lens, and this product divided by the sum of the size of the image and the size of the object. The quotient will be the focal distance of lens.

(To be continued.)

A NOVEL BABY SHUTTER.

BY G. W. CODDINGTON.

I INCLOSE you herewith two ferrotypes of the *Baby Shutter* I have had in use for about two years or more with entire satisfaction. I use it also for adults, or anything else that should happen to get in focus. It answers all purposes equally well. Fig. 1 shows a front view of block and tube

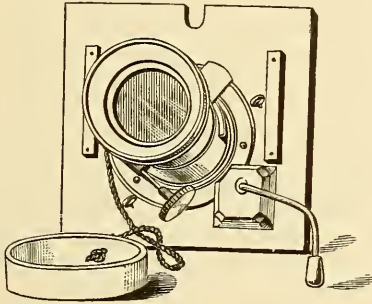


FIG. 1.

The block is about one and a half inch thick, or as thick as the length of the movement given by the rack in focussing the instrument, so that the back lenses shall not go clear through the block. At any lowermost corner through the block is passed a rod or wire one-eighth of an inch thick, with a shoulder or flange soldered on it where it enters the wood, to keep it from playing backwards in the block. The wire is bent at right angles, so as to form a lever to operate the shutter behind the tube.

Fig. 2 represents the back on shutter,

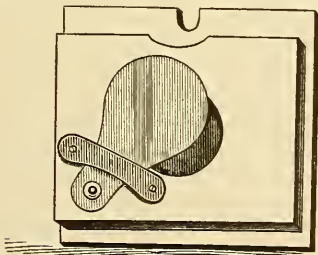


FIG. 2.

which is soldered fast to the opposite end of the wire forming the lever, and is made of sheet-iron or zinc. Over this is passed a strap of sheet zinc, which is secured by two screws at the ends, to keep the shutter close

up to the face of the wood block, and excludes all light when closed from passing through the lenses. The shutter being slightly larger than the hole in the block, the two screws that hold the strap at the end act as stoppers to the shutter in opening and closing the tube in making an exposure. Fig. 2 shows the shutter partly open, with the knob on the lever projecting at the side. As the shutter is always closed after making an exposure, it keeps out all dust and dirt from settling on the back lenses.

In making an exposure of a baby, it does not attract the attention of the eye as with a hat or cap of the instrument, and there is no occasion to flirt your head-cloth in the face of your sitter, which is anything but agreeable. The whole costs but a trifle, and is easily made. I think it would pay some enterprising manufacturer of camera boxes to put them on all front boards hereafter made, especially for one-quarter and one-half size tubes, and particularly as it is not patented, but a free gift for the benefit of the fraternity.

The next best thing in my long experience with flaps and shutters, is the lens cap itself, with a slight attachment, very slight, indeed, but like many other simple things and trifles in themselves, must be tried and used to be fully appreciated. It is nothing but a piece of string about thirty inches long, double it, and pass it over the hood of the tube by looping it; the other two ends pass through a hole punched through the rim of the cap, tie a knot in the end so it cannot fall through, and you have got that cap where it cannot get away; it is always just where you want it to be for an exposure or to cap out all dirt, and you can use it as a timer. By dropping it it will act as a pendulum, and by counting two beats to a second you can hit the right time (*within a mile every time*), if you know when to stop every time. But, without joking, it is a good thing all around. But don't try it; it is so simple, and any fool could do that inside of five minutes; and, of course, you have known that since 1841. All I have to say is, I began about that time myself, and I was such a fool I never thought of it until a short time ago, and I am not too old to learn yet. So if you have anything good,

if it is ever so simple, trot it out, and spread it all over the pages of our *Philadelphia Photographer*, and let old and young all come to the feast.

The cap and string is shown on Fig. 1, front view, and is as plain as the nose on your face.

Now I guess I will shut her off, put on the cap myself, and proceed to develop as usual.

PLATT'S TRACING APPARATUS.

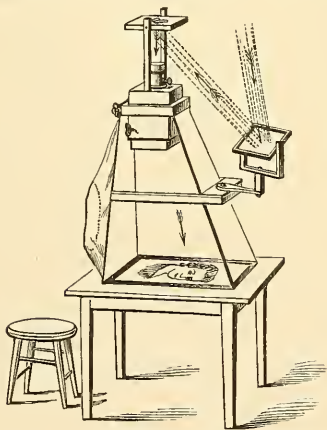
BY S. L. PLATT.

A GREAT many photographers cannot afford a solar camera, and an apparatus that would enable them to have some of its advantages will doubtless be of service to them.

All of us, after the careful study of Gihon's *Photographic Colorists' Guide*, can make good use of our spare time in crayoning, and taking or coloring enlargements from our negatives.

The first step is to procure the enlarged sketches of the picture you propose to make. This I do by means of the apparatus which I shall describe below.

As I have said, my invention is for tracing or sketching for crayon or other portraits.



It can be used by any one, and for enlarging any object that can be attached to the top, which is to contain the picture, face down. It can be made of any size, from 8 x 10 to life-size. The lens, the movable front for focussing, clamps for holding the movable top, which is adjusted from inside, and governs the size of the object, and the reflector,

to throw strong sunlight on the object, will all be seen in the diagram; also, the table or stand upon which the paper, or material upon which to draw the image as it is reflected down, is placed. This is a very useful instrument for any gallery, as any card can be enlarged to a perfect 8 x 10, or larger, to show the customer how he would appear in a large portrait, which might induce him to have one made.

The one I have is intended for a ten-inch head, or from that down to 8 x 10. It is two feet square at the base, four feet high, fifteen inches wide at the centre, with a twelve-inch arm to the reflector. The reflector has three movements, or six, counting the backward movements.

The movable box has only two movements, up and down, for governing the size of the reflection. The box is 9 inches square, one inside of the other, fastened with a thumb-screw inside of the front curtain. The movable top is raised and lowered from the inside, and fastened by a clamp with a thumb-screw in front. The thumb-screw is ten inches long, to reach clear across the front. The strip across the centre, holding the reflector, is eighteen inches long.

The box or frame work is covered with soft flannel, and lined with thick yellow paper, so no light gets in save the reflected light. It will be observed that the image is very strong, and has the appearance of a finished picture. The rays falling in at the top make it a very pleasant light to work in, just right for comfort, something like twilight. It takes one to trace by measure, as all portraits do on canvas or cardboard, from two to four hours.

An artist rarely crayons two heads alike from the same picture, and do his best. I can with this make eight sketches with ten-inch head in less than an hour, and have them alike every time, for I will not change the focus, and pin the paper each time at the same place. Changing the position of the reflector does not change the reflection, as it leaves the picture every time alike. This is not usually the case with a solar printer.

I am a great friend to the solar camera, but I can, by using a condenser, do the same work by this.

GIHON'S GATHERINGS.

COMPILED BY THE LATE JOHN L. GIHON.

V.

OLD COLLODION MADE NEW.—"When collodion has become so old and red as to be useless, it can be rendered equal to new by this simple means: Cut some zinc into small strips, and throw a few of these into the bottle of old collodion; shake a little, and let stand until the color has changed from red to straw color, which will take from three to forty-eight hours. Collodion keeps better and longer in dark bottles than in clear glass ones."

To Discolor Collodion.—"Put some clean egg-shells in your bottle of old red collodion, and you will have the pleasure of seeing it gradually resume its normal color, and its working qualities will be found as good as new."

Collodion.—

"Ether,	12 ounces.
Alcohol,	12 "
Iodide of Ammonium,	120 grains.
Bromide of Potassium,	48 "

"Mix the ether and alcohol together; dissolve the bromide in as little water as possible, then add it to the ether and alcohol; shake slightly, then add the iodide of ammonium, and shake until all is dissolved. If needed for immediate use, filter before adding the cotton; if not, let it stand twenty-four hours."

Pinholes in the Negative "are caused by the use of the rough side of common glass, dust in the camera, in the dark-slide, in the atmosphere, or in the bath. Keeping the plate too long in the bath, or in the dark-slide, is a frequent cause of pinholes; but a cause still more frequent, is a deranged condition of the silver bath, the most usual derangement being excess of iodo-nitrate of silver. When pinholes arise from this cause, dilute the bath with half its bulk of distilled water, filter out the turbidity, and add silver enough to make up the strength."

Solution for Arresting a Fog.—

"Acetic Acid, No. 8,	4 ounces.
Gelatin,	4 drachms.

"The acid will dissolve the gelatin with-

out heat. Keep this solution in the dark-room all the year round.

"When a tendency to fogging shows on the negative, mix a little of the above with the developer, and you will get a clear picture, whether it be a negative or ferrotype."

Acid Toning Bath.—"One grain of chloride of gold is dissolved in one ounce of water. Add to this, of solution of carbonate of soda enough to make the bath alkaline; then add a few drops of acetic acid to acidify it. In an hour or two the solution will have lost its yellow color. It is then diluted with three or four ounces of water, and may be used immediately. If it tones too blue, more water may be added. It works very regularly, and does not bleach out the half-tones.

"The bath will keep for any time, and can be used for many weeks. It is a good plan to keep some of the stronger solution separately, as it serves to keep up the strength of the bath."

Solar Development.—**DRY PROCESS—SALTING SOLUTION.**

"Water,	40 ounces.
Chloride of Sodium,	1½ ounce.
Citric Acid,	6 grains.

"After filtering, add 160 grains of arrow-root, and boil, stirring constantly. Float the paper five minutes. Silver solution, 1:6; float one minute.

WET PROCESS—SALTING SOLUTION.

"Water,	4 ounces.
Bromide of Potassium,	30 grains.
Chloride of Ammonium,	18 "

"Float five minutes.

SILVERING SOLUTION.

"Water,	6 ounces.
Nitrate of Silver,	400 grains.
Acetic Acid,	150 "

"Float two minutes, and expose the paper while still wet for about three minutes. Develop with a concentrated solution of gallic acid, with the addition of a little acetic acid; wash well, then tone and fix as usual.

"Prints made in this manner from harsh negatives, will show great softness and even delicacy."

General Hints on Failures.—"When defects of any kind are discovered, proceed

systematically to discover the cause, always beginning with the simplest and most obvious. For example, in case of foggy pictures, clean the plates with more scrupulous care; observe if any ammoniacal or other noxious vapors are escaping into the atmosphere of the dark-room; reduce the amount of yellow light in the dark-room; examine for diffused light in the dark-slide or camera; regulate the temperature to about 60° F. If these things do not remove the evil, make fresh developing solutions, test the bath, or make a new one. It is always desirable to have two baths in working order.

"Flatness arises from overexposure, insufficient and injudicious intensifying, and also from anything that causes fog or veiled shadows.

"Want of half-tone or hardness arises from bad light, underexposure, the use of a weak or old developer, or stopping the development too soon, and then over-intensifying."

Insensitiveness and Want of Intensity.—

"The light very dull; the bath weak; the temperature too low; too much nitric acid in the bath; the developer too old or the collodion too old; this condition of the latter is indicated by its being excessively red. Any of these causes will tend to both of these results."

SOLAR RETOUCHING PROCESSES.

OUR readers are woke up to the advantages of improving their solar negatives, and we append a couple of useful communications on the subject:

"When solar negative retouching processes are assuming so much importance as to be sold at large prices, both as patented and secret processes, the following will be found equal to any of them, and does not infringe on any patent yet granted, and if you will give it the publicity of your journal it may be of use to some of the profession.

"Instead of the usual varnish, flow with a solution of gelatin, one part to six of water (or nearly that proportion), holding the plate level over a strong but diffused heat until the gelatin sets perfectly smooth and

glossy, which will soon be acquired by practice. Grind in the usual way with pumice to make a tooth for retouching, which is done in the usual style, being careful to have as fine as possible. After the retouching is done breathe on the film, which blends it *into* the gelatin, so that it may be rubbed over with oil, glycerin, or any other substance, giving a transparent film free from grain or line.

"By all workers of the carbon process the above will be recognized as borrowed from Leon Lambert's instruction on retouching the chromotype before being transferred.

"A little salicylic or No. 8 acetic acid, or, better, ten drops of a saturated solution of alum, will preserve the gelatin from decomposition, and keep it from dissolving again.

C. TOMLINSON,
"Elmira, N. Y."

"HARRINGTON'S SOLAR PROCESS.

"To one quart of rain water add

Alum,	1½ ounce.
Bichloride of Mercury,	1½ "
Loaf Sugar,	1½ "
Acetic Acid,	½ "

"To reduce the intensity of the negative, flow over (after clearing and washing) with this solution. Then wash and flow with strong cyanide of potassium, wash and repeat as often as necessary, to reduce to proper intensity. Then flow with gelatin, and dry, and retouch finely. Now take another glass, perfectly clear, and flow over with pure balsam of fir, and heat both negative and other glass, and then place them together, and use two pair of wooden pincers to fasten them. See that no air remains between the glasses, and finish by pasting gum paper around the edges. By following this process no one need have any trouble to get fine solar negatives of any intensity, as you can reduce your negative as far as you wish, and stop.

N. P. HARRINGTON,
"Salem, O."

We give these to our readers as they come to us. Being unfamiliar with the processes advertised, we must ask the owners to inform us if the above infringe or not upon any patent. Mr. Harrington's process seems Stigleman-like, as the specification reads.

THE WAY TO PHOTOGRAPH CHILDREN.

TOO little attention is paid to this branch of business. The artist is usually very busy when the child is brought, and arises at the squall of the child, and begins to scratch his head, then, after a heavy sigh, starts for some old cubby-hole, hands out the remains of a chair resembling the one used by Adam in his infancy. The mother looks at the chair with a shudder, and claps her hand over the child's mouth; the artist goes for a duster, and an old coat for a covering. After the chair is dusted and covered the best he can, he seeks some branch of amusement by the way of blowing an old whistle, screaming, shaking keys, or picking the last string of some old fiddle. This, in time with the child, is music for the blind only, and to all looking on seems silly.

In order to do away with the above nonsense, take an ordinary high chair, and fix the back with a stationary curtain, so it is straight, up high enough to support the child's head; pad it so the back will keep the child from moving sideways; cover with a nice spread; then focus the instrument on the back; have the baby to sit, so it will bring the glass in focus at that point. After this is done, take your position back of the chair, and as soon as the mother places the child in, fasten him with a cord; then get ready for the exposure. Don't appear to have seen the baby, and he will not be afraid. Let the mother seat herself by the side of the child, and hold her peace. Then light a torch, made by soaking a cork in oil, on the end of a wire. As soon as you see the child's attention is drawn by it, make the exposure. Never let a child know anything is required of it, but go on about your business, and it will be sure to have its eyes on you.

When a child is to be photographed, old enough to understand what you say to him, do not let him know you wish any more than to show him how pictures are made. Have him sit or stand, as you choose; then take a small mirror, three inches wide, five inches long, and hold above the tube of the instrument, and call his attention to it. Show him his picture in it, but do not look toward him; you can watch his movements

in the mirror; that is what it is for. When he is still, make the exposure. He will not know he has had a picture taken, nor when.

If you look at a child of that age, and try to get his attention, he will look and appear awkward. It would be rather difficult for a grown person to sit and be stared at, and hooted at while sitting.

Now, always keep a small mirror in the gallery for this purpose, as it will be of great use to you.

S. L. PLATT.

SCIENCE FOR THE PHOTOGRAPHER.

SILVERING SOLUTION FOR GLASS.—A solution of 2 grammes silver nitrate, 1 gramme aqua ammonia, 3 grammes alcohol, and 3 grammes water, are mixed, and the mixture filtered at the expiration of a few hours. Another liquid is prepared by mixing 0.25 grammes grape-sugar, 8 parts, and 8 parts alcohol, and likewise filtered. The articles to be silvered are then placed in a bath containing equal parts of both clear liquids, and heated to 65° C.

INK THAT CANNOT BE ERASED.—An ink that cannot be erased, even with acids, is obtained by the following receipt: To good gall ink add a strong solution of fine soluble Prussian blue in distilled water. This addition makes the ink, which was previously proof against alkalies, equally proof against acids, and forms a writing fluid which cannot be erased without destruction of the paper. The ink writes greenish-blue, but afterwards turns black.

MANUFACTURE OF CELLULOID.—Celluloid is made by dissolving pyroxylin in camphor, instead of ether or alcohol. A solution of one part of camphor in eight of alcohol is made; pyroxylin is ground in water, the desired colors added, and all water removed from the mixture by pressure; the camphor solution is then added in the proportion of one part to two parts of pyroxylin; the mixture is stirred, and allowed to stand in a closed vessel until the solvent has penetrated all parts, when the mass is expressed and formed into the desired shape by means of a hydraulic press, being heated at the same time from 65° to 130° C., when a solid, uniform piece of celluloid is obtained.

WRINKLES AND DODGES.

TO MAKE THE GELATIN ADHERE TO THE PLATES USED IN PHOTOTYPIC PRINTING.—Mr. Husnik recommends to first clean the surface of the metal with a bath of chromic acid, and to wash repeatedly. A coating of pure gelatin is first used, and then the sensitized coating. The plates should be kept in a very dry place—*Bulletin Belge*.

FILTRATION THROUGH WOOL.—Collodion, albumen, gelatin, and other viscous liquids, filter much better through sheep's wool, washed and cleaned, than through cotton. The ordinary wool, freed from grease, and treated with a small quantity of ether to remove any traces of the lint, is lightly pressed into the bottom of the funnel. It lasts a long time, and does not agglomerate in hard lumps.—*Bulletin Belge*.

TO STICK PAPER TO TIN.—Some one was inquiring for a paste to stick paper to tin or sheet-iron or tintypes. Make a paste of rye or wheat flour, and stir, say, a teaspoonful, or nearly, of glycerin into a pint. Try it. If, after it dries, it peels, put in some more glycerin. It is a perfect success. *The thing* to stick gems into gem-slips. The glycerin, in the proper quantities, toughens the paste so that it will not peel. Try it by all means.

OLD CAMERA.

A SIMPLE WASHER FOR COLD WEATHER.—In galleries where the washing of prints is done by hand, it is always tedious, and often painful in winter, when the water is icy-cold. To obviate this, I have hit upon a simple device, consisting of a piece of board six inches square, bored full of holes, half an inch in diameter; this has a convenient handle. All the edges are carefully rounded, and screw-heads sunk in the wood, so that there is no bruising of the prints or broken corners. Two of them are necessary; one to use before toning, the other after fixing; and if the prints are washed entirely by hand, a *third*, to be used when nearly finished, that there may be no trace of "hypo." A large number of prints may be washed more thoroughly in a short time by this simple washer than could be done in many hours without it, as the constant pressure and re-

moval of it upon the surface stirs them constantly to the very bottom of the mass.

Mrs. T. M. V. DOUGHTY.

IMITATION OF DIAPHANOUS PLATES.—

This kind of print, which is very suitable for ornamenting windows, or placed in one of the elegant frames made for the purpose, as an adornment for the centre-table, is thus described by its inventor, Mr. W. J. Anckorn.

First albumenize the plate, and when it is entirely dry cover and sensitize it as for an ordinary negative. When well drained it is placed in contact with the negative, a degraded or ground-glass in front, and exposed before an oil-lamp for ten seconds.

Now develop in an iron bath at three per cent., very acid, wash, and develop again with the following:

Pyrogallic Acid,	. . . . .	4 c.c. (65 minims).
Crystallizable Acetic Acid,	. . . . .	6 c.c. (97 ").
Water,	. . . . .	125 c.c. (34 fl. drs.).

When dried and varnished the transparent image is covered on the back with a piece of albumenized paper and another sheet of the plain glass, the whole being held together as in an ordinary passe-partout.

PHOTOGRAPHIC NEWS.

DR. MONKHOVEN has communicated to the editor of the Paris *Moniteur* a very remarkable article on gelatino-bromide emulsions. By this new process emulsions may be prepared without difficulty, the washings being entirely suppressed. Dr. Monkhoven read his paper before the society at its last meeting.

A SMALL photographic gallery, consisting of cabinet portraits of our principal literary critics, now to be seen at Mr. Rolling's, shows that they are, for the most part, young men of from twenty to twenty-three years of age; and, it is well known, since the time of Hippocrates, that reason does not always exist in young heads.

MR. GORDON writes, that in preparing the Beechey emulsion, and very probably every other kind of emulsion, there is great advantage in placing the bottle that contains the collodion in warm water before pouring

the silver into it. The resulting emulsion is much more homogeneous, and is more easily worked.—DR. PHIPSON in *Moniteur*.

A NEW species of tannin, recommended for photographic use, known by the name of "Vedovine," has just reached London; it is said to be made at Smyrna, from certain excrescences found on all the oaks of Asia Minor. These excrescences are washed by means of a greatly diluted solution of carbonate of soda. The mass is then pulverized and pressed into small blocks by means of a powerful hydraulic press.—DR. PHIPSON in *Moniteur*.

COUNT OSTROG, the founder of the "Maison Walery," has just had a high honor conferred upon him, having been made by His Majesty Alphonse XII, commander of the order of Isabella the Catholic; this mark of distinction having been rendered to his incontestible merit. His establishment in Paris, which has met with such extraordinary success, has just been sold to Messrs. Dupont & Rouan, at a price exceeding half a million francs.—*Moniteur*.

THE American journals, the *Philadelphia Photographer*, and the *Practical Photographer* of St. Louis, reach us with magnificent specimens of prints made by our co-workers of the New World. There is, especially in the Philadelphia journal, so ably conducted by Mr. Wilson, a print that is truly remarkable, coming from the ateliers of Mr. Mora, of New York.

We had the pleasure to meet Mr. Mora at Mr. Nadar's studio at the time of the Universal Exhibition, and of seeing a splendid collection of prints, of which we were reminded by the specimens published by Mr. Wilson.—MONS. LEON VIDAL, *Editor Moniteur de la Photographie*.

THE London *Chemical News* publishes an important discovery just made by Dr. Fleck, a German chemist, who has found in certain colors in daily use by painters in aquarelle and photographers, a large quantity of arsenical acid. In the brown colors especially, analysis has given more than three per cent. of this dangerous substance. At the same time, mention is made of the death of an artist who was accustomed to frequently

pass the brush between his lips to give it a fine point. We might mention cases of severe sickness among school boys resulting from this habit, where the colors were of an organic nature, especially gum gamboge. The death of the artist referred to above, was the result of a slow accumulation of arsenic in the different organs of the body, as the medico-judicial investigation has shown.

PHOTOGRAPHIC COLORS ON PORCELAIN.

—A vitrifiable color is mixed with a freshly prepared solution of gum arabic, and the mixture is spread in a uniform manner on a sheet of rather thick paper of good quality. This coating should be dried at a temperature not less than 19° C. (66° Fahr.). Twelve hours before using, the sheet is very quickly passed through a solution of oxalate of iron, and dried. The dry paper is burnished, then exposed to the light of the sun under the photographic print which is to be transferred to the porcelain. The exposure ended, the sheet is plunged for a few moments into cold water, and by the prepared surface is then fixed on the object to be decorated. This is plunged into water. The sheet of paper detaches itself gradually, and the non-lighted portions of the image are removed by agitating the object, or by using a small stream of water. After desiccation the image is fixed by baking.—*Bulletin Belge*.

MANY of the most distinguished scientists, among others the well-known Sir William Thompson, are of the opinion that electric light will take the place of gas in the near future, whilst on the other hand there is a project for introducing the Sugg lamp, which has already been tried with some success in photographic ateliers and street lighting. It consists of a gas-lamp made on the argand principle, and bears the rather curious name of Sugg's London Argand "Governor" Burners. The chimneys are of glass, and are made of two sizes; one, which has been used in photography by Mr. Law, of Newcastle, consumes twenty-two cubic feet of gas per hour; the other burns fifty cubic feet in the same time. In the first, the gas is burnt in two concentric columns or rings of flame, and in the larger size in three

similar rings, the whole being inclosed in a polygonal lantern. The result of the most careful experiments made since the month of March last, shows that this new system gives four and a half times more light than our street lamps, and costs three times more than these last. There would, therefore, be an advantage in Mr. Sugg's system.—
DR. PHIPSON, in *Moniteur*.

FRENCH CORRESPONDENCE.

Opening of Another Exhibition in Paris—The Photographic Department—August Meeting of the Photographic Society of France—A New Means of Making Gelatino-Bromide Emulsions, by Dr. Van Monkhoven—On a Means of Dispensing with the Focussing-Glass and Cloth, by Mons. Leon Vidal—Reflections on said Apparatus—How to Precipitate Silver from Gelatin Residues.

A NEW exhibition, dedicated to Science applied to Industry, was opened in Paris on the 24th of last month, by private speculation. This is, indeed, unlike French prudence, and speaks highly of the talents and energies of the organizers. Seeing that the great International Exhibition is still fresh in the memory of all, a new exhibition could hardly be looked upon but as a failure. Such, I hope, will not be the case. The architect has done wonders to please the eye and instruct the public. Exhibitors have not been behind; they came forward to the roll-call. The photographic department, under the superintendence of Messieurs Leon Vidal and Davanne, is very well organized. It is a great pity that so few American and English houses can be seen. The friendly struggle for fame would have been more enticing and more pleasing did more enter the lists. The platinum printing process has the first time come before the public. Dealers in photographic appliances make a fine show of the best objects and apparatus drawn from all parts. German address and Anglo-Saxon ingenuity can be seen side by side with French taste in their gaudy exhibits. The taste for brilliant chocolate-colored prints is on the wane, and gradually permanent proofs ob-

tain public honor. Few silver proofs to be seen; carbon and fatty-ink proofs are abundant. Will have occasion to return to this subject in another letter.

The Photographic Society of France met on Friday evening last, the 1st inst., Mons. Davanne in the chair. The greater interest of the evening was concentrated on Dr. Van Monkhoven, who was to communicate a new method of preparing gelatino-bromide emulsions.

I will endeavor to give a condensed account of his lecture, bearing more especially upon the most useful parts. The learned professor began by giving a full description of how a gelatino-bromide emulsion was made by Mr. Bennett. He then explained that the emulsion in the first stage of its preparation was of a milky-white appearance, and gave a very thin film; turning very rapidly dark by exposure to open light, but slow in the camera under the influence of the reactives used to develop the image. He went on to show that maintaining the emulsion in a liquid state for a long time was an advantage; how by this prolonged emulsification the molecular construction of the bromide changed, and the emulsion from a milky-white color had changed to a greenish hue; that a plate prepared with the emulsion at this stage, if brought into open light, would be nearly insensitive, and not change its color; but how the same plate, if exposed in the camera and developed, would be found to be by far the most sensitive of the two. Van Monkhoven went on by stating the inconvenience resulting by double decomposition, prolonged washing, and lengthy emulsification, and risk of decomposition of the gelatin so acted upon; all evils by which we have been little or more troubled.

To sum up, his opinion is, that to obtain a very rapid emulsion the bromide must undergo a change from white to green. To prevent puckering, the gelatin must not be bothered by so much washing. To stop decomposition, lengthy emulsification ought to be avoided. All this I understood from the first part of his communication. The second part I will use his own words, because in it he describes a means to avoid all the ills he speaks of. In fact, my opinion

is that our colleague has made a perfect revolution in gelatino-bromide emulsion work, and has rung the death-knell to collodion and the silver bath.

"I prepare," said the learned professor, "a certain quantity of very pure bromhydric acid, and I determine in a very exact manner the quantity of acid required to precipitate ten grammes of silver nitrate. I add 200 c.c. of water to the quantity found, and incorporate $2\frac{1}{2}$ grammes of gelatin by means of heat. In my dark-room I precipitate 10 grammes of silver nitrate by a solution of bicarbonate of soda; this last salt a little in excess. This precipitate is allowed to repose twenty-four hours, when the water is changed as soon as the carbonate of silver has settled on the bottom of the beaker. I decant the water from its surface. Upon this precipitate of silver carbonate I pour a warm solution of gelatin, composed of water, 200 c.c., gelatin, 2 grammes, keeping on stirring all the time. I now pour this solution into the gelatin containing the bromhydric acid. The whole is well shaken every fifteen minutes, and kept at a temperature of 50° Centigrade (122° Fahr.). The bromhydric acid slowly dissolves the carbonate of silver, and as the liquid is colloidal the silver bromide is produced in a very fine state of division. At the end of ten or twelve hours the mixture appears of a greenish-white color when spread upon glass. I then add 10 grammes of gelatin, cut into small threads, and dissolve by agitation. The emulsion is now ready to be spread upon plates. No washing is necessary. In order to succeed with this method great precaution is necessary. The bromhydric acid must be free from sulphur and phosphorus. Even the water employed to wash the carbonate of silver must not contain any carbonic acid. In an emulsion prepared by this formula there is always a slight excess of bromhydric acid and carbonate of silver remaining in the emulsion. I am convinced that their presence is in no way hurtful, having added these products to other emulsions without injury. When silver oxide is used instead of carbonate of silver, the results are not the same; gray and fogged plates are obtained. The plates I prepared by the new method were twenty

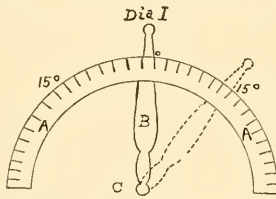
times more rapid than the best wet plates. Compared with the best English dry plates, I found them three or four times more rapid. The same observations and the same method will hold good for collodio-bromide emulsions, of which I will speak in a future communication."

Mons. Van Monkhoven was warmly cheered by all the members present.

Mons. Leon Vidal presented a very pretty little travelling camera, composed of a square box, forming the camera. On the top of the camera was a drawer, or sliding box, containing the dry plates, which can be inserted into the camera in full light. This was not the principal object our esteemed colleague had in view in making his communication. It was to show the possibility of dispensing altogether with the focussing-glass and cloth when out of the studio. To effect this Mons. Vidal has inserted into the back of the camera an oculaire, or eye-piece, like that of a microscope. In order to find the focus once for all, a ground-glass is inserted into the place of the dark-slide. The centre of this ground-glass is polished and marked as a chess-board, by means of a fine diamond. A newspaper is placed before the lens, and its image is therefore reflected on the ground-glass. This oculaire is drawn in and out until the image of the letters and the diamond marks are both perfectly sharp. When this result is obtained it suffices to fix the oculaire in its case or telescopic tube by means of a screw, or to make a mark round its circumference, so that the same place can easily be found again when required. It is true that only the central part of the view can be focussed in this manner, but Mons. Vidal says that in practice it suffices.

Not having a focussing-glass, it may be asked how can the operator know the length, breadth, and depth of the image, as reflected on his sensitized plate? The answer is, every person knows the angle of his lens. So Mons. Vidal has had a very ingenious idea to have a little instrument placed upon the top of the camera. (See Diag. I.) Supposing the angle taken in by the lens to be 30° , the alidade or hand is moved toward the right hand until it lies

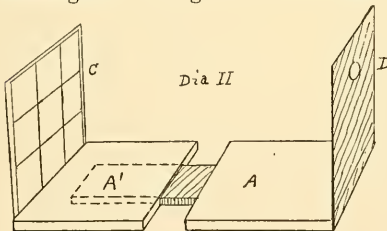
upon the 15° of the semicircle. Now, in looking along it, the operator can easily see what he takes in on the right-hand side of



- A—Brass semi-circle divided into degrees.
 B—Alidade.
 C—Pivot upon which the alidade is fixed.

his camera. The alidade is then turned to the left, until it lies on 15° . What will be reproduced upon the sensitized plate can thus be easily seen. In order to know whether or not too much sky or otherwise will be taken in, another similar instrument is placed on the side of the camera.

I, myself, compliment Mons. Vidal for having found means to focus without a ground-glass, for most landscape photographers, whether amateur or the trade, have known the inconvenience of a broken focusing-glass. But I beg Mons. Leon Vidal's pardon for suggesting a slight change, not in the focussing, but in the means of taking the angle, which I think is a little too complicated. I would propose a kind of instrument as given in *Diag. II*. If this instru-



- A' A—Two pieces of brass or wood.
 B—A plug or drawer to enable the two pieces, A' A, to approach each other, or vice versa.
 C—A metallic frame, having four silken threads dissecting it like a chess-board.
 D—A hole for the eye to look through.

ment be placed on the top of the camera, and the eye of the operator be placed close to the opening *D*, in looking through the metallic frame *C*, the whole of the view embraced by the angle of the lens can be

seen at once, and the camera moved about until the most pleasing and artistic part of the landscape is in view. Let it be supposed that the distance from the eye to the frame coincides with the angle of the lens. In fact, it can be used with any lens, for if a short focus one be employed, there is only to approach the visual hole *D* to the frame *C*; if a long focus lens be required, the two supports are to be drawn asunder as far as required. The frames *C* and *D* can be joined to *A' A* by hinges, so when not in use they can lie down flat, which will be very convenient for packing.

In a former letter I asked the readers of the *Philadelphia Photographer* to give an easy means to precipitate decomposed gelatino-emulsion residues from gelatin plates, etc. No one, as I am acquainted with, answered the appeal. Since that time I have succeeded in precipitating the silver by means of sugar. But another system, much better and more convenient, was imparted to me by Dr. Van Monkhoven, whom I had the pleasure to receive the other day. This formula I give for the benefit of the readers of the *Philadelphia Photographer*, to some of whom I hope it will be of service. Add ordinary ammonia to the liquid residues, and the silver will be precipitated immediately in the form of a black powder.

PROF. E. STEBBING.

27 RUE DES APENNINS, PARIS, Aug. 5th, 1879.

GERMAN CORRESPONDENCE.

Dr. Schulz-Sellack Deceased—The Purple of Ancient Times a New Photographic Substance—Sensitizing Albumen Paper by Immersing—The Latest about Gelatin Plates—Steinheil's Aplanats.

ONE of our contemporaries recently expressed regret that there was nothing heard any more from the renowned German photo-chemist, Dr. Schulz-Sellack, and it was evident that the writer of the paragraph was ignorant of the fact that at that time the Doctor had been dead for some months already. He died in May of this year, having taken poison, together with his adopted father and his mother. All three had been living formerly in pretty comfortable circumstances, but by and by they be-

came reduced, step by step, and when the last cent had gone, they committed suicide. It is to be deeply regretted that the departed man of science kept his misery locked up all within himself, as otherwise his friends would cheerfully have helped him to bridge over his momentary difficulties. Dr. Schulz-Sellack was not unknown in America. He went to New York in 1871, after having published some very interesting papers upon the photography of the spectrum, and the relation between absorption and photographic effect. He assisted Kurtz, in New York, as retoucher for some time, and went with Gould, in 1872, to Cordoba, Argentine Republic, from whence he returned to Berlin, where he occupied himself with studies relating to the natural sciences. His old friends and colleagues seldom got a glimpse of him, and only the notice of his death drew general attention to him once more. The last fruit of his researches published by him related to brome-silver paper. He found that brome-silver could be used in the positive process just as well as chlor-silver. Brome-silver paper, by itself alone, however, gives only weak pictures, and it is only after fuming with ammonia that it prints really beautiful and brilliant, and also much faster than chlor-silver paper. Upon his recommendation brome-silver paper was practically tested, and the fact was thereby established that the mixing of chlor-silver and brome-silver produced extraordinary brilliant pictures. In spite of all, the papers did not prove a success in practice; their extreme sensitiveness proved to be more of a drawback than an advantage, for they require special thick negatives, that the lights might remain white. One of the most interesting observations made by Schulz-Sellack, is the dissolution of the crystals of chlor-silver, brome-silver, and iodine-silver in the light. He prepared plates of so-called vitreous iodine-silver, which were quite diaphanous, but became dull in the light. (See *Photogr. Mittheilungen*, VIII, p. 60.) He even copied pictures on such plates, and it thereby was observed that according to the relative intensity of the light, curious colors appeared, which phenomena he made mention of in explaining the colored photographs of Poitevin, Niepce, etc. Dr.

Schulz-Sellack left no papers behind. He declared them all to be worthless, and burned them up. What a pity that the untiring, highly-gifted scientist had to speak thus despondingly.

One of our younger chemists, Dr. Schnuck, who occupies himself much with experiments on alizarine, published recently an interesting work upon the purple of the ancient times, and according to these experiments this, in olden times so much desired and praised, color seems to be a photographically interesting substance. It is the secretion of the purple-fish. Schnuck writes: "When a piece of white linen is soaked in this stuff, and exposed to the light of the sun, the originally yellow stuff changes from green and blue to purple or scarlet, while a strong garlicky smell is emitted. Daylight is absolutely necessary to the formation of these colors. In the dark this stuff remains unchanged for years. The color is not affected by alcohol, soap, or acid; only chloric acid or nitric acid destroy it, and we have here a dyestuff which, contrary to the rule obtaining with most other dyestuffs, not only does not fade in the light, but actually gains in intensity. The stuff is much less affected by corrosive substances than most other similar dyestuffs are, and we have in it a substance which answers the most severe requirements in regard to durability which can possibly be made. If it were possible to gain this stuff in larger quantities, the problem of producing durable photographic pictures would be solved in the most simple manner."

Schnuck states that from four hundred pieces (*Purpura lapillus*) he obtained only two milligrammes of the purple powder. But doubtless the purple-fish in the Mediterranean will yield more of the stuff, as otherwise the ancients could not have used the same in such considerable quantities. It is surprising, however, that the photographic properties of this interesting substance have not been discovered till now.

Schnuck classes this dyestuff (which he calls "Punicin") among the indigo group, and as indigo has been produced already through artificial means, it is not improbable that also this dyestuff may be obtained through artificial means some day, and then

its use for photographic purposes will be assured, although the smell—recalling the strong smell of garlic—which is emitted in printing, may not be a very acceptable and pleasant addition to the other pronounced smells for an elegant atelier.

It has lately been recommended here to sensitize albumen paper, not in the old way of floating on the silver bath, but by immersing in the silver bath. A paper is obtained thereby which is more than three times as sensitive as ordinary paper, and printing at least just as brilliantly.

The gelatin plates are yet much talked about, and it is now a pretty well-established fact that they are gaining more and more ground in photographic practice. In summer, of course, when we have plenty of light, we do not need those highly sensitive plates; but we want them the more in winter, and it is certain that the winter is the real favorable season for the gelatin plates. They are handled easily then, while in summer their proper use meets with many difficulties, as the most recent experiences demonstrated. The gelatin skin softens and wrinkles, etc.

Obernetter adds some isinglass to the gelatin, to avoid these annoyances. But the best is to apply cold water, and the ice-pitcher seems to be destined to become an indispensable requisite for the dark-room in case the gelatin process is introduced into summer practice.

Obernetter tried, some months ago, to introduce liquid gelatin emulsion into the market, but the same did not prove a success. In summer it did not keep, and now Obernetter has replaced it with solid emulsion, as did also Kennett. While with other plates, insufficient sensitiveness proves a drawback, it may happen with gelatin plates that the over-abundance of sensitiveness works disaster.

When I am experimenting with gelatin plates in summer, I have to shut off my whole studio, with the exception of an aperture of about fifty square feet, in order to prevent overexposure, and yet I must not expose more than from three to five seconds. In outdoor work the instantaneous shutter is quite insufficient, and it would be a grateful task for the skilled mechanics to con-

struct an instantaneous shutter, working quick, without shaking the objective.

It is probable that if the gelatin plates come into general use, large and costly portrait objectives will be dispensed with, and we can then easily work with the smaller and cheaper aplanats of Steinheil, or with the rapid rectilinears. Steinheil, the indefatigable optician, lately modified to some extent his system of aplanats, which for a number of years has been known so favorably by the public. When the aplanat became first known, thirteen years ago, there existed only one instrument of the kind, distinguished by its pretty large angle (70°), its exemption from distortion, and having twice as much intensity of light as the triplet. Now we have five different degrees: portrait aplanats, of great intensity of light, the aperture of which is equal to one-third of the focal distance. Aplanats for groups also having only two-fifths of the intensity of light of the portrait objectives, but producing a larger picture, which certainly justifies its designation as aplanat for groups.

Following this instrument comes the above-mentioned ordinary aplanat. A yet greater visual angle than this latter instrument has the landscape aplanat, which comprises ninety degrees of angular compass, but being in its stead again surpassed by the wide-angle aplanat, which, although it has less intensity of light, shows a field of view exceeding ninety degrees.

The aplanat for groups was lately used for a number of highly interesting operations by Obernetter, in taking groups from the festival inaugurated by the artists at Munich. Scenes from the cruel wars, caused by the revolt of the peasantry three hundred years ago, were to be taken, momentary exposure being necessary for these moving and variegated groups, and the success Obernetter reached with gelatin plates was beyond all praise. He operated out of doors, and used the instantaneous shutter. The pictures have caused a great sensation, and they have already been multiplied by licht-druck, or, as you call it, artotype.

I send you inclosed a few samples.

Very truly yours,

DR. H. VOGEL.

BERLIN, July 29th, 1879.

[Translated for the *Philadelphia Photographer*.]

HINTS FROM ABROAD.

BROME TINCTURE FOR COLLODION.—Brome tincture, when a few weeks old, becomes colorless, and assumes an agreeable smell, like malic acid. In this condition I use it as an addition to collodion, when the same, with sufficient acid in the silver bath and in the developing solution, seems to be inclined to form fog.

The collodion does not change through this addition when colorless, and there is no external sign of iodine getting free; its qualities, however, are materially ameliorated. The sensitiveness to light becomes greater. The negatives are very clear, and work out in the deepest shades. The durability of the collodion is not affected.

With an addition of iodide tincture, or diluted nitric acid, the collodion shows less sensitiveness to light. The negatives become harder, and are not worked out so well in the shades, while the durability of the collodion is much affected.—FR. WILDE, in *Photographische Correspondenz*.

JANSSEN'S NEGATIVE VARNISH.—The varnish in the market is often too thin. The following is a receipt for lac to varnish negatives:

Alcohol (sp. gr. = 0.830),	. . .	15 parts.
Gum Sandarac,	. . .	2½ "
Camphor,	. . .	½ part.
Venetian Turpentine,	. . .	1 "
Oil of Lavender,	. . .	¾ "

It can be used also for paper pictures.

The varnished negative must not be retouched at once, as the varnish has to be first hardened sufficiently to take the graphite retouch. It is best to let the layer become a day old.

JANSSEN'S CERATE FOR ALBUMEN PICTURES.—He recommends the following receipt of Salomon, in Paris:

White Wax,	. . .	800 grains.
Elemi Gum,	. . .	10 "
Oil of Lavender,	. . .	300 "
Benzole,	. . .	200 "
Oil of Spike	. . .	15 "

The retouched albumen pictures are waxed with it to impart a glossier appearance to them.—*Photographische Correspondenz*.

MR. CHARDON furnishes a method for

placing upon the surface of glass plates a coating of opaline gelatin, giving the effect of ground-glass. This is done by incorporating with the gelatin a salt of barytes, the sulphate, by double decomposition. A salt is thus formed in a state of extreme subdivision. The two following solutions are made:

1.—Water,	. . .	100 c.c. (27 fl. drs.)
Chloride of Barium,	. . .	6 grs. (92 grains.)
Gelatin,	. . .	5 " (77 ")
2.—Water,	. . .	100 c.c. (27 fl. drs.)
Sulphate of Soda,	. . .	15 grs. (231 grains.)
Gelatin,	. . .	5 " (71 ")

After mixing together the two solutions, and when the double decomposition is effected, the sulphate of soda in excess is eliminated by washing, and an opalescent liquid is obtained, which, poured upon a plate, produces a mat appearance, more or less opaque as the thickness of the coating is more or less thick.—*Moniteur*.

GELATIN PELLICLES WITH A SENSITIZED COATING OF COLLODION AND GELATINO-BROMIDE. PROCESS OF MR. A. FERRIER.—MR. Ferrier exhibited at the last meeting of the French Photographic Society pellicular films of gelatino-bromide, and pellicular negative clichés printed and developed on these films. It will be interesting to learn the process used by Mr. Ferrier to obtain these sensitized pellicles.

A plate of a suitable size is covered with a coating of normal collodion at the density of one per cent. of gun-cotton, in a mixture of equal quantities of ether and alcohol. The plate is allowed to dry, and on the coating of collodion is poured a solution of ordinary gelatin thus composed:

Gelatin,	. . .	15 grammes (232 grains.)
Water,	. . .	100 c.c. (3 fl. ozs. 3 fl. drs.)

When this second coating is dry, it is covered with another coating of the preceding normal collodion, which is again allowed to dry, and on this, finally, is poured the sensitized emulsion with gelatino-bromide of silver.

When this last coating is entirely dry, the edges are cut all around the plate, and the sheet of sensitized gelatin may be easily detached. The sheets may be kept for an indefinite time in a dry and dark room. The

plate, before receiving the first coating, should be rubbed with talc or a fatty body,—wax in solution in ether,—and rubbed on with a wad, so as to leave very little on the surface.

To expose these pellicles in the camera, they should be placed in the frame between two thin plates of glass. The development is the same as in operating on a plate, but more care must be observed in handling the pellicle, which naturally is more fragile than a rigid body.—*Moniteur*.

GELATINO-BROMIDE PROCESS. DEVELOPER PROPOSED BY M. DE LA MOTTE.

A—Water, . . . 100 c.c. (3 fl. ozs. 3 fl. drs.)
 Carbonate of Ammonia, . . . 25 grs. (386 grains.)
 Bromide of Potassium, . . . 1.2 grs. (18 “)
 A—Water, . . . 100 c.c. (3 fl. ozs. 3 fl. drs.)
 Carbonate of Ammonia, . . . 25 grs. (386 grains.)

Or,

B—Water, . . . 100 c.c. (3 fl. ozs. 3 fl. drs.)
 Carbonate of Soda, 25 grs. (386 grains.)
 Bromide of Ammonium, . . . 1 gr. (15 “)
 B—Water, . . . 100 c.c. (3 fl. ozs. 3 fl. drs.)
 Carbonate of Soda, 25 grs. (386 grains.)

The plate having been washed in water for five or six minutes, is plunged into a dish containing (for a plate 18 x 24 centimetres) (7½ x 9½ inches) 125 c.c. (3 fluid ounces 10 drachms) of a solution of pyrogallic acid at 1 per cent., well mixed with from 12 to 15 c.c. (3 to 4 fluid drachms) of good beer, and is allowed to remain in this liquid for about one minute.

The plate is then removed; 4 or 5 c.c. (1 to 1½ drachms) of the solution A or the solution B are added to the bath, and the plate is again plunged for 30 or 40 seconds; the image will not yet show itself. 3 c.c. (49 minims) of A, and 2 c.c. (32 minims) of A, or 3 c.c. (49 minims) of B, and 2 c.c. (32 minims) of B are added, and the plate is again immersed for about half a minute; the image will now appear. The development may be continued if it is necessary, by adding more or less of A and A, or of B and B, as may be required.

If a solution of sodium is used for the de-

velopment of gelatino-bromide negatives, corresponding with colors that are strongly non-actinic, too great a degree of intensity may be obtained, and it is better to remedy it by underexposure.

After an ammoniacal development, it is possible to obtain all degrees of intensity, and if this were insufficient, the image must be strengthened by a mixture of pyrogallic and acetic acid, containing about ten per cent. of beer.—*Moniteur*.

PHOTOGRAPHING CLOUDS.—The photographer, John Harmer, has lately called attention to the fact that photographing the clouds is not as much cultivated as the adequate finishing of landscape pictures would make it desirable.

He remarks that March and April are the months most suited to exercise this branch of photography in, and he believes that the best time to photograph clouds is the moment when the sky brightens up again after a southeast storm and bad weather. The clouds are then very brilliant and actinic, and are easily taken with the blue sky as background. When the wind comes from east or northeast, the clouds are neither as brilliant nor as beautiful. The objective must work rapidly and have a wide aperture. Harmer uses a brome-iodine collodion, a weak acid silver bath, three or four weeks old, and an iron developer prepared some days ahead. The exposure must be almost instantaneous, and the objective is best shut off with a piece of black velvet, which the operator holds in his hands; any shaking of the apparatus will spoil the picture.

EPHEMERAL PHOTOGRAPHY.—In the present day, when every one is searching after permanency, the title of this article will seem out of place, therefore I had better explain that what I am about to describe is simply a pretty and interesting experiment (new, I believe), by which photographers may amuse their friends and lecturers their audiences.

The process is simple, and has this advantage: that the same pieces of sensitized paper may, owing to its ephemeral nature, be used over and over again, and at the same time always retain its sensibility.

The material is the phosphorescent pow-

der, sulphide of calcium obtained by calcining oyster-shells, and treating with sulphur. A sheet of paper is coated with this by covering with gum or varnish, and dusting the powder over it. If this paper is exposed for a few seconds to light under a positive, and then removed to a dark room, a luminous positive will be seen, lasting a longer or shorter time, according to the exposure given.

I have also produced phosphorescent portraits and views by the dusting-on process, substituting the powder for plumbago.

These experiments, although of little value scientifically, are interesting, and add to the uses that the phosphorescent properties of the sulphides have been put to. Give the same strides that electricity has made, it is perhaps possible that in fifty years to come, the study of phosphorescence may make equal advances, and photographs may be taken at night by the aid of the light that emanates from the walls of the studio.

The old story of the cucumbers and sunbeams, like many another fable, is becoming a reality in this era of advance in science — WALTER B. WOODBURY, in *Photographic News*.

GELATINO-BROMIDE OF SILVER PROCESS.

THERE is such a growing interest in this subject, that we give space this month for an exhaustive article upon it by one of our esteemed co-workers, who is well posted, that our readers may have the whole story in compact shape. We use the report presented by Mr. Chardon, at a recent meeting of the French Photographic Society, and published in our esteemed contemporary, *Le Moniteur de la Photographie*, and also call attention to the present and recent correspondence on the subject by Dr. Vogel and Prof. Stebbing. Mr. Chardon writes as follows:

After what has been said concerning the process known as the *Gelatino-bromide*, it would seem, at first, that there is nothing to add. For the practice of this process, our colleague, Mr. Ferrier, so skilful in the photographic art, has given us simple formula by which success is assured. We therefore

intend to consider the gelatin process under slightly different aspects, wishing to enter, as it were, more fully into the question.

To be more easily understood, we will divide this work into three chapters or principal points:

1. Gelatin considered in its natural state.
2. The bromide of silver emulsioned by the gelatin.
3. The developments of the latent image.

I. GELATINS.

The different kinds of gelatin, sold by the trade, are obtained from the skins, horns, bones, cartilages, and tendons of animals. According to the substances that enter into the manufacture, and also the mode of extraction, the gelatins present different aspects and different qualities. It may be useful to know in connection with our subject, in what conditions a choice should be made. Three properties appear to us to be necessary: Purity; porousness, or, rather, permeability; tenacity, or resistance.

Gelatins obtained exclusively from bones and tendons are highly resistant; but the first are often acid, and the others sometimes contain traces of alum. Acidity is the most common fault, and the most injurious for photographic purposes.

Gelatins made from the skins and cartilages of young animals are pure and free from acid, but they lack resistance. Used in emulsions they adhere badly to the support, and detach themselves, filling often a space double that which they covered. These gelatins should be severely rejected.

A simple method, and one which succeeds very well in ascertaining those gelatins fit for use, consists in placing at the same time, in a flat dish containing a little water, a sheet of each gelatin that is to be tested, care being taken to immerse but one-half of the sheet. Preference should be given to the one which, although swelling by the absorption of the water, preserves its primitive shape the best; this one will almost always offer the most resistance. As to the acidity it is easy to determine it.

Isinglass, or fish-glue, is of good use in emulsions. It is rather hard to melt, and it is necessary to allow it to remain a long time in cold water before dissolving it. The

solution should be filtered through carded wool, as it is mixed with fibres and insoluble matter that it is necessary to eliminate. Trade furnishes, under the form of gelatin, fish-gelatin that is freed of all foreign substances and of excellent use. Spread over glass it gives extremely thin films, very permeable, and even more permeable than any other gelatin. It cannot, however, be used alone, as, after having been once melted with the silver salts, it is very difficult to make it take again its jelly form. There is no doubt that it is to this particular condition that fish gelatin owes its great permeability.

II. EMULSIONED BROMIDE OF SILVER.

A first question presents itself; should the gelatin emulsion be made with an excess of silver or an excess of bromide, or, finally, absolutely neutral?

In collodion emulsions, it is incontestable, and practice has sufficiently demonstrated it, that an excess of silver is necessary to obtain a greater degree of sensibility. We have recommended that this excess should be small, otherwise the organic matter, which is the cotton, would combine with the silver, and inevitably cause fogs in the development of the image. It may be remarked that cellulose has no relation as organic matter to the gelatin. This last combines with the silver with the greatest facility. A very simple experiment conclusively proves it. If, in a neutral solution of gelatin, a few centigrammes of nitrate of silver are introduced, and if this liquid solution is kept for a few hours, the silver will be completely combined, and analysis will not be able to discover any trace of it in the washings. Moreover, there will be instant coloration of the gelatin, even in obscurity.

We have always thought that the bromide of silver was formed in an inert medium, and on which it could exercise no action.

We maintain this opinion as to gelatin. In regard to excess of bromide in the emulsion, it will always retard the luminous impression, but, if the excess is small, there will be no sensible difference. Absolute neutrality is what should be most desired.

It may be objected that almost all the published formulæ indicate an excess of silver. Without questioning the care with

which they may have been made, we answer: Is it very sure that the excess of silver exists? Has it been shown by methodical analysis?

It should not be forgotten that products found in the trade are variable in their composition, and that theoretical equivalents are often at variance with practice. Here is an example:

The bromide of ammonium, the formula of which is AzH_4Br , gives an equivalence 97.996. The nitrate of silver, AgOAzO_3 , gives 169.97. From which it results that for 1 gramme of bromide of ammonium, chemically pure, it requires 1.73 gramme of nitrate of silver to convert it into bromide of silver. Now, with commercial products, it is found that, to obtain an excess of silver in the double decomposition, it requires nearly 2 grammes of nitrate of silver for 1 gramme of bromide. I do not think that any formula with excess of silver has covered this deviation. This we believe has been the cause of success. We do not know if the same thing obtains with other bromides, not having had time to make the experiment. Before ascertaining this fact, we had thought for a moment that the silver had partly been absorbed by the gelatin whilst being sensitized, and that it was to this phenomenon that should be attributed the great sensitiveness of the bromized gelatin. It is not so. This sensitiveness arises, we have no doubt, from a molecular arrangement of the bromide of silver joined to infinite division. We insist, therefore, on what we have said, that there should be no excess of silver in presence of the gelatin under penalty of red tints and fogs, accidents often encountered by those who are not yet familiar with this process.

Before indicating the formula we have finally adopted, we will say that to obtain a maximum of sensitiveness, the gelatin should contain the greatest possible quantity of bromide of silver, and that this result is reached by using a quantity of gelatin proportional to the volume of bromide of silver that is to remain in suspension.

Water,	50 c.c.	(13½ fl. drs.).
Bromide of Ammonium,	5 grms.	(77 grains).
Gelatin (Nelson), Comet		
Brand, 1st quality,	4 grms.	(62 ").
Gelatin (Fish-gelue),	4 grms.	(62 ").

Sensitized by

Water, 50 c.c. (13½ fl. drs.).
Nitrate of Silver, 9 grms. (139 grains).

These proportions, with respect to the practical equivalents, give a very slight excess of bromide.

It is useless to enlarge on the preparation, as it is very simple. The gelatin, cut into pieces, is allowed to swell in the water containing the bromide. Afterwards it is melted over a water-bath. The nitrate of silver is dissolved in distilled water, care being taken to carry the solution to the same temperature as that of the gelatin; then, gradually, the silver solution is added to the bromized gelatin, agitating after each addition. With one-half the quantity of water, rinse the bottle containing the silver. It is very important not to reverse the operation, that is to say, to not pour the gelatin into the silver; for the silver, not having enough bromide in presence, would infallibly combine with the gelatin, and produce ultimately the red coloration which renders success impossible.

The emulsion thus prepared should remain over a water-bath at least three hours, and should be stirred from time to time. If the operation has been well conducted, we will obtain a creamy emulsion, very homogeneous in its nature.

The emulsion should now be filtered over a dish, so as to spread over it a thin film. When cold, it coagulates and forms a jelly, which, to acquire sufficient consistence, should remain for about three hours, and, if possible, at a low temperature. Nothing now remains to be done but to divide it and wash, making use of one of the known methods. It is useful to analyze the last washing water, so as to show that the emulsion no longer contains any soluble salt.

We shall have but few observations to make concerning the preparation of the plates. The method the most familiar to us is often the best. We shall limit ourselves to saying that the drying should be done as quickly as possible. It is not indispensable that the plates should dry in a horizontal position. When the gelatin has become fixed, it may be placed vertically in a box or closet, care being taken to introduce a con-

stant current of dry air. The dry plates should be opaque by transparency, and, notwithstanding this opacity, it is important that the films should not be too thick, in order that they may be easily permeated by the developer.

III.—DEVELOPMENT.

Here presents itself the most important question in all processes, and particularly in the gelatin process. We may say that in treating of this question, we omit any strengthening of the image. Strengthening may be useful in certain cases, but in the majority of cases it is decidedly injurious, because it never acts uniformly, and its action bears especially on the portions that have been overexposed. The development should bear a relation to the effect to be obtained, to the time of exposure, and the nature of the sensitized film.

For gelatin emulsions there are, up to the present time, but two processes in use; one using ammonia, either liquid or as a carbonate, mixed with the pyrogallie acid; the oxygen of the air assists materially the developer, as we all know with what ease it is absorbed by the alkaline pyrogallates. The other process makes use of certain salts of iron.

The first requires a shorter exposure, and gives more details, but it often gives gray negatives, especially if the exposure has been rather long. On the other hand, if the exposure is sensibly too short, it is impossible to prolong the development even by renewing the developer. The pyrogallie acid acts upon the gelatin, and gives it a red tint, which can only be made to disappear by endangering the safety of the negative. The negative presents a slightly green appearance, and may cause errors in printing. This green tint may be lessened by allowing the negatives to remain for a few moments in a solution of alum. The use of iron might appear advantageous, if it did not require rather a too long exposure. The tone of the negative is good, and the light leaves nothing to desire. The effect, also, is much more agreeable.

We have every reason to hope that shortly we will be able to find formulæ which, while at the same time that they preserve

the good qualities, will enable us to overcome the defects.

LIQUID AMMONIA DEVELOPER.

I here, in advance, ask pardon of our excellent and sympathetic colleague, Mr. Ferrier; but I found his formulæ so excellent that I take possession of them for reproduction. I rely upon his indulgence to pardon me this plagiarism.

Solution No. 1.

Distilled Water, . . . 100 c.c. (27 fl. drms.).
Alcoholic Solution of
Pyrogallie Acid at
10 per cent., . . . 10 c.c. (3 fl. drms.).

Solution No. 2.

Water, . . . 1000 c.c. (34 fl. ozs.).
Concen. Ammonia, . . 15 c.c. (4 fl. drms.).
Brom. of Potassium, . 3 grms. (45 grains).

The plate should be immersed for a few minutes in ordinary water containing a few drops of a weak solution of bromide of potassium, then slightly washed and covered with the Solution No. 1. A few minutes afterwards an equal quantity of No. 2 is added. If the pyrogallie acid is of good quality, and the exposure has been right, the image will appear after thirty seconds, and in a few moments will reach its complete development, without it being necessary to renew the developer. The causes that produce the red tint are manifold; we have already mentioned several. Pyrogallie acid that is old or of poor quality produces the same effect. It may also be found in plates that are too transparent, the backs of which have not been covered with a colored coating.

CARBONATE OF AMMONIA DEVELOPER.

- 1.—Water, . . . 100 c.c. (29 fl. drms.).
Carb. of Ammonia, 5 grms. (75 grains).
• 2.—Alcohol, . . . 100 c.c. (27 fl. drms.).
Pyrogallie Acid, . 10 grms. (150 grains).

The plate should remain for a few minutes in the following solution :

Water, . . . 100 c.c. (27 fl. drms.).
Brom. of Potassium, 1 grm. (15 grains).

Drain without washing, and plunge for two minutes in

Water, . . . 50 c.c. (13 fl. drms.).
No. 2, . . . 4 to 5 c.c. (65 to 81 mins.).

Then add gradually, according to the appearance of the image, 50 c.c. (13 fl. drms.) of No. 1.

This development gives more effect than that with liquid ammonia. The image appears, perhaps, a little more slowly, but the details are good. Moreover, the developer may be kept, without fear of too much coloration.

IRON DEVELOPER.

We have tried the different formulæ that have been published on this subject, and none of them have given us entire satisfaction. After numerous experiments, we have provisionally stopped at the following formulæ:

I.

- 1.—Water, . . . 200 c.c. (6 fl. ozs. 6 drs.).
Oxalate (neut.)
of Potash, . . 75 grms. (2½ Troy ozs.).
Oxalate of Iron, 17.50 grms. (262 grains)
2.—Water, . . . 30 c.c. (1 fl. oz.).
Suerate of Lime (liq.), . 25 c.c. (7 drms.).
(Formula of Mr. Davanne.)
Bromide of Potassium, 0.50 grm. (8 grs.).
Alcohol, . . . 25 c.c. (7 drms.).

Commence by dissolving, using heat, the oxalate of potash in the 200 c.c. (6 fl. ozs. 6 fl. drs.) of water, then when cold add the oxalate of iron. The solution is allowed to remain, then add gradually No. 2, which previously has been separately prepared. A precipitate of oxalate of lime is formed which remains on the filter. The bath, when entirely cold, is fit for use, but it is better to wait for a few hours.

II.

- Water, . . . 100 c.c. (27 fl. drs.).
Oxalate of Potash, . . 20 grms. (300 grains).
Lactate of Protoxide of Iron
(FeO, C₆ H₅ O₅, 3HO), 10 grms. (150 grains).
Suerate of Lime (solution), 10 c.c. (3 fl. drms.).
Bromide, . . . 0.05 gr. (¼ grain).

The lactate of protoxide of iron is obtained by boiling lactic acid with iron filings. It may also be obtained by decomposing lactate of lime by the sulphate of protoxide of iron.

The solution of the lactate of protoxide of iron sueroxidizes itself but slowly when

exposed to the air. The preparation is made as in the first formula.

III.

Water,	100 c.c. (27 fl. drms.).
Solution of the 2d Formula, 100 c.c. (27 fl. drms.).	
Alcohol,	25 c.c. (7 drachms).
Aldehyde,	10 drops.
Bromide,	0.20 c.c. (3 grains).

These three developers which are very similar in character, give, as to the two first (as I have not had time to thoroughly study the last), very clear negatives of an agreeable tone and favorable for printing. The necessary exposure, although rather longer for the first formula than for the ammoniacal developers, is nevertheless very short. We can obtain landscape negatives in a few seconds.

In regard to the second formula we can say that the rapidity of development is equal to that obtained with the ammoniacal developers. Very complete and perfect negatives are obtained of a tone similar to those made by the wet processes, and this with very short exposures.

The bromide added to the developer is used to prevent fogging, but it sensibly retards the coming of the image. Much precaution and care should be taken in its use. As a warning against using too much, we would say that a few drops of a solution of 1 to 1000 of water is often sufficient to give a negative all its limpidity.

To conclude, we would add, that the question of developers appears to us the most important part of the investigation. We will continue our experiments, considering ourselves happy if our communication has interested you as much as the subject which we have treated deserves.

SITTER AND OPERATOR.*

IT has several times been stated in this journal, as one of the chief aids to successful portraiture, that the operator should be a gentleman possessing great and varied conversational powers. Allow me to proffer to those who lack the above-named gift a very creditable substitute, which is "al-

ways be ready for your sitter by the time your sitter is ready for you."

In photographic operations this maxim is a very useful one. I have been often amused at sitters comparing the anxiety attendant upon having a photograph taken to that of tooth-extracting; but clearly the comparison is not so extravagant when the sitter has been compelled to wait for considerable time the leisure of the operator, the stupendous preparations which he thinks must be in progress for his reception quite driving all the buoyancy and "life" out of the most imperturbable of sitters. Some photographers are never ready, but always seem to be the victims of surprises. A sitter comes in when, perhaps, the operator is engaged in copying or enlarging (which he wouldn't delay to save his life). The sitter is therefore made to wait, and the exposure of the enlargement shortened, so that it is found on development to be underexposed and, of course, of no use. There is no time to do another one, and after a few hasty expressions the unfortunate visitor below is hurriedly ushered up.

Having arrived in the studio, his courteous greetings are promptly suppressed, and he is politely told to take a seat. He does so, and has the inestimable privilege of beholding the operator arranging his "things," those peculiar pieces of furniture being bundled about him in all quarters until he gets quite distracted and nervous, and by the time the lens is adjusted and the lighting satisfactorily thrown upon him, the wearied sitter heartily wishes himself well out of it. The operator is probably too much engrossed in his business to note the effect his confusion has on the person whose portrait he is taking, and that accounts for his astonishment when the sitter brings or sends (mostly sends—it saves discussion) the photographs back, and complains of the expression. "Now think of that," he says; "fancy that fellow sending those proofs back after all the trouble I took with him! it's all his own fault, however—it's just how he looked!" Is it "his own fault?" I don't think so. If you, my friend, had been ready for your sitter by the time your sitter was ready for you, an order for three dozen would most likely have been the result.

* British Journal of Photography.

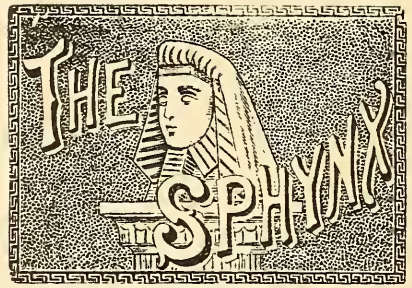
Now, in the first place, when a photograph is to be taken and the sitter's name entered in the engagement-book, as a saving of time, have the style chosen placed by the side of the name. For example: "11.30. Brown. *c. dev.*, $\frac{3}{4}$, and vignette," or "Rembrandt," as the case may be; and of course "cabinet, $\frac{1}{1}$," or "10 x 8," etc. This plan generally saves time when it is the most valuable, and it can never be out of place to have the style chosen beforehand.

Next: before your sitter arrives see that everything is as nearly as possible ready for him. Arrange even to the lighting, so that when your sitter appears he has scarcely more than to walk into the studio and be taken. Keeping him in the studio while you go through those performances with the furniture is only indicative of bad taste, and the sitter knows it. Besides, with everything prepared, you have certain advantages in posing; you are quite ready for your sitter, and have plenty of opportunities for observing the position which would best be adapted to his form and features; and you will get an expression distinct from that jaded look or spasmodic grin which too frequently disfigures the ordinary class of photographs.

This habit of seeing after things at the proper time may impose a little trouble on the operator; and that is, I daresay, the reason why those far-sighted people who have never adopted it before won't consent to take it up now. But if this plan, which is the fruit of experience, be once tried I feel assured it will be continued. It makes things go comfortably for both operator and sitter, and instead of a worry all day long (I refer to a busy day), with such a beginning there will be plenty of leisure. It also begets a sympathy between the sitter and operator.

CHARLES KING.

THE STIGLEMAN PROCESS.—Messrs. Howe & Beecher request us to say that they have made an improvement in the manner of preparing negatives, that simplifies and shortens the time of preparation, and improves the print. See advertisement.



NOTE FROM SPHYNX.—My object in this world is to be a means of communication between photographers. I open the way for you to ask your questions, but I do not undertake to answer them all for you. If one of you asks a question, I hope to see some other one answer it "in my next." In this way photographers can help each other much. Won't you "take a little stock" in me, and try to make *my column* the most useful in our excellent journal? *It can be done.* I'll secure you the space.

Yours, without a word,

SPHYNX.

Queries.

1. WHAT constitutes a *perfect* photograph? What is our criterion? Won't *Sphinx* and his friends give us their opinions?

E. & W.,
Penna.

2. WILL some one give, through *Sphinx*, a receipt for making a retouching varnish to use without grinding the surface?

F. N.,
Mass.

Answer.

See "Hints from Abroad," page 277.

DELINQUENT PATRONS.*

THE journals devoted to photography do not generally give much heed to the purely commercial aspect of the art, although they have from time to time afforded opportunity for ventilating the question of payment at the time of sitting. This, of course, is a question that each professional photographer must settle for himself; and, so far as my observation extends, prepay-

* British Journal of Photography.

ment would seem to be the rule, the exceptions being principally the larger establishments, whose connections are amongst the "upper ten" and the "better classes" generally. During a visit to one of these establishments recently, I gathered some information bearing on the subject that may be both interesting and useful to many of my readers. In a conspicuous part of the elegant and luxuriously-furnished saloon, there hung a neatly-framed intimation that "strangers" were expected to pay at the time of sitting; and in close proximity to such frame was another containing eighteen addressed envelopes, each bearing, in addition to the address, various post-marks and lines written in red ink. Inquiry elicited the information that these were simply a few specimens of a large number of accounts that had been rendered and applications made to the patrons of the establishment for payment for work done, all of which had been returned by the post-office authorities after they had tried in vain to find the parties to whom they were addressed. A little analysis of the contents of the frame, which may be taken as a fair sample of the whole batch, will probably serve as a key to the kind of people who are thus subject to fits of forgetfulness. Of the eighteen, twelve, according to the red-ink marks of the post-office authorities, had "gone away, and left no address;" three were "not known;" two were "not to be found;" and one was simply marked "refused."

The delinquents included seven "Mrs.," who would appear to be the greatest sinners in this direction. But perhaps we should not be too hard on them. They may have been so much in the habit of leaving the paying department of the economics of life to their husbands that they had unconcernedly arrived at the conclusion that with the acquirement of a desired article their responsibility ended. "Misses" are, it would seem, more cautious or less trustful, as they only number two in the list, a like number belonging to the class of "Esquires." It is to be hoped that the latter are not bachelors, or, if so, that they will not, by the force of circumstances, be brought together in a nearer and more intimate relationship with the "Misses," as such unions might be bad

for the tradesman whom they patronized. But, although some excuse may be made for the "Mistresses," and we may be inclined to think gently of the "Misses," what shall be said of the "Reverends," of whom there are three in the frame? They are currently believed to be examples to their flocks, and no doubt some of the pictures to which the letters in the envelopes refer are frequently examined by admiring eyes; but perhaps the admiration might be somewhat qualified if it were known that the originals had *forgotten* to pay for them. The list includes a "mister," a "doctor," a "colonel," and is wound up by an "honorable." The sums due vary from six shillings and sixpence to ten pounds two shillings. Of course, it is possible that some of these may have been cases of forgetfulness, although it is difficult to see how they could occur. The small bill of a tobacconist or wine merchant may be forgotten, because orders to them are of frequent occurrence, and the articles they supply are in daily consumption; but, with the majority, at least, of mankind, sitting for a portrait occurs so rarely as to form an epoch in the history, say, of the year that is not likely to pass from the memory, even if some of the pictures that resulted from it were not constantly at hand as silent witnesses.

JOHN NICOL, Ph. D.



THE NATIONAL PHOTOGRAPHIC ASSOCIATION.

SHALL IT BE REVIVED?

OWING to the wide distances separating the members of the Executive Committee of the National Photographic Association, the meeting proposed for discussing the expediency of holding a convention next year has not yet been held.

It is called, however, for September 2d, in New York, and it is expected that a full meeting will be had. If there is, that alone will be assurance that there yet remains considerable interest in the welfare of the Association.

Pending that meeting, and the publication of the report of the proceedings thereat, we beg to ask the old membership of the Association, and all who feel an interest in the matter, members or not, to give an expression of their feelings on the question as to whether it is worth while to resuscitate the Association or not? No doubt the Executive Committee will want an answer to this very query before they go very far one way or another. It is their due that they should know your wishes in the matter. It is true that of late considerable desire has been expressed in a quiet way, from various directions, that a convention be held. A more general and *substantial* expression will, however, be due the Executive Committee before they can reasonably be expected to arrange for a convention, presuming that the popular feeling is in favor of it.

To arrange for a convention and exhibition would involve *somebody* in considerable expense before it could be held. The committee cannot be expected to shoulder this. The dealers here and there will help reasonably, but they are unwilling to be leaned upon *unreasonably*, as they have been heretofore. The only earnest that the committee can have, therefore, that a convention is wanted, will be the payment of a sum into the treasury of dues sufficient to meet the necessary expenses of a convention conducted in the most economical possible manner.

As soon as there is a balance in the treasury of any association, trouble usually follows. We hope, therefore, that the Executive Committee will feel warranted in offering to remit the dues for a portion of the years unpaid, and only call upon the membership for enough to pay the floating debt (the Permanent Secretary not having received any pay, we believe, since his election), and meet the expenses mentioned.

This would probably not call for more than one year's dues. If all the membership would honestly pay this, the Association might be again started on a solid and prosperous basis for future usefulness.

With an empty treasury, absolutely nothing can be done, and, we suppose, nothing will be done.

The question then as to the holding of a

convention may rest entirely with the membership. Let us then discuss for a moment what is the best policy to follow.

Can you *afford* to help to support the Association *now*? That is the question which must come up first. You are aware of its advantages. Every candid photographer must admit that American photography never *grew* and improved so as it did during the six or seven years when photographers met annually, and rubbed together, and studied each other's work. Every honest person not involved in some "company" organized for fleecing their fellow craftsmen, will admit the good *moral* effect which the Association had upon process-venders and patent sharps with gum-elastic consciences.

How is it now? Are we going back—retrograding in our work? Is our craft cleansed from these impudent vultures, who would pick its very life out if it would "pay"? Can you afford to do *without* the N. P. A.—to let it stay down? *You* know, fellow photographers, and can see better than we can see for you.

Let the Executive Committee, if they communicate with you, be promptly and substantially answered. If it should turn out that the popular voice is in favor of a convention in 1880, then let us come together with *one prime object in view*, namely, the *improvement and advancement of our art* blessed of photography. Let us have an exhibition, by all means, if we have a convention. It is the life of the whole. Let our able men prepare instructive papers on photography—*work*, and give us freely what they know. Let us bury all personal animosity, and mind *our own* business, and let that of others alone. Let all tinkering stop, and for once leave the poor Constitution alone. Throw cold water upon all private irons that may be stuck towards our fire.

The time will be precious. Don't let us work under mob law, and have our heads turned by empty eloquence, but let us *think* well upon every measure, and work for the *good* of the whole.

We are not a body of Nihilists. We do want *something*, if we can get it; and if we have anything, let it be an association for self-improvement, and *attention to business*.

An invitation is already in the hands of the Secretary of the Executive Committee to hold the convention, if there is to be one, in one of our largest cities.

SHALL WE GO ?

A Fable.—Æsop tells us that once upon a time three oxen were feeding together in a field, in the most congenial and neighborly

manner, and all things went well with them. A hungry lion came along, anxious to make his dinner upon them. So long as they were *together*, however, he could do nothing. His only way was to separate them, and then, one by one, he could overpower them, and luxuriate at leisure. This he contrived to do, and the unwary oxen all suffered destruction.

Editor's Table.

OBITUARY.—Mr. A. G. DA LEE, long and well known as a photographer in Lawrence, Kansas, is dead. He was not only considered the best photographer west of the Mississippi, but he was a man of sterling good character, and much thought of by the citizens of Lawrence. His death spread a gloom over the whole city. He was about sixty years of age.

A DESCRIPTIVE CATALOGUE of the photographs and photo-etchings made by GILBERT & BACON, of this city, has been issued by their wholesale agents, Messrs. WILSON, HOOD & Co., No. 825 Arch Street, Philadelphia, and includes nearly 500 subjects. It is a speaking evidence of the fact that good work will bring a large business. It is wonderful how the business of these gentlemen has developed since they began to make "celebrities" a part of it. They have two extensive studios here, and not only is there a great demand for their pictures in America, but also a large foreign purchase made of them. The catalogue is tasteful, and will be found convenient.

AN IMPERIAL HONOR TO PHOTOGRAPHY.—Mr. F. GUTEKUNST, of this city, has received a pair of elegantly wrought metal vases from the Emperor of Japan, as a slight token of his appreciation of Mr. GUTEKUNST's talent as a photographer, examples of which were sent him.

A SKETCH of Dickinson College, Carlisle, Pa., has just been issued by the author, Prof. CHARLES F. HIMES, Professor of Natural Science in the college. It is a handsomely bound book of 155 pages, and is illustrated by engravings, and by photographs executed in the college laboratory, under the direction of the author.

These latter make the book particularly interesting to us, for it is a cheering fact to know that our art is now regularly taught in many of our colleges. Prof. HIMES is particularly enthusiastic

on this score. The work is written in his usual fresh style, and is beautifully printed (photographs included), and handsome throughout.

ARTOTYPES RECEIVED.—The disciples of the artotype are beginning to send us in examples of their success, which we are glad to see. Mr. W. J. BAKER, Buffalo, N. Y., favors us with some admirable mat-surface prints of a lady, and from Mr. L. G. BIGELOW, Detroit, Mich., we have quite a variety of subjects well printed.

PICTURES RECEIVED.—From our esteemed correspondent, Mr. A. M. DE SILVA, New Haven, Conn., some admirable views of Yale College and the grounds adjoining, and prints from the *interior* negative, which he describes in his "Notes" this month. They are all fine, but the latter is specially so for interior work. We have also a fine view of a company of soldiers, posed apparently upon the rocky summit of some mountain, which is carefully taken, and marked "compliments of PUGH, Videtta." We are grateful, but—would like to know more about it. Mr. BRADSHAW, Quincy, Ill., is also making rapid strides in our art, judging from the parcel of cabinets he sends us. The posing, particularly, is graceful and artistic. Mr. DOULASS, Evansville, Ind., is likewise making towards the front rank. Some of his cabinets before us, of fine-looking old gentlemen and ladies, of children, and young misses as well, are effectively lighted and posed, and the chemical work is equally creditable. Mr. E. D. ORMSBY, San Francisco, Cal., favors us with some cabinet "busts," which are up to his standard, and prove that he is just as able with pictures of that style as with the more pretentious kind shown in "our picture" this month. Mr. M. L. DAGGETT, Taunton, Mass., has again added to the weight of our stock of silver-ware. His effects are photographically exquisite.

ITEMS OF NEWS.—Mr. WELL G. SINGHI, Binghamton, N. Y., "made faces" at us a few days ago, *en route* for the seaside.—Messrs. CHARLES COOPER & Co., 191 Worth Street, N. Y. (factory at Newark, N. J.), have favored us with a copy of their monthly price-current.—Mr. H. B. HILL-YER, Austin, Texas, speaks very despondently of the prospects in his region, and advises sanguine photographers not to try it there this season.—Mr. J. E. BEEBE, Chicago, Ill., says: "Your journal is most welcome."—Mr. W. H. MOCHISER, Dubuque, Iowa, says: "I have had your magazine for nine years, and should feel lost without it."

A RARE opportunity is offered to purchase an establishment in a growing and healthy locality by Mr. H. L. BINGHAM, San Antonio, Texas. Those who find our colder clime too strong for them, will find this worthy of attention. Mr. BINGHAM went there in precarious health, which is now restored, and has a splendid business. Parties who confer with him can rely on the information he gives them, as he will not misstate.

ARTOTYPE materials of the very best quality may now be had *by any one* who wants them, at favorable prices, and *sans* license fee, through Mr. ROMAIN TALBOT, 68 August Street, Berlin, Prussia. You can send direct, or through your dealer. If direct, send a draft with order, and we are sure you will get good treatment, as we have personally known and dealt with Mr. TALBOT for many years.

MESSRS. LOQUIST BROS., Peoria, Ill., offer an inducement to the right party, in our *Specialties*, which is worth looking after. We are assured by them, in a private letter, that nothing but a painful accident would have caused them to offer this sacrifice.

MR. N. R. WORDEN, New Britain, Conn., also offers his business for sale, having been incapacitated for work by being thrown from a wagon.

MR. RANALD DOUGLAS, 819 Market Space, Washington, D. C., offers his services to the trade to make negatives in and around the capital on very favorable terms. He has done some most satisfactory work for us, and we cheerfully recommend him.

MR. JOHN I. SHAW has succeeded Mr. J. W. MORRISON, at Nos. 10 and 12 Sixth Street, Pittsburg, Pa., where he will continue to keep a well-selected stock of photographic supplies. We wish him the same measure of success and popularity which was enjoyed by his predecessor.

"PLAIN DIRECTIONS FOR SAVING SILVER AND GOLD WASTE," is the title of a pamphlet just issued by Messrs. PHILLIPS & JACOBS, of No. 8 N. Seventh Street, Philadelphia, for gratuitous distribution. This is a capital idea. Now that photographers may take care of their own wastes without the fear of infringing any patent, more of it will be done, and these "directions" will be found very useful. They are very full. And since these gentlemen are well and favorably known as old refiners, waste can be sent to them with the full assurance of honest returns. The pamphlet is mailed free to all applicants.

MR. JAMES MULLEN, Lexington, Ky., desires us to call attention to his advertisement in the "Specialties." Mr. MULLEN is another of our best photographers, and has, no doubt, a desire to rest after so many years of labor. Those who correspond with him can rely upon his statements.

MR. WM. MYLES, Centre Wheeling, West Va., has just completed a fine building on the site of the old one burned last February, which is the largest and finest photographic establishment in the State. It is supplied with all the modern apparatus, including American Optical Company's Cameras, and every convenience for the production of the best of photography. Mr. MYLES has been twenty years practicing the art, and shows his continued faith in it by the erection of this fine building in its honor.

THE PHOTOGRAPHER TO HIS PATRONS is becoming more and more popular as an advertising medium. See advertisement. We have shipped as many as 25,000 recently, and the orders still flow in. A great many will be used during the coming autumn and holidays.

A FEW days ago the store of Messrs. HOWE & BEECHER, Columbus, Ohio, was robbed of about \$400 worth of goods. The thief was not experienced enough. He offered the stolen merchandise for sale to Mr. G. W. CHASE, of Newark, who, knowing of the robbery, telegraphed to HOWE & BEECHER: "*I have your man.*" The result was activity on the part of the Columbus police, the arrest of the burglar, and the recovery of the whole of the goods. *Good.*

MO-SA-ICS for 1880 is under way, and all of our readers are invited cordially to contribute practical articles for its pages. Please let us have the usual abundance of goodness and usefulness, and let us have it *now.*





ANTON SEITZ,

BUSMAN PUBLIC LIBRARY

THE VILLAGE PHOTOGRAPHER.

MUNICH.

T H E

Philadelphia Photographer.

Vol. XVI.

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By EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

OUR PICTURE.

AGREEABLE to promise, we issue with our current number a picture serving as an illustration to our articles on artistic photography, and which, we believe, will be received with great interest and unusual pleasure by our readers. It is called *The Village Photographer*, and was copied from an oil painting by Mr. Anton Seitz, of Munich, who is called the "Messonnier of Germany."

Mr. Seitz chose this subject, and painted it for the Paris Exhibition of 1868, where it was exhibited, and caused the artist to be awarded a medal for its excellence. It was then photographed, and a print sent to Charles L. Sharpless, Esq., one of the best-known merchants of Philadelphia, who at once purchased the picture, and very kindly loaned it to us to make the negatives used by us for our present illustration.

The subject, besides coming to us just when we wanted just such a composition to help us in the series of articles we have undertaken, on Art Principles Applicable to Photographic Composition, and the like, appealed to us, because it is the first time in our recollection when a first-class painter has honored—should we say it?—photography by drawing a subject from the daily work of a photographic artist.

For a long while the artistic nose was turned up at photography and its attempts

at applying art principles to its productions, and bent very much out of joint; and even now, the work of photographers is not allowed to compete for hanging space in the collections of our Academies of Fine Arts. But painters and sculptors themselves are learning the value of our art as a helper to theirs, and are using it largely, too.

This is progress we are making, and Mr. Seitz has given us still another lift. For this we honor him, and say, Bravo! Herr Seitz; photography helped you to find a patron many thousands of miles away from you for this picture, and, no doubt, for many another, and you have given it a fair compensation back.

We should not forget either the gentleman who has the taste to purchase a painting of a photographic subject.

As a work of art, *The Village Photographer* is a grand effort. Wiser and better judges than we have passed upon it, and our readers will at once appreciate it fully.

The photographer has been called upon by a prosperous peasant to make a "family group." Not one of the conventional kind, with the vulgar and homely accessories usually found in a photographic studio, but such an one as can be made at his own home, with all the accessories incident thereto—a veritable "Harvest Home" scene, or Thanksgiving Day, with the fruits of his fields and the fruits of his marriage with the bonnie

lass at his side, about him, and his mother-in-law—where she should properly always stay—in the background, as an accessory only. Think you every photographer could manage such home-like accessories to such great advantage in making up what is a splendid example of angular composition? We fear many of you would fail; hence our desire to bring the lessons of the picture before you for your study. It is full of humor and pathos and good lessons. We should like you (all who can) to try how near you can, from nature, imitate this splendid subject, and then send us the proofs, and the one who succeeds the best shall favor us with negatives to print for our magazine.

To help you we have devoted a large portion of our space to four other articles, all bearing upon the rules you should follow. Much useful information can be had, also, by referring to the chapters on Perspective in Gihon's *Photographic Colorists' Guide*. Will you not take up the matter, and improve in this direction? For the same rules and principles are applicable to making one or more figures, either.

The Village Photographer reminds us very much of the admirable combination picture published with our issue for March, 1874, by H. P. Robinson, Esq., called "Preparing Spring Flowers for Market." Those who can should compare the two.

Of course there is greatly added interest here, because of the introduction of one of our craft. He is, very properly, made subservient to the rest, but he is verily there, true to nature, and is doing splendidly.

To take all the advantage possible of our illustration, we have also added an article "On Copying Oil Paintings," a branch of our art not very well understood, as we found out ourselves when undertaking this, though we had taken good lessons when in Dusseldorf from the Messrs. Overbeck. There we found the plan of those gentlemen was, viz.:

The first great object is to light the subject properly. The copying-room of the Messrs. Overbeck is very large, and perhaps eighteen feet high, with high front- and side-lights. All the walls and objects in the room that would act as reflecting surfaces are care-

fully blackened, and all extraneous light is shut off from the lenses by long cones, which reach out as far beyond the brass-work as possible. The camera is placed on wheels, which run on an iron track nearly the whole length of the copying-room, and fastenings supplied to make it rigid in any desired place. The painting is placed on an adjustable stand, and is coated with thin linseed oil previous to copying, in order to clear up the shadows, etc. A Steinheil lens is used, and is declared by the Messrs. Overbeck to be the best for flat surfaces. The exposure varies according to the intensity of the light. In the chemical manipulation of the negative, we saw no novelty except in one instance. Many of the copies are very large, and in making such it is very difficult to get a uniform thickness of collodion all over the plate. Messrs. Overbeck first coat the plate in the usual way, and then turning it end for end, *re-coat* it, and thus have quite the same thickness of film all over the plate. This double coating of collodion also tends to keep the plate moist, which is a very essential thing in making the long exposure necessary when copying an oil painting. Plates thus treated will bear exposure at least two hours—a hint for those who have interiors, etc., to make.

In copying this picture we used a similar plan, as near as we could under a skylight. No doubt others could have done better. We give it to you as the best we could do under the circumstances, assisted by Mr. H. C. Bridle, who has also done his best to make good prints from the negatives.

One great object we have in all this is to show how the simplest accessories may harmonize with a kindred subject.

Next month we shall give you an example showing "accessories thrown in," with which, and other articles and remarks, we expect to pursue further the subject of accessories in photography, and how to use them with artistic effect.

We have repeatedly supplied our readers with information in this direction, and with good results we are assured; yet such a *want* of art knowledge is apparent in the work we see that we are constrained to push the subject again.

PRACTICAL HINTS ON COMPOSITION.

AS an aid to the better understanding of "Our Picture," we make the following extracts from Burnet, the best teacher there is on the subject:*

"Composition is the art of arranging figures or objects, so as to adapt them to any particular subject. In composition four requisites are necessary: that the story be well told; that it possess a good general form; that it be so arranged as to be capable of receiving a proper effect of light and shade; and that it be susceptible of an agreeable disposition in color. *The form of a composition is best suggested by the subject or design, as the fitness of the adaptation ought to appear to emanate from the circumstances themselves, hence the variety of compositions.*

"The point of time being fixed upon, the action, expression, and incidental circumstances oblige us often to determine on a particular arrangement, that we may be enabled to place the most interesting objects in the most prominent places. Unless our attention be directed to such arrangement in the first instance, we shall often be obliged to put an emphasis on an insignificant object, or throw into repose an interesting point of the action, when we come to consider their relation to a good effect of light and shade. . . .

"In giving a few examples of composition, I have confined myself to the four simple and principal forms; not only from their being most palpable, but also from their possessing a decided character, which is at all times desirable. To those who imagine that such rules tend to fetter genius, I shall merely quote Sir Joshua Reynolds, whose works, if properly understood, render all other writings on the subject superfluous. 'It must, of necessity, be, that even works of genius, like

every other effect, as they must have their cause, must likewise have their rules; it cannot be by chance that excellences are produced with any constancy or any certainty, for this is not the nature of chance; but the rules by which men of extraordinary parts and such as are called men of genius work, are either such as they discover by their own peculiar observations, or of such a nice texture as not easily to admit being expressed in words; especially as artists are not very frequently skilful in that mode of communicating ideas. Unsubstantial, however, as these rules may seem, and difficult as it may be to convey them in writing, they are still seen and felt in the mind of the artist; and he works from them with as much certainty as if they were embodied, as I may say, upon paper. It is true these refined principles cannot be always made palpable, like the more gross rules of art; yet it does not follow, but that the mind may be put in such a train that it shall perceive by a kind of scientific sense, that propriety which words, particularly words of unpracticed writers such as we are, can but very feebly suggest.' . . .

"In commencing a composition, it is customary to mark the middle of the space, for the purpose of arranging those points we consider of most importance to the subject; dividing the picture for the regulation of the masses of light and shade, of ascertaining and fixing the horizontal line, etc. This mode of constructing the composition is often suggested from the perspective effect requiring a length of line, thereby obliging us to place the point of sight at one side of the picture; sometimes from the group requiring a large space; which a diagonal line secures. . . .

"*Fig. 5.** The original of this sketch, a small etching by Ostade, ought to be in the

* Burnet's Hints on Composition. Reproduced by photo-lithography. It is fully illustrated, and supplies in a very attractive form the art knowledge in reference to composition that photographers need. Price, \$3.50. Edward L. Wilson, Philadelphia, publisher. (See advertisement.)

* The numbers used by Mr. Burnet refer to the admirable photo-lithographic illustrations which accompany his book. "Our Picture" possesses many of the same elements, being of the same form of composition; hence our readers may refer and apply these remarks to it, in case they have not Mr. Burnet's work before them, and see how exactly Mr. Seitz has complied with the rules of true art in his composition.—Ed. P. P.

possession of every artist, for its beautiful arrangement of light and shade, and the skilful way in which they are woven together. As I ought to have noticed above, that the principal mass of light in out of door scenes (both in nature and the best masters) is generally placed in the sky, or upper part of the picture, I may here remark, that in interiors (especially such as are constructed upon this plan) it is generally reversed, the roof and background being reserved for a mass of shadow and repose. Ostade, in his compositions, displays such an ingenuity in their construction as to render his pictures an endless source of gratification and study to the artist. In some of his works, the art is so completely hid as to make it difficult to say whether his background or figures were the first composed. We have not only objects intercepting each other in the most natural and picturesque manner, but the figures carried up against them; thus coming in contact with various forms, different in size, distance, and color. This, when done with judgment, gives a rich and inartificial effect. On the contrary, in the pictures of Teniers, we often find a number of objects cast down in one corner, evidently for the mere purpose of being painted; which, however, from their situation, their picturesque arrangement, and the mechanical skill of the execution, acquire a force, natural sharpness, and beauty, that amply compensate for the ostentatious display of such excellences. Tenier's backgrounds are also totally different from Ostade's principle; his figures being generally surrounded with black spaces of shadow or half-tint. When a story is to be told, that requires the spectator to be directed to the heads and hands for expression and action, this breadth is more allowable; but breadth, as Mr. Fuseli justly observes, ought never to have the appearance of 'flatness or inspidity.' It is observable that, in an exhibition where there are a number of objects to distract the attention, those pictures please us most on which the eye is allowed to rest, from their possessing a vacant space; but those very pictures uniformly look blank and unfurnished when hung up singly in a room. . . .

"Angular Composition. — PLATE III.

Fig. 1. The plan of composition I have here taken up is in the form of a diamond; which we find often adopted, either as a complete group, or as forming part of a more complicated arrangement. In commencing a composition, I have mentioned, 'that it is of importance to mark in those points most necessary to our purpose.' For example, when a story is to be told, the heads and hands, the seats of action and expression, are often referred to each other for the completion of form or extension of light; as by such means the eye of the spectator is led to the commencement and operation of the incident. After arranging the principal points, what are called the 'secondary' require the greatest consideration; whether for the repetition of the lines, extension of the form, or conduct of the light and shade. Sometimes we are actuated by our requiring a second or third group for the better illustration of the story, which naturally leads us in the direction that affords us the greatest space; sometimes by the principal group demanding a considerable portion of the ground for a mass of shadow, beyond which a strong point is required, as a link of communication between the figures and the background. By making this point the strongest of a secondary group of objects, either from its size, lights, or darks, the eye is carried into the most remote circumstances, which become a part of the whole, from the principal group being made to depend upon *such point* for the completion of its form, the extension of the light, or the repetition of color.

"*Fig. 2.* In designs constructed upon this plan (especially of the Dutch school), we generally find the lower part of the form strongly pronounced, either by color, or by light upon a dark ground, or *vice versa*; this gives the group a firm foundation, and also enables the artist to keep the other objects in their proper situations as to distance from the eye. I wish particularly to direct the student's attention to this particular, as a doctrine, founded upon the rays of vision, has been attempted to be established, viz., that objects as they recede from the centre of the picture, either to the sides or bottom, ought to be deprived of part of

their force of and light shade and color. This is neither nature nor art. If the subject requires those objects to be kept subordinate, true art does not deprive them of their natural force, by robbing them of their lights, darks, or colors: it renders them less obtrusive by the ground which surrounds them, or substitutes other objects of a less attractive quality. . . .

"As the best practical hints are derived from accidental combinations in nature, whose sudden changes prevent the possibility of sketching, the mind ought to be trained to the most regular and even mechanical mode of arranging the ideas; that in an instant we may be able to determine whether the effects, which we perceive, depend upon a particular form, or upon particular arrangement of the light and shade. By thus tracing effects to their proper causes, we secure the principal points as a sort of short-hand notes to guide and assist the memory. This practice will also open a road of communication between the eye and the operations of the mind, which neither a hasty sketch nor the most learned dissertation can, separately, produce. At first it may seem more difficult than it really is; but a few trials will convince the student of its practicability, especially as the effects that strike him to be the most pictorial are generally the most simple. . . .

"I must also caution the young artist against supposing that these modes of arrangement are given for his imitation: I merely wish him to be acquainted with the advantages any particular composition possesses, that in adopting any invention of his own, he may ingraft upon it those or similar advantages. A design that has nothing but novelty to recommend it is a conceit, not a composition. The student in painting can hope to derive advantage from theory only, when rendered obvious by ocular demonstration. One great cause of the obscurity which envelops the art is the criticism of those whose ideas on the subject are obscure;—to free *the world* from their influence is perhaps impossible; but the artist must free *himself*. . . ."

WILSON'S *Lantern Journeys*, Vol. II, is full of art information. Just out. \$2.

PYRAMIDAL FORMS.

AS a still further help in understanding "Our Picture" this month, and in continuation of our purpose to lead the photographic mind to the much-needed study of art principles, so far as applicable to *their* art, we make further quotations from Mr. H. P. Robinson's admirable book, *Pictorial Effect in Photography*, a splendid work now out of print, but in the possession of many of our readers. The "Blind Fiddler," the picture which Mr. Robinson alludes to, is of the same order or form of composition as "The Village Photographer," so that the article applies as well to one picture as the other, and in reading what follows, "Our Picture" should be constantly referred to and studied. It will be found to respond in every particular. We earnestly desire that all these matters should have the careful study of our readers.

"We now come to a consideration of pyramidal forms, a method of composition very suitable to single figures and groups.

"It is, perhaps, as well to begin with a complete subject; therefore, as an example containing almost every element of formal artistic composition, and as a subject to which it will be useful to return again and again for the illustration of various points to be commented upon, I have selected Wilkie's 'Blind Fiddler' for my illustration. Well known and familiar as it is to all, there is scarcely another picture in the whole range of art so useful to the teacher, or from which the student of the art of picture-making could learn so much. This is not because of the subtlety or ingenuity of the arrangement, but quite the reverse. To those who have the slightest inkling of composition, the art displayed is very noticeable, defying the teaching of those who say 'the greatest art is to conceal the art,' and that all the artist has to do to produce a work of art is to take a bit of nature, no matter what, and imitate it faithfully.

"There is no doubt that the maxim that the art should be concealed is good enough, but it is one of those rules that the student should use with judgment, or it will cripple him. It should be taken in the sense of a protest against academical formality. Bur-

net says, on this subject: 'Concealing the art is one of its greatest beauties; and he best can accomplish that who can discover it under all its disguises. I ought, however, to caution the young artist, on this hand, not to be too fastidious in trying to conceal what can be obvious only to a small number; for in endeavoring to render his design more intricate, he may destroy character, simplicity, and breadth; qualities which affect and are appreciated by every one.'

"As regards composition, the pictures of Wilkie may be taken as safe guides by the student. Artists of every shade of opinion unite in regarding them in this one respect as perfect. Even Haydon, whose enthusiasm for grand art, and contempt for subjects of a domestic character, almost amounted to insanity, acknowledges that, as an artist, Wilkie will be a teacher and an example forever. Speaking of this great artist, in one of his lectures, he says: 'His composition is perfection; there the youth may consider him infallible; it was the composition of Raffaele in a coarser style.' And adds: 'My not seeing the beauty of his works at first was entire ignorance; as my knowledge increased, my admiration went with it: exactly as I understood Raffaele, I understood the beauty of Wilkie's art.'

"The 'Blind Fiddler,' as far as the arrangement of its materials is concerned, would have been possible in photography; it is, therefore, a picture of which a long study and analysis will much benefit the photographer.

"The composition consists of a series of pyramids, built upon and combined with one another. The fiddler himself forms a pyramid, and, being the motive of the picture, he is more isolated than any other figure, which gives him greater prominence, although he is not the chief mass of light; so that what Ruskin rather fantastically calls the 'law of principality' is observed. But he is not left quite alone, but is connected with the principal group by the figures of his wife and child, and the basket at his feet. This basket is made light, to strike the eye, partly to unite the two groups, but chiefly because it is the supporting point of the angle of which the old grandfather's head in the centre is the apex, and which

is led up to by the boy in shadow warming his hands at the fire. The two little girls form a pyramid, and so do the mother and child, supported by the dog, which is again continued by the man snapping his fingers, again by the old man, who caps and perfects the whole group. Notice particularly how the line of one side of the pyramid formed by the mother and child is carried on by the stick in the little girl's hand. All the figures are connected together in one grand pyramid by the dark and light spots formed by the cooking utensils over the fire-place; and the diagonal line is still further carried on by the slanting beam to the left, which, again, is balanced by the steps leading to the door. The perpendicular lines of the wall give stability to the composition, and the group of kitchen utensils and vegetables in the foreground, being darker than any other part, give delicacy and distance, as well as scale, to the rest of the picture, and, by contrast, perfect balance to the group.

"I have pointed out the leading lines only of this famous picture, sufficient to guide the student in his further analysis of its governing forms; but he will discover that there is not a line, however insignificant, that has not its equipoise and contrast; not two articles together but what have others added to form the group. A good example of this will be seen in the way the sieve and frying-pan on the wall are connected together and grouped by the gridiron and cup, which subordinate group is connected with others, and so on throughout the whole composition. I shall return to it again, to help my explanation of other details of composition, such as repetition, harmony, and repose.

"What could be more formal, regular, and artificial than this group, and yet what more entirely natural? If art—art regulated by laws—were antagonistic to nature, this would not have been the most popular picture of its year, 1806; nor would it have retained its popularity, and become, as it perhaps is, the best-known picture ever painted in England."

"PERSPECTIVE," in Gihon's *Photographic Colorists' Guide*, should be studied by all who aspire to fine photographic compositions.

CHOOSING AND HANDLING THE SUBJECT.

DETERMINED to make this issue of our magazine do as much work, in connection with "Our Picture,"* as we can, we quote some excellent thoughts from Dwight's *Study of Art*, a splendid and useful work, which we drew upon largely in our "Art Studies for All," a series of papers published in our Vol. XI, 1874. We also repeat here-with a part of that series, and recommend as many of our readers as have them all to re-peruse them.

"The study of light and shade we referred to in the last volume, but we deem it expedient to take it up again here in its application to *composition*. The management of light and shade in a composition requires great care and study. The adaptation of it to the character of the subject is not only to be considered, but the quality of draperies, accessories, etc., in regard to their power of absorbing or reflecting light; the mechanical arrangement of light and shade that will be produced, and the force and nature of colors that may affect the composition.

"Whether the picture be a group or have but one principal figure, the arrangement of light should be such as to give prominence to the principal subject, by avoiding the introduction of anything that will draw the attention away from the central figure or figures. If a group is to be photographed, such an arrangement of light must be made as will illuminate the whole, and give prominence to the figures composing the group, rather than to background or accessories. As to the nature of materials that compose a group, violent contrasts, such as black and white drapery, should be avoided. The light cannot be arranged to do justice to such extremes, and the harmony of the

lighting, as well as the composition, is often destroyed.

"With a single figure, the whole arrangement is more under the control of the artist than with a group, and the various points of the picture can be studied to produce the best possible effect. The nature of the light best adapted for the subject is the first consideration. If light drapery, a much more subdued light will be required than for dark, and the accessories must be arranged so as to not be entirely lost by contrast. The observation in reference to extremes of black and white applies here as well as in groups, and with white drapery, anything that absorbs light to any great degree should be avoided.

"The source and direction of the light must be considered according to the nature of the composition. According to the rules of art, a top-light produces the best effect, by allowing every part of the picture to be more clearly defined. An oblique or side-light casts the shadow of one object upon another, and sometimes runs them together in confusion. In portraiture, however, care must be taken with a top-light, to avoid heavy shadows on the face. In landscape photography, where the principal points are much separated, an oblique light is very effective in giving force and expression to the composition.

"Unity of light in a picture is an established rule of art, founded on a law of nature. This rule is not so applicable to groups for portraiture, where we are obliged to light all equally well, as far as possible, as it is to the style of grouping known as *genre composition*. But in pictures of the latter class, as well as those of single portraiture, the principal figure should be placed in the focus of light, while everything else is subordinate. The centre figure then becomes the centre of observation; for the eye is ever attracted by light, and turns instinctively to it. Gradation, so indispensable to harmony, requires the same attention in lighting the different figures of a composition, so that a perfect blending, from the principal figure, in the strongest light to that of the least importance, in the deepest shadow, may be secured as in lighting a single face, where a harmonious gradation

* If our readers will compare "The Village Photographer" with these notes, as they read them, they will see how carefully the rules laid down here are followed. As to "color," the photographer being limited to black and white, all he can do in that direction is to suggest to his subjects what to wear, or better hand them to read a copy of "The Photographer to His Patrons."—Ed. P. P.

from the highest light to the deepest shadow is now so universally sought for and obtained. It will be readily seen that, under the proper regulation of laws, light is to the artist a language or medium of expression, the due observance of which enables him to make clear the plan of his picture, and give the interpretation he desires.

"Objects receiving light should not be extended to the margin, because, in the first place, the lights cannot be well supported by the shades; in the next, extending the lights quite to the boundary gives the effect of an unfinished picture, which destroys the unity, so essential to the harmony and completeness of the subject.

"The lights, as well as the figures, should vary in form. This depends much upon the management of the drapery. In the infinitely various modes of arranging draperies, the artist may contract or extend his lights at pleasure, varying the general effect to any extent.

"If the light and shade in a picture are well arranged, and in due quantity, the effect will be pleasing, even at such distance from the eye that the subject cannot be distinguished. It is then a mere correspondence, or a balancing of light and shade. On a nearer approach, its force and powerful relief attract the eye, and fix the attention of the spectator. It will not have this effect, unless it possesses the essential requisites of *chiaro-oscuro*.

"Before proceeding to composition, the artist should first classify his subject. After deciding upon the impression he intends to convey, he chooses his figures, . . . and the accessories on which he depends for expression. In the selection of the characters introduced, their relative position and attitude, the management of the light and shade, the arrangement of the background and accessories, the artist shows his design; or, in other words, his conception of the subject that he endeavors to express by the imitation of various objects. Success in composition requires, first, a careful observance of the rules as already treated in the various elements of art; next, to compose with accuracy and beauty, the artist must understand the principles of perspective, line, light and shade, colors, variety,

repose, simplicity, and harmony. Perspective and line demand the first attention.

"In a dramatic representation, there must be a hero or heroine, who sustains the principal part, and to whom all the other characters belonging to the scene, however subordinate, have a due relation. The same rule must govern the arrangement of figures in a pictorial representation. There must be one who, as the hero of the story, occupies the centre of the picture. His position, attitude, and expression should give him a marked distinction from others introduced, who are merely his attendants, and should be made to appear as subordinate characters. The principal figure should receive the strongest light; the greatest force and effect that can be given by what most attracts the eye. The other characters introduced should then receive light, color, and expression according to their relative importance in the group, or their distances from the centre.

"In regard to the number of figures introduced in a picture, the best artists are governed by the same rule as the best dramatic writers, who included in their compositions the smallest number possible. Nothing is so injurious to effect as a crowded picture. If the subject requires the introduction of many figures, they should be distributed in masses or groups in different gradations, all indicating a subordinate relation to one principal group or mass, which should occupy, in the centre, a place corresponding to that of the principal figure or personage in a composition including three or four figures. In some of the best compositions of the best masters, a single group of four or five figures is found sufficient to tell an interesting story, and to display great artistic ability. The object in breaking a composition into groups, is that the eye, in passing from one to another, may, by having a distinct classification of the parts, easily comprehend the whole. When a mass of people are crowded together, and no prominence given to any one person, or any number of persons divided from the rest with reference to the effect of gradation, it is then merely grouping, not composing, a distinction which it is important for the artist to bear in mind.

“Figures should be more or less varied in attitude, because an exact repetition of line produces formality. The manner and extent of variation must be decided by the subject; they must also vary in regard to prominence. The artist who represents all the figures introduced in his picture as holding the same rank, making each one equally prominent, understands nothing of the principles of nature, or the laws of art. The same artist will, with great labor, bring forward, on his canvas, the most insignificant objects; for trivial minds ever value trivial things.”

ON COPYING OIL PAINTINGS.*

WE have frequently heard it stated that continental photographers are, as a rule, more successful in copying oil paintings than are those of our own country, and various have been the causes assigned for this superiority. It may not be generally known, however, that most of the best copies of pictures made on the continent are not taken from the original painting at all, but from copies in monochrome made expressly for the purpose of being photographed. These copies are generally made by the artist himself, so that the original touch—so important in work of this kind—is preserved.

We are aware that this method of reproducing copies of paintings has been employed in this country, but not, we believe, to the same extent as abroad. For what reason we are unable to say, as we know that successful copies of good pictures always command a ready sale, and therefore must prove profitable both to artist and publisher. Further than this: we know that the time necessary for making a negative, or series of negatives, only occupies as many hours as the engraving of a plate frequently takes years, so that photographic copies may be placed in the market while the picture is in the zenith of its popularity, instead of, as is now frequently the case, a year or two afterwards, when the excitement consequent upon its first exhibition has abated and the demand for copies become more limited.

Photographers are frequently called upon to make copies of paintings that are by no means suited for reproduction by means of their art, for the reason that the colors of the painting do not impress the plate in the proper ratio of tints requisite to render the copy a true transcript of the original. It often happens that yellows that have been used to give a light and ærial effect in the original come out dark in the copy, while blues which have been employed for shades come out light, thus destroying the *tout ensemble* of the picture. Old and faded oil paintings always prove a source of considerable trouble to the photographer, and the copies are rarely satisfactory, however carefully they may be made.

One great trouble in copying oil paintings arises from the inequality of the paint itself, by reason of its being so thickly applied by the artist. In some examples we have seen, it has been so coarse and rough as almost to suggest the idea that it had been laid on with a trowel rather than applied with a brush. Such paintings have, however, been very excellent when viewed in a proper light and at an appropriate distance; but when such a painting has to be photographed, unless very special precautions are taken in lighting it, and also in the distance at which the camera is placed, these inequalities in the paint will be painfully apparent in the reproduction, as each little hillock of color reflects light and produces bright spots, thereby giving the copy a patchy and unsightly appearance.

When a picture is “on view,” visitors are often struck with the care that has been bestowed on the lighting of it, which generally proves to be similar in character to that employed by the artist while painting it. By this means the colors appear as he intended, which might not be the case if it were otherwise lighted. Another very important feature in such exhibitions is that the picture is placed at such a distance behind a barrier that the spectator is compelled to view it from a proper point of sight—generally two and a half or three times its longest diameter. Under these conditions the picture appears to the greatest advantage both as regards color and general effect.

* The British Journal of Photography.

Now, seeing that the artist (who generally arranges this matter) is so careful as to the distance at which his picture is viewed, we may fairly assume that this distance is the best at which to place the camera in copying it; and in practice it will prove to be so, for as we approach nearer to the painting so do the reflections, from the inequalities of the color, become more apparent. At the greater distance they were not visible; but the nearer we approach the more clearly they are perceived, and the coarser and less harmonious the picture appears. Photographers who have to copy oil paintings will do well to bear this fact in mind, and to select for the purpose a lens of such focal length as will enable them to place the camera at about the distance we have indicated, namely, about two and a half or three times the greatest length of the picture. By doing this copies may be secured free from reflections, and at the same time more in accordance with the original; whereas if a lens of short focus be employed, it will have to be placed so close to the picture, and the angle included must be so great, that the inequalities will be considerably exaggerated, especially at the margin of the picture.

In copying paintings it is always advisable to work with the largest aperture the lens will permit to be used to secure sufficient definition, as by doing this the negative will prove of a much better quality, *photographically*, than if a smaller stop had been employed. We are informed that on the continent single lenses of the landscape form and of great focal length are utilized for this class of work. And for subjects that do not include straight lines at the margin we know of no better lens for the purpose, as it is generally longer in focus, and will work with a larger aperture than many compound lenses. But, of course, if there be any straight lines near the margin, single lenses are inadmissible, on account of the curvature they would produce.

It is the practice with many operators to rub a little oil or glycerin on paintings previous to copying them, and this will be found a great assistance, especially if the painting be old and discolored, as it brings up the colors and details in much the same

manner as in the case of revarnishing. Although this treatment greatly improves old paintings, it by no means follows that it will do the same with all, especially those which have just been painted, as the reflections caused by the extra gloss will more than counterbalance the slight advantage of transparency conferred by the treatment.

We have not here gone into the chemical aspect of the question, which has been frequently discussed in these columns, but have confined ourselves to what may almost be simply called the optical phase of the subject.



SHALL THERE BE A CONVENTION OF THE N. P. A. ?

A MEETING of members of the Executive Committee of the National Photographic Association was held according to appointment at 419 Broome Street, New York, on Tuesday at 11 A.M., September 2d, 1879.

A thorough canvass of the subject of holding another convention of the Association was had, and it was the suggestion of those present that while it would be wiser at present to make no *official* communication to photographers in general, it was proposed that an address be made to them by the editors of all the photographic magazines on the subject of holding a convention in 1880, asking an expression of opinion from photographers on the same, so that the Executive Committee might ascertain whether enough interest was felt on the subject, or sufficient desire on the part of the photographers existed to warrant the Executive Committee to go ahead and prepare for an exhibition.

In pursuance of the above request from the members of the National Photographic Association Executive Committee, who met in New York as above, we willingly make another effort to awaken an interest among our readers.

A good deal of earnest talk was had at that meeting, several present having travelled long distances to have a conference on this all-important subject.

From what we were able to gather we judge the state of affairs to be just this: The Executive Committee are quite ready to undertake all the preliminary labor of arranging for a convention, provided the photographers of the United States want it.

They would favor *beginning afresh*, as it were, *i.e.*, paying no attention at present to the debts of the Association or making them an issue now, but simply acting as a committee to arrange for whatever the fraternity want, and help them in it up to the time of any convention that may be held, if there be one, and then leaving the whole transaction of affairs to the attendants.

They are *not* willing, however, to go even this far, unless they hear from photographers themselves, or a goodly number of them, that a convention is wanted. *They* believe it would be a great lift and push forward *for our art* and *for our business* to have a grand reunion and exhibition again. But sundry expenses have to be incurred, and others guaranteed, *in the beginning* of the arrangements for such an event, and to be plain, the committee do not feel like having to pay this out of their own pockets. The only way then is for you who are to be most benefited, to contribute to a fund to be used only for the expenses of a convention and exhibition, and in this way show your desires substantially in the matter.

The main items of expense would be circulars and postage, etc.; in making railroad arrangements and sending copies of same to you all; the rent of a hall for meetings and the exhibition, and the construction of stalls for the pictures. The whole preliminary sum would not be more than \$500 it is thought.

Now if one hundred enterprising persons will send \$5 each to Mr. Albert Moore, Treasurer National Photographic Association, 828 Wood Street, Philadelphia, or two hundred would send \$2.50 each (the money to be returned if no convention is held), the Executive Committee would certainly feel it compulsory upon them to go forward and arrange for a grand reunion,

say next June. This, we believe, would be fine.

Already a number have signified their willingness to come into such an arrangement and we have great hope of its ultimate success.

If we are justified in such a hope, and a convention is resolved upon, then the next question would be as to locality. This subject was also widely canvassed, and an invitation was read by the Secretary from a well-known friend of photography in a Western city, asking that the convention be held there.

It was the sense of the gentlemen present, however, that if there be a convention, that it should be at a place where the lowest possible cost would be entailed both to the treasury and the individuals attending. A large city therefore was not thought to be a good place, and Saratoga Springs, New York, was suggested as one of the best of all. Its locality is unrivalled for East, West, and North, and it is about as accessible to the South as any Western city. In the month of June the great hotels are empty, and there are besides them many other more private boarding places, where board and lodging of excellent quality can be arranged for at \$1 per day. There is a fine large hall there for the exhibition, and one of the immense hotel parlors could be had for the meetings. Moreover there will be no outside attractions usual in a large city to divert the attention from the meetings, and the whole time could be given to mutual improvement.

And then there are the healthful waters which would enable us all to combine health-seeking with business push.

Columbus, Ohio, is another point that we think desirable. It is central, and more easy of access than any other point in the country; parties could reach there from most points in from twelve to twenty-four hours. A hall, we believe, could be got there. Nine railroads centre there; and we have no doubt that local pride would cause the railway companies to help us secure reduced rates. Hotels are numerous, and would be reasonable in their charges, we think. No doubt a party for Local Secretary, that would be the right man in the right place,

could be secured amid the hosts of the fraternity living there.

It seems to us a delightful programme could be made out, and a fine opportunity for culture and enjoyment given. Our art *wants* just such a send off as an old-time convention and exhibition will give it, to make business better.

We can all stand more business, surely, for it has been dull enough for a few years. But can we stand a grand reunion at Saratoga, or any other point?

The Executive Committee want to know. *Your* action in the matter regulates theirs entirely. Let us hear from you.

WHAT A "FATHER IN PHOTOGRAPHY" THINKS.

IT may do some good, and so we know he will forgive us, if we publish, without his consent, a letter received from "Father Southworth," in response to our invitation as Secretary of the Executive Committee National Photographic Association to meet with us in New York.

He is well known to *all* who ever attended any of our conventions, and by the death of our esteemed President, W. H. Rulofson, Esq., is now the President of the National Photographic Association, hence his opinion will be of interest.

His letter evinces the right feeling, and just the kind of *view* that is wanted now to bring photography out of its present dullness.

36 SOLEY STREET, CHARLESTOWN DIST., BOSTON,
September 1st, 1879.

EDWARD L. WILSON, Esq., *Secretary*.

DEAR SIR: It would afford me great pleasure to be able to meet the Executive Committee of the National Photographic Association, according to your very kind notice, on the 2d inst. My health requires that for the present I should avoid all mental and physical effort that can be avoided consistently. My physicians would not allow any exceptions, but I avail myself of some liberties of which I do not inform them. I have lost nothing of my interest in the most beautiful of arts, "that of picture-making." I am as firmly per-

sued as ever that the conventions of the National Photographic Association have been of most permanent, as well as immediate, benefit to its members, and have, tended to develop and extend far and wide the uses and beauties and value of photography. I could not refrain from attending a convention, even in my present condition of health, and should make every effort to have, as far as possible, an agreeable, harmonious, and useful meeting. The sad and most sudden and irreparable loss sustained by the death of our most respected and worthy President, is before me whenever I think of the National Photographic Association in any aspect whatever. He had a vast ability for usefulness, and labored with zeal and efficiency for the interests of the noble art, which he honored by his genius and devotion to it as a profession. In everything worthy and useful he was truly and nobly a "*Man*." To fill the chair made vacant by his decease is utterly beyond all my abilities and powers, however desirous I might be to do so. The confidence and honor of holding the next office I duly appreciate, and render to those who placed me there my heartfelt gratitude. And now I say in all sincerity, some younger, better qualified, and far more able person is needed to preside over and lead the business interests of the National Photographic Association. I desire and hope that the Executive Committee may, in their best judgment, select and put forward a member out of the very many that can be chosen who can do far more for the interests of the National Photographic Association than I possibly can do. I shall be always glad to be a *working member*, and have neither pride nor ambition to hold an office over associates better fitted to fill it than I am. Most truly and respectfully,

ALBERT S. SOUTHWORTH,

First V. P. of the N. P. A.

P. S.—I do not consider that I can be of essential service to the Executive Committee at their meeting. They will take into consideration the time of holding the convention, so as to accommodate the largest number of the most influential and experienced photographers. The place of the

meeting also is one of the important points, and not to be overlooked will be the items of expense, both to the National Photographic Association as a society and to the members whilst going to and returning, as well as whilst attending the same. But more important than all is the locality where the greatest benefit will accrue to the art of photography as a whole. If our brethren of the craft in New York should feel like taking firm hold unitedly for the interests of the art and the National Photographic Association, there is no locality that would be so desirable for the convention. I have some fears that the time is not sufficient to give notice for this year, yet my fears may be groundless. I have confidence that good judgment will characterize the action of the convention.

THE THEORY OF PHOTOGRAPHY.

BY HENRY M. M'INTIRE, M. E.

(Continued from page 264.)

THE last method given for obtaining the focus of a lens will serve when the focal length of the lens is known, to calculate of what size any object will be produced as its image, when the size of the object and its distance from the lens is known. Thus performing what is known in algebra as clearing of fractions, transposing, and dividing by the coefficient of the unknown quantity, we have the following: The size of the image will be equal to the size of the object multiplied by the focal length of the lens, and this product divided by the distance of the object from the lens, less the focal length of the lens. Thus the size of the image may be obtained. Thus a "Table of Enlargements" may be easily constructed.

We have now glanced at the theory of many parts of photography. All our attention, however, has been to that branch of the art in most general and widely distributed use throughout the country. And now, in closing, it will not be out of place to take a glance, however hurried, at some other photographic practices: first, to that branch which is doing much good at present, and is destined to journey nearer to perfection, and as a consequence increase

in usefulness; that is to say, that branch which calls to its aid the printing-press.

The peculiar property of gelatin and chromic salt, which is made use of in the carbon process, has been spoken of before. To repeat, in a word, it is that gelatin and some chromate when intimately mixed will become insoluble in warm water after being exposed to the light. This is utilized in other ways in photography than in the carbon process. For a layer of chromated gelatin has an appreciable thickness, after being exposed under a negative and treated with warm water, when the soluble parts have been dissolved away, the insoluble parts remaining, of course. Thus will be an uneven surface obtained. Where the soluble part was will be sunken, while where the insoluble part remains will be raised up. And these hills and valleys will correspond with the lines of the negative. So a relief plate will be obtained. This can be used to take a cast from, or may be used to print from directly, some other substance having been mixed with it (as alum) perhaps, to harden it. A like result may be obtained by coating the plate of metal with gelatin and chromate, exposing and washing away the unchanged gelatin, when the plate will be left bare in some parts; and treating this with an acid or a solution of chloride of iron or of platinum, which will eat in or etch the design upon the metal. By the aid of an acid another method of obtaining a relief plate is also used. The metallic plate is covered with a coating of bitumen, or "pitch of Judea," dissolved in oil of lavender; this is allowed to dry, and then exposed under a negative for several hours, when those parts exposed to the light become insoluble in certain oils. The plate is then treated with these (a mixture of oil of lavender and mineral naphtha), upon which the unaltered parts are dissolved away, and the metal left bare at those places. The plate is then treated with acid. The above process will be recognized as "one of the kind from way back," as the boy says, being one of Niépce's processes as early as 1827. Still another property of chromated gelatin is made use of. A plate coated with it is exposed under a negative, and then moistened by means of a

sponge; only those parts unexposed to the light will soak up the water. Now, if the plate be "gone over" with a fatty ink, the ink will only adhere to those places where there is no water, the parts that have been exposed to the light. And thus a print may be obtained from it. And still another method for gelatin and chromate: a lithographic stone is covered with a coating of it, and exposed and washed, or the gelatin is placed upon paper and afterwards transferred to the stone, when the stone holds the developed gelatin. It is then wetted with water. Upon being treated with a fatty, lithographic ink, the ink is repelled by the wet parts, but adheres to the gelatin coating, so can produce a print.

Now let us glance at one or two other processes where chromates are used.

If a solution of a gum be mixed with a solution of chromate of potassium, and a plate be coated with this, this plate will, when dry, be quite sticky. But if it be exposed to the light the stickiness will disappear. So by exposing this under a negative and then sprinkling some black dust upon it we will obtain a picture. If some enamel coloring matter be used as the dust, and the plate be treated the same, by burning, as any article to be enamelled, an enamel picture will be obtained.

Ducos du Hauron's method for photochrome or photographs in natural colors, comes under the head of chrom-gelatin processes. The printing from three negatives, which have taken only the green, violet, and orange colors of an object in green, violet, and orange inks, depends, of course, upon the principle that all colors can be divided into these three, or part of them, and can conversely be again formed by a mixture of them in the right proportions. The other processes for natural colors, by means of subchloride of silver and the like, being processes of the experimental laboratory, and not of the workshop, will not be treated of here. There is nothing of any consequence then left. There is a host of things that are affected by the sun's rays, that may be used some day for photographic purposes, but to speak of such here would be foreign to the subject.

The End.

GERMAN CORRESPONDENCE.

The Dissociation of the Elements—Chlorine a Compound Body—The Different Conditions of Bromide of Silver and their Relation to Emulsion—Monckhoven's Researches—Photographic Block Printing in Japan—Restoring the Bath—Carvalho's Paint for Studios.

WE are living in a time of strife and schisms. The political world was always embroiled in some kind of wrangle or dispute, but now it seems the chemical circles are even more disturbed and divided.

Lockyer goes straight for the elements and places their very existence in doubt. He speaks of "so-called hydrogen," "so-called calcium," as if theory of the existence of those bodies was an exploded fable of years ago. Fortunately the great body of chemists are not so sanguine and revolutionary; they stick to their old elements and will not be convinced of there being compound bodies, unless more weighty reasons are advanced to sustain this assertion, and we therefore may yet feel at liberty to speak in photography of real iron and real silver, instead of "so-called iron" and "so-called silver." Of late, however, doubts have been raised as to the elementary integrity of another interesting photographic body—chlorine.

It has long been a well understood fact that one volume of chlorine weighs 35.5 times more, and one volume of oxygen weighs 16 times more than one volume of hydrogen.

Victor Meyer has now proved that with oxygen this relation remains unchanged, even when the gases are heated to 1000° C. and more, while with chlorine it is otherwise. At 1242° chlorine weighs not 35.5 times as much as hydrogen heated to the same degree, but only 23.6 as much, or $\frac{2}{3}$ of 35.5. A similar fact is observed with iodine when heated, and this singular phenomenon gave rise to the oft-repeated, and especially by Schoenbein, vigorously defended, assertion that chlorine is a compound body—the oxide of a so far unknown stuff, murium. Victor Meyer treats this matter with extreme caution; he wants to gather more material, and will make further ex-

periments, "letting the chlorine, heated to 1500° C., act through a diaphragm." More than this he does not say in his report to the German Chemical Society, but the busy newspapers, always ready to pounce upon sensational news, even of doubtful origin, already brought the report that Meyer had succeeded in dividing chlorine, obtaining oxygen thereby. The confirmation of this report has not come yet, but in case it should prove true, then all our old theories about the combination of many important photographic bodies must of needs be relinquished. I myself have some doubts yet in regard to the matter. If chlorine is decomposed already at 1500°, it would with more reason yet be decomposed by the electric spark, the temperature of which is estimated to exceed 20,000° C., and if thereby oxygen is set free, oxygen lines would be visible in the spark spectrum of chlorine; but of all this nothing can be observed. These experiments and observations seem to offer, so far, interesting points only to theorists, but similar theories have often exercised the greatest influence upon the practice. The whole manufacture of our aniline colors rests on a theoretical basis, and, according to Monckhoven's recent publications, photography begins now too to draw benefit from certain hitherto unnoticed, seemingly only scientifically interesting facts, concerning the properties of brome-silver.

For the photographer there exists only one kind, or chemically expressed, one modification of brome-silver, but it is easy to show that brome-silver, as such, appears in many different conditions. When, for example, brome-silver is precipitated with an excess of nitrate of silver, a cheesy, dark-yellowish precipitation is obtained, while when treated with an excess of bromide of potassium or ammonium, the bromide of silver appears light yellowish and powdery, showing much less sensitiveness to light than the former precipitation, after having been washed and dried. We have consequently two different modifications of the bromide of silver. But the celebrated Belgian chemist, Stas, who studied the combinations of silver with extreme minuteness, states that he did not find two, but six different modifications of brome-silver.

He makes distinctions between: 1, the spotted white; 2, the spotted yellow; 3, the powdery intensely yellow; 4, the powdery white, pearly; 5, the grained yellowish-white; 6, the crystallized intensely yellow. Stas furthermore states that brome-silver, which was usually considered insoluble in water, is really soluble in water to a marked degree, at a temperature exceeding 33° C., when in a spotted or powdery condition. Unfortunately Stas did not extend his researches to the relative sensitiveness to light of the different kinds of brome-silver, but recently Monckhoven has shown that these various conditions which brome-silver appears in, are a very important factor in the production of gelatin emulsion, which has of late become of so much importance. He states that in manufacturing brome-silver emulsion, at first brome-silver of a very inferior sensitiveness is obtained, which, however, through extended emulsification, *i. e.*, through being kept liquid in a warm state, is changed into a much more sensitive modification. The object of emulsification is consequently to work a modification of the brome-silver.

Monckhoven tried to obtain this sensitive brome-silver modification by a different process, as the protracted emulsification and washing is very apt to produce decomposition of the gelatin. He puts hydrobromic acid (HBr) to gelatin, shakes the same well with carbonate of silver, and thus is said to obtain the sensitive modification of brome-silver, without having recourse to the long emulsification. Monckhoven takes so much hydrobromic acid as is necessary to precipitate 10 grammes of nitrate of silver, dissolves this HBr in 200 grammes water with 2.5 grammes gelatin. He precipitates furthermore 10 grammes nitrate of silver with carbonate of soda, and washes out the precipitated carbonate of silver with pure water. Upon this carbonate of silver he pours the acid solution of gelatin, shakes well, and lets the whole stand about twelve hours at 50° C. Gradually brome-silver is then formed, which is distributed equally all over the gelatin, and after adding 10 grammes of gelatin, the emulsion is ready, and it is not necessary to wash the same, as it only contains free hydrobromic

acid, or free carbonate of silver, which, according to Monckhoven, does not matter. Monckhoven extols the sensitiveness of his emulsion, but unfortunately he fails to give all the necessary details, so that his process, in other hands, has produced less favorable results.*

It has often been tried to obtain printing-blocks with the help of heliography, and with much good success, but while an easy way to produce a printing-block with the same rapidity and precision as a silver picture has not been found yet, it looks very much as if the far East would present us with such a process.

Baron Stillfried, now professor of photography in Japan, and superintendent of the photographic department of printing, reports that a Japanese possesses the secret to make printing-blocks with the help of photography, by using a sensitive substance, long known to the varnishers in Japan. This substance is red-brown, soft, like putty, and has the property to harden in the light, and to become insoluble in certain solutions. With the doughy substance a wooden block is coated, smoothed with rollers, and the whole is lighted under a negative. The lighting lasts in the sunshine a whole day, and the lighted parts become thereby hard like stone, and dull, the rest remaining soft. It is now easy to remove the soft parts with a wooden knife. The hard parts resist the knife, and the whole is then worked with an instrument resembling a comb, or the soft part is removed with a solution. The remaining relief can be hardened in the light and used at once for printing. More than this Stillfried could not ascertain. The Japanese have always been very reticent in regard to the fabrication of their excellent varnishes, and it therefore might not be easy to obtain any further information about this sensitive varnish.

In your last number, I found under "Gihon's Gatherings" some very valuable items; among others, one entitled "How to Sun a Bath." I believe the recipe to be good, especially for America, where there is no lack of sunshine, but, nevertheless,

the process requires several hours of preparation in summer. The bath has to be neutralized first, then intensified again after sunning, etc.

Much easier the same result is obtained without the sun, by using permanganate of potassium, which was first recommended by Crookes. For twelve years I have used this substance, and do not need to sun a bath. A few minutes only are necessary for the purpose, and I never had a failure, and long ago I recommended this way of restoring a bath instead of sunning, but it seems as if not all photographers were successful with it. Usually the mistake is committed of using entirely too much permanganate, thus neutralizing its beneficial effects. I take one part permanganate, 1 part nitric acid, dissolve in 100 parts water, and of this solution I put one drop into the silver bath which is to be restored. If the bath now contains organic substances, the beautiful rose color, which the first drop produced, will vanish quickly again. Then another drop is put in, always shaking, and if the rose color vanishes again inside of a minute, another is added, and so on until the point is reached when the rose color will remain permanent while shaking, when no more permanganate must be added. In this way a bath may be restored in 5 to 10 minutes with permanganate. If no organic substances are in the bath, the first drop already will impart to it a rose color, which will last several minutes. I had baths, with which I had to use 20 to 30 drops of solution of permanganate, and others which were restored already with 3 drops. But too much of permanganate is always injurious, and very apt to produce insensitiveness or fog. Of course, only organic matter is removed from the bath by permanganate, but not so all other defects (for example, excess of iodide of silver). I know people who imagine they can remedy all and every defect with permanganate of potash, but it cannot be done.

Since the new patent law has come into existence in Germany, a great many photographic patents have appeared. In a year forty to fifty photographic novelties have been patented, but real value only a few of them possess. Some of these patents are

* Dr. Monckhoven's paper on this subject will be found entire on another page.—Ed. P. P.

already extinct again, as they realized so little to the patentees, that they were not inclined to pay the patent tax for another year, though the same amounts only to about \$12. The undeniable worthlessness of many patents, has had the result that everything patented is viewed with suspicion. Formerly, when only really new and practical inventions were patented, the case was different. I see that recently some American inventions were patented here, and I do not believe that they will amount to more than the other patents. Lately a patent has been applied for, for Carvalho's orange-pea-green paint for studios. I have read the application, and must own that I have seldom seen so much nonsense condensed in a few pages, as in this report. It is undoubtedly obvious that the shadows of our models, if they shall be effective for photographic purposes, have to be lightened by photographically effective lights. Such a light is the white or blue, and therefore the reflecting walls of our studios must be painted blue, white being too glaring for the eyes. If anybody asserts having obtained better results in a studio with orange-pea-green walls than in one painted blue, he simply deceives himself, and such a delusion happens not unfrequently with photographers. Only a short time ago a photographer brought me some "lightning" collodion of which he seemed to think wonders, but which I found, upon testing it in my studio, much less sensitive than my own collodion.

If a photographer, as I read in some English paper, experiments to-day in a blue studio, and the day after to-morrow in one painted pea-green, and thinks he can perceive that in the latter case the picture is much better, I do not place any weight whatever upon the fact, because no man, not even the very best photographer, can judge what change the chemical strength of light has undergone in three days. The better result may be traced to any other influence, but not to the pea-green coat of paint; and anybody who will prepare two reflecting screens of equal size, painting the one light blue with ultramarine, and the other pea-green, and place first one and then the other on the shadow side of a person, taking one right

after the other, in equal light, can judge for himself how much the pea-green color is worth.

Yours truly,

DR. H. VOGEL.

BERLIN, August 30th, 1879.

NOTES AND PRACTICAL SUGGESTIONS.

(Continued from page 261.)

SOME three years ago, in Anthony's *Bulletin*, I described the singularly rapid fading of some prints which had hitherto stood well, until they were wetted. I have also some prints made at the same time, on a different brand of paper, which are (with the exception of being slightly discolored by time, ten years having elapsed since they were made) still in excellent condition. I divided several of them into four, damping them—nay, soaking them in water for ten minutes at a time—many times during the past three years, and still they do not fade. Why should the two samples of prints, made at the same time, from the same negatives, act so differently? They were both made on Rive paper, but the albumenizing was widely different. The albumenizer of the paper on which the lasting prints were made—the late Mr. Spencer, of London—at that time rather prided himself on using fresh albumen; those which faded "every time" were made on stinking stuff, rotten at the start. I am not alone in the conviction that stale albumen (necessary where the paper is twice coated) has a good deal to do with the fading of the proofs. I myself fail to see the great superiority of "double stinking" over the "single fresh." It is claimed that the delicacy of shadows is much better rendered; that the print "presents a much more beautiful appearance." Now, using well albumenized paper, with a burnisher or hot press, they can be shined up—this being the idea of the beautiful with the vulgar mind—to any extent, which process will give additional transparency to the shadows. For larger work, undoubtedly the less glossy presents the most artistic appearance.

We have all sorts of remedies for blisters, and still they come, and never again

adhere to the paper support; for once the albuminous coating separates from the paper support it does not again adhere to it. If anyone doubts this let him bend *inwards* a mounted print which has blistered, and the larger blisters will at once show on the surface. If the prints do not blister in the hypo—and I have seen them show signs in the toning bath—very strong fresh salt and water will mend matters. But as they start generally—better, make their appearance—in the hypo, we must commence before this, in order to prevent them.

Perhaps the result of some experiments I have recently made will not be out of place here, and possibly enable others to steer clear of some difficulties. In every case I used Cross-Sword Double Albumenized Rive paper, both eight and ten kilo, the latter being the weight generally used here. On a strong bath for the paper as salted, sixty grains to the ounce, drawn over a rod, both just neutral, the prints bronzed badly; *felt* suspicious in toning bath (of sal soda and salt and gold), and blisters appeared in the hypo, 1 to 12, which produced murky prints. Longer fuming occasioned larger blisters; and when this was, done and the prints were placed in the first washing water, acidulated with acetic acid, the prints felt decidedly rough in the toning, were covered with small blisters in the hypo (kept weak still, and at a normal temperature); passed for several minutes through the salt solution, which was gradually diluted in the wash-tank. They were one magnificent crop of blisters—worthless! Forty-grain bath, showing the *slightest* acid reaction, short fuming—just sufficient to produce reddish-purple tint on print; less bronzing; prints not looking quite so bright as with longer fuming, but toned brilliantly in a bath of salt and gold, to which was added a *very* small quantity of bicarbonate of soda; *fixed* in hypo, 1 to 8; very few tiny blisters making their appearance in the hypo. Bright prints.

Two baths, as recommended by Mr. H. T. Anthony, a stronger and a weak one, nearly neutral, the paper being drawn across a glass rod; short fuming; *no* acid wash; toning and fixing as before. Result: no injurious bronzing; no blistering. Try

it. As I have already occupied so much space with this subject, I must reserve for a future number other results bearing upon it.

I have before me a truly magnificent group (14 x 17 in.) of the Yale Freshmen Base-ball Team, taken here last summer by Mr. Bourdon, the gentlemanly and very clever operator of Messrs. Notman & Campbell. It is doubly interesting, having been taken with a comparatively new lens, the Euryscope of Voigtlander; every one of the figures, arranged three deep, being well defined. The lens used was a "No. 3," nineteen inches equivalent focus, using stop f f 12, the exposure being but thirty seconds. That the lens works most beautifully I have had abundant proof, and there can be no doubt that lenses of this class will soon supersede the large and cumbersome old-fashioned portrait lenses, being *practically* as quick working, making better pictures, and costing very much less money.

I have to thank the editor, Mr. E. L. Wilson, for sending for trial a capital pair of Ross Rapid Symmetricals, with which I am much pleased, but must reserve further remarks for my next communication.

A. M. DE SILVA.

(To be continued.)

TROUBLE WITH BLISTERS, AND GETTING OVER IT.

BY F. C. WESTON.

I SEE by the August number of the *Philadelphia Photographer*, that you solicit communications from those who have any new method of manipulation, or think they have.

Having had considerable trouble in the past with blisters, in using the double-gloss paper, I set myself at work for a *sure* remedy, and am happy to say I have found it. At the same time, it may be old to some, but I have never seen it in print. It is simply this: Instead of immersing the prints, after fixing, in salt and water, or any other solution, merely gradually dilute the hyposulphite until all traces have disappeared, which can be easily effected by letting a *small* stream of water flow into it, keeping the prints agitated, of course, all of the

time; or turn out *one-half* of the hyposulphite, and add as much water. Repeating this process three or four times is sufficient.

I have never seen even an indication of a blister since I used the above, and it seems very reasonable it should be a preventive, since the rapid expulsion of hyposulphite is the cause.

I send with this a few samples of my work, which is the best I am doing at present; but, of course, I will aim and strive to do better in the future, as I think any one who flatters himself he is perfect will never improve; in fact, will degenerate, if anything. I have never made a picture yet but I thought it could be improved, and I never expect to. I am thoroughly in love with the art in every particular. To be sure, there are many annoyances and troubles, as there are in all other business, but, on the whole, it is a grand and beautiful art; and a comparison of the productions of to-day and a dozen years ago cannot be otherwise than a source of great satisfaction to its devotees.

WILLIS'S PLATINUM PRINTING PROCESS.

ANOTHER "process" is being offered to the fraternity, and in order that all may be so posted as to act intelligently in the matter, we call attention to what follows.

The method alluded to is "Willis's Platinotype Process." It is patented both in this country and in Europe, and, so far as we know, the patent is recognized as sound, good, and undisputed. It is being worked by a company in New York, with the inventor at the head, and at other places also. We have once seen it worked, and the manipulations are seemingly about as simple and easy as the ordinary plain-paper or ammonia-nitrate process.

While "absolute permanency" is claimed for the results, we do not look for a wholesale driving out of the silver process by the platinotype, for the results, though soft and rich, are black and cold, and moreover their surface is mat, though some we have seen have been albumenized after printing, but with indifferent effect. For prints which are to be colored or crayoned, or for any

mat-surface print, or for printing upon handkerchiefs, and other linen*—a novel and pretty branch, by the way, which could be pushed to popularity—the Willis process is of advantage. We do not see where else it is of service to the ordinary everyday portrait photographer.

Mr. Willis waited upon us with his specimens when he first came to America, since which time we believe he has made some improvements. He does *not* come into the plan adopted by the odious process-vendor, of making loud claims, and false ones, for his method. It is being offered for sale by Mr. C. C. Gentile, and it may be by others. We know not.

We should be glad to hear of the experience of those who have had success with it.

This much concerning it is said without solicitation, but simply to keep our readers posted promptly on what is going on, as is our habit.

At a recent meeting of the South London Photographic Society, Mr. Willis read a communication, in which he gave a brief of his process. To further enlighten you, we extract from it below.† It is substantially as we saw the method worked in our own humble establishment.

"Paper is coated with a mixture of platinum and iron salts, and then dried. It is now exposed under a negative; after exposure it is floated for a few seconds on a hot solution containing oxalate of potash and a salt of platinum. This solution develops the print, which has then merely to be washed in a weak solution of acid to remove the iron salt from the paper.

"I will now proceed to give a detailed account of the manner in which the process is actually performed.

"The chemicals made use of are the following:

"A solution of ferric oxalate containing about 120 grains of the salt in each ounce. This is the iron solution.

"A solution containing thirty to forty grains of potassic chloroplatinite and three

* See Gihon's Gatherings. Philadelphia Photographer, Jan., 1879, p. 16.

† See also Prof. Stebbing's letters, Philadelphia Photographer for Nov. and Dec., 1875.

to four grains of plumbic chloride. This is the platinum solution.

"A solution containing in each fluid ounce 120 grains of potassic oxalate and seven grains of potassic chloroplatinite. This is the developing solution.

"A sheet of suitably-sized paper is placed on a glass plate, and held there by any convenient means. The sensitizer is made by mixing equal quantities of the before-described iron and platinum solutions; two drachms of this mixture are now placed on the paper, and spread evenly over it by means of a piece of flannel wound round a glass rod. The paper is then hung up to dry, and as soon as surface moisture has disappeared the drying is finished before a fire or stove. The sensitized paper is now ready for exposure under a negative, which is done in the usual manner. The right exposure may be determined by inspection or by an actinometer. I prefer the latter as being more simple. A sufficient quantity of the developing solution is then put into an enamelled iron dish, and heat is applied underneath until the solution has nearly reached the boiling-point. The exposed prints are now floated on this hot solution for two or three seconds; the image, visible on the papers before they are thus floated on the developer, consisting of a sub-salt of iron, is dissolved by this solution, and in its place is left a picture in pure metallic platinum. When removed from the developer the prints are washed for a few minutes in a weak solution of oxalic or citric acid, and are then finished by washing for half an hour in three changes of plain water.

"In sensitiveness the process is about three times as rapid as silver. The sensitized papers and the exposed, but undeveloped, prints have been kept in a dry state for upwards of two months without any deterioration. They may probably be kept for a very much longer period.

"You all know that platinum is one of the most permanent substances with which we are acquainted. The prints made in that metal by this process are, practically speaking, impregnable. I have not succeeded in injuring them by any reagent, save only hot *aqua regia*."

PLATINUM AND IRIDIUM.*

THESE rare and valuable metals have within the past few years assumed a position of greatly-increased importance in photographic operations; confined at first to the use of a few experimentalists, platinum has now a recognized value in toning operations, while iridium is a substance which could scarcely be replaced among the chemicals of the enameller. It is more especially with their chemical rather than their mechanical properties we have now to deal, or we could dwell strongly upon the value of platinum in the laboratory, where, though not literally quite worth its weight in gold, it is in actual use of far greater value, having been a potent agent in modern laboratory work, enabling many otherwise impossible operations to be performed. Iridium has found its mechanical usefulness as an adjunct to the sister metal, a slight addition sufficing to convert the comparatively soft platinum into an alloy of great hardness and durability; indeed, the combination has been selected by an international body as the material for constructing standard weights and measures.

We have alluded to the use in toning and enamelling of the two metals, and we must not omit to name Mr. W. Willis's new platinum printing process as likely to make a combined use of both metals, his experiments, when last reported, having indicated a possible important application of iridium, in giving a more agreeable tone to his already very beautiful results.

We have classed these two metals together, as, though they possess very distinctive characteristics and differences, they still have properties in common. Platinum is soft, being about equal to copper in that respect, while iridium is one of the hardest and most brittle of metals. But each is very heavy, they forming, with a third, osmium, a group of the three heaviest metals known, their average specific gravity being about 22.4.

The source of both metals is the same, the three we have named, together with others, being almost always found combined with copper and iron. They are found in

* The British Journal of Photography.

the auriferous sand of certain localities, in the shape of dust or small grains. Owing to the difficulty with which they are attacked by chemicals their purification is a matter of some trouble; indeed, it is found in practice next to impossible to obtain any one of the series in a state of complete purity. This to photographers, who have found by painful experience how small a quantity of a foreign substance suffices to utterly ruin otherwise excellent materials, is a matter of some importance, as it would be impossible to obtain a thorough knowledge of the behavior of any one of the metals unless we could guarantee their integrity. A sample of platinum upon being tried against another might give very conflicting results; and, again, one quantity of iridium might be all that could be desired in enamelling, while the next, owing to a little impurity unthought of, might entirely upset the results of previous experience—the more so as, when fused into glass, such minute quantities of many substances are sufficient to impart considerable depth of color.

As our readers are aware, Mr. Willis, in his platinum process, has employed iridium with advantage as a toning substance; and, though his experiments were not far enough advanced to be made public, he was enabled to announce a very important improvement in tone through its use. It is, again, easy enough to see here how necessary it must be to have thorough confidence in the integrity of the materials made use of. In this case they are of the most rare and expensive kind, and difficult of purification; therefore a paper recently read by Mr. Matthey—of the firm of Messrs. Johnson, Matthey & Co., the well-known metallurgists—before the Royal Society, giving a detailed account of the preparation and purification of platinum, iridium, and the allied metals, will be read by photographers with much interest, and a brief abstract of it will not be considered out of place in these pages. Of course we cannot here do more than give a short summary of his processes, those of our readers who wish to get further details being referred to the reports of the papers in the scientific periodicals.

Mr. Matthey finds that to obtain pure

platinum is an operation of extreme delicacy, and he begins by fusing ordinary commercial platinum with metallic lead, and afterwards dissolving out by dilute nitric acid as much of the lead as possible, till the platinum lies in a state of fine powder at the bottom of the vessel mixed with some little of the lead and shining crystalline particles of iridium. Weak *aqua regia* is used to dissolve the platinum and lead, and the latter is thrown down by sulphuric acid. The yellow double salt is thrown down by chloride of ammonium and sodium, heated to 80° C., and allowed to stand for some days. The precipitate is next washed with solution of chloride of ammonium, and then with weak hydrochloric acid. If rhodium still remain, as is likely, it is removed by reducing the precipitate to spongy platinum, by heating to dull redness in a platinum crucible the last-named precipitate, mixed with bisulphate of potash and a small quantity of bisulphate of ammonium. This elaborate process enables platinum to be obtained free from rhodium, etc., and, indeed, in a state of absolute purity.

Mr. Matthey's instructions for purifying iridium are quite as elaborate, but he has not attempted to make it absolutely free from platinum, seeing that his process is for the purpose of getting an ultimate alloy of the two metals. Similarly, for photographic purposes, the admixture of platinum—seeing that iridium is generally used in conjunction—would not be of any material hindrance. He obtains the finest iridium capable of being purchased in the ordinary way and fuses it with lead, dissolves the latter out with nitric acid, and, after treating the residue with powerful digestion with *aqua regia*, obtains a crystalline mass. Rhodium is expelled by mixing the mass with bisulphate of potash, and raising to a high temperature. The iridium so far purified is melted in a gold crucible with caustic potash and nitre, and the mixture treated with cold distilled water, then with water containing in solution a little potash and hypochlorite of soda, and again with distilled water. The blue powder thus obtained is mixed with a strong solution of hypochlorite, and after standing awhile gradually heated to the boiling-point. The

last traces of ruthenium are removed by heating with nitre and potash water and hypochlorite of soda and chlorine.

The result so far is oxide of iridium, which has next to be dissolved in *aqua regia*, evaporated to dryness, and redissolved in water and filtered, dropped slowly into a concentrated solution of soda and hypochlorite of soda, and subjected to a current of chlorine gas. The blue oxide thus again obtained is washed and dried, and subjected to the action of carbonic oxide and carbonic acid. The mass is then heated to redness with bisulphate of potash, then subjected to repeated washings with distilled water, followed by chlorine water, and then by hydrofluoric acid, which finally leaves iridium free from almost every trace of foreign matter but platinum.

We have given these details, not with the idea of their being copied by ardent photographic experimentalists, but with the purpose of showing how extremely difficult is the purification of these remarkable metals, and to give our readers some idea of the contents of a paper which, we are inclined to believe, will be looked upon as a classical monograph upon what used to be termed the "infusible metals."

A SPLENDID LUBRICATOR.

BY S. L. PLATT.

White Wax,	1 ounce.
Paraffin,	¼ "
Camphor,	¼ "
Soap,	¼ "
Melt together. Then use	
Of above,	20 grains.
Chloroform,	¼ ounce.
Alcohol,	3 ounces.
Oil of Bergamot,	15 drops.

It can be used without chloroform and alcohol, if desired, by rubbing it on a flannel pad.

PRINTING IN BLUE.

A NUMBER of inquiries have come to us lately for the process of printing in blue. We have repeatedly given this process, but it has recently been published more in detail in the *Franklin Institute Journal*,

by Mr. David Townsend, of this city, and we reprint from his valuable paper what follows these remarks.

Mr. Albert Levy, of New York, Mr. T. H. McCollin, of this city, and in fact all dealers, we believe, supply the paper already sensitized, and for experiment, perhaps, that is the best way to get it.

"The process which is most used in America, and which has been largely adopted by our manufacturers, is known as the blue process. The drawings are reproduced in white lines on a blue ground, and I understand the paper is sold in the market already sensitized, although it can be prepared cheaper and just as well as the bought article. Almost any heavy well-glazed printing paper will answer the purpose, but, as this is the only expense, a good quality should be used. The sensitizing bath consists of

a. Citrate of Iron Ammonia,	1 part.
Clear Water,	4 parts.
b. Red Prussiate of Potash,	1 part.
Water,	6 parts.

"The two solutions are dissolved separately, and preferably at the ordinary temperature; when in complete solution they are mixed, and kept in a yellow bottle, or carefully excluded from the light, which would cause a blue precipitate. If the paper is not sufficiently sized, gum or gelatin should be added to give it body and prevent the liquid from soaking through. The sensitizing is performed as follows, in non-actinic light: The sheet of paper, cut to the required size, is pinned to a clean board; some of the solution is poured into a vessel, and the paper painted with it by means of a soft camel's-hair brush three inches wide. The brush is dipped into the solution and the paper completely moistened in one direction; then, without removing the liquid, it is smoothed until no streaks or lines appear. Some prefer to use a sponge, but this causes uneven spots, and mars the beauty of the picture. In this way a very little solution will cover quite a large surface. Before putting the brush away it must be carefully cleaned. The paper is unpinned, hung upon a line, and when dry will keep a long time in the dark. It should be a brass-yellow color when rightly prepared. To make a copy, the drawing, on tracing cloth, is put

into the printing frame, as usual, with a sensitive sheet, and exposed to sunlight for six to ten minutes, or to diffused light for one to two hours. The double salt is reduced to the ferrous state where the light strikes it, and immediately combines with the red prussiate present to form Turnbull's blue, while the protected parts remain unchanged. The exposure should be continued, until, on opening the frame, the white lines have almost disappeared and the background is grayish-green. The sheet may also be exposed on a board padded with flannel, over which is placed a sheet of plate-glass, but this requires to be always horizontal, and needs more apparatus than it would cost to get a regular frame. When exposure is finished the print is removed, and put immediately into a tank of running water, when the lines will become white (unless over-exposed or not in contact), while the ground becomes dark blue. After sufficient washing, the ground can be improved by transferring to a bath of

Hydrochloric Acid, . . .	5 parts,
Water,	100 "

when it must be again thoroughly washed, and then dried. The color always darkens on drying, and prints that would otherwise be underexposed have very beautiful light-blue ground.

"This process has become the favorite one, owing to its great simplicity, and the ease with which any one can work it; the objections to it are: the length of exposure, especially on cloudy days, and the impossibility of copying drawings from anything but tracing cloth or paper. In very large sheets the fine lines are apt to be reduced, thus making the picture somewhat uncertain in parts. If, instead of mixing the solutions, the paper had been sensitized with the citrate bath and then exposed, the reduction would have been very rapid (fifteen or thirty seconds), as this is the most sensitive salt of iron. The picture could then be developed in the ferricyanide bath, and finished as described; but in this case it is better to sacrifice sensitiveness to convenience. The other double salts could be used to replace the citrate, but they require a longer exposure."

HOW TO AVOID SILVER STAINS.

BY J. E. BEEBE.

PROBABLY the most unpleasant feature connected with photographic chemistry is the unavoidable staining of silver. Most unpleasant it is, both to operator and sitter; and having been able, by a simple expedient, to avoid this annoyance almost entirely, I take this opportunity of bringing it to the more extended notice of the profession.

Near the sink where the negatives are made, I have standing an ounce vial of ordinary tincture of iodine (the vial has, of course, a ground-glass stopper), and while my hands are still wet from the washing of the negative, I shake the bottle, and, with the stopper, smear all stains on my hands with the iodine. Now as to the result.

If my negative has been washing under the tap during the moment I am putting on the tincture, and I proceed to cut it with cyanide, of course by allowing the cleaning solution to run over my finger ends, they are at once freed from all stains. But I find that by using the iodine after each negative is made, *and at once*, before the silver has time to penetrate very far into the skin, and by a frequent use of good soap and water, the silver and iodine stains disappear without the use of any cyanide at all.

It takes longer to describe this simple operation than is consumed in doing it, and by a most ordinary economy of time the busiest operator need not lose a moment.

This is a small matter I know, but it may be of use to some photographer who appreciates how much disgust the usual soiled hands inspire, for very many people believe the black color comes off on their faces or dress, and will aid him in the neatness so essential to success.

A little more neatness as regards spotted clothes and linen would not be amiss, and then the usual trade-marks would be relegated to the resting-place of long hair and mighty hats, and it would be impossible to distinguish a photographer from any other gentleman.

OLIVER SARONY, the Scarborough, England, photographer, and brother of N. Sarony, of New York, died August 30th.

[Translated for the *Philadelphia Photographer*.]

ABOUT FURNISHING THE STUDIO.*

BY DR. H. VOGEL.

ALTHOUGH there has been very much written about the construction of the studio during the last twenty years, yet many mistakes are made every day, which might easily be evaded by consulting a good book relating to the matter.

Some years ago the owner of a house built a studio under my directions, and I told him to follow the suggestions which I have made on the subject in my *Handbook of Photography*.

In this way a low studio (height, ten feet on the window-wall) was built which is best suited for taking portraits, as the experience of all first-class photographers has proved. Adam Salomon and Reutlinger in Paris, and Loescher & Petsch in Berlin, work in such low studios.

The photographer, however, who rented the studio afterwards, was of different opinion, and declared a high studio as the only right one, and the skylight was raised five feet at the cost of more than five hundred thalers. It was money thrown away. The business of the photographer stopped entirely in a couple of years, and the studio now stands empty.

The other day I saw a studio painted green on the inside, and the artist declared he had seen this color recommended in some newspaper. Other ateliers I know show a brown color, which is an imitation of the painters' studios, in which the color is entirely in its right place, while in the studio of the photographer it is not. The shadows of the figures are illuminated with such a color by brown reflecting lights, that means to say, in a color which photographically is the least effective. In order to avoid in a brown studio the brown reflecting lights, it is necessary to use special reflecting screens, but it is surely best to paint the studio in a color which is photographically effective, and such a color is ultramarine. A white coating would be good, too, if it was not too glaring for the

eyes. The floor is usually dark, but here, too, a lighter color would be more appropriate, as reflecting more light into the sockets of the eyes and under the chin. Only the exact spot where the person stands, and which appears on the picture, must be dark, as a light floor looks very ugly in a picture; therefore a carpet of a subdued pattern is very appropriate.

To prevent the sun penetrating into the studio, usually sun-screens are yet used, which are very annoying, owing to their being easily torn, and their fluttering in windy weather; and very few artists have yet adopted the system of venetian blinds which I recommended in the third edition of my handbook. Those who want to avoid the expense for those new contrivances will do well to screen the skylight in the inside with white sheeting, which can easily be removed in winter or in bad weather.

In regard to backgrounds, every studio can show up some worthless trash. The blunders which are committed here by the decorative painters are legion, and only the American, Seavey, has brought the matter under a sensible system, and given us excellent and artistic backgrounds, which have found here ready approval and successful imitation. Till now it was the rule to use a background of a subdued tone in order to leave the main light to the figure, but recently Loescher & Petsch startled the craft by using white backgrounds, and obtaining such wonderful effects with them that they fully merit the praise and admiration they receive. I do not mean to say that these white backgrounds are the most appropriate for portraiture, but for *genre* pictures they are of striking effectiveness. Of course, their use requires extreme caution and artistic culture. Loescher & Petsch even placed figures in the air, and obtained pictures of thorough finish.

In regard to furnishing the studio with apparatus, the matter is very often overdone. New beginners lay in a stock of expensive objectives, which often do not realize the interest on the outlay, and landscape apparatus, without even having any use for them. For most of the smaller studios a

* Photographische Notizen.

carte-de-visite and cabinet instrument, or an objective which can be used for both sizes, as, for example, Busch's System I, of a three-inch diameter, furnishing 7 x 9 inch pictures, will be sufficient.

In beginning with moderate means, only the indispensable should be bought at the start—the more expensive acquisitions will come by and by if the business grows.

I know a portrait studio having a very considerable practice, which has only three objectives, the largest for pictures of sixteen inches, and getting along first-rate with this modest stock.

PHOTOGRAPHIC NEWS.

"HOT WEATHER GELATIN PROCESSES" are now being discussed abroad. And well they may be, for alas! anything with gelatin in it requires all sorts of discussion in hot weather; and that is why it is not a perfect substitute for collodion.

"HENDERSON'S IMPROVED SAFETY DIPPER"—with a slot into which works a glass button, which holds the plate in place—is described in a late issue of the *British Journal*. Such dippers have been used here for years, invented, we think, by Mr. Samuel Root, the veteran photographer, of Dubuque, Iowa.

"FREE LANCE," in the same journal, objects to the Willis platinum prints because of their black tone or color, and says that it is their "weak point;" "too cold," etc. Alas! there is little perfection here below.

MR. FAULKNER, a very excellent London photographer, was called a *swindler* by one of his patrons a few days ago, because the pictures supplied were not approved. Result, a "broken eye" for the patron and a cross-suit.

Photographers are most unreasonably attacked unto exasperation sometimes, and as our art was sprung into existence long after the laws were made, and there are therefore no laws for the protection of the photographer, perhaps Mr. Faulkner did right. Any way, there should be *some* way of protecting the photographer from the insult to which he is often subjected by ignorant people.

We do not believe in the argument *knock-*

down, but we are just *photographer* enough to say *Bravo!* Mr. Faulkner.

A BIT OF NEWS FROM NEW YORK.—Fredricks is making pictures of oarsmen in shell boats; very realistic.

Ludivici is making the same with background representing a club boat-house on Harlem River. He puts one, four, or six men in the boat, as required. The background was painted by Seavey, of course.

Mr. Ritz, formerly operator with Dana, has succeeded Mr. Wells at Bogardus's. Wells takes the position of positionist with Pach Brothers.

Seavey has discovered a new form of balustrade, called the "Mora Circular," the curved part of which he is supplying to those having the old "Kurtz Balustrade" at a low figure. This gives a change, and avoids the necessity of purchasing a complete new balustrade. Good idea.

PHOTOGRAPHIC BOOKS.—The publisher of this magazine is the most extensive publisher of books for the use of photographers in the world. We call your attention to the advertisements of them. Our magazine is to be "better than ever" during the rest of this year. The pictures will be especially valuable and instructive. See the article on "Our Picture." \$1.00 will secure this number and all the following ones for 1879.

MONS. LEON VIDAL, the able editor of the Paris *Moniteur de la Photographie*, states that some of his correspondents accuse him of an attempt to drown them in emulsion, and pray that he will *once in awhile* give them something new. He obliges them with the following:

"Mr. Darricau, of Marseilles, sends us the formula for a developing solution, by means of which, he asserts, considerable rapidity is obtained. It is as follows:

Distilled Water,	. 100 c.c.	(3¼ fl. oz.)
Saccharo-sulphate of		
Iron,	. . . . .	12½ grms. (193 grs.)
Crystallizable Acetic		
Acid,	. . . . .	50 drops.

"The use of this developer gives to negatives a very rich tone, similar to that obtained with pyrogallic acid, and with a bright light, like that used for the Boissonnas process, to open and shut sufficient to

obtain a negative, which does not require strengthening.

"Mr. Darricau gives also the formula for making the above substance, which cannot be purchased of dealers in photographic materials. Take:

Protosulphate of Iron, 200 grms. (6½ Troy oz.)
Distilled Boiling Water, . . . 100 grms. (3¼ fl. oz.)

"Dissolve.

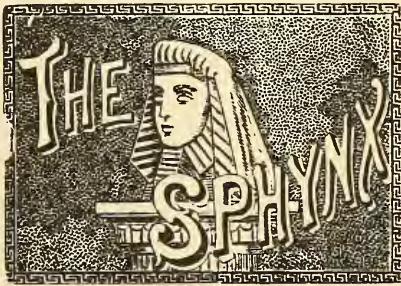
Rock Candy, . . . 50 grms. (1½ Troy oz.)
Distilled Water, . . . 30 grms. (1 fl. oz.)

"Dissolve.

"Mix these two solutions, and there will be a deposit of pale blue-green crystals. These crystals are collected and dried between several thicknesses of *white* bibulous paper, avoiding (an essential condition) the using of any that is colored.

"The addition of a small quantity of formic acid will increase the energy of the solution."

It *looks* good, and we congratulate our esteemed contemporary on being able to secure something so good and fresh. Really emulsion articles are beginning to be—numerous, but then there is much to hope for in that direction.



Queries.

1. CAN you tell us, through the journal, how to make the varnish that artotypes are finished with? M. H. P.

2. I AM so well pleased with the two copies of the *Philadelphia Photographer*, the only ones I ever saw (as I am only an amateur of but a few months), that you can count on me as a regular subscriber. I received some of the most valuable information from its pages.

Now what I write for is to ask *why* I fail

to produce the effect with "water blue," as described in your last number by Mr. Frank Thomas. I follow, as closely as possible, his instructions, and I fail to produce any change of color in the alum solution. I have used S. & M., Clemons's new, and R. & T. of Chicago, with no change of color. Now if Mr. F. Thomas, or any one else, can tell me what the trouble is, I would like to know.

I tried the water varnish described in the same number, and find it produces a *harder* surface than any alcohol varnish I have ever used. But I find it very difficult to flow on a plate while dry. I wet the plate under the tap; then it flows nicely.

I will now give you a wrinkle in glass-cleaning that even older heads may find a good thing, for those who use concentrated lye.

After your plates have remained in the lye a suitable time, take out one at a time and wash off in a pan or pail of clean water, then drop them into a pail about half full of clean water to which has been previously added about a half an ounce of acetic acid No. 8. After your plates are out of the lye proceed to albuminize in the usual way by first rinsing under the tap. Since using the above I've not lost one plate from uncleanness. Some *old heads* to whom I've told it pronounce it all O.K.

I would now like to ask Sphynx for the formulæ for a good and reliable toning-bath; one that will keep longer than toning in once, and give as good results as at first.

AMATEUR.

VOICES FROM THE CRAFT.

MOSAICS, 1880.

CAN it be that you are already at work upon this capital little year-book, the *number sixteen*. Why I am not old yet, still I well remember how, in December, 1864, you handed me a copy of it, modestly remarking, "Accept this, George William; it may be useful to you." And it *was* "useful" then, and *has* been each year, promptly coming since. Of *course* I gladly contribute to the "usual abundance of goodness," and herewith send you my copy "*now*."

I hope every live photographer will send you of his knowledge and practice, and hold up your arms while you fight and work for us, and cheer you as you grow gray in our service.

GEO. WM. WALLACE.

WATER BLUE.

In the August number of the *Philadelphia Photographer* the article headed "Water Blue" is to the point. I fully agree with Bro. F. Thomas as to the many vague and indefinite articles published. They are "shust as clear as mut" to the majority of subscribers. If you publish anything make it plain and explicit. Bro. Thomas, what you said is as true as gospel; it is good preaching. We want no grammes, centimeters, minims, kilogrammes, etc., in ours. Give us plain English, Bro. Wilson. We want no foreign journal in our *P. P.* on this side of the pond. W. T. BROOKS,

Water Valley, Miss.

We are a little surprised at this correspondent's remarks about the metrical system, knowing him to be a progressive man. We want you all to become familiar with this system of weighing and measuring, for one day it is sure to become "according to law."

AND DO PHOTOGRAPHERS ACT THUSWISE?

I send you the following clipping from the *Saturday Night* of Cincinnati:

"'No!' thundered the old farmer to a man soliciting his subscription to a newspaper. 'Don't want no papers round here. It's a waste of money. Catch me foolin' away two dollars a year on a newspaper. I never reads 'em, and my folks never does nuther.' Then he turned to the bogus lightning-rod agent, who was patiently sitting by, and told him he might put a cheap rod on his barn, and he signed the contract which the agent presented to him with scarcely a glance. But when in a few months that contract turned up again, the old farmer was horrified to find that in some manner it had changed into a note of hand for \$500. And he had to pay it, too. But he don't read any papers."

Does it not remind you of some of our craft who "don't take no journal"—who

"get along without 'em"—throw down your circulars when they receive them, and turning to the process-vender, pay him their hard-earned cash in part for a process you have over and over again published, and give their note for the balance? And then by the time the note comes due they find out they have been humbugged, and resisting payment of the note, are sued, and put to much trouble and heavier expense, all because they "don't take no journals!" And then how they do flock to you (*don't they?**) for "help to beat them infernal process-mongers." But then they "don't take no journal;" how could they expect to be posted?

Fellow-craftsmen, you *lose much money* if you do not subscribe for every magazine, and buy every book published on our art.

JAMES Y. SILSBEE.

A WAIL FROM A VICTIM.

A correspondent raises his voice as follows:

"I am threatened with a suit on a note given something over a year ago for the right of two counties for the Lambert patent carbon process.

"Having seen some of your comments on this process, I can think of no better source to which I can apply for definite information that would govern me should I contest this claim.

"I find too many failures connected with the process to make it a practical success. Occasionally some very fine prints can be obtained, but there are a dozen or more failures for every successful trial.

"Can you tell me if any note given for this process has been contested; if so, by whom, and with what success?

"Is there not mixed up with Lambert's patents sufficient of the old methods to invalidate his patent?

"Do you think the claim could be successfully contested, judging from your knowledge of the patent and the nature of its operation?

"Can you give me the names and addresses of parties who candidly admit the impossibility of successfully working the processes?"

* Yes, they do.—Ed. P. P.

"Any other questions that may suggest themselves to you, please consider asked. And greatly oblige me by a prompt reply.

"Although you have not my name on your subscription list, still I have purchased, when able, your valuable monthly from the newsdealer, so that, indirectly, I am one of your patrons.

"I regret that hard times of late have prevented my being able to keep as thoroughly posted in the *Philadelphia Photographer* as I would otherwise have done, consequently may have missed replies to the very questions I have asked. If so, please send me such numbers as will prove of benefit, after you have replied to THIS letter; in which reply you can state what amount I shall have to send you for payment.

"It is highly essential that I receive an immediate reply by mail, containing the most *positive* information, you can give me, as the note in question will be forced upon me.

"I scarcely feel able to enter into a suit without some positive show of success beforehand. Perhaps there may be others in the same boat with me that would assist to test the validity of the patent and quash the payments.

W.

"September 15th, 1879."

[No good object can be attained by giving the names of the parties, so we omit them. If any one can help our correspondent, we will give them the opportunity, and forward any communications to him. Address "Carbon," to our care.—ED.]

A VERY KIND VOICE.

I think and feel it a duty of each and every reader of your journal, that they should, from time to time, give to the fraternity any item of news that they may consider of general interest to the followers of the dark art, in remuneration for the many beneficial influences brought to bear on us, through the crowded columns of sound and good sense articles appearing therein, and the firm position taken by yourself in the common welfare of the readers of the *Philadelphia Photographer*. Allow me to here make the statement that to your journal do I consider myself a thousand times indebted for such information regarding the artotype

(or, what is it?) that led to the wise conclusion of my not investing in the right of our town to the extent of \$300.

JOHN H. HENNING,

Johnstown, Pa.

We assent. Many thanks.—ED. P. P.

A POOR SHOWING.

The following is from a slip poked at me in a city street the other day.

Thousands of poor have never had

Their portraits made, and why?

The simple reason we will state,

The price has been too high!

But new Machines, with lightning speed,

Make changes that are great,

Thousands are rushing to and fro,

*Looking for**

Hundreds of little children come

With hair both frizzed and curled;

Our *Baby Tamer*, too, can beat

The photographic world.

The largest photographic rooms,

Eight buildings cut in one,

Polite assistants here are kept

Busy from sun till sun.

And no wonder! We have the facilities, and are making 100 *Fine Photos* for 50 cents. Also, three dozen *Little Gem Pictures* for a Quarter.

Our \$6.50 *Life-Size Crayon Photo-Scenerytype* is worth \$30.00.

OBSERVER.

ANOTHER KIND "VOICE" FROM A VETERAN—SOMETHING GOOD FOR US ALL.

ENCLOSED please find \$2.50 for *Philadelphia Photographer* from July till January, 1880. Please send till I request you to stop, and send bills when due. I appreciate your efforts in behalf of photographers, and am more than ever convinced that you labor for their best interests.

In the *British Journal* of May 9th is a very sensible article in regard to this Carvalho paint craze, which embodies my own views precisely. I was glad to see the common-sense action of the Chicago photographers in regard to it. I asked a painter about the price. His answer was, that the material would cost about seven and a half cents per pound, which would leave quite a margin of profit, the advertised price being thirty-seven and a half cents per pound.

* ——— we don't state.

In regard to less time of exposure being necessary, it is easily explained in the fact that a room newly painted of any light color, the illumination is very much increased; and especially does the floor reflect a large volume, light, or shadow, as it may be colored with, carpet, paint, or, very likely, dirt.

If photographers would only keep their studios clean, the paint and paper fresh, and of some soft, neutral tint, they may safely leave "orange and green," for some less thrifty neighbor to experiment with, and they will never be the loser.

CHARLES TOMLINSON,
Elmira, N. Y.

GHION'S GATHERINGS.

SALTING PLAIN PAPER.—"To those preferring to salt their own paper the following hints may be useful: Always remember the *quality* of salt has much to do with the tint of the print; the *weight* of the salt effects the picture in the same manner.

"If the bath for salting is under strength, the print will show it by a weak, bluish look, and an entire absence of the rich purplish contrasts in the face.

"Again, oversalting will make the print-

ing slow and tedious, and the blacks will be feeble and of a reddish tint; mealy spots are apt to show, and the whole print will appear flat and unsatisfactory.

"It is well to immerse some kinds of paper; but if the plain Saxe paper is used, it should be only *floated*, not immersed. Lay the paper perfectly flat, and lift off again with the same care as in silvering. Every printer has his own idea about the amount of gelatin needed in connection with the salting; however, this is a good medium rule; for ordinary Saxe paper, about one box of gelatin to four gallons of salting solution, in warm weather; in the winter this quantity can be nearly doubled.

"If the salting is done with chloride of ammonium alone, the prints will be rather brownish, and the paper will not keep so well, nor print so rapidly, as when the ammonium is used in equal proportion with the common salt.

"The following are the proper proportions:

Chloride of Ammonium, .	1½ grains.
Common Salt,	1½ "
Water,	1 ounce.

Gelatin, thirty grains to the quart, in summer; in winter, use from fifty to sixty grains to the quart."

Editor's Table.

WE have received from Mr. HIRAM J. THOMPSON, late of the firm of RICE & THOMPSON, No. 259 Wabash Avenue, Chicago, his supplementary catalogue of mirrors, mouldings, frames, easels, cornices, chromos, photographs, panel flowers, fancy goods, etc. The whole list comprises a very attractive selection, on reasonable terms, and at moderate prices. Send and get one of his complete catalogues of March 1st, and see for yourself what he offers before you look elsewhere for your winter stock of fancy goods.

PICTURES RECEIVED.—Mr. F. C. WESTON, Bangor, Me., sends us some fine specimens of the different varieties of his work, ranging from card, cabinet, promenade, and panel. Mr. WESTON seems to have every style of accessory for representing indoor and outdoor scenery. His work is very good, the pictures clear and sharp, light well managed, posing good, and

accessories tastefully arranged. From Mr. E. D. ORMSBY, No. 914 Market Street, San Francisco, Cal., a beautiful cabinet head, perfectly clear and sharp, yet as soft and pure as a porcelain. Mr. A. A. BALDWIN, Hinsdale, N. H., favors us with some cabinet photos, one of which is a portrait of himself. The negative work is clear and sharp, and prints fine. Two specimens of dry-plate work from Mr. GEO. A. JOHNSON, Bridgeport, Conn. Mr. JOHNSON is well known as one of our most enthusiastic workers in emulsion. The views he sends us are of a picnic party in a most romantic rocky glen, beside a pretty little cascade. Of course the people all moved, but the bit of scenery is charming, and the work, chemically, an unusual success. It is *very good* for dry plate. Mr. F. MCKNIGHT, Paducah, Ky., sends some samples of his photographs, one of which represents a specimen of a "Kentuck baby." The *little* one

is seven months of age, and weighs *forty-eight pounds*. If this is the style of infants down there we would rather be the photographer than the nurse. From Mr. JOHN REID, Paterson, N. J., a very pleasing picture of a domestic scene. The young prince of the nursery, just out of his bath, and seated, in all his dimpled freshness on aunty's lap, is counting his toes and smiling in all his baby contentment. The picture is very sweet, and by the very simplicity of pose, and fewness of accessories, makes a scene so natural and home-like that it appeals to the heart of every one. Also from Mr. CHAS. A. DEAN, Sycamore, Ill., two fine samples of cabinet photography. Mr. DEAN has been in the business but a few months, and his work *now* is far ahead of that of many old veterans. If he continues to use his present care and pursuit of perfection, we predict a brilliant career for him.

MESSRS. N. C. THAYER & Co., Nos. 250 and 252 Wabash Avenue, Chicago, send us their new fall catalogue of frames. It is a neat little book of over 30 pages, profusely illustrated, and closing with some "Remarks," or useful hints for photographers on the subject of printing, giving formulæ for the toning and fixing bath. The Messrs. THAYER offer every variety of frames, mats, and albums, on good terms to customers. Send for their price-list.

THE *Photographer to his Patrons* continues to be the favorite mode of advertisement among the go-ahead men of the fraternity. Since our last issue we have sent these little pamphlets North, South, East, and West for photographers to scatter them "like dry leaves before the blast" among their customers. In a word the *leaflet system* takes. It is now used by many of the leading houses in photography. San Francisco's latest gallery has adopted them, and we hope their use will continue to grow more prevalent.

DISSOLUTION OF COPARTNERSHIP.—A circular with the above heading has just reached us from Messrs. HENDERSON, GEORGE & Co., stock-dealers, 37 and 39 Virginia Avenue, Indianapolis, Ind. Their successors, Messrs. M. A. JOHNSON and ALEXANDER BLACK, will continue to do business under the name of the old firm. Mr. F. M. PICKERILL, one of the veteran salesmen of the old house, will remain with the new firm. We wish them all success.

MESSRS. CROSSCUP & WEST, who have for so long time done the engraving for the *Philadelphia Photographer*, have lately introduced into their

establishment an improved method of photo-engraving, whereby they produce in the usual manner lead plates from drawings. Specimens of both kinds of their work are constantly appearing in our pages and we think it speaks sufficiently for itself.

WE have received the fall catalogue of their excellent photographic chemicals from Messrs. CHARLES COOPER & Co., manufacturing chemists and importers, No. 191 Worth Street, New York.

THE *Sedalia Daily Democrat* of September 3d gives a glowing account of the opening of Mr. LATOUR's new photographic rooms in that town, on the evening of September 2d. It was made the occasion of a general social gathering. Mr. and Mrs. LATOUR received their guests, and showed them over their spacious apartments. The evening was closed with music and dancing. May the brilliant opening be the forerunner of an equally brilliant and successful business career.

THE *Buffalo Express* gives a very complimentary notice to Mr. A. SIMSON, one of the leading photographers of Buffalo. It praises his work, the result of intelligent personal care on his part; also the good taste shown in the furniture and appointments of his studio and work-rooms.

MR. E. DECKER, 243 Spruce Street, Cleveland, Ohio, receives in the *Trade Journal* a half column notice of his artistic productions under the skylight; also of his success in enlargements in crayon, oil, water colors, and India ink. We would add our good wishes to those of the *Trade Journal*.

MR. J. S. YOUNG, Rome, Ga., receives a lengthy and flattering notice of his studio and work in the leading paper of the city. We congratulate Mr. YOUNG, and wish him continued success.

OUR carbon friends in New Orleans seem to have been having trouble during the hot weather. The fault was not in the gelatin, nor the ink, nor yet in their tissues. But it lay in the thorny hedge of "transfers legal;" and they seem to have been bent on sticking some one. It seems that last January Mr. THEODORE LILIENTHAL, of New Orleans, transferred the right of working Lambertype to Messrs. B. & G. MOSES, of that city. These gentlemen again sold their right (which by the terms of their contract they claim they were entitled to do), to a Mr. W. W. WASHBURN. Mr. LILIENTHAL now claims that Messrs. B. & J. MOSES violated their contract with him, thus

forfeiting the right to either work the process or to sell the right of doing so to another. He further threatens the parties so accused with the rigor of the law. How the matter will be settled remains to be seen. But when photographic processes come to be surrounded by the technicalities of the law, the tangled rope of territory, contracts, infringements, etc., somebody is pretty sure to get choked in the muddle. We have gleaned our facts from personal cards, signed by each of the three above-mentioned parties, which were published in the *New Orleans Times* of September 1st.

WE have received from Mr. R. H. ROSE, Princeton, N. J., a most exquisite foliage picture of evergreen and other trees. The negative was evidently made on a shady day, but just before the exposure had expired, a sudden gleam of sunlight burst upon the scene, tipping leaf, branch, and flowers with the most delicate highlights. The effect is charming, and one which a photographer might try for weeks, without being blessed with success, "Old Sol" being such a freaky personage to deal with. There are two reasons only which prevent us from placing this beautiful study before our readers: the first is the large size, 8 x 10, of the negative, and the second, and all-powerful objection is that there is but *one* negative. We dare not venture to print from it, for former experience has showed how costly an experiment it would prove.

DEATH OF W. BLAKESLEE.—At his late residence in Mendota, Ill., on Monday, August 4th, WILBUR BLAKESLEE, aged forty-seven years.

This is the simple death-notice, from a local paper, of a good photographer and a good, kindly man. We have frequently met him, and regret that our art must so early lose one so useful.

A MAGNIFICENT GROUP.—We have received from Mr. A. M. DE SILVA, New Haven, Conn., one of the finest specimens of group portraiture it has been our privilege to see for awhile.

The photograph is a 14 x 17, of Yale College Base-ball Club, No. 82, and the group shows us ten fine athletic youths, poised in easy and natural attitudes. The negative was made with a Euryscope lens, and shows the most accurate sharpness of detail in every point. The printing, toning, and general finish are all that the most fastidious critic could ask for. The particulars concerning this group are given by Mr. DE SILVA in his "Notes" on page 305.

WE are pleased to learn that Mr. GEORGE B. RIEMAN, so long known in connection with Messrs. BRADLEY & RULOFSON, and of late, business manager for TABER, San Francisco, has now gone into business for himself. He has associated with him Mr. TUTTLE, formerly head operator at TABER'S. The new firm, under the title "RIEMAN & TUTTLE," are now established in their new rooms, 26 Montgomery Street, San Francisco. We wish them all the success that industry, energy, and good work deserves.

A PHOTOGRAPHIC GALLERY IN THE SOUTH is offered for sale by Messrs. E & H. T. ANTHONY, New York, which is said to be a very desirable bargain. Full particulars may be found in our *Specialties* column. Please read the advertisement.

AT THE PENNSYLVANIA STATE AGRICULTURAL FAIR, Centennial Buildings, Philada., Messrs. SCHREIBER & SON, 818 Arch Street, Philadelphia, received two silver medals: one for the best photographs of animals, the other for best photographs from nature. We are pleased to hear this, for, in our humble estimation, Messrs. SCHREIBER & SON are the *best* animal photographers in this country. A diploma was also awarded to the Levytype Printing Co., of Philadelphia, for best specimens of relief-printing, plates, etc. It is a fact that the exhibition of photography was very limited, but we are quite certain had it been much larger the result would have been the same, and among many or few competitors, the awards would have gone to the parties who have won them.

THE *Inter-Ocean*, Chicago, contains some questions from a correspondent in regard to enlargements, and how to finish them in color or crayon. The reply recommends the photographic camera for reliable enlargements, and GIBON'S *Colorists' Guide* for instruction in finishing. We are much obliged to *Inter-Ocean* for this, as it was entirely unsolicited on our part.

IMPORTANT ANNOUNCEMENT.—Under this head, Mr. J. H. SCOTFORD, Lansing, Mich., announces in our *Specialties* the fact that he is prepared to supply the trade with bromo-gelatin plates for gallery use. We have not as yet had opportunity to make a personal trial of Mr. SCOTFORD'S plates, but we hope before our next issue to have done so, when we shall have more to say on the subject. Please read the advertisement in *Specialties* column.

We do not know of any one year since our editorial life began, in which testimonials from all sides have flowed in as they have during the past year. Some of our old friends thought they could "do without" our journal, but they are coming round again, and calling for back numbers. We quote from some of these letters:

"I have taken the *Photographer* from our newsdealer here, but stopped the 1st of January, thinking I would subscribe direct for it, as it cost \$6.00 per year of the newsdealer, which makes it rather expensive; but I would buy it at that price rather than do without it, for it has been of great benefit to me, and I feel lost without it. Wishing you abundant success in your good work, I remain, A. B. COMSTOCK."
 "Long may you live and *hang your banners on the outer walls.*"—O. R. LANE. "I got your card in regard to September number this morning. I cannot afford to do without the journal that has stood by the rank and file of the fraternity against the plots of process-venders. It has earned the gratitude of all those who have heeded its timely warnings. Inclosed find postal order for \$5.00, for which please send me the numbers for 1879."—M. H. PORTER. "I have been receiving the *Philadelphia Photographer* every month. After this subscription expires I will be a regular subscriber to your valuable journal. It beats any photographic journal ever published."—JOSEPH THEIRING.
 "Received your card a few days ago with your offer of four last numbers of the *Photographer* for \$1 25. Inclosed please find the amount. As you know, we have always taken your journal until this year, and have been taking other works for a change; but there is a want somewhere that the others do not fill, and in order to be satisfied, want the old journal to be continued."—J. H. STEFFEY. "I have missed your journal very much, and thought every year that I would renew my subscription with you. It was, and I believe to-day would be, my favorite. I take Fitz's journal now, but its too full of carbon, Lambert's lightning, and artotype for me, a country photographer. I was duped in the chromotype and lightning processes. Would not have been had I stuck to your journal. I send you a postal order for \$1.25; you may send me the four numbers mentioned in your card of August 31st, 1879."—J. J. RUBOTTOM.

DR. R. SHELTON MACKENZIE, editor of *The Press*, who wrote the first article of the first issue of the *Philadelphia Photographer*, still continues his kindly interest in our welfare. From time to time, sometimes almost monthly,

he gives us cheering little notices. The following is the latest:

"This month's *Philadelphia Photographer*, edited and owned from its start by EDWARD L. WILSON, is an excellent number, as usual. It stands at the head of its class in this country, and is accepted as standard authority in foreign lands. It has a little army of native contributors, besides regular French and German correspondents. It is truly scientific and eminently practical. Its frontispiece this month is a cabinet portrait, by E. D. ORMSBY, San Francisco.—Published by E. L. WILSON, No. 116 North 7th Street."

OUR MAGAZINE finds favor wherever it goes, from "Afrie's burning sands," to Newfoundland's icebergs; East and West it travels to photographers in every clime; and the various conveniences we have been enabled to offer to our brethren in the craft, also give universal satisfaction.

Even in *Canada* we are not without honors, as witness the following:

E. L. WILSON, Esq.

DEAR SIR: Please find inclosed \$7.50 for one year's subscription to *Philadelphia Photographer*; also for two Robinson's Straight-cut Photograph Trimmers, which send by express.

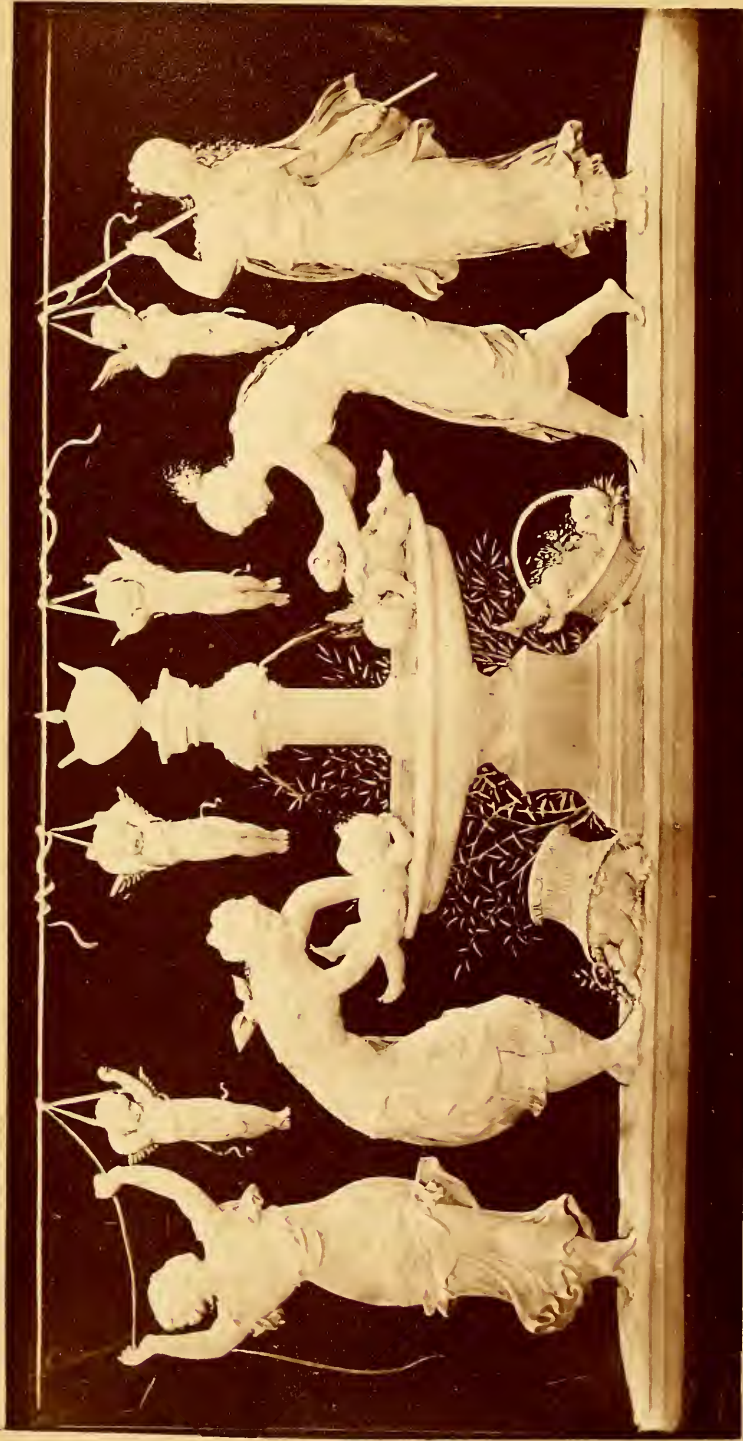
We are, yours, etc.,

NOTMAN & SANDHAM.

MONTREAL, September 13th, 1879.

WILSON'S LANTERN JOURNEYS, for the use of lantern exhibitors and lecturers, and all who like to read about the interesting places and things of this beautiful world, has received such kind patronage that the author has issued a *second volume*, containing over one thousand descriptions of countries, detailed in the advertisement, to which please refer. The book is handsomely bound in cloth, gilt, and will be mailed for \$2.00. It will be found an entertaining book to any one fond of reading.

MOSAICS FOR 1880.—As announced in our last number, we are now hard at work on our little year-book, and the time of its appearance draws near. We shall be glad to receive contributions for it *now*. Let the articles be thoroughly *practical*, without any wordy head or tail. Another favor we would ask, that they be sent in *at once*. Our old contributors all know that they each receive a handsomely bound volume in return for their assistance. We hope this announcement will not bring down on us such a mass of MSS. that any will be crowded out, though it will be nothing unusual for us to be crowded, such is the friendship felt for this popular favorite, *Mosaics*.



FROM A PLAQUE.

THE WASH-HOUSE.

BY L. SOLON.

T H E

Philadelphia Photographer.

Vol. XVI.

NOVEMBER, 1879.

No. 191.

Entered according to Act of Congress, in the year 1879,

By EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

THOUGHTS SUGGESTED BY "THE VILLAGE PHOTOGRAPHER."

I HAVE a few words to say about the picture copied from a painting in your October number. It is a beautiful picture, and well deserving of all the praise you give it. That style of subject has been painted many times, in this effort only substituting the camera for the painter's easel; and it may be worth considering whether there is not a suggestion therein worthy of practical application.

Instead of a photographer sitting down among his chemicals, and calling all his customers to him, can he go to them himself in their homes, and photograph them with all their household gods about them, or goods, which amounts to the same thing? There would seem to be some chance of variety and individuality in such a method of utilizing the scenery and surroundings of each family, instead of the monotony that now prevails, where people of both sexes and of all ages and conditions sit or lean on the same fence, before the same house, sometimes in summer and sometimes in winter clothing, in shooting jackets, or full evening dress, all treated alike, and brought as near to one cut and fashion as possible.

It would be a great advantage if children could be photographed at home instead of taking them a tiresome journey, then dragging them up two or three flights into a room

such as they never saw, surrounded by things such as they never used, to be posed into positions such as they never voluntarily assumed, and then be told to look natural, when in truth they feel totally unnatural, as is too frequently done.

The wide range of possible effects that could be produced if such a fashion should come in vogue, would give the most inventive imagination ample room. But can we take this idea as more than a painter's license, to avoid the palpable difficulties of making a picturesque effect with the arrangement of the usual photographic studio, and is this picture any benefit to a practical photographer, by suggestions of lighting, grouping, and accessories?

In the first place this picture of a photographer taking a photograph, is not the picture which the photographer took. This picture is finely artistic, with balance of lines, light, and shade, etc.; but whether the picture the photographer took was so or not we have no means of judging. Would not a photograph actually taken under such circumstances and conditions be of more value, and is there any one working in that way who is prepared to offer one, with the variety of difficulties overcome, showing how the local accidents of surroundings and accessories were used to advantage, etc.?

In this connection permit me to ask why you could not give us from number to num-

ber, running through the coming year, a reproduction of Burnet's *Education of the Eye*, with photo-engraved copies of the plates, reduced to the size of your columns, one or two in each month? The matter and the plates so reproduced would do all practical good.

If you could offer us that advantage it would be worth more than the cost of a year's subscription to every photographer in addition to all you now give, and ought to double your subscription, if you have not already got more than half their names on your books.

Can you give us any promise in this direction?*

E. K. HOUGH.

WHAT THE N. P. A. OUGHT TO DO FOR US.

BY N. R. WORDEN.

THE *Philadelphia Photographer*, always interesting, is, first let me say, rapidly becoming invaluable. Its sterling worth as an advertising medium was made quite apparent to me when the applicants for my studio poured in their queries as to "terms," "amount of business done," etc. A few I answered. Meantime my injuries improved so rapidly that I concluded not to sell, and ceased all correspondence on the subject.

You are agitating a convention, though not a National Photographic Association. I am not opposed to it. There exists at least one all-sufficient reason for a *mass meeting* of the fraternity. To state it briefly, photography is not as lucrative as it should be; many of us do not complain of the amount of business done, but of its non-productive margins. There is plentiful lack of profit, and the balance-sheet is almost literally such.

This condition of affairs exists in a day when photography is an acknowledged fine art; and in this very fact lies one explanation, for our prices have not kept pace with our improvements. Each photographer, anxious to excel his neighbor, gave his patron the benefit of each and every improvement, and these appearing from time to time, did not so perceptibly add to the

cost of production as now when all this accumulated excellence compels us to deliver dozens of photographs at cost and even less.

Years ago, when photographers were—(well, I won't call names, but we all know how crude the art then was)—they quoted prices for small work as good as ours, and for larger work much better. Good margins then followed success *and failure*; it was a good time to lay up a cent, if the "bromide-man" or Shaw didn't get it, and the fellow with the sheepish prefix to his name had not so widely demonstrated in carbon, that photographers were as easily humbugged by process-mongers as by the public generally. But I am digressing. Usually proofs were neither shown nor expected. People, then ignorant of the fact that photography *does lie*, believed that it did not, and ordered dozens "sight unseen." They got them neither retouched nor burnished, but printed on paper and mounted on cards costing much less than now, as did everything else used except silver and gold. Wages, too, were lower, for you must know that one man then could do more than two now, yes, three in printing. We required no retouchers, and resittings were as phenomenal as prepayment was general.

Then, if people were exacting or wished to experiment, they paid for it, and Mister Artist figured his *time*, worth dollars and cents; also his materials. Had many of these conditions attached themselves to our rapid strides toward perfection, some of us might occasionally detach a coupon.

A convention should urge the necessity of limiting resittings, and requiring pay for well-executed work. "We have not got sand enough in our crops" to tell people that *time* and *skill* should be paid for, as it is in all other professions and trades.

Could a single photographer soar up and away, head and shoulders above his local competitors, and make the public appreciate his *par excellence*, he would be in position to dictate favorable terms. Were I that lad, so elevated above grovelling competition, my terms would be, so much for, say, two positions, when made on same plate, including proofs; each additional sitting, if card size, \$1.00; then the prints, so much per dozen.

* We agree, and are preparing to do this very thing. See page 3 of our cover.—ED. P. P.

But in this day of general excellence, when there are so many really good operators, no one photographer can so tower above his fellows as to be wholly independent of their prices and ways of doing business. Then, too, judging from the fact that many bright people, when shown two or three proofs, will insist on ordering from the poorest, it must appear that a—(charity prompts me to write)—few cannot appreciate excellence; but these few are sufficiently numerous to support Mister Dollar-per-dozen-man, when he is willing to “bend low, and in a bondman’s key, with bated breath, whisper humbleness,” and say: “Sit you as often as you wish;” “we guarantee perfect satisfaction to the most whimsical;” “change your drapery as often as a dying dolphin does his colors;” “we will give you proofs of each toilet to select from;”—and all the proofs, some of them retouched, are most respectfully submitted, with the stereotyped invitation “to sit again if not satisfactory, for you know, madam, money is no object.” What is? reputation! Bah! Who wants to excel in a business that is not remunerative? Reputation is very desirable; but you can’t stand under it without bread and butter.

If the convention, or rather its members, would provide ways and means of making us an harmonious unit, working together for the common good of all, and *defending us from ourselves*, and the resittings, etc., of a too exacting public, then borrow Gabriel’s trump and call it, for such action would resurrect photography from bankruptcy.

NOTES AND PRACTICAL SUGGESTIONS.

(Continued from page 306.)

“IT just *won't* do it!” “It just *won't* come in!” Every landscape photographer has found himself not unfrequently exclaiming; either the stock of lenses being too long or too short in focus. His intention might be all well and good, but his purse will not always admit of the incessant drain, and so he is obliged to make the best of the instrument he possesses; sometimes with a sad heart.

The makers of microscope objectives “put their heads together,”* and decided upon what is known as the “universal screw;” that is, the object-glasses were mounted so that they would fit into any microscope. Now, why cannot something of the sort be adopted by the makers of photographic objectives?

Not only would it save the carrying around of extra baggage for additional flanges and camera fronts, but would be a boon to the photographer in that he could *combine* the cells of different objectives, more especially in the smaller sizes, and thus get various focal lengths. In these days of symmetrical lenses it would be a matter easily accomplished: for example, by taking the front of a 6-inch Dallmeyer Rapid Rectilinear and the back cell of a 9-inch Portable Symmetrical of Ross, you have a 7½-inch lens which works well on a 4-4 plate; *but* before you can do this it is necessary to have a “collar” made to enable you to screw the first into the cell of the latter; by taking the front of a 7½-inch Rapid Symmetrical of Ross and the back of the 9-inch Portable, you have *conveniently* (for they both have the same *thread*, and fit the *same mount*) a lens of 8¼ inches, which, with smaller stops, will cover well an 8 x 10 inch plate. Sometimes the difference of even a trifle in the focal length of lenses is a perfect godsend, and it requires but a little courage, tact, and experiment to find out the way to combine them. With the first eight of the series of the Ross Portable Symmetricals (from 3 inch to 10 inch), this is a very easy matter, fitting as they do into the same mounts. By adding together the equivalent foci of the compound lenses from which you select one cell (of each), and dividing it by two, you have the equivalent focus of the two cells combined. To repeat, for example, one cell from a 3 inch and one from the 9 inch, would give a 6-inch lens, and as the single cells work well alone, you would thus be enabled to have a 6-inch and 18-inch single, and a 3-inch, 6-inch, and 9-

* I believe they were *pressed* a little by the ideas and determination of the microscopists. Photographers should do likewise with regard to *their* objectives.

inch rectilinear, that is, five lenses from the two compound lenses.

Now this might be thought objectionable—it is practical, for I have frequently availed myself of the necessity—this “ringing of the changes,” as the opticians have done on the same principle with their symmetrical doublets, called by whatever name you please. One thing I am sure of, it would do anything but decrease the sale of lenses. Finding readily the value of the slight difference in focal length, it would be a stimulus to improvement, which requires additional facilities, and thus the opticians would be benefited largely in the long run.

A. M. DE SILVA.

(To be continued.)

ON THE VALUE OF CERTIFICATES

SOME SCRAPS OF PHOTOGRAPHIC HISTORY.

BY D. BACHRACH, JR.

WERE each one to consider, when he puts his name to a certificate recommending certain articles, processes, etc., as carefully as he would were it an indorsement of a promissory note, we would probably not have the numerous tribe of swindlers to fight and expose, who so continually have something or other in the way of a scheme for extracting money from the pockets of photographers.

I was led into this train of thought by looking over some bound volumes of Humphrey's *Journal of Photography*, from 1851-53, which I had lately purchased, and reading the history of the famous “Hillotype” fraud, some extracts of which I append, and especially call attention to the certificates of such men as C. C. Harrison, J. Gurney, Professor Morse, and other men of equal and less prominence.

I was still more forcibly reminded by being called on the day after by Mr. Burger, a photographer, who has a small establishment in Frederick, Maryland, a town of about 8000 inhabitants, and who complained of having been fleeced to the tune of \$130 for *carbon*, by means of the certificates given by myself and other photographers of this city, when the sharpers had demonstrated their many-named process to us.

Now we were no bigger fools than the average photographer, and had even taken the precaution of appointing a committee to examine the matter for us, and were fortunate enough to get off cheap; yet we were morally responsible for leading others astray through our premature indorsement.

No photographer, in view of these facts, is safe in investing in *any process*, except after thoroughly satisfying himself, by actual practice and experience, no matter what *great leaders* have indorsed it, even though they be such men as Sarony, Kurtz, etc. Any process that is not offered with such conditions as insure absolute safety, may be put down as doubtful.

The late agitation of this subject has undoubtedly curtailed the operations of all process-mongers, and every one should help to drive an extra nail in their coffins. It is usually not the *inventor* who is the cheat, but some mere huckster, who uses the invention to fill his pockets at the expense of the unwary.

But to resume my original subject. In the *Daguerrian Journal* of February 15th, 1851, the editor makes a double-leaded announcement, of which the following extracts will give a fair sample of the rest.

“NEW AND VALUABLE DISCOVERY.

“*Hillotypes.*”

“We are now called upon to notice the greatest and most valuable discovery that has been presented to the public since the announcement of the daguerreotype by Daguerre and the telegraph by Morse. With these names we now add another, of one whose great perseverance and energy has ranked him with the first discoverers in the world. This gentleman, like Daguerre, has given much time and manifested much skill in conducting his experiments, and is entitled to great credit.

“L. L. Hill, of Westkill, this State (New York), has discovered a process of producing impressions upon metallic plates with all the ‘*Colors of Nature*’; and as the process is ‘essentially different from Daguerre’s,’ and wholly unlike all others, we will (as it has been left with us to ‘christen’) name it ‘HILLOTYPÉ.’”

The balance of the editorial is full of laudatory mention of the pictures and the man, who is represented in feeble health, and perfecting his invention under great difficulties, etc. For a long time he drew on the sympathies of the fraternity, and received pecuniary support from them in various ways, and a committee finally proposed to buy it *as it stood* for the fraternity (composed of such men as Gurney, and others of equal standing), *for one hundred thousand dollars as soon as demonstrated.*

Now please look at these certificates, which are but samples of many others at the time.

. . . . "I have also seen numerous specimens of Mr. Hill's 'experiments,' produced by the action of light, such as copies of prints, flowers, etc., with a view of developing the various shades or tints of colors, many of which were truly beautiful and interesting.

"His portraits from life, I am happy to say, are all that the most enthusiastic daguerrian artist can desire, and much more beautiful than our scientific men and the public have been led to suppose. The time will come when all generous minds will award to Mr. Hill due credit for having guarded so faithfully, thus far, the wonderful discovery which it has been his good fortune to bring before the world.

"M. A. ROOT,

"Daguerreotypist, 140 Chestnut St., Phila."

This is to certify, that I have just visited Mr. L. L. Hill at his residence, and that he gratified me with a sight of his pictures in natural colors. I say most cheerfully, and as an act of justice to Mr. Hill, that I am perfectly satisfied of the truth of his claim in the broadest and fullest sense.

These pictures are really exquisite and beautiful, differing essentially from any other style of picture. They present every possible variety of color and tint in a most brilliant form—the whites are peculiarly bright and glossy—and the aspect of the picture is one of astonishing boldness and relief. The drapery, background, etc., are fine beyond description, and I unhesitatingly pronounce the invention a wonderful one,

and shall hail with joy the day when I shall be allowed to work it.

J. GURNEY,

189 Broadway.

NEW YORK, June 12th, 1852.

I cheerfully concur in the foregoing, and would add stronger language, if stronger could be found, in support of the entire and most gratifying truth of Mr. Hill's discovery. From actual inspection of his results, among them portraits from life, I am amazed and delighted beyond my power to express.

C. C. HARRISON,

Camera Manufr., 85 Duane St.

NEW YORK, July 5th, 1852.

This is to certify that I have examined with astonishment several daguerreotypes in which were faithfully copied all the colors of nature, by L. L. Hill, among them a portrait from life, and upwards of thirty different copies of colored engravings, and I am fully convinced that he has discovered a chemical process by which he can take daguerreotypes with all the natural colors.

JOHN A. WHIPPLE,

Daguerreotypist, 96 Washington St.

BOSTON, August 30th, 1852.

. . . . "The world, or rather a great number of daguerrian artists, have done Mr. Hill a very great injustice by pronouncing him a humbug and impostor; and some went even so far as to threaten not only a public exposure but personal injury. Now, the question arises, why this persecution of an honest, upright, and innocent man, when the party so abusing him could not have any personal malice towards him? I will tell you: it is simply a feeling of jealousy because he did not take them into his confidence; or, what is more likely, because they had not brains enough to fathom the mystery which surrounded the operation. They did not believe that mortal man could produce anything beyond their own limited comprehension.

. . . . "At my first visit to Mr. Hill's, this time twelvemonth, I had not the pleasure of seeing any specimens of his pictures, as up to that time very few—and those only who were the most intimate friends—were favored with a sight under the seal of secrecy; for he did not wish them to be spoken of until he was ready to lay them before

the public at large. But his enemies were determined to forestall public opinion, and crush him ere he had time to acquire strength. In this, however, they failed most signally, and now many of them are beginning to feel ashamed of the contemptible part which they have played.

"I suppose you would feel inclined to ask me if I have seen any of his specimens, and what I think of them, and I am as readily inclined to answer. I have, and must say that I was disappointed—yes, very much disappointed, for their brilliancy and perfection surpassed all my expectations. I always believed, from the first announcement by Mr. Hill, that he had discovered a process by which he could transfer the colors of nature to the metallic plate, but had no idea that he could do so with so much perfection. The eye cannot see, the tongue express, the mind conceive, or the pen describe the perfection of those pictures. In a word, they are perfect transcripts of nature, and far surpasses every preconceived opinion I had formed of them.

. . . . "Mr. Hill allowed me a privilege very few enjoyed—that of handling them freely. I rubbed several of them with my finger and handkerchief, but without producing the slightest ill effect; on the contrary, the more I rubbed the brighter they appeared.

"Before I close this letter, allow me to describe a few which particularly struck my attention. One double whole-sized plate taken from a highly colored lithographic print of a lady and child. In this picture there were the following colors: bright red, pink, dark blue, light blue and orange, with their several combinations and tints. This was a lovely picture. On the other, a basket of fruit, containing peaches, black and white grapes, with beautiful bright green and darkly tinted leaves. This picture, like the other, bore every resemblance to nature herself. The colors of the first were most perfect; also a yellow basket, filled with fruit of various kinds. On other pictures, different varieties of flowers of the richest coloring and their tints. In this there was a charming effect produced by a sprinkling of small yellow and blue flowers. Several plates of the largest size with birds

of the most gorgeous plumage. On one were five birds with heads, tails, bills, breasts, wings, and claws of different colors, all true to nature. But above all was a lovely picture of his own child, with her flaxen hair, light blue eyes, delicate flesh tint in the face, arms, and neck, and a charming childlike expression of countenance. She was dressed in colored clothes, with red stockings and blue gaiters. This was a pretty little picture, on a quarter-sized plate. Another of a sweet looking young lady of the village, dressed in blue. The beauty of the complexion in this picture would make miniature painting on ivory sigh for its departed greatness. Many more I could enumerate, but this is sufficient for the present. I am in hope Mr. Hill will be able to exhibit before the world this fall, when I have no doubt a complete revolution will take place in the daguerrian process that we have little dreamed of.

"J. H. FITZGIBBON.

"St. Louis."

This last, the most gushing of all, is followed by many others.

Now in face of those certificates, would any daguerreotypist have hesitated, had Hill possessed the assurance and cheek of the present race of swindlers? Notice particularly our friend Fitzgibbon of the *St. Louis Photo-comic* (?) monthly. Does not history repeat itself most thoroughly and in a comparatively short space of time?

This gives us food for reflection. Men who occupy high positions in our profession lower themselves and blemish their high reputations among photographers by carelessly indorsing every plausible-looking process, and thus aiding to rob their poorer and humbler brethren for the benefit of those who, in many cases, ought to be serving the State behind the iron bars of a prison. I ought to have said something of the *very last batch* of these worthless things, but the editor of this journal and myself have done our whole duty in this matter, and the space can be used to better advantage. Those who now get swindled will not do so blindly.

BURNET'S celebrated work, *The Education of the Eye*, will be reproduced entire in our next volume. It cannot be bought for \$15. We give it all for one-third that.

A QUERY AND MY FORMULÆ.

BY E. B. ROGERS.

[WHEN Mr. Rogers' picture appeared in our August issue, his paper should have appeared with it, but having become imbedded in our drawer editorial, was overlooked. It is just as fresh now, though, and has not faded by being kept in a dark place.—ED. *Philadelphia Photographer.*]

NOW, Mr. Editor, I will lay a matter before you that may interest some poor photographer, and may be the means of saving him some trouble and money. If you think it may be of any benefit you can give it to the craft. Eight years ago I contracted with a party for a building, at so much rent a month, as the building was, which was not in shape for a photograph gallery, but I was to fix it to suit myself, and pay my own bills. The lease was to run for seven years without privilege of renewal, that is, without a new contract, I always having the preference. But, as I said before, subject to a new contract in seven years. Now on my part I was to have the privilege of selling my improvements, giving the owner of the building the preference; and in case I did not sell to him or any one else, I could remove the improvements, provided I put the building back as it was when I got it. I put everything up in sections so as to be easily removed, should I ever wish to do so.

Well, in the course of time the owner gets in debt, and mortgages the building. Real estate depreciates until the building will not sell for what it is mortgaged for. My lease has expired, and I only have a verbal contract, though good, living witnesses to verify it. Now petitions are filed to close the mortgage. Now if I cross petition, do you believe the court will grant me the privilege of removing the improvements, or allow my claim to step in front of those mortgages. If you, or any of your readers, have ever had any similar cases, or judgments, or decisions of court, please give them.

Well, as for the formulæ, I am comparatively a new man in the business, although I have followed it for thirteen years, but I began under peculiar circumstances, and for several years did not try to do anything in

the business but to get out of it, so I have really only been a photographer for the eight years past, as you will see by the subject of lease, of which I spoke before.

When I leased the building I now occupy, I built my light twenty-four feet long, so as to work either end; north side six feet from floor to glass. The glass roof, seven feet long, angles forty-five degrees; it does not leak, though just ordinary sash, and the glass put in with putty. As I said before, I am comparatively a new man, and would prefer to get good results from others' experiments than bad pictures in trying to get up something of my own. Many formulæ are good, and the most of them will give good results when properly worked.

COLLODION.

Ether,	10 ozs.
Alcohol,	10 "
Gun-cotton,	80 grs.
Iodide of Ammonium,	100 "
Bromide of Potassium,	60 "

BATH.

Water,	12 ozs.
Silver,	1 oz.

Make up and let stand in the dark until wanted. It will work much better to stand in the dark than the light. When you begin to use it, just leave the plate in until coated. Of course a new bath coats quicker than an old one. Have plenty of it, and filter often. Never boil it or doctor it if you can help it; it won't give you but little trouble if you don't trouble it.

DEVELOPER.

Water,	64 ozs.
Iron,	4 "

Let stand until dissolved and filtered; add acetic acid enough to make it work smooth; let your negative develop until it is intense enough, and wash well. Keep your bath clean, your developer clean, your dark-room clean, your hands clean for good pictures, and your face clean for appearance's sake.

WILSON'S *Lantern Journeys*, Vol. II, is ready. It is an entertaining book of travels for any one to read. It gives facts and fancies about nearly 1100 of the beautiful places and things of this world which have been photographed. The author, the editor of this magazine, says: "It is my best work." \$2.

WILLIS'S PLATINUM PROCESS.

BY H. A. WEBB.

MUCH has been said about the simplicity of the platinum process; and this together with its permanency and rapidity of printing appears to be the chief merit claimed for the process.

Now this merit of simplicity has so often been claimed as an advantage; in fact, in almost every new process offered to the photographic fraternity this is recommended as an important feature; and even so in cases where the process would require the most careful judgment and considerable experience, until photographers have become somewhat skeptical upon this point. And indeed we are not to be blamed for this unwillingness to accept all that may be claimed for a new process. So that upon reading the theory of the platinum process with the delicate chemical changes that take place, we are likely to arrive at the conclusion that it is quite a complicated process.

It was my privilege to both see the process worked and to work it myself, and I can conscientiously say that a more simple process I have never tried.

But I have met with some failures, and for the benefit of those who are working the process I will mention them in order that they may guard against them.

The first attempt I made after seeing the process worked proved successful. The second was a failure. The prints instead of being vigorous were flat and gray. Mr. Clements, who visited our establishment, to see how we were succeeding, at once pointed out the cause of the trouble, which was simply owing to our being too sparing with the sensitizing solution, and so not supplying sufficient platinum to give the amount of deposit necessary to form deep shadows. I also met with some few streaks, which can be attributed to the same cause, namely, endeavoring to make a small amount of solution go a great ways, and using too hard a rubbing in distributing the solution over the paper. But as soon as I followed Mr. Clements's instructions the difficulties all vanished. The printing is very simple, and no actinometer is needed, for the image is sufficiently distinct to watch the progress and see

when it has reached the proper depth. In my experience I have found that the proper exposure is reached when all the modelling in the face can be faintly traced.

The image formed in printing is not a latent image, for nothing is brought out in the development that cannot be faintly seen in the print previously. The deposit in developing only takes place where there has been some perceptible action of light, and thus only intensifies and makes vigorous what before appeared flat and weak.

Not only in printing does the rapidity exceed the silver process, but also in developing, for it does not take any longer to develop a print than it would to place one in the toning-bath.

HEATING A TONING-BATH.

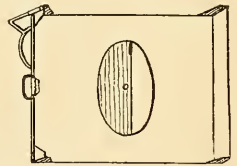
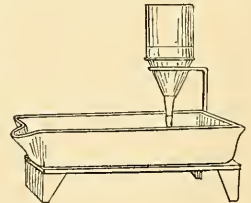
BY S. L. PLATT.

WE all know how perplexing it is when one is toning to have to stop and get two bricks to place under a toning-bath to raise it so we can use an alcohol lamp. Usually one end is higher than the other, so the solution runs all to one end; then the lamp heats all in one spot. I have a tin stand three inches high, just the size of the bottom of the toning-dish.

The top-piece is one-quarter of an inch from the bottom-piece, which forms a hot-air chamber. The bottom-piece has a large hole in it, covered with a loose piece of tin.

The lamp-flame strikes the loose piece and fills the chamber with hot air, which warms the whole top evenly.

This also makes a fine thing to dry plates on.



SUBSCRIBE now for the *Philadelphia Photographer* for 1880. At the end of the year, you may have more calls for funds, and have to lose the visits of the journal for awhile. Look ahead!

PHOTOGRAPHIC NEWS.

CORRECTION.—Mr. Darricau desires us to complete the manner of preparing the saccharo-sulphate of iron, published in our October number, page 314, by adding that the distilled water in the solution of rock candy should also be *boiling*, the mixture of the two solutions taking place when in a state of ebullition.

THE Belgian Association of Photography has made an entire change in the editorial staff of its *Bulletin*. The editing of this publication is now intrusted to a committee, composed of Messrs. G. de Wylder, Ch. de Pitteurs, and A. de Blohouse, who have obtained the assistance of numerous foreign correspondents, whose original articles will add still greater interest to this publication.

In the last number (August), we find very interesting papers from Dr. H. Vogel (Germany), Captain Abney (England), and from Messrs. Favre and Vidal (France). We wish them all success in their new departure.

THE subscription organized by the city of Chalon-sur-Saône, for the purpose of raising a statue to Nicéphore Niépce in his native town, is still open, and it is now proposed to do the same in honor of Daguerre, born, as few know, at Cormeilles-en-Parisis (Seine-et-Oise).

The initiation of this subscription in favor of Daguerre belongs to the Photographic Union of France, and we cannot but give our hearty sympathy to the praiseworthy thought of thus honoring the memory of one of the founders of photography, and we wish all possible success to this new subscription.

If Daguerre was not the Christopher Columbus of photography, he was at least its Amerigo Vespucci.—*Moniteur*.

THEY are striving to form a weekly "Photographic Club" in London. The elements which compose a photographer on the little island must be very different from those forming the make-up of the genus American "artist," if the scheme succeeds. There is something so noble and so generous in a character who, seeing the need of culture on the part of his confrères, devotes

himself to their improvement, yet it is a sad fact, that so soon as they begin to realize that he knows more than they do, they will kick him, and "swear they know it all."

Whoever he may be, he is sure to receive ingratitude and calumny for his pains—in this world at least. Still don't be discouraged, good friends. Le's 'ave th' N. P. A. 'nd a "club," too, swung weekly.

PROCESS FOR TREATING HARD NEGATIVES, AND TO MAKE THEM TRANSPARENT, WITH A VIEW TO THEIR ENLARGEMENT.—Our honorable correspondent at Marseilles, Mr. Darricau, sends us a method which he uses with success in the treatment of hard negatives, and which in that condition are of no use.

He first removes the iodide from the negative with hyposulphite of soda, washes, and then using a vessel with a large opening, he places in it a small quantity of a solution of cyanide of potassium at four per cent., of ordinary water, which he pours upon the negative at several intervals until he has brought it to the desired tone. He now washes, dries, and varnishes it.

The cyanide is poured again into the stock-bottle, to be used until exhausted.

For negatives that are already weak, the strength of the solution of cyanide may be reduced to from three to two per cent.

By his process, Mr. Darricau succeeds, whilst preserving all the delicacy of the modelling in obtaining transparencies, by which the negative gains considerably in harmony and softness.

He thus prepares for enlargements negatives of the desired transparency, and, if needs be, upon a plate bearing two negatives, he chooses the sharper one, which he treats especially for enlarging, whilst he leaves the other for printing ordinary positives.—*Moniteur*.

ADHERENCE OF GELATIN TO ZINC.—In our March number we published a method proposed by our honorable colleague, Mr. Husnik, to make gelatin adhere to zinc. After a trial of this method, which is somewhat complicated, and which has the fault, admitted by Mr. Husnik himself, of producing spots on the phototypic plate under the influence of humidity, we sought for

something else more simple and more reliable.

It is well known that films of gelatin adhere perfectly well to copper. Now, why not coat with copper the surface of the zinc? This is a very easy operation, by means of which plates of zinc of all sizes, which have been previously planished and grained, may be very economically substituted for copper plates.

Sulphate of copper is dissolved in ordinary water until saturation; then to this solution is added cyanide of potassium in sufficient quantity to dissolve the flaky green precipitate which is first formed. The liquid, which at first is thick, pasty, and of a dark-green color, soon becomes white and clear, and nothing remains at the bottom of the vessel but a light, white precipitate. An excess of cyanide of potassium is not injurious.

Filter, and in a bath composed of a sufficient quantity of this liquid plunge the zinc plate, which has previously been cleaned with a water slightly acidulated with nitric acid, say about four per cent.

The deposit of copper is instantaneous. It is allowed to thicken a little, and we have a surface which is fully as good as that of a plate formed entirely of copper.

We believe that this process is the most certain to facilitate the use of zinc plates in phototypic work.—LEON VIDAL.

THE BLIND FIDDLER AS A STUDY.

THE allusions made to the "Blind Fiddler," have caused a demand for the engraving of it, and we reproduce it from *Pictorial Effect in Photography*. It is a very poor woodcut, but the only copy we could find. It will, however, answer our purpose, and as a further help to its study, we add Chapter XV of the work alluded to, in order to instruct you on a further element in art photography, namely:

VARIETY AND REPETITION.

"How great a share variety has in producing beauty may be seen in the ornamental part of nature. All the senses delight in it, and equally are averse to sameness. Yet, when the eye is

glutted with a succession of variety, it finds relief in a certain degree of sameness; and even plain space becomes agreeable, and, properly introduced and contrasted with variety, adds to it more variety. I mean here, and everywhere, indeed, a *composed* variety; for variety uncomposed and without design is confusion and deformity."—HOGARTH.*

Notwithstanding the formality of the composition of the "Blind Fiddler," the great quality without which no pictorial arrangement can be complete—variety—is present in a very marked degree. This is very noticeable in the disposition of the heads and leading points, as will be seen at a glance by the following diagram, in which they are set forth; as will also the pyramidal forms of the groups, and the way in which they fall in with and harmonize one another, continually piling up until they form one great irregular pyramid, supported by the group of dark objects in the front. The extreme care Wilkie has taken to get his pyramid complete will be seen in the disposition of the fiddler's bundle and stick on the one side, and the spinning-wheel on the other. Every variety of aspect in the heads is given, from the full face of the grandfather to the back of the head of the fiddler's son warming his hands at the fire. Every position is represented—standing, stooping, leaning, sitting, lying—as well as every degree of expression, from lively action to repose, "from grave to gay, from lively to severe;" and every age, from the octogenarian to the infant, youth being directly opposed to age in the centre of the group.

That variety is a necessity in good composition is so apparent that it need scarcely be dwelt upon at any length. It must be obvious that the reverse of variety—that is, monotony—would be fatal. One definition of composition might be, that it teaches the proper use of variety. A line running in a given direction must be balanced and opposed by a counteracting line. Full faces in a group should be varied with three-quarter and profile heads. A line of heads "all of a row," as is too often seen in photographs even by the best photographers, is jarring to a sensitive taste, and is an offence to art.

* Mark well this introduction when studying *Our Picture* this month.

So also with figures dotted about a landscape without purpose, disturbing repose by directing the eye to objects which are out of all harmony with the view represented.

Variety is one of the chief sources of picturesqueness and beauty. This quality alone would make a dead flat interesting. The ever-varying lines of the waves—varying, however, according to regular laws—make the level and otherwise tame and monotonous ocean a constant fascination. No tree, however finely grown and vigorous, presenting an unbroken mass of foliage, will interest the artist so much as others, inferior although they may be in size, but presenting

ture—beauty—which appears to require a greater amount of simplicity for its success.

Variety of attitude should be studied for the sake of contrast; but simplicity, especially in photographs, must not be lost; the peculiarity of the art itself supplies sufficient intricacy and detail. No amount of ingenuity in varying the positions and aspects of the figures will compensate for loss of simplicity and repose. Photography does not admit of much action. In painting, the model is forgotten; in photography, it is different. It is well known to everybody that the figures represented actually stood for some seconds in the attitude shown—



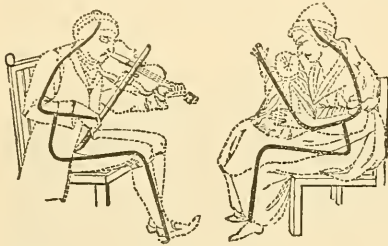
variety in their outline and intricacy in their details. Without variety of form there cannot be variety of light and shade.

Notwithstanding the absolute necessity of variety, as one of the chief sources of beauty, it may be, and frequently is, carried to excess. All great painters have guarded against this by introducing the opposing element to variety—repetition—repetition as an echo, not that resemblance which produces monotony. Picturesque effect will allow, and demands, a greater amount of variety than does the higher form of na-

except, indeed, in instantaneous pictures, where art often has to accept much from chance (we cannot get away from that fact, even if we desired to do so)—whilst painting or drawing represents something that need not have been seen for more than an instant by the artist; indeed, it is not necessary to the enjoyment of a painting to know that the original ever existed.

Simplicity, symmetry, and uniformity, strange as it may appear, are not antagonistic to variety, but are, in the extensive scale of nature, highly conducive to it, es-

pecially in scenes composed of many objects. Uniformity in a single figure will produce monotony; but in a scene composed of many figures it will add to the variety, for if the greater number of figures be irregular and varied, the introduction of repetition in some of the objects will actually increase the variety. This is beautifully illustrated in the "Blind Fiddler," in which the "uniformity in variety" necessary in a perfect work of art is finely shown. The following diagram exactly repeats the lines of the



fiddler and the woman with the child seated precisely opposite to him.

It will be seen that the position of the body is the same in each—stooping a little forward, with the head bent down; the lines of the arms, the legs, and the chairs exactly correspond, and the line produced by the child's arm reaching up repeats the line of the fiddlestick, while both figures, although different in sex, wear caps; the lines of the dress even, especially above the arms, are symmetrical, and in both cases the back leg of the chair is concealed. This uniformity is not accidental, but must have been produced deliberately and with a purpose. There are other similar examples of repetition in this perfect composition; for instance, the boy imitating the action of the fiddler with the poker and bellows; the delight of the human beings repeated in the face of the dog; and, if you like to be fanciful, the rude art of the fiddler echoed in the rude art of the caricaturist in the picture of the soldier on the wall.

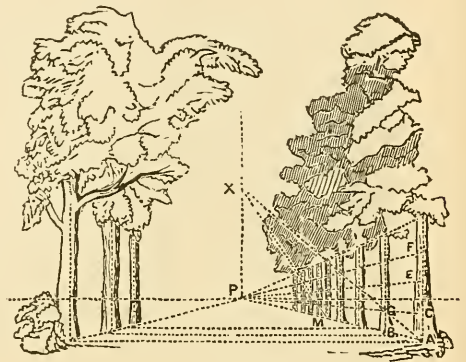
A LESSON OR TWO IN PERSPECTIVE.

AS a further help to photographers who desire to make progress in their compositions, and who often find it necessary

to paint their own backgrounds, we make one or two extracts from that portion of Mr. John L. Gihon's admirable work, *The Photographic Colorists' Guide*, which treats of "Rudimentary Perspective." The whole of that treatise should be carefully read by all students.

It also gives many useful hints as to how to arrange accessories so they will appear in harmony and correctly in a picture.

"To represent an avenue of trees in perspective.—Establish your distance between the two first, which you will mark *A* and *B*. From the point *A* raise a vertical line; mark on this line the equal distances *C*, *E*, *F*, *H*, etc.; from these points draw lines to the point *P*. From the point *A*, and through



the point *G*, draw a line till it intersects a vertical line drawn from *P*; the points *I*, *K*, *L*, thus procured, will show the places for the third, fourth, and fifth trees. To obtain a still greater number, draw a line from *M*, the base of the last tree, to *X*, and proceed as before.

"Where a landscape background is introduced, and is made up principally of trees or of indefinite forms, mistakes in drawing will often pass unobserved. When houses are introduced and badly managed, even the uneducated eye will detect that something is wrong, without being able to explain the difficulty. The most glaring faults are generally found in the setting of the roofs upon the buildings. The subjoined diagram will give some idea of how they should be placed.

"I will now conclude this chapter by

giving an illustration of the interior of a room, all of the objects contained in it being drawn in strict accordance with the rules of perspective. It must be remembered that all the examples I have given must be regarded only as diagrams illustrative of principles, and that they have no pretensions as pictorial embellishments. They are skeletons upon which more attractive matter may be moulded.

"The present picture will need very few explanations, since the same laws are involved that have already been illustrated.

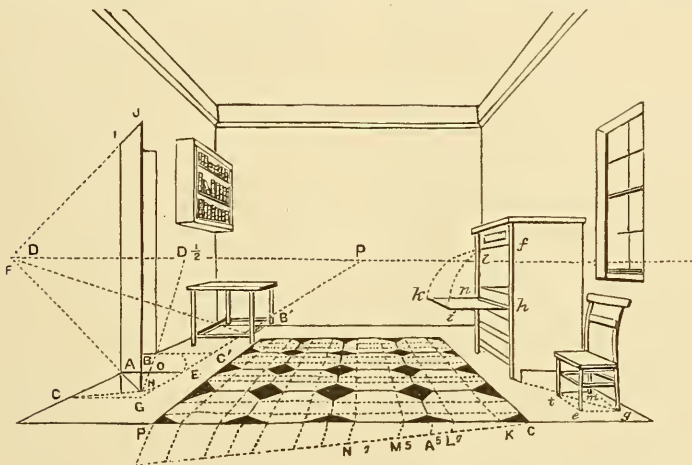
"To open a door.—Let AB be the doorway. From the point $D\frac{1}{2}$, and through the point B , draw an indefinite line; from the

from the centre, and is comprised in a semi-circle, which has for radius the width of the doorway.

"To open an *escritoire*.—From the points hn , draw horizontal lines; from the point h , as centre, and with a radius equal to hf , describe a quarter circle, fi ; from the point n as centre, and with a radius equal to np , describe a quarter circle pk ; join the points ik by a straight line which should go to the point P , the vanishing point of the front of the *escritoire*.

"To find the base of a chair.—Construct the square, $egmf$; from its angles raise vertical lines.

"To imitate a flooring of octagon and square tiles.—If we wish to place four octagons from



point A , draw a horizontal line, which will give the point O ; take the size AO , and bring it from O to E ; from the point P , and through the point E , draw a line, which will give G on meeting BO prolonged; draw the horizontal lines GC and BC' , and we shall have two squares, $BCEA$ and $AGEC$, in which a semicircle must be traced, BEC . Let AH be given for the base of the door; this line is equal to AO . Prolong HA as far as the horizon, which gives F ; from this point, and through the point I , draw a line, and from H raise a vertical, which will give I and terminate the door.

"The base of a door must always begin

P to C , divide this space in such a manner that CK contains five equal parts, KL seven of these parts, LA five, AM five, MN seven; from the points C, K, L , etc., draw a line to the point of distance which gives the point B and the diagonal CP ; wherever this diagonal intersects the lines going to P , draw horizontal lines, and thus we obtain squares, on which, by drawing diagonals, we obtain the figure required.

"A careful study of these diagrams will give to the student the key to the practices of the legitimate 'artist,' and be very helpful when it is necessary to add accessories and fancy backgrounds to colored photographs."

A CIRCULAR LETTER TO PHOTOGRAPHERS.

NOTHING so speedily develops the profession of photography as a free interchange of ideas among its votaries. The natural medium, when no mass-meetings can be held, is the photographic magazines, and the most natural of these is ours. Hence we desire that all of our readers who are so disposed will consider the circular letter which follows as addressed to them, with the hope that they will take time to respond. We should like to hear from each State at least.

The Philadelphia Photographer.

EDWARD L. WILSON, EDITOR AND PUBLISHER.

116 North Seventh Street,

PHILADELPHIA, November 1st, 1879.

MY DEAR SIR: About two years ago, I asked questions similar to those which follow, and the answers which came did so much good at home and abroad (for they were copied largely by the foreign magazines), that I am free to bother you again. Will you not therefore help me, "for the common good," by answering these questions, and adding all the other useful information you find it in your heart to give?

1. How is business? Does it improve?
2. What are the prospects for the coming season?
3. Do you show proofs; and what is your system?
4. Do you secure pay in advance?
5. Are you encouraged to make continual effort to improve the quality of your pictures?
6. Are your efforts to please your patrons appreciated?
7. Has low-priced competition increased, and does it do real damage?
8. Do you usually make more than one sitting, and allow a choice?
9. Has the public taste improved, and is it more exacting?
10. What sizes and styles are the most popular?
11. Are pictures with fancy backgrounds and accessories demanded?
12. Have the so-called improvements in

our art been *real* improvements; such as retouching, burnishing, and fancy printing?

13. Have you reduced prices within two years; and if so, why?

Of course, do not answer any queries which may seem presumptuous.

With kind regards,

Truly yours,

EDWARD L. WILSON.

VOICES FROM THE CRAFT.

WE ALL STILL LIVE.

YOUR postal-card was received some days since, but have been so much under the weather lately that I could not make up my mind to think of anything but what was necessary. The *Philadelphia Photographer* was duly received this month; allow me to congratulate you on its improvement. The cutting of the pages adds to its appearance, and is a great convenience to your readers. Its contents, too, show that there is no lack of care on your part to make the *Philadelphia Photographer* all you claim for it.

The great artotype excitement has apparently subsided. You know my neighbor purchased the county right, and was so confident of its superiority that he made the assertion that I would not be in business long, and that he could clear \$10,000 in two years. *I am still in business*, and doing as well as ever, and do not try to make a fortune making twenty-five cent tintypes at G. A. R. camp-fires. What a fall! The only effect the artotype has had in this community that I can notice, is that the whole people are disgusted with the results produced. What will be along next to catch the *smart* photographers who desire by one grand *coup d'etat* to destroy the legitimate photographer?

With many kind wishes, M. of P.

A THANKFUL VOICE.

"THANK God for that," said the doctor to the lady, when she told him she had taken all his medicine and was still alive. So say we to the many readers of *Mosaics* who have read it so many years, and *yet live*, and who send us so many good wishes with their articles for the 1880 issue, No. 16.

A CASE IN POINT.

You will find inclosed post-office order to pay for your journal. If you had kept on sending the journal to me, instead of stopping it a year ago last June, when my subscription ran out, you would have been ahead, as I wrote and told you to send it, and I would send the money in the course of a month. But when the time came for the journal to come, and I did not get it, I thought if you could not trust me for one month, I would not take it any longer. But I have received a number of invitations from you by circular to renew my subscription, so I thought I would try it once more, but if you drop me from the list, the same as you did before, it will be the last, as I have taken it a good many years, and have always paid for it. All you have got to do is to send the journal, and you will get your money sure.

Yours truly, R. W. D.

SEPTEMBER 22d, 1879.

We regret the necessity of depriving any person of this magazine who wants it, and yet we could never bring ourselves to the questionable way adopted by many of begging subscriptions by continuing to send our magazine after the time for which it has been paid expires, and then dunning for money which we do not think is due. This is the ostensible reason for such procedure, but the real fact is, you *owe* for a magazine sent you if you take it from the office, whether you subscribed for it or not, and the money can be collected by law. It is a beggarly way to do. Our receipts always show when a subscription ends, and if you think enough of it to want it continued, we ought to have substantial evidence of it in the way of our pay. We cannot afford to send our magazine on a risk. We want to save all extra expense by giving our paying readers all the matter their patronage will allow. Please, then, as the end of the year draws nigh, to remit promptly for 1880, and you shall not suffer from want of the *Philadelphia Photographer*.

THE *Philadelphia Photographer* for next year will be worth \$20 to any photographer who wishes to improve. Subscribe now.



MATTERS OF THE N. P. A.

SOME GOOD SUGGESTIONS.

I INCLOSE you an article for *Mosaics*, 1880. It is rather short; but, if I understand your invitation, it is short, practical articles you wish; and as one of such I trust it will pass muster.

I see by the journals that a convention in 1880 is not only a possibility, but a probability, as the photographers in general are very much in favor of it. The Executive Committee should bear in mind, however, that Ohio and Indiana are no longer "the West."

There are hundreds of photographers this side of the Mississippi who would be glad to attend; but New York State is not near. Still, if low rates could be secured on all rail lines, I do not think the Western photographers would seriously object to having the convention at Saratoga, as it would give them an opportunity for an Eastern trip that many would be glad to avail themselves of.

As the Executive Committee are waiting to take their *cue* from the photographers, I would suggest that circulars be issued. The cost would be but trifling, requesting each recipient to send one dollar to the Treasurer, said contributions to constitute a fund to be used only for the necessary expenses of a coming convention; and if five hundred dollars are received at a certain time, to push it through; and if not, to drop it. And if there are not five hundred photographers in the United States who are willing to give one dollar for a national convention, it ought to be dropped.

Again, would it not be well, if June is decided on, to have it not earlier than the 20th, as a great many of us are located in college towns, where it is impossible for us to leave earlier in the month.

Let us hear from some of our Western photographers.

GEORGE SPERRY.

IOWA CITY, October 6th, 1879.

A VIEW THE OTHER WAY.

IN view of the frequent solicitations and offers for the *Mosaics*, I herein offer a contribution, hoping it may help some one who has had similar disadvantages to contend with.

In regard to the revival of the Association, as an ex-member, I think it is not an advantage in the long run, while we have the *Philadelphia Photographer*, and it so ably edited, and is open to a free interchange of photographic gleanings. I think, financially, the Association is unnecessary, more especially when debts are contracted in excess of receipts. H. H. FLANAGIN.

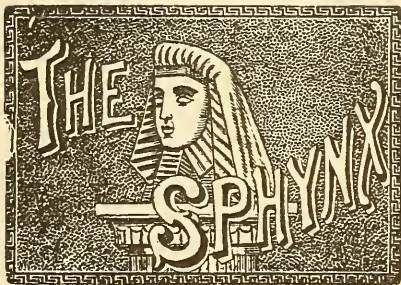
WOODSTOWN, October 10th, 1879.

A SAMPLE LETTER.

YOUR suggestion in the last *Photographer*, that the next convention of the N. P. A. be held at Saratoga, I heartily indorse, and wish to be counted in as one of the one hundred at \$5.00. Criticism and comparison are best appreciated by the photographer who is bound to take the lead. I have sent you, by this mail, two or three sketches.

J. E. WATSON.

DETROIT, October 9th, 1879.



Query.

WHEN ether and alcohol are mixed (equal parts), do they become one body; if *not*, in what proportion will they evaporate when exposed? If you will please answer the above query, you will greatly oblige,

Yours truly, L.

Answers.

At ordinary temperatures, the *ether* evaporates from a mixture of alcohol and ether more rapidly than the alcohol. Below the boiling-point of alcohol, ether may be dis-

tilled off, and an impure alcohol will remain behind. When alcohol and ether are mixed, they form a *mixture*, not a true chemical compound. The proportion of ether which would spontaneously evaporate from the mixture would depend upon length of time, temperature of air, and, perhaps, other causes. SPHYNX.

"JUPITER" will find a plan for building a portable house, with drawings, on page 169 of our Vol. VIII, 1871.

SPHYNX.

F. N., of Massachusetts: Ground-glass surfaces and grinding is about played out with all the best retouchers I know. The thing most generally used, and the best I have ever tried, is common copal varnish thinned with turpentine. To use it, after varnishing your negative as usual, take a very small quantity on the ball of your finger, and rub it on the spot you wish to retouch; then take a dry finger, and rub nearly all off, so as to leave it a little sticky, and it will take any amount of retouch without any grinding. After trial, I give you the hang of the thing, and after you have got it, you will want nothing else.

GEORGE W. CODDINGTON.

SOCIETY GOSSIP.

PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.—The stated meeting of this Society was held on Thursday evening, October 2d, 1879, the President in the chair.

The minutes of the last meeting were read and approved.

Messrs. McMichael, J. Traill Taylor, B. Bradley, Frank Robbins, and George B. Selden were elected corresponding members of the Society, and members of the Exchange Club.

The present officers were then nominated for re-election at the annual meeting in November.

Dr. Seiler said that gelatin emulsion was being worked very successfully by a number of gentlemen in Rochester, N. Y., and he thought that possibly plates would be sent out from there commercially.

It was suggested that perhaps Rochester, being situated near a large body of water,

was a particularly favorable location for gelatin processes, as the range of humidity would not be so great as in drier and more inland places. Dr. Seiler also called attention to a recent statement in foreign scientific news that the solar spectrum had been photographed in colors, but the experimenter had not as yet succeeded in fixing the image. The Doctor said that if this statement was correct, it was the most

A MODEL CHECK SYSTEM.

BY GEORGE M. BRETZ.

I INCLOSE you one of my checks that I use when making negatives. I give the check to the sitter, filled up, to be presented to the operator, who keeps the top slip, and returns the body of it to the customer. The part kept is pasted on the negative, which gives the printer all needed information. You will see its use at once.

N. P.	Size.	Style.	Price.	No. Neg.
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PLEASE READ THIS BEFORE SITTING.

To secure pleasing and good photographs, it is essential that there should be harmony between operator and sitter. Be pleasant, dress neatly, suggest to operator what you desire, have confidence, and then let him use his judgment. No one should be under the skylight except the *sitter and operator*, except in case of children; and then only one other, and that the *parent or nurse*.

Photographs should invariably be paid for in advance, as that is the *only* evidence we have that they will be called for. All our energies will then be devoted to making satisfactory work.

Pottsville, Pa., 18

Size.	Style.	Number Pictures.	Price.	Amt. Pd.	No. Neg.
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Just All sizes and styles Photographs. Views made to order. Life-size portraits in Oil, Water Color, or Crayon, a specialty.

GEORGE M. BRETZ.

(Fac-simile of signature.)

successful attempt at photography in colors yet made.

The meeting was then adjourned.

D. ANSON PARTRIDGE,
Secretary.

A CORRESPONDENT of the *Druggists' Circular* has discovered that oxalic acid is very destructive to the enamel of the granite iron-ware. Perhaps the knowledge may be of use to photographers and others using it. Another objection is that it scales off, leaving the iron exposed, which colors some preparations. The "Agate" ware is warranted.

PROFESSOR COHN, of Breslau, has been making experiments with the electric light on the eyes of a number of persons, for the purpose of ascertaining its influence on visual perceptions and color sensations. He finds that letters, spots, and colors are perceived at a much greater distance through the medium of the electric light than by day or gaslight. The sensation of yellow is increased sixty-fold compared to daylight; red, six-fold; blue, two-fold. Eyes which can only with difficulty distinguish colors by the day or gaslight are much aided by the electric light.

THE ARTOTYPE PROCESS.***SUBSTRATUM.—No. 1 SOLUTION.**

Pure Albumen, 5 ounces.
 Bichromate of Ammonium, . 25 grains.

Add the bichromate and beat all to a froth, and let it stand over night, and then neutralize the acid bichromate with a few drops of ammonia, and filter several times. Apply with a brush, and dry by slow heat or spontaneously, and expose the glass side to the light on a black cloth till a piece of silvered paper turns black; then put in the dark, for use when wanted.

Or the following substitute may be used:

No. 1 SOLUTION.

Albumen, 2 ounces.
 Silicate of Soda, 1 ounce.
 Gelatin, 60 grains.
 Bichromate of Potash, . . 40 "
 Water, 20 ounces.

To the prepared albumen, 2 ounces, add 5 ounces of water. Now add 5 ounces of water to the silicate of soda, and mix them, pouring the soda into the albumen, stirring slowly all the time. Now add the gelatin and bichromate of potash to the remaining 10 ounces of water, and dissolve by heat in a water-bath, being careful not to raise the heat above 120°. Then add the albumen and soda, mixing thoroughly. Filter, and flow the plates, and set away to dry spontaneously, free from dust. When about to use, immerse the plate in a dish of water about five minutes, then rinse and dry.

Now place in the oven and heat to 100°; then take the plate on the spread left hand, and coat with

No. 2 SOLUTION.

Gelatin, 1 ounce.
 Bichromate of Potash, . . 70 grains.
 Water, 20 ounces.

In winter from 10 to 20 drops of glycerin may be used. Soak the gelatin in 10 ounces of water for an hour, then add the remaining 10 ounces of water and the bichromate of potash. Heat to 100°, stirring till dissolved; then filter several times, and it is ready for

* These revelations come to us as the confessions of a *tired licensee* of the Artotype Company, and are given for the use of those who may want them.—Ed.

coating the plates. When warmed to 100°, the plates will dry in ten to twenty minutes. Then cool off slowly, and they are ready for

No. 3 SOLUTION.

Gelatin, 1 ounce.
 Russian Isinglass, . . . ½ "
 Water, 24 ounces.
 Alcohol, 4 "
 Bichromate of Ammonium, 90 to 120 grains.
 Calcined Magnesium, . . 10 to 20 "
 Chrom-alum Solution, . . 1 to 2 drachms.

Dissolve the isinglass in 6 ounces of water by boiling from one to two hours, and the gelatin in 8 ounces of water, in water-bath at 100°, and add the alcohol and remaining chemicals to the remaining 10 ounces of water, *except* the chrom-alum solution, which should be added last and on the day of use only. Do not raise the heat in any case above 120° with Solution No. 3. Coat the plate precisely as with No. 2, except that the solution should flow off the opposite corner. Let the plates stand for a few hours after they are removed from the oven, and then expose under the negative to diffused light the proper times.

CHROM-ALUM SOLUTION.

Chrom-alum, 40 grains.
 Bicarbonate of Potash, . . 20 "
 Water, 5 ounces.

BIBLIOGRAPHIC.

WE have received copies of the following works from their several authors:

INSTANTANEOUS PHOTOGRAPHY. By J. Ferrán and I. Pauli. Gelatino-bromide of Silver Process; ten times more rapid than Wet Collodion. Starch Emulsion, by the same. Remarks on the Recent Process of Dr. Van Monckhoven. Tortosa, Spain: 1879.

This pamphlet being in the Spanish language, the most of our readers must be debarred from the enjoyment of its pages. In a note accompanying it the authors say:

"We have the honor to send you a copy, fresh from the press and yet unbound, of the treatise that is about to appear under the title of *Instantaneous Photography*, and we would call your attention to the chapters in which are described a new theory on sen-

sitiveness, a new method of enlargement, and a new process of starch emulsion with bromide of silver, but much more rapid than the gelatin process.

"We would also call your attention to our new flexible support, described in another chapter."

The authors use potato-starch, either alone or in connection with gelatin, and claim for their process economy and rapidity. We give briefly their process.

Potato-starch, . . . 4 grms. (62 grs.)
Ordinary Water, . . . 20 c.c. (5½ fl. drs.)

The starch is placed in a mortar, and a few drops of water added; the thick mass which is formed is triturated with force, and the rest of the water is then added. The trituration has for its object the breaking up of the small grains of amylaceous matter, to facilitate their hydration, and to thus obtain a more homogeneous mucilage.

In a vessel that can stand heat make the following solution :

Ordinary Water, 80 c.c. (2 fl. oz. 6 fl. drs.)
Bromide of Potassium, . . . 1.12 grms. (17 grs.)

Boil, and add drop by drop the preceding liquid, stirring very quickly.

In distending, the starch-grains become thoroughly penetrated by the bromide of potassium, and this is an essential point to gain a good emulsion.

Whilst the liquid is still very hot, add drop by drop the following solution :

Distilled Water, . . . 20 c.c. (5½ fl. drs.)
Nitrate of Silver, . . . 1.12 grms. (25 grs.)

Agitate quickly and constantly to obtain the double decomposition, which requires from eight to ten minutes. Now filter through a cloth on a glass plate, and as soon as the coating is sufficiently firm, wash in pure water, and proceed for all the rest of the operation as is done in the gelatinobromide of silver process.

To prevent the too great solubility of this emulsion at the time of development, the authors have tried an emulsion composed of gelatin and starch. They say that starch gives a greater permeability, and consequently still greater rapidity.

ON THE CHEMICAL EFFECTS OF COLORED LIGHT AND PHOTOGRAPHY IN NATURAL COLORS. By Dr. Josef Maria Faber.

This *brochure* comes to us from Germany. The author states :

"That at the present stage of the study of the chemical properties of light it is no longer enough to speak of the 'effects of light,' by which the white sunlight is meant.

"As the student of natural philosophy keeps the different rays of different diffraction composing the white light very distinctly apart, so the study of the chemical effects of the light must follow the same road.

"It is necessary to take the effects of the colored ray of the spectrum into account, which appears the more important, as in almost all cases each color of the spectrum produces a distinct chemical effect.

"The theoretical photographic chemist, as well as the practical photographer, must count with this factor.

"The first is very little cultivated by chemists, so that in the most recent complete manuals on chemistry, the researches of Becquerel (*La Lumiere*, 1868), Hunt (*Researches on Light*, 1854), Herschel, H. W. Vogel, and others, are treated very cursorily.

"The photographer finds it very difficult to follow the matter up, though the most important points have been laid before him in Dr. H. W. Vogel's manual on photography, and yet the practical photographer already begins to try to draw benefit from the chemistry of the colored light.

"As the author is occupied with an extensive work on pyroxylin and the photographic collodion, he thought fit to study closely the results of the photo-chemical experiments on the, to the photographer, very important combinations of silver.

"At the same time he took other substances, the behavior of which in regard to colored light was partly known, into the course of his studies, and also gave some space to photography in natural colors in his work.

"In this way the present work was finished, which, in spite of its being very short, is nevertheless the most complete

essay on the chemistry of the colored light, and its object is to facilitate the study of photo-chemical matters."

The above is a digest of the author's introductory remarks which precede the work. He gives a short history of the various experiments made in regard to the chemical effects of the light, and says that above all the relation of silver salts to the influence of light have found most attention, and he treats first of the effect of the sun-spectrum upon silver combinations, of all of which he gives a detailed account.

THE LICHTDRUCK AND THE PHOTOLITHOGRAPH is the title of a work of 110 pages, by our talented colaborer, Dr. Julius Schnauss, and published by Dr. P. E. Liesegang, Dusseldorf, Germany.

It contains many useful hints for those engaged in mechanical printing, and we suppose a \$1.00 post-office money order sent to the publisher will secure a copy. It is in German.

THE CARBON PROCESS, by Dr. P. E. Liesegang, seventh edition, accompanies the above publication.

It is a complete treatise on the subject of carbon printing, making tissue, etc. We have before reviewed it at length, and commend it to carbon printers as the freshest and best work of its kind. Price, \$1.00. Published by the author in German.

A PRACTICAL TREATISE ON PHOTO-TYPIE. By Mons. Leon Vidal, editor of *Le Moniteur de la Photographie*. Published by Mons. Gauthier-Villars, Quai des Augustins 55, Paris, France.

This admirable work of our valued contemporary comes to us with a pleasant letter from him, in which he says, "with the object to popularize the progress of photographic art, I have gathered in my new work, all the documents and practical details possible on the subject of Photo-typie," or as we call it in America Artotype.

And that our good author has admirably succeeded there can be no doubt, for in the three hundred closely and beautifully printed pages, we have the various processes given of Albert, Edwards, Obernetter, Monckhoven, Boilinetto, Geymet, Jacobsen (Rich-

ard), Jacobi, Despaquis, Husnik, Gemoser et Voigt, Murray, Poitevin, and of the author himself, with eighteen splendid woodcuts of the apparatus and machinery required for the perfect working of Photo-typie on a large scale, by hand or by steam. To this is added a copious index, and a list of the authorities who are quoted.

An important feature we must not forget. It is the introduction of two beautiful illustrations. The first is a view of the Cité de Carcossonne, from a negative by M. Fabre, and printed by Mons. A. Quinsac; and the second an admirable genre picture, negative and prints by our amateur friend, Mr. Carlos Relvas, of Gollegan, Portugal, the Jacobi process having been used for the prints.

The whole is an admirable work, and exhaustive up to date.

Our friend has contributed a most valuable addition to photographic literature, and we hope he may be well rewarded for his labor.

His book is in French, and no doubt \$1.50 sent to the publisher will secure a copy.

It would help our friends, the publishers of foreign books, if with the copies sent us they would also name the price thereof, as our readers frequently inquire for copies. We hope presently to make some extracts from Mons. Vidal's capital work.

PHOTOGRAPHY: ITS ORIGINS AND ITS APPLICATIONS. A lecture delivered March 20th, 1879, at La Sarbonne, by Mr. A. Davanne, Vice-President of the French Photographic Society.

"Such," says Mr. Vidal, editor of the *Moniteur*, "is the title of a new pamphlet just published by Gauthier-Villars.

"This publication adds to the photographic library, already so extended, a valuable document, highly useful to those who may have to rapidly resume the history of photography, from its inception to the present day.

"We might make copious extracts from it, but we prefer to refer our readers to the work itself."

Mr. Davanne says: "I would like to give a definition of photography, and from the start I find myself embarrassed, as I can

neither call it a science, an art, nor a trade. No; it is a new mode of reproducing and fixing, by the action of light, the image of things that light renders visible to our eyes (sometimes even invisible things), and, according to the application made, it becomes scientific, artistic, or industrial.

"Let us admit that it owes everything to science. It is born of the union of physics and chemistry, and it is towards these sciences that it should direct its steps, in order to continue its progressive march."

Those of our readers who can read French will find M. Davanne's *brochure* very enjoyable and interesting.

SCIENCE FOR THE PHOTOGRAPHER.

PROCESS FOR CLEANING AND PRESERVING ENGRAVINGS.—The learned Dr. Diamond, one of the fathers of photography, has published his process for cleaning and preserving old engravings, and making them suitable for reproduction by photography. This process is very simple in itself, but requires some care in the manipulation.

The engraving is placed, with the print down, in a large flat dish, and boiling water is poured upon it, care being taken that the water should not fall directly on the print. The boiling water is poured from a kettle by means of a wooden spoon, which causes it to fall very gently upon the back of the paper. The print is allowed to soak for about two hours, or for even a longer time, then raised with great care and placed on a thick sheet of good white bibulous paper. In certain cases a second washing is necessary to entirely remove all impurities, and to restore the old print to its original condition. To dry, place the print on a thick sheet of bibulous paper, and when dry press between two sheets of fresh paper, but without pressing with a hot iron.—DR. PHIPSON in *Moniteur*.

IMPROVEMENTS IN COATING MIRRORS.—The French Academy has awarded a prize of 2500 francs to M. Lenoir for improvements which secure to mirrors all the advantages of silvering, together with the qualities of amalgamation under conditions

which preserve workmen from exposure to mercurial vapor. The glass, after being silvered by means of tartaric acid and ammoniacal nitrate of silver, is exposed to the action of a weak solution of double cyanide of mercury and potassium; there is thus formed a white and brilliant silver amalgam which adheres strongly to the glass. The operation is facilitated, and all the materials are economized, by sprinkling the glass at the moment when it is covered by the mercurial solution, with a very fine zinc powder, which precipitates the mercury and regulates the amalgamation. Mirrors which are thus prepared are free from the yellowish tint of ordinary silvered glass, and the amalgam is not easily affected by sulphurous emanations. The committee, in their report, also recount M. Lenoir's improvements in galvano-plastic processes, his discovery of an autographic telegraph, which reproduces writings or drawings with printers' ink, his new and ingenious methods for securing the synchronism of the transmitter and the receiver, and the well-merited reputation which he has acquired for his gas motor.

MR. HESKIN, of Preston, England, has discovered a new way of making magnesium. He puts the anhydrous chloride of magnesium in a tubulated earthen retort, and passes hydrogen or carbonic oxide gas through the molten mass. The chloride is reduced, and metallic magnesium forms a regulus in the slag.

INDELIBLE INK NOT CONTAINING SILVER NITRATE.—Hager triturates 10 parts anilin black with 200 parts alcohol and 15 parts fuming hydrochloric acid, and adds a solution of 15 to 20 parts gum arabic in 800 to 1000 parts water. After standing for two weeks this ink can be used with a common pen. In case the ink is to be used for marking metal, wood, or leather, it is diluted with a solution of 15 parts shellac in 800 parts alcohol, instead of the aqueous solution.

WHEN gun-cotton is decomposed in closed vessels it gives rise to products which are few in number and simple in character, namely: carbonic acid, carbonic oxide, hydrogen, and nitrogen.

BROWN BRONZING LIQUID for copper and brass consists of copper acetate $5\frac{1}{2}$ parts, ammonium chloride 7 parts, acetic acid 1 part, water 100 parts. The articles, having been previously heated, are coated repeatedly until the desired color is obtained.

PARIS BRONZING VARNISH is a simple solution of shellac and a little camphor in alcohol. One part shellac dissolved in 8 to 10 parts alcohol, and mixed with $\frac{1}{4}$ part camphor, triturated with a lavender oil, yields a varnish which greatly resembles the commercial article.

ADHESIVE COMPOSITION, for preparing sticky fly-paper, is made by Nessler, by melting together 1 pound white rosin and 1 pound rape-seed oil, or any other non-drying oil (American manufacturers preferably use castor-oil), and allowing the mixture to cool.

Another good formulæ suggests to melt together 1 pound white rosin, 350 grammes lard, and 330 grammes oil.

BRUMATA GLUE is a similar mixture, and said to consist of Venice turpentine and a little expressed oil of laurel.

DESICCATOR FOR CARBON-DISULPHIDE, ETHER, CHLOROFORM, AND BENZOLE.—Frequently it is desirable to evaporate considerable amounts of the above-mentioned solvents for the purpose of gaining the substance dissolved in them without the application of heat. The spontaneous evaporation of these liquids in the laboratory is not convenient because of the character of the vapors liberated, and all of the solvent must be lost for future use. Lieberman uses a simple device to avoid this. The solutions to be evaporated are placed in an ordinary desiccator in which, instead of sulphuric acid, pieces of low-fusing paraffin are placed. The different liquids evaporate rapidly over the paraffin, which does not lose its absorptive power even when liquefied. Experiments showed that paraffin absorbed its own weight of

Carbon Disulphide in . . .	4 to 5 hours.
Ether,	8 to 9 "
Chloroform,	9 to 11 "

For benzole the absorption is considerably slower. The paraffin will take up more than

three times its weight of CS_2 , and more than twice its weight of ether. These solvents can be recovered by simple distillation from the paraffin solution, and are obtained perfectly pure.

DETECTION OF BROMIDE IN IODIDE OF POTASSIUM.—A. Jandousch calls attention to the fact that potassium bromide yields no precipitate with mercuric chloride, while potassium iodide precipitates red mercuric iodide, which is redissolved as long as undecomposed potassium iodide is present, but remains undissolved when this is no longer the case. One gramme potassium iodide is entirely decomposed by 0.82 mercuric chloride, and 8.2 c.c. of an aqueous solution, containing in the litre 50 grammes of mercuric chloride, are necessary to obtain a permanent precipitate. The iodide should not contain iodate, and before testing it should be dehydrated in case it contains water.

Lepage shakes 12 parts of potassium iodide with 150 parts of 90 per cent. alcohol, and considers the iodide pure if there is no undissolved residue. The *Austrian Pharmacopœia's* test consists in precipitating potassium iodide with silver nitrate, and digesting the precipitate with ammonia when that from pure potassium iodide is not dissolved.

DR. PHIPSON has succeeded in obtaining from organic substances present in fresh water a new and interesting product which he has named "characene." It is a kind of camphor which gives to the algæ in general, and to the waters in which they grow, that peculiar marshy odor which has hitherto been thought to be one of the results of vegetable decomposition, but which really arises from a substance produced by certain plants while they are alive and vigorous. As yet, few of the properties have been definitely ascertained.

THE yearly production of potash in France is estimated at 14,000 tons, 1000 of which are derived from the residues of the beet-root and 1000 from the grease of wool.

A MIXTURE of equal parts of plaster of Paris and powdered pumice-stone makes a useful casing for articles that are to be soldered or brazed.

GIHON'S GATHERINGS.

COMPILED BY THE LATE JOHN L. GIHON.

VI.

OLD COLLODION MADE NEW.—"A source of great waste among photographers is that of old collodion. It can be renovated and used again by the following process :

"Pour off the collodion from the sediment, and add subchloride of mercury (Hg_2Cl)—calomel—until a greenish color is assumed when shaken. Then allow to settle and add more calomel, until, by shaking again, the collodion appears of a canary-yellow color. Now, if it is very old and thin, either add more cotton to it, or mix it with your new collodion. When thus treated it will never turn red again. If it should not work as sensitive as new collodion, add one drop of aqua ammonia to each ounce of collodion, *as you use it*. Should it peel off the negative during washing or development, coat your plates with

White of Eggs (well beaten),	1 ounce.
Water,	6 ounces.
Chloride of Ammonium, or	
Sodium,	10 ounces.

Mix, and shake well. After washing the plates, and while wet, coat them with this solution of albumen, and lay them away to dry, for future use. The surplus albumen may be kept any length of time in an uncorked, wide-mouthed bottle, by adding a few drops of acetic acid. Should the collodion treated as above not dissolve the cotton readily, add a small quantity of lime."

Intense Collodion.—"As a means of obtaining density in negatives, it has been recommended to introduce into the collodion organic matter in the shape of sugar. Dissolve one grain of *white* sugar in a few drops of water, add this solution to the alcohol in making the collodion; one grain of sugar being sufficient for four ounces of collodion; and causing it to yield negatives of the utmost intensity. The introduction of too much sugar renders the film rotten, and in some cases it will be found desirable to reduce the amount here given."

Signs of Failure of the Negative Bath.—"The first signs with me," says Mr. Elbert

Anderson, 'are generally a refusal on the part of the silver solution to lay perfectly smooth on the plate after the latter is sufficiently sensitized.'

"I do not mean that the plate does not coat smoothly, but after it is all ready and withdrawn from the bath, the silver solution runs down in an irregular manner (*lumpy* I call it), and the plate takes rather longer to sensitize than usual. Cause: Too much ether and alcohol in the bath. Remove the bath and test for strength. (I frequently run mine down as low as 25 to 30 grains, and produce as good effects as at 40.) Boil about *one-third* its volume away, let cool, add water enough to make from 35 to 40 grains, filter, and you are all right. One hundred more plates may now be dipped before the next signs of failure present themselves."

A Quick Way to Sun a Bath.—"Here is something of an improvement on the old way of sunning an old bath.

"Pour it out into a flat porcelain dish and leave it in the sun, sheltered from the dust. The bath should first be neutralized, say with carbonate of soda. In a few hours a black scum will be found on the surface of the bath. This can readily be removed by a strip of blotting-paper, and the solution is again free to the action of the sunlight. This should be repeated every few hours until the bath remains clear, or nearly so, when it is ready to be filtered and diluted by the addition of water, for, as will be readily understood, during the process of sunning in a flat, open dish, there has been considerable evaporation of both water, alcohol, and ether. After being diluted, filtered, and acidified, it will be found to work as well as ever it did, free from streaks, stains, and pinholes. The advantage of the dish over the bottle, so generally used in sunning, is, that the black scum which collects on the inner surface of the bottle obstructs the rays of the sun, and prevents the free access of light to the solution, and thus renders the process of sunning much more lengthy and tedious than when the dish is used."

To Boil Down a Bath.—"Mr. Anderson gives his mode of 'boiling down' in the

following manner: 'I have frequently seen it advised, when adding water to the bath to precipitate iodide of silver, to add an equal amount, or more, of water to the solution. I think this is a mistake. I keep my bath *almost up to saturation*; the nearer the bath approaches this point, the better will be its results. Add *half* its volume (pour the bath into the water, not the reverse), filter perfectly clear, and boil to its original strength. Should the solution lack in volume, add silver *before* boiling. Should the bath show any signs of "fogging," which is not removed by filtering, the solution is contaminated. (This should never, or certainly very seldom, be the case.) To remove which, put the solution in an evaporating-dish on the stove, and when it commences to steam, add liquor ammonia gradually until all acidity is removed, when the solution may be boiled half away. You will be amazed at the amount of organic matter that will be thrown down, and will cling to the bottom and sides of the dish, which would otherwise have remained in the solution if it had been boiled in an acid state. When cold, reduce to normal strength, filter, and acidify as before. Now this is the simplest method I know of, and being the simplest, you may rest assured it is the best.' "

Formic Acid in the Developer.—"The following formula for an iron developer is extracted from the *Journal of the Photographic Society*:

Water,	6 ounces.
Common Acetic Acid,	30 minims.
Sulphate of Iron,	1 drachm.
Formic Acid,	1 "

"And in a subsequent volume another writer recommends formic acid with pyrogallic as well as with iron. He gives the following formula:

Pyrogallic Acid,	40 grains.
Water,	16½ ounces.
Ordinary Spirits of Wine,	1½ "
Formic Acid,	2 "
Sulphate of Iron,	2 "
Common Water,	16½ "

Dissolve, and add

Spirits of Wine,	1 ounce.
Formic Acid,	1½ ounces.
Sulphuric Acid,	5 drops.

"The writer says of the preceding pyrogallic developer, that it brings out the details in the deep shadows, which with most other solutions would be entirely lost. He therefore prefers it for landscapes, and for portraits of gentlemen, while for female portraiture the iron developer is preferable."

Modifications of the Iron Developer.—

"The possible modifications of the iron developer are almost without limit.

"The following stock solutions will be found most excellent:

"In bottle No. 1, make a saturated solution of protosulphate of iron in *hot* water.

"In bottle No. 2, make a saturated solution of ammonio-sulphate of iron in *hot* water.

"Both solutions must be allowed to get *quite* cold before they are used. The deposited crystals will, of course, be used at the next time of making these stock solutions.

"In bottle No. 3, make a solution of

Gelatin,	60 grains.
Glacial Acetic Acid,	1 ounce.
Water,	6 ounces.

"To make the developer, pour from bottle No. 1:

Saturated Solution of Sulphate of Iron,	1½ ounces.
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"Bottle No. 2:

Saturated Solution of Ammonia-sulphate of Iron,	1½ ounces.
Water,	16 "
Glacial Acetic Acid (in winter),	1 ounce.
Glacial Acetic Acid (in summer),	2 ounces.

"Bottle No. 3:

Gelatin Solution,	2 drachms.
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"This developer generally flows evenly over the plate, but, if necessary, alcohol may be added.

"If the negative requires intensifying, it is best to do it before fixing with acid, pyro, and silver.

Intensifying Negatives.—"Among the various methods suggested for this purpose the following will recommend themselves for their safety and simplicity in manipulation to obtain the desired result:

“The first is, to allow the light to act on the unfixd negative. Certain operators have employed this method with the most satisfactory results. Another plan is, to coat the back of the fixed and varnished negative with a bichromated mixture of gelatin, and allow the light to penetrate through the image to this sensitive film below; then fix and wash this secondary image. The results in the prints will show both strength and softness. Still another method, and one equally simple with the first, is to expose the unfixd image to light under a pale-yellow glass, first carefully wiping the reverse side, and removing all specks and blemishes. The negative is dried, and if not then sufficiently dense, it is again exposed as before. It is afterwards fixed and varnished in the ordinary manner.”

SUNSHINE OR SHADE?

BY EDWARD DUNMORE.

[As a further help to the artistic consideration of things photographic, and as a part of our series on this score, we use this admirable paper. It is *full* of useful things, from one able to think and teach practically.—ED. P. P.]

UP to a very recent date I was laboring under the belief that the finest effects in photography were only to be obtained in sunny weather; in fact, I looked upon the dictum that “sunshine was necessary for the finest effects in landscape work” as a truism. It seems, however, to be a disputed point; in fact, some leading landscape men assert that they prefer light without sunshine for the best effects, so I have no doubt others hold similar views. For my own part I cannot conceive how such an idea can prevail for an instant. Of course one opinion is as good as another unless substantial proofs can be adduced in support of either. I propose, therefore, to produce proofs favorable to my way of thinking and uphold the sunshine theory, for which I am a decided advocate.

Imprimis. In photographic picture-making one great source of error arises when we believe that perfection of art depends

only on skilful manipulation, any condition favorable to making a so-called perfect negative is deemed the most favorable condition for artistic work. To the success of those who continue under this misapprehension there is an impassable barrier; but, to those who consider picture-making as an effort of the mind, progress and constant improvement is an invariable result. To quote from some old authorities in picture-making: Quintilian, lib. vii, cap. 10, says, “a painter having once perceived the *true manner* will easily obtain the similitude of such things as come before him.” Now, this “true manner” depends on the right mode of *seeing* and thinking, and applies to photography somewhat negatively, inasmuch as it totally ignores the *necessity* of perfection of detail in the construction of a picture. Of course Quintilian is discoursing of painting; but, as variety of color without form is incapable of constituting a picture, while form without varied color *can*, the pertinency of these remarks will be apparent. As sunlight makes forms for itself and harmonizes others, the advantage of making photographic pictures under such conditions is obvious. Pictures, made by whatever process they may be, are all subservient to the same artistic rules. Tertullian says, “there is no art that is not either the parent or near relation of another.” So rules which are acknowledged by painters, must be acknowledged by photographers, and strictly adhered to if perfection be the goal desired. I will ask this question: How many (amongst the thousands of pictures painted by first-rate men and authorities in the artistic world) pictures representing daylight scenes have been painted without sunlight represented as shining on some portion or other of the work? Unless for some very exceptional effects I am inclined to think sunshine is always a factor in the arrangement. I cannot call to mind a single instance of a leading landscape painting quite destitute of sunshine. Take a stroll through our picture galleries—South Kensington, for instance—and try and find a daylight landscape without sunshine effects. The search will, I think, be tedious and unremunerative in this respect; yet there are represen-

tative pictures of most of our leading artists to select from. If, then, sunshine be unnecessary for pictorial effects, how is it that it is always adopted? and why are not paintings made to represent nature under a leaden sky, or, at least, where sunshine is absent, in preference?

In answer, the photographic advocates of no sunshine may say that the greater play of color in sunlight is the inducement to painters; but, as color effect is to be ignored as much as possible by the photographer, the less there is of it the better for perfect photographic results. But sunshine does something else besides vary color effects; it quite as much varies form and composition. A bright gleam of sunshine will frequently make a beautiful picture out of what was without it a flat, uninteresting subject. Let us call to mind our last exhibition at the Royal Academy, and take for an example that charming landscape by Vicat Cole—"Ripening Sunbeams," I think it was called. Here we have a picture whose principal charm is the marvellous and brilliant play of sunlight. As to composition it is such as might fall into the way of the photographer; but would the most zealous advocate for shade prefer to photograph such a view on a dull day in preference to a glorious sunshine that would break up the ground into magnificent shadows and sparkling lights? I should think not. Yet this is what the advocates of even light will say—that its absence would permit the better rendering of detail in the dark parts of the subject; that is, make a more perfect negative.

It seems to me that art culture is the principal thing now required by photographers. The manipulative part has attained such perfection that scores can turn out any number of perfectly manipulated negatives, yet not one in a hundred will turn out an artistic result. A wonderful assistance to a photographer is the ability to sketch from nature with either pencil or brush, and no greater help can possibly be given than the knowledge acquired in pursuit of this most charming occupation. If success be attained in this direction success will be much more easy with the camera. As in the future the artistic qualities of the

print will, undoubtedly, be the quality first considered, photographers will do well to lose no time in making themselves artists in reality, and not rest content that the designation of "photographic artists" shall be, as it is in scores of instances, a pretentious and hollow sham.

There is no doubt that evenness of development and fulness of detail are pleasant to look upon in a negative, and if the negative were the completion of the matter there would be little more to be said about it; but, as it is only a means to an end, and not the end itself, it is only so far satisfactory as it will produce a satisfactory print. Discussions are frequently held how one portion of a negative can be intensified more than another—not for the purpose of equalizing and bringing all to a dead level, but for making some portions print brighter and stronger than others. Now this is, I should fancy, a very frequent requirement with the shade photographer, and he tries to artificially supply a want that the sunshine would itself supply naturally and far better; consequently, by giving himself an infinite amount of trouble, with an enormously inferior result, he strengthens his negative and calls it "art."

Brilliancy in a photograph is a mere matter of intensity altogether irrespective of any artistic consideration. It alters neither form nor composition; but sunshine not only supplies this intensity, but especially improves the picture by varying the forms. In illustration of this take a foreground with nothing but a grass bank and short herbage growing upon it: the advocates of no sunlight represent it as a blank and even patch, which it possibly may be; but, give sunshine a chance, and the shadows of neighboring trees, etc., or inequalities in a ground itself, make a broken and pleasant effect without an accessory of any kind.

What applies here to the small piece of foreground holds good with the whole of the landscape; and I firmly believe that no landscape was ever taken on a sunless day, no matter how successfully, but would, with the same skill of manipulation, have been infinitely better done on a sunny one. In fact, it is a mystery to me how any one

who has intelligently studied landscape effect at all could think otherwise. Because there is sunlight there is no necessity for chalkiness or snowy effect in the foliage or want of detail in the shadows. These effects are mere errors of manipulation, and chiefly occur when the plate has had insufficient exposure or faulty development, and are not due to the lighting of the subject.

These remarks, of course, are intended to apply to general landscape work. Special instances do undoubtedly occur now and again where the absence of sunshine is advantageous. Where, for instance, from the exigencies of the situation, one is obliged to work with the sun directly in front, then there is no doubt of the advantage of cloudy weather; but, from an artistic standpoint, such subjects would not be photographed at all. Still, as they have to be done occasionally, the least objectionable conditions are, of course, selected; but this only proves the exception.

In architectural subjects—say some building in its entirety—when the position of the camera is entirely under the control of the artist, a *satisfactory* picture could not be made without sunlight. Architects themselves carefully consider the effect of cast shadows on their works as a means of enhancing the appearance of the structure, and giving relief and prominence to some ornamental or architectural feature. The even-light photographer, trusting to intensification, would make but a poor hand of such a subject. It is true little bits of detail may occasionally be rendered better without direct sunshine falling upon it; this has, however, nothing to do with landscape work, and comes under an entirely different set of conditions. Again: most works giving instruction in drawing and painting go deeply into the matter of shadows and their perspective and of *chiaroscuro* generally. What would be the use of all this knowledge if effects were better without direct sunlight? No; depend upon it, sunlight in landscape work is as absolutely necessary to perfect pictorial results as the reducing agent is in the development of the photographic image.—*British Journal*.

OUR PICTURE.

OWING to an unforeseen occurrence we are unable to present the picture this month which was promised in our last, and which should properly follow "The Village Photographer," in the chain of instructions which we have undertaken to give on the subject of accessories, composition, etc.

The lessons already given will therefore have all the more time for digestion, while we step aside from the line for a month, and give you a side dish which you will no doubt relish, though it was our intention to reserve it for your Christmas Dinners. Being headed off in this, let us hope that it may at least serve as a dessert of a light and harmless kind for the Thanksgiving Feast.

The subject of our picture is called by the talented artist, Mr. L. Solon, "The Wash-house," and is from a *plaque* in possession of Charles L. Sharpless, Esq., who kindly placed the original at our service, as he did "The Village Photographer," feeling, as he does, a great interest in all matters of art education.

We are grateful to him for his liberality, and wish that the artist had given us a less homely title for so admirable a composition. We have taken some license with it, therefore, in getting up for our lantern friends a series of dissolving views, climaxed by this splendid group, to which we give the name of

"HEBE'S REVENGE UPON CUPID." A NEW MYTHOLOGY.

In the lecture which accompanies the transparencies, we romance thus:

Fig. 1. *Statuary Group*.—Hebe, the goddess of youth, desiring to perform her toilet, commands Cupid to hold her mirror for her. Indignant at being pressed into such menial service, Cupid causes the image of a monster to appear in the glass. The lovely Hebe views it calmly, but swears vengeance; and they both disappear into

Fig. 2. *The Blue-tinted Clouds*, by no means good friends, though seemingly at peace.

Fig. 3. *The Home of Hebe*.—Amid the beauties of the Aurora Borealis, whence she gathers the beautiful tints, with which she paints the feathers of her mother Juno's

peacocks, which are committed to the care of our sweet heroine.

Fig. 4. *Statue of Hebe*.—Meditating how she shall punish the impudence of Cupid. At first she resolves to entrap him with a garland of flowers, but abandons that project, and determines to consult her father, Jupiter, on the subject. She prays to him to come to her aid.

Fig. 5. *Cupid's Counsel with his Fellows*.—Having in vain sought Hebe for a loving *make-up*, and satisfied that there is mischief in the air, the troubled little urchin proceeds to their rendezvous, for a counsel with his chums. To avoid detection, they cause themselves to be transformed into gnomes. They resolve to frighten Hebe to death, and dig for some horrid monstrosity to assist them, two of them as vampires, being posted in the air to guard against intruders.

Fig. 6. *A Cloud of Fire* shields them from the searching eyes of the enemy, on the further side of which we may see, if we are on the alert,

Fig. 7. *Hebe Consulting with Jupiter* (Statuary).—The father of the gods appears to her in the form of an eagle. She refreshes him with food and drink, and meanwhile relates her woes. He, promising a father's protection, seizes her lunch-baskets, and swears that he will capture the whole army of cupids, and bring them to her feet, not to be destroyed—oh, *never!*—but to be punished with mercy.

Fig. 8. *A Golden Veil* approaches, into which they both disappear—Hebe, delighted, to ask the assistance of her companions on the grand occasion of vengeance satiated, as promised by Jupiter—he, to make his captives.

Fig. 9. *Hebe's Revenge*; Grand Statuary Group.—The cupids are brought in baskets, given a thorough bath by the goddesses, and then hung upon lines of fire suspended in the air, for thorough desiccation. Hebe marries Hercules, and we now see poor

Fig. 10. *Cupid a Beggar* (Statuary).—Under such trial, our sympathies go out towards him, despite the just vengeance of the petulant Hebe.

We flatter ourselves that this makes the

picture more interesting, be it though a tremendous expansion of the imagination.

As a work of art there can be no superior in its line. Mr. Solon exhibited at our Centennial Exhibition, where he was awarded the highest prize, and is world renowned, having orders ahead for all he can do.

Measured by the rules we have already given you on composition, etc., this group stands the test.

Anything more simple and lovely and sweet in conception can hardly be imagined. It is as pretty as it can be, and is indeed a double study in the order of composition given in our last picture. Look at it as you will, it is beautiful and perfect.

The *plaque* is of the style first shown in this country by Mons. Solon, in 1876, and known as *pate sur pate*. To explain its nature further to you, we make the following extract from one of the reports of the World's Fair, in Philadelphia, as follows:

“The newest and most artistic work is done in what is called the *pate sur pate* process, or, literally, paste upon paste. The design is raised in white china clay upon a dark ground, the result being a most perfect imitation of a cameo in onyx or agate. These works are shown for the first time at this exhibition, none of them appearing at Vienna. M. Solon is the chief artist in this beautiful work.

“The process is as follows: White china clay is reduced to a liquid state, and when in this condition the artist with a thin brush paints the design upon the plate, vase, or other object, putting on coat after coat of liquid china until the desired thickness is obtained in each of the parts. Before burning, the china is opaque, but becomes translucent after burning. The artist, therefore, to properly distribute the light and shade, must put on the material thin or thick, and do this, too, without being able to judge of the effect by the eye; nor can any error of judgment be corrected by subsequent retouchings, as nothing can be done after the piece has been burned.

“Some of the most striking examples of this work are three *plaques*, or panels, and a couple of pairs of vases. The *plaques* are entirely new. One design represents Cupid

preaching; six virgins are his auditors, three on each side. The pose of the figures and expression of the countenances show as accurately as a painting how the lesson is received. The outlines of the limbs are clearly seen through the drapery which covers them, and the drawing shows the hand of an artist. Another represents Venus's dinner-party, in which the hostess is carving a heart. The third represents Wisdom chaining Love, Wisdom being rep-

resented by a blind old owl. These designs are original with the artist, and show a richness and grotesqueness of imagination which is quite remarkable."

Many other splendid things were shown by Mons. Solon, which we have not space to describe. They were all superb.

Next month, unless something else happens, you shall have the composition "with accessories thrown in," and many other good things to close the year.

Editor's Table.

ARTISTIC LANDSCAPE PHOTOGRAPHY.—Our beautiful country is so rich in varied scenery that it is a matter of regret that so little attention is paid to that unfailing source of picturesqueness, landscape photography. One could tell on his fingers the names of our best workers in this department.

However, the world here is awakening to this long neglect, perhaps spurred on by the cargoes of European views that annually are brought home by tourists. The demand for American views is on the increase, and energetic men are coming to the front, to meet it with a supply of excellent work.

Among these we take pleasure in naming Mr. J. H. HENNING, Johnstown, Penna. He has lately sent us some gems of charming scenery, made in his immediate neighborhood. Taste and judgment are shown in the choice of views, skill and good workmanship in the manipulation. The light is soft, and shadows well defined. One seems able to gaze away in, amid the shady nooks of the grove, and yet distinguish the forms of tree, trunks, and foliage.

These pictures are cabinet size, mounted on a heavy bevelled card with gilt edge, and placed on little easels they would make an attractive ornament for parlor mantel or table. We readily coincide with the remark of one artist, who, in examining the photographs, exclaimed: "By George! a fellow needs only put the color on here; the light and shade are just perfect."

We congratulate Mr. HENNING, and wish him continued success in this branch of his work.

PICTURES RECEIVED.—Mr. J. E. WATSON, Detroit, Mich., sends us some specimens of his cabinet and panel photographs. The panels are of

a bare-legged fisher-boy. With excellent accessories, few and judiciously disposed, it forms one of the most lifelike studies it has been our pleasure to receive. In this case Mr. WATSON has avoided the error into which so many fall: that of overdoing the matter in trying to imitate nature. Here is no undue conglomeration of unnatural rocks, artificial flowers, baskets, tackle, etc. The boy looks like any other boy out for a day's lark. He sits on a grassy bank beside a quiet pond; on the ground lie his shoes and jacket. He has just caught a fish, and is earnestly engaged in removing it from his hook. In the other picture he is starting for home, with shoes and jacket on one arm and pole over the other shoulder, looking as though he had not had *very* good luck. From Mr. J. S. YOUNG, Rome, Georgia, a number of samples of cabinet, promenade, and panel photographs. These pictures show that photography need not be behind the age, although far removed from the great business centres of the country. The negatives are clean and sharp, and prints most excellent; both showing a pleasing harmony, the result of care and good judgment. Pictures and circular from Mr. C. C. COOK, Fort Smith, Ark., who has just started in business in that place. The circular claims them to be "the finest pictures ever made southwest of St. Louis." Among them we notice one of a Choctaw Indian, aged 115 years, and he looks *fully his age*. Another of a very beautiful Cherokee race-horse, "Gray Alice;" a really *fine* picture. Mr. V. H. YOUNG, operator for ROBERTSON, Platteville, Wis., sends us various specimens of his work, which reflect great credit upon him. Among the lot are two rural scenes, which we would like to be able to place beside our illustration in our next number.

Mr. YOUNG's pictures are thoroughly harmonious in their arrangement, and this property would be greatly enhanced by comparing it with *our* next picture, so full of incongruities. From Mr. J. P. SPOONER, Stockton, Cal., several panel photographs. We are glad to see that this graceful style of picture continues to grow in favor among photographers. It is certainly far better adapted to standing figures than the old-style cabinet or even the promenade size. From Mr. J. S. MASON, Medina, O., a variety of portraits, made in his new studio, which show careful and tasteful manipulation, and great care in their production. From Mr. L. F. SMITH, El Paso, Ill., a very pretty snow picture; well done.

THE ROBINSON TRIMMER AGAIN.—The little tool holds its own now as ever; in fact, it increases in favor. Nearly every customer who purchases one acknowledges its receipt with some pleasant expression of satisfaction. Here is one of the latest from Washington, D. C.: "The trimmer works like a charm, and the neat work fascinates the public, and helps good prices. Why do not photographers generally give as neatly cut prints as chromo dealers do?"

STILL GOING BUT NOT GONE.—This is true of the leaflets, *To my Patrons*. We are constantly filling orders for the little favorites, and are ready for more. The supply is inexhaustible, and will continue so as long as there is any printers' ink to be had. All agree that this is the wisest way for advertising, perfectly invaluable to the photographers.

MESSRS. RIEMAN & TUTTLE, San Francisco, sends us their new business card. On the face are portraits of the two gentlemen, tastefully arranged, with their names underneath, so that a new customer is sure to know which member of the firm he is talking to. On the back of the card is their advertisement. The whole thing is a neat and attractive conception.

PHOTOGRAPH ROOM FOR SALE.—In Madison, Wis., Mr. J. M. FOWLER, the present proprietor, offers his place, business, and furniture for sale. He says it will be a bargain, and if an inexperienced party purchases, he will remain with them, and give necessary instruction. He solicits correspondence on the subject. His address is as given above.

AN ACCIDENT TO A PHOTOGRAPHER.—We have heard with regret of an accident which befell a

promising young photographer in Washington, D. C., Mr. RANALD DOUGLAS. While crossing Pennsylvania Avenue at the corner of Fifteenth Street, he was knocked down and run over by two horses, but not by the wagon to which they were attached. He had in his hand a bottle of cyanide of potassium, which was broken by his fall, and the contents sprinkled in his face. As soon as he arose, he ran into a drug store near by, and obtained the necessary antidote. We are happy to state that he is now recovering from what might have been a fatal accident.

COMMENDABLE ENTERPRISE.—Mr. SINGHI, of Binghamton, N. Y., lately was called upon to copy a card picture of Prince ALEXIS of Harleshausen and Barchfeld, Germany. The copies, cabinet size, were so good that two of them were sent to the royal original. His Highness was so pleased that he at once sent an autograph order for two dozen.

We suppose our Yankee artist will immediately place over his door: "Patronized by the Royal House of Hesse."

We clip the following from the *Press*, Philadelphia, October 7th:

"The frontispiece in the *Philadelphia Photographer* for October may be regarded as a gem. It is a photograph from the 'Village Photographer,' an oil painting by ANTON SEITZ, of Munich, painted for an exhibit in the Paris Exhibition of 1868 (and awarded a medal for its excellence), the picture itself now being in the possession of Mr. CHARLES L. SHARPLESS, of Philadelphia. The grouping is admirable, and (a sure test of excellence) the picture tells its own story. Even as a photograph, this is worthy of the highest commendation. Published by EDWARD L. WILSON, Philadelphia."

We have received a circular headed "A Decided Success." It relates to the R. & T. Brilliant Albumen Paper, sold by HIRAM J. THOMPSON, Chicago, and is filled with warm testimonials on the good qualities of the paper.

We would call attention to the advertisement of Mr. G. G. ROCKWOOD, 17 Union Square, New York, so long famous for his extensive solar printing business. To still further facilitate work in this department, he has purchased the platinum process, and is now prepared to make solar prints for the trade. He gives a price-list of very reasonable rates for both silver and platinum prints, both of which he will make for the

trade. Read his advertisement in *Specialties* page of this number.

As the year draws to its close, we find our friends do *not* drop away like the falling leaves, but, on the contrary, send in warm words of cheer and good wishes for the coming year. And they mean to help make their good wishes come true, as is proved in the few extracts given below:

"I feel ashamed of myself when I think how I have let you struggle along without my small quota to the *Philadelphia Photographer*. I therefore inclose you postal order for the full volume of 1879, and hope when 1880 comes, and we still continue to live, that you will still send it right along."—O. PIERRE HAVENS. "I received the numbers of the *Philadelphia Photographer* except the January number, which I wish, for I am much pleased with these, and do not see how I have done without them. Please send me the January number."—L. R. BLISS. "My subscription for the *Philadelphia Photographer* ran out with the June number. Since the first of July I have been travelling about, photographing in a tent; but now I have settled down for the winter, and I miss the *Photographer*. Please send it for the last six months of this year (from July to December). Check inclosed."—WILLIAM L. TENSH. "Please send me the September, October, November, and December numbers of the *Philadelphia Photographer* of 1879. I hope to be an everlasting subscriber now."—A. C. FALOR. "I want your *Philadelphia Photographer* for September, October, November, and December, for which I send \$1.25, and you can count me in for 1880 on your subscription list. I am, like a great many others, sick of *humbugs*, and certainly our beautiful art was never so much tainted and afflicted as at the present time with fraud and the devil. I have been 'going it straight' with silver process, and am better satisfied than if I had *dabbled* into the worthless processes."—H. J. RODGERS. "There is too much of good in it for me to lose."—A. J. WHALEN. "I think that the *Philadelphia Photographer* improves with every number, and wish I could induce others to subscribe for it, as it would be to their interest as well as yours. Wishing you success with both *Mosaics* and the journal, I remain."—FRANK THOMAS. "I am out of all photographic journals now, and will fall back to my FIRST LOVE again, the *Philadelphia Photographer*, which you will please send to me. Shall probably continue another year."—L. GILMORE. "You will find inclosed post-office order for your *Philadelphia Photographer* for one year. I am taking ANTHONY'S *Bulletin*, the St. Louis

Practical Photographer, and desire the *Philadelphia Photographer*, as I am assured it stands at the head of photographic publications in America."—WM. R. WRIGHT. "Every number of the *Philadelphia Photographer* is worth its weight in gold in my estimation, and I mean to continue a subscriber as long as I am in the business. In fact, every artist that does not take it is losing a hundred times the price of it every year. I started in business with very little practice, and no one to give me a helping hand except your noble journal. With it, and the aid of some other of your books, I am now getting on splendidly."—M. ELREY & SON.

MR. THEODORE LILIENTHAL, New Orleans, La., sends us a cabinet photograph of the orphan children of the late General HOOD. As a combination picture it is a real study. There are ten children, originally taken in six separate pictures.

They appear in easy, natural attitudes, scattered about a pleasant room. In the foreground, fast asleep on a small lounge, is the youngest of the children, an infant of three months. To the left are the next youngest, a pair of little twin girls, and back of these are the seven other children. On an easel is a life-size bust portrait of General HOOD, and on the wall a smaller portrait of his wife, who died a short time before him.

MR. LILIENTHAL has kindly presented two hundred of these pictures to the Hood Relief Committee, to be sold for the benefit of the little orphans. The picture is a silver print.

THE LINEN PROCESS.—Since the publication of the platinum process as applied to fabrics, several of our correspondents have written us, asking for the old method of making a photograph on handkerchiefs or other articles of linen. To save much letter-writing, we answer, one and all, the process for printing on linen was given in "Gihon's Gatherings," February, 1879, page 51.

PLATINOTYPES ON EXHIBITION.—We have noticed at the door of MESSRS. BROADBENT & TAYLOR, 914 Chestnut Street, a fine display of platinum prints worked up in india ink and crayon. They are extremely soft and brilliant, and leave nothing to be desired.

MOAICS, 1880.—Is now in press, and we hope in a month to have it ready for our readers. We always accept with pleasure any testimonial of appreciation of our little year-book. The fol-

lowing extract is quoted from the letter of Mr. V. H. YOUNG, whose pictures we have noticed elsewhere :

"I owe my first instructions in photography to the dear old *Mosaics*' 'Lessons to New Beginners,' and there is nothing I have gained as much from for the money as from its pages from year to year. I always look for the new issues as soon as out."

Another correspondent, in speaking of this work, says, "May *Mosaics* become as venerable as the mosaic art."

SUPERIOR NEGATIVE RETOUCHING.—Mr. J. E. BEEBE, Chicago, has sent us some samples of his cabinet photographs, which serve the double purpose of exhibiting his skill in photography and the very superior negative retouching of Mr. BARTHOLD MEYER, formerly head retoucher with KURTZ, SARONY, and at some of the leading studios in Chicago. Mr. MEYER has lately opened a studio of his own at No. 182 South Clark Street, Chicago, for the purpose of working for the fraternity at large. Mr. BEEBE very warmly indorses Mr. MEYER's ability in manipulating both the negative and the positive, also in doctoring and repairing an injured or faulty negative. As a sample he sends two cabinet photographs from H. ROCHER, Chicago. The first picture is of two young ladies sitting very close together; in the second picture the figure of one lady is taken out, and in her place some graceful accessories are introduced. The result is very satisfactory, and we think it fortunate that Mr. MEYER has now placed his skilled services within the reach of the trade.

Mr. J. C. SOMERVILLE, St. Louis, Mo., sends us his Bargain List, general list of goods, and Illustrated List of Frames, Albums, and Stereoscopes. He offers easy terms and attractive inducements to purchasers. Now is the time to buy your fall stock, when the dealers all have their shelves full of new goods fresh from the factory. Don't wait until nearly Christmas, and then take what you can get, after everybody else has been ahead of you. Please notice Mr. SOMERVILLE's advertisement on another page, and send to him for price-list. He calls special attention to his *Bargain List*, in which he offers some unusual inducements. It is just out.

A CHANCE TO BE INSTRUCTED.—Mr. W. M. KNIGHT, 306 Main Street, Buffalo, N. Y., having

sold his business there, proposes to make a tour over the country, and will be in shape to assist any parties who may wish to better their work, with the necessary instruction, on favorable terms. Mr. KNIGHT has been a practical business photographer for over thirty years, and is thoroughly competent to teach. Here is an opportunity not often offered, and the wise will take advantage thereof.

THE WOLFE PROCESS.—Mr. GATCHEL, of GATCHEL & HYATT, writes us that all who purchase and work this process, are perfectly satisfied that the results are better than by any other process. Easy manipulation is a claim also made for this method. Mr. GATCHEL further says: "We do not want any one's money without giving full value for it. I believe Mr. WOLFE has secured great improvements, and should share the reward with others who purchase his invention."

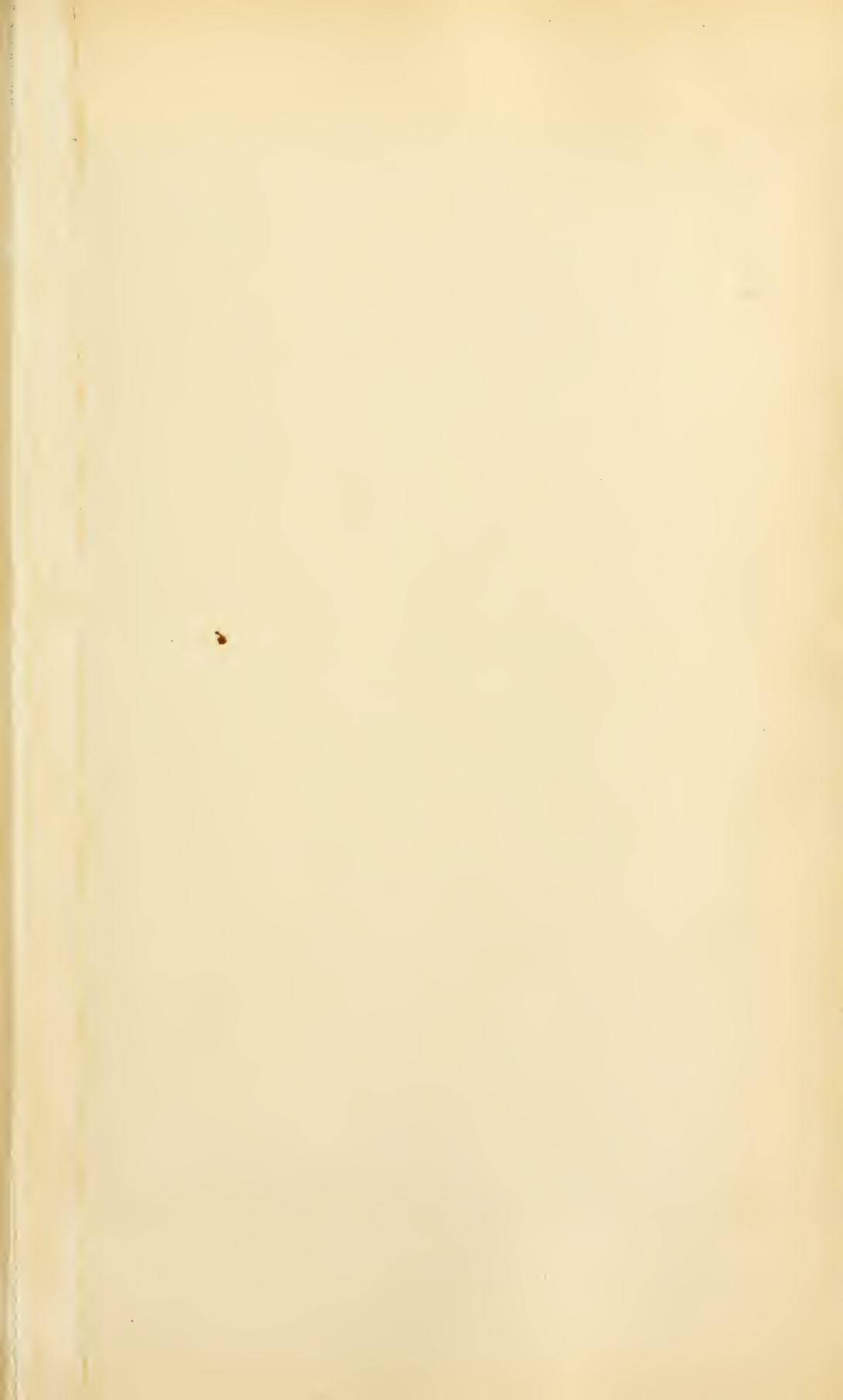
CORRECTION.—On page 228 of our August number, we make Mr. FRANK THOMAS, in his article on "Water Blue," say, "Use aniline blue No. 1." It should read "aniline blue, letter I or R." So says Mr. CLEMONS.

PREMIUMS GIVEN.—Mr. J. PITCHER SPOONER again "took all the photographic premiums" at the Stockton, Cal., Fair, held recently. Mr. H. J. RODGERS, Hartford, Conn., was awarded the Society's medal and diploma at the late State Fair of the Nutmeg State. All good.

A SUPPLEMENTARY CATALOGUE to our *Lantern Catalogue*, fifty pages, is ready, and contains lists of the slides in the twelve new *Journeys* described in Vol. II of *WILSON'S Lantern Journeys*, besides descriptions of several new lanterns, outfits, and lists of new dissolving and other views. See advertisement.

THE ARTOTYPE Co., after a vain career, has dissolved, and the management of affairs gone into the hands of Messrs. HARROUN & BIERSTADT, 58 and 60 Reade Street, New York, gentlemen who are well and favorably known to the fraternity. See their advertisement.

OUR German and French correspondence both failed to come to hand *in time* this month, and must lay over for our next. Severe storms at sea have recently delayed the foreign mails generally.





S. V. ALLEN.

Boston Public Library,

FREEMONT, ILL.

T H E

Philadelphia Photographer.

Vol. XVI.

DECEMBER, 1879.

No. 192.

Entered according to Act of Congress, in the year 1879,

By EDWARD L. WILSON,

In the office of the Librarian of Congress, at Washington, D. C.

WHAT CHEER?

THIS is a query put in the interest of the *publisher* of this magazine. We have tried very hard to protect, and caution, and inform, and benefit you during 1879, and now the time is near at hand when we always have to step out from our editorial sanctum, and ask you to be pleased to let us know *soon* whether our interests are to continue to be one or not during 1880? There are a great many items of preparation which we must attend to a long time ahead, of course; but there are many others for your good, that we cannot undertake until we are substantially assured that we shall stand at least as well during 1880 with our friends, whose subscriptions expire with this issue, as we do now.

Knowing the importance, then, will not you please *renew promptly*? It is *very* important to you to have continually such a magazine as ours. About as soon as you have read this, you will receive our annual circular, giving you premium and club rates; and with this the usual *order-sheet* will reach you. Please give them attention at your earliest convenience, and fill up the order-sheet as liberally as you can. The favor will be reciprocated fully. We are no longer in doubt as to *which way* to go. Our way is *with you*.

Besides the many good things we shall do otherwise, we are going to give you the

whole of Burnet's *Education of the Eye*, a splendid art-work (see page 3 of cover), which alone is worth \$10.00. Besides this fact, please observe our discount given on books, when three are ordered. Now is the season for reading; take advantage thereof.

The year 1880 is going to be a prosperous one. We never felt more assured of good times coming than now, and that feeling pervades in all quarters.

Secure the *Philadelphia Photographer* at the earliest opportunity, any way; and even if times should come up slowly, you will have what is our earnest wish for you all, a *Happy New Year*.

OUR PICTURE.

SOMETIMES very excellent lessons may be obtained by studying the productions of ourselves and others which are not up to the highest standard of excellence. Many of our best and most successful men of business acknowledge that they have been taught more by their own mistakes and blunders than in any other way, proving the truth of the old adage that "experience is the best teacher."

Such being the fact then, and having already held up to you some examples that were, at the time, the best we could get to illustrate the remarks we wanted to make plain to you on the subject of accessories

and their use in the studio, we now beg your consideration of what is an excellent example of plain photography, but full of mistakes in the arrangement of the accessories, and in the composition generally. What these mistakes are you may readily discover, if you will measure the picture by the rules given in what we have already written, and in the excellent articles which accompanied the same, extracted from higher authorities.

But as this may be expecting too much from some of our less experienced posers, we venture to assist them by calling attention to a few of the points which "hurt the eye" of the correct poser and good artist.

In looking at a picture which pretends to be any sort of a composition, our first effort should be to interpret the meaning and intention of the artist in producing it, and then, using the rules given us, by analysis, discover whether or not he has succeeded in carrying out his object. Let us illustrate this by coming at once to "Our Picture."

To serve our purpose, our artist has evidently endeavored to illustrate an event which may occur in the life of any fair maiden, namely, the coming of a welcome visitor, which enables us to name the picture without any impropriety *Expectation*.

The model is properly posed, and the lighting well managed. She has done her best to carry out the idea of the picture, for all care has been driven away by a smile of happy expectancy.

But her surroundings are most inharmonious. Clothed in warm winter dress, she sits by an open window, which has been, by some strange freak of the architect, placed at the foot of the stairway. Notwithstanding this, the parlor table and the evening lamp have been brought in to back our expectant model, in case the sunlight falls short, and that beautiful Rembrandt effect be lost to the view of her appreciative caller. No expense has been spared upon the elaboration of the window, and silk and lace, curtain and shade are brought in, to puzzle us again as to the season of the year.

We should be in no doubt as to this when we look out upon the landscape and see the trees in full leaf, the expanse of water unfrozen, the distant rocks uncovered by snow,

and in the dim maze beyond a tiny bark under full sail; but when we look inside again, and observe the trailing branches which so abound about the window, we are forced again to think of winter, until we see the bird-cage hanging there in air which must chill the little creature, and up above the stairs so high that it must be difficult to reach him, especially as he is free to fly away into his natural element if he chooses.

The abundance of gas-fixtures also suggests evening, while the strong light which comes in the window surely forces us to be undecided as to that even. Indeed, the whole picture is spoiled by an utter lack of harmony, caused by an undue crowding in of incongruous accessories, of such shape and form also as to catch every twinkle of light, which causes the eye as much pain to accommodate itself thereto as a chromotrope in a magic lantern, and which give no thought whatever of proper composition.

There is not a quiet spot upon which to rest the wearied vision, unless we join the young lady in her expectation, and look out upon the distant view.

All this will be better understood, and the real merits of the picture appreciated, if the student-reader will take the pains to cut out a paper mask, $2\frac{1}{2}$ inches wide by $6\frac{1}{4}$ inches long, and place it upon the picture, so that on the right extreme only the outer edge of the hanging curtain will show, and on the left just a little of the inner edge of the window-frame, while at the bottom the mask barely touches the skirt of the lady's dress.

The effect will be that of a really pretty and excellent panel picture, quite harmonious in most respects (inasmuch as the photographer cannot always control the matter of dress), and clipped of the majority of the breaches of art which we have just pointed out.

Thus far we have criticized our picture solely with reference to the valuable lessons it might be forced to yield for the benefit of our readers. In doing this we have *assumed* the existence of certain facts for purposes of illustration. Mr. Allen assures us we have by no means exhausted the list of actual incongruities; in fact, he has kindly suggested to us (to use his own words) "that

an entomologist would not permit a butterfly to alight on perpendicular glass in any event, more especially with its feet outward in the air, and holding on by the back of its head. That no 'lady of the house' possessing good taste would weight a balance-vase with shingle-nails, or leave the store tab on the waiting-room lamp. That no florist of good repute would allow his ivy-leaves to 'break joints,' nor the leaves of the ivy and the maple to grow on the same stem, nor either of them to grow on wires; nor would he permit even the time-honored rose to usurp the functions of a creeper, much less a wax-plant to turn its leaves from the chief light. That no truly smart architect would let his mouldings diverge, his step stop short of its support, or the seam show beyond the mitre, though it is just possible that he might, without help, mistake the brilliantly lighted entrance to a conservatory for the gloom of a stairway, and so, in the innocence of his heart, hang his bird-cage low enough to thump his visitor's hat out of shape."

And finally, Mr. Allen says, evidently judging his own picture on its merits, and sarcastically at that: "Few artists would have the courage to offer a sitter a book, open at a page of horrors, of lightning-flashes and general desolation, and then try to evoke a cheerful expression."

Now, that we have had our lesson from the picture, as we have actually presented it to our readers, let us do further justice to the real merits of the negatives; let us, in fact, follow the instructions of Mr. Allen himself.

First, we will regard the step simply as he designed it—the entrance to a conservatory, and the vines and bird-cage merely as introductory to the same. Next, we will vignette the figure of the lady until all the accessories have disappeared into delicate, fleecy masses of light and shade—have *lost their aggressive individuality*, in short. Finally, we will very slightly tint or *gray* the parts vignettied, and we have before us the artist's real design, and more of an artistic picture.

We are greatly indebted to Mr. S. V. Allen, of Freeport, Illinois, for his generosity and co-operation in this matter. He made the negatives for our purpose, and at our request permits this use of them.

The chemical work is all one could desire. The negatives as such are worthy studies, and we fully appreciate his willingness to allow us to use a picture so open to criticism over his name.

His noble desire to help us correct what is a growing offence among photographers, entitles him to the grateful thanks of us all. Few would consent to do it, hence the greater praise should go out towards him.

Many, many incongruous pictures come to us. One before us now represents a young lady reaching out of a window clad with a profusion of vines, to pick a flower from a plant which stands in a pot placed upon a marble-top table on—nothing, beneath the window.

Let us drop the subject for this month, referring you, in closing, to further extracts from Dwight and Robinson, on other pages.

The prints were made at our own rooms by Mr. H. C. Bridle and staff, on the Extra Brilliant S. and M. Dresden paper, sold by Mr. G. Gennert, Maiden Lane, New York.

ACCESSORIES AND DRAPERIES.

TO aid us still further in making plain to you our lessons on the composition and arrangement of the picture, we draw once more from our invaluable teacher, Dwight, whose excellent remarks on the subject of accessories, draperies, etc., must not be overlooked by the careful photo-art student.

"Nothing has so bad an effect as a picture crowded with accessories that have no connection with the principal object or group. When well chosen, and properly arranged, they help to tell the story, and heighten the interest of the scene. Yet there is scarcely any pictorial subject that does not require the expression and character obtained by the introduction of some accessory. Let an artist picture a female figure expressive of holy resignation: it serves as a representation of one class of humanity. If he adds a wheel to his costume, it is marked at once as St. Catharine. A tower introduced as an accessory would have marked it as St. Barbara. A picture of the two Marys at the tomb, seated and waiting, requires no accessories. Anything added to the tomb and the two figures would only serve to di-

vert attention, and destroy the beauty and simplicity of the subject represented, and would weaken rather than add to the expression.

"It is universally allowed that Raffaele excelled all other painters in a graceful arrangement of drapery, and a natural disposition of the folds. By studying the principles of the ancients, he learned to consider the figure as the principal part, and that drapery should be regarded as an accessory; that it is intended to cover, and not to conceal; that it is employed not from caprice, but from necessity. Consequently the dress should not be so narrow as to constrain the members, nor so ample as to conceal them, but suitably adapted to the size and attitude of the figures represented. His ample draperies had no useless folds, and were bent at the articulations. The form of the figure indicated the form of the folds, and on the great muscles he formed great masses. When any limb was foreshortened in the drawing, he covered it with the same number of folds as if it were extended, but crowded them in proportion to the foreshortening. By the folds of his draperies, it is easy to determine the attitude of the figure previous to the one in which it appears. For example: whether the arm were extended or reposing immediately before the action in which it is represented. This was an expression he carefully studied on all occasions. When the drapery was to cover the leg or the arm but partially, he made it cut the member obliquely. His folds were of a triangular form. The reason for this is found in nature; for all drapery, after being extended and then falling again under the pressure of the atmosphere, is naturally formed into triangles. His whole practice demonstrates the theory that the movements of the figure cause the peculiar form and position of the folds exhibited in the drapery that covers it. . . .

"If it is light and gay, a much greater variety of objects and of colors may be admitted than if it is grave and majestic. By multiplying objects, a greater variety is obtained in line, light and shade, and color, which contributes to gayety. A variety of objects is inconsistent with the simplicity so essential to the grand style. In pictures

of this character, variety must be considered with reference to that undivided attention which a great subject demands.

"In relation to art, true simplicity is the opposite of exuberance or pretension, and requires that the effect intended shall be produced by means neither numerous nor complicated. Simplicity should pervade all parts of a work, from the general plan to the execution of the details. The best works of art, those that are the most pleasing, the most enduring, and produce the most forcible impression, are always characterized by simplicity.

"Proportion is requisite in everything intended to please the eye. The most cultivated taste, and the most practiced eye, can best judge of proportion. In works of art, it refers, first, to size; next, to the degree of light and shade; and again, to the force of expression required in the character or scene represented. Any work is in good proportion, if its details are neither too large nor too small, when viewed in relation to the whole or to each other.

"To the grace and beauty of the whole work, harmony is indispensable. Without harmony, each part may fail of the effect intended; however true in design. There must be harmony of line, harmony of grouping, harmony of light and shade, harmony of coloring, harmony of expression. Each part must be so adapted as to correspond to the rest. The attitude must be in keeping with the expression; the color with the subject treated; and the accessories must be true, both to the character and the age represented. A harmonious whole is always more or less pleasing in itself, independent of subject or style.

"Lastly, breadth is essential to harmony. According to Allston, 'by breadth is meant such a massing of the quantities, whether by color, light, or shadow, as shall enable the eye to pass without obstruction, and by easy transitions from one part to another, so that it shall appear to take in the whole at a glance.' To this, unity is essential. Unity is distinct from harmony, and requires one point of view, one focus of light, one tone of color, one prominent character or group, one leading idea. There may be unity of parts when harmony in the whole is entirely

wanting. When the objects introduced in a composition are multiplied, scattered, and divided, the eye, in searching for the principal object of interest, becomes wearied and perplexed, and the picture is then said to want repose. . . .

"In learning the rules for composition, as in all other departments of art, the artist must study nature to find his fundamental principle. And in doing so, he will learn, that in accordance to this law of unity of the mind, but one feeling or sentiment is directly and decidedly addressed by any one production of nature. Flowers having the strongest perfume, like the orange, jasmine, and lilac, are either white, or most delicately tinted. In the charms displayed by the gorgeous lilies and tulips, the eye alone is gratified. Brilliant birds are never great singers. People who are regularly beautiful are not gifted with strong mental capacity; for according to the laws of harmony, strength of character is too decidedly marked in the physical development to admit of the delicacy that is essential to regular beauty. We find every degree of strength and beauty, every variety of element, and every possible variety of combination in the human form and character; and, according to the law of harmony that pervades life, we also find, that the intermediate combination that serves to unite and harmonize the two extremes, partaking alike of the character of both, is never wanting. . . .

"Fuseli says, 'By the choice and scenery of backgrounds, we are frequently enabled to judge how far a painter entered into his subject; whether he understood its nature; to what class it belonged; what impression it was capable of making; what passion it was calculated to rouse. The sedate, the solemn, the severe, the awful, the terrible, the pleasing, the solitary, the gay, are stamped by it. Sometimes it should be negative—entirely subordinate, receding or shrinking into itself. Sometimes its forms, sometimes its colors, ought to command. A subject in itself, bordering on the usual or common, may become sublime or pathetic by the background alone, and a sublime or pathetic one may become trivial and uninteresting by it.' The student will readily perceive, that no definite rules can be given

to guide him in this department. In some subjects, it is required that the principal figure should be distinctly seen, and again that it should be partially lost in the background. Success depends as much upon an eye for effect as upon artistic skill.

"By a story told of Rubens, we have authority for asserting, that to the effect of the picture, the background is of the greatest consequence. He was once offered a pupil, with the recommendation of being already so advanced in the art, that he could immediately assist him in the backgrounds. Rubens smiled, and replied, 'That if the youth was capable of painting backgrounds, he did not need his instruction; that the regulation and management of them required the most comprehensive knowledge of the art.' . . .

"It will be readily seen, that the study of costume is of great importance to the artist, yet he must be careful not to go too much into detail in regard to time, place, etc. The province of art allows him a certain latitude, of which he must avail himself, if he would make a pleasing picture; on the other hand, he must be careful not to err in taking too much—between the two extremes he will be guided by his taste and judgment, rejecting what is unnecessary to truth, and admitting all appropriate beauties and characteristics. There is, perhaps, no department of art, where taste and propriety are so requisite, yet many instances occur among works of the great masters, where they apparently attached no importance to the costume of a picture. These the student must not take as a guide: for instance, a picture of Eve, having her hair tied with blue ribbons; or the Israelites represented with muskets, as in Tintoret's picture of the 'Falling of Manna.' . . .

"Picturesque figures are those that are the most free from the restraints of habit and dress that belong to artificial life; the crippled beggar with his tattered hat; the ragged urchin filling his pitcher at the rippling brook; the gipsy girl with her gipsy costume, etc."

Subscribe now for 1880, to insure getting your January number promptly. It will be a valuable one. See offer on page 3 of cover.

MR. ROBINSON ON ACCESSORIES.

IN order to further impress those who need instruction on that score with the necessity of giving attention to our papers upon the use of accessories, and other art topics, we make extracts again from Mr. Robinson's excellent *Pictorial Effect in Photography*, from the chapter on "Accessories." Mr. Robinson heads his chapter with the following from that immortal artist, Shakespeare:

"Fit it with such furniture as suits
The greatness of his person."

"It shall be so my care
To have you royally appointed, as if
The scene you play were mine."

He then dissertates upon five or six examples of photography before him in a way similar to our remarks herein upon *Our Picture*, and says that in an album of one hundred pictures at hand, no less than *seventy-eight* of them have a column or balustrade introduced! Happily, however, since then (1869) those once chronic accessories have been generally laid aside, but for others just about as inappropriate and unmeaning.

Mr. Robinson then plunges warmly into his subject as follows:

"But if you have any pride in your art, if you desire to do the best that can be done, you must eschew imitations, and have nothing in your studio but genuine furniture of the best kind, and of good design and character. When the photographer is furnishing, he would find it a good plan to fit up, not only his studio, but his reception-rooms also, with chairs of different patterns—a 'Harlequin Set,' as collectors of old china would call it—so that he may be able to make a constant variety in his pictures. He would do well to avoid the elaborately carved, high-backed chairs, so constantly seen in photography, and seldom anywhere else, the high backs of which often stick out round the head like a Gothic glory: if this chair be used at all, it should be so arranged that the head of the sitter is quite clear of it. Dining-room and library chairs are always useful; so also is that kind of chair to which the name of *Prie-Dieu* is given, especially for standing figures. It is very difficult to meet with a good arm-chair suitable for photographic purposes. The chairs

of the present day are made more for comfort than appearance, and are so low that the sitter is dwarfed and foreshortened. It would pay manufacturers to employ a good designer to supply them with patterns and make them for the profession.

"After chairs naturally follow tables. It is scarcely necessary to say anything against the little round table, about twelve or fourteen inches in diameter, to be seen in many early photographic portraits, the use of which is now gone out, except in the smallest and lowest glass sheds. The furniture in a picture should give an idea that there is space in the room; this is not done when a small table is employed, obviously because there is no room for a larger one. A long, oval table, about three feet six inches by one foot six inches, is a very useful size and shape; it should be made light, and upon large castors, that it may be easily moved. This should be provided with one or two good covers of a quiet pattern. In a table-cover, as in the covers of chairs and cushions, violent and 'noisy' designs should be avoided. As a change from the plain table, a more elaborate carved-oak table may be admitted for occasional use, and so may a judiciously selected cabinet; but it must be always remembered, in introducing these accessories, that it is the portrait of the sitter that is required, and which must be most prominent, and not the magnificence of the fittings of the studio, which may be 'richly suited, but unsuitable.'

"Some photographers employ a table which can be raised or lowered, to suit the stature of the sitter, by means of rackwork. This, in the hands of a photographer of great judgment, may be a very useful accessory, but it is a power that should be employed very sparingly, and within very narrow limits. If it were raised too high, it would dwarf the figure by comparison; or, in the reverse case, by screwing it down too low, it would transform the sitter into a giant, reminding us of the *carte-de-visite* of the short man whom *Punch* represented as having his portrait taken surrounded by toy furniture. The same principle has also been applied to the pedestal and column.

"The great idea of many photographers, in taking standing figures, seems to have been

that they must have something to lean upon, and, therefore, the want was supplied by a pedestal that outraged nature, as I have already said, most abominably. It is not necessary to an easy and graceful effect that the figure should appear to be too tired to stand on its own feet. Lounging is no more graceful than is a lisping and insipid manner of speaking gracious, but tends more to what Sir Joshua Reynolds called the most hateful of all hateful qualities, affectation. If people look well in a standing position at all (which some certainly do not, and should never be taken so), they will be found to do so without the aid of a prop; but still, for the sake of variety, and because some people have been so often taken with a support that it has become a custom with them from which they do not like to depart, it is as well to have something of the sort at hand. The best piece of furniture of the kind is a cabinet. A low bookcase is not objectionable, neither would be a well-designed what-not, but the ugly, meaningless pedestal should never be used. I should consider I was doing a great service to the art progress of photography if I could induce all photographers who have columns and pedestals to burn them at once. Do not send them to the broker; he may sell them again, to do further mischief.

"A few ottomans and footstools of various sizes should always form part of the furniture of the studio. They are especially useful in grouping children. The carpet of the room should be of a small, neat pattern, and contain no great contrasts of dark and light.

"A great deal can be done, and very beautiful pictures made, by the mixture of the real and artificial in a picture. Although, for choice, I should prefer everything in a photograph being from nature, I admit a picture to be right when the 'effect' is natural, however obtained. It is not the fact of reality that is required, but the truth of imitation that constitutes a veracious picture. Cultivated minds do not require to believe that they are deceived, and that they look on actual nature when they behold a pictorial representation of it. An educated observer does not, like that Moor to whom Bruce, the African traveller, gave the picture

of a fish, believe that the artist had made a reality, and say: 'If this fish at the last day should rise against you and say, "Thou hast given me a body, but not a living soul," what should you reply?' Art is not the science of deception, but that of giving pleasure, the word pleasure being used in its purest and loftiest sense. For this purpose—that is, the mixture of the real with the artificial—the accessories of the studio should receive the addition of picturesque or ivy-covered logs of wood, ferns, tufts of grass, etc., either growing in low pots, or gathered fresh. It will be found easy to make up picturesque foregrounds with these materials, behind which a painted view or sky may be placed. If the background be well painted, it will be found to unite very naturally with the foreground. Care must be taken that linear perspective be avoided, and that the light fall on the figures in the same direction as it does on the painted screen."

A SIMPLE VOLUMETRIC METHOD

FOR DETERMINING THE STRENGTH OF SILVER SOLUTIONS.*

BY GEORGE BRINTON PHILLIPS.

IT is often a matter of some importance to be able to ascertain rapidly, and with some degree of accuracy, the number of grains of nitrate of silver in the ounce of bath solution, and for this purpose the actino-hydrometer is generally used.

Although this instrument is convenient, owing to the rapidity with which the test may be made, yet its indications are reliable only under certain conditions, and may prove a source of positive error. The actino-hydrometer merely gives indications based upon the density of the solution, which may be diminished by the withdrawal of the silver salt, and at the same time increased by the addition of foreign saline impurities. Thus a nitrate of silver bath, upon which a number of sheets of paper have been floated, will lose a certain proportion of silver; it will thus have its density diminished, but at the same time as an equivalent of sodium nitrate goes into

* Written for Mosaics, but received too late.

solution (during the double decomposition which takes place between the silver nitrate and sodium chloride in the paper), the density of the bath may be considerably increased, and the hydrometer will indicate a higher per cent. of silver than actually exists in the solution.

This uncertainty presents itself unless the solution consists of pure nitrate of silver dissolved in distilled water.

Such being the case, it is evident that the actino-hydrometer is only accurate when the above exceptional conditions are fulfilled, and as it is often desirable to know the strength of an old bath, which may be contaminated with various saline impurities, some other means must be employed to obtain reliable results.

The method known as "volumetric analysis," applied to testing silver solutions in the usual way, requires the use of a burette graduated into cubic centimetres—a piece of apparatus easily broken, and which is hardly adapted to the wants of the ordinary dark-room; but, as the principle upon which it depends is extremely simple, the following modification of the process is offered, which it is thought will come within the practical working of almost every photographic laboratory.

Before describing the method, it will be well to briefly explain to those not familiar with volumetric analysis the principle involved.

When a solution of salt (sodium chloride) is added to a nitrate of silver solution, chloride of silver is formed, which, being insoluble, is precipitated at the same time the sodium nitrate (the other product of the decomposition) goes into solution. 60 grains of sodium chloride are required to precipitate 170 grains of nitrate of silver. If, therefore, 1 ounce of water held in solution 170 grains of nitrate of silver, it would require just 60 grains of salt to precipitate all the silver as chloride; or, should the 1 ounce of water contain one-half the quantity of nitrate of silver (85 grains dissolved), then 30 grains of salt would be required to effect the complete precipitation. From this it will be seen that the quantity of salt required to precipitate a silver solution depends upon the

quantity of silver dissolved; and, therefore, to learn how much silver is held in solution, it is only necessary to find out how much salt is required to completely precipitate it. For this purpose a standard solution of salt is made, a given quantity of which will represent so many grains of nitrate of silver.

The simple process suggested, based upon this well-known principle, is as follows:

First procure a 1-ounce graduate, marked off in drachms; also one 16-ounce narrow-mouth, cork bottle, and one 8-ounce narrow-mouth, glass-stoppered bottle; this is all the apparatus required. Next take an ounce or more of common salt, and dry it in a clean dish over a gentle heat for an hour or more, until the little moisture it contains is driven off. When the salt is thus well dried, and cool, weigh out exactly 90 grains on a piece of paper, and pour it into the 16-ounce bottle, taking care not to spill any; then add exactly 15 ounces of water; common water will answer, but distilled or clean rain-water is much better. Cork the bottle, and shake it well until all the salt is dissolved. Label the bottle: "Standard salt solution for testing silver baths. Formula: 90 grains of salt; 15 ounces of water. Each drachm of solution represents 2 grains of nitrate of silver."

Now, in order to make the test, proceed as follows: Measure out exactly half an ounce of the silver solution (the strength of which you wish to ascertain), and pour it into the 8-ounce bottle; rinse out the graduate twice, with about half an ounce of water each time, and pour these washings into the bottle with the half-ounce of silver solution. Now add a few drops of pure nitric acid to the bottle, in order to render it decidedly acid to litmus-paper. Next pour into the graduate exactly 1 ounce of the standard salt solution, and add it gradually, a drachm at a time, to the bottle containing the silver solution. Put the stopper in, and shake violently for a few moments; the salt solution will precipitate the silver as chloride, and the shaking will cause the liquid to settle clear; add another drachm of salt solution, and shake as before; go on doing this until the silver solution begins to look milky after the addition of a drachm

of standard solution, and does not settle out clear. This is the critical point, as nearly all the silver has been precipitated, and a very small quantity of the salt solution will now effect the complete precipitation. Add the solution now, a few drops at a time, shaking well after each addition; and when the test-liquid in the bottle no longer shows a cloudiness after the last addition, the operation is completed.

To ascertain now the strength of the silver bath, it is only necessary to bear in mind how many drachms of the standard solution have been used in the operation. Suppose, for instance, it took exactly 7 drachms of the salt solution to effect the complete precipitation; as each drachm represents 2 grains of nitrate of silver, 7 drachms equal 14 grains to the *half ounce*, or 28 grains to the ounce.

If the test is always made with half an ounce of bath, the number of drachms of standard solution multiplied by four will give the number of grains of nitrate of silver to the fluid ounce.

Should it be found in another case, 8 drachms (1 ounce) was not sufficient to throw down all the silver as chloride, then another ounce of standard solution is measured out and added, in fractions of a drachm at a time, until the desired result is attained. If in this case $9\frac{1}{2}$ drachms precipitate all the silver, then $9\frac{1}{2}$ multiplied by 4 equals 38, or 38 grains of nitrate of silver to the ounce of bath.

In order to obtain accurate results, two tests should be made; the first will give an idea about how much standard solution will be required for the operation; then the second test must be made with care at the end of the trial, adding the salt solution, in portions of a few drops only at a time. As it is quite possible to read down to a quarter of a drachm on the graduate, the strength of the bath may be ascertained, at least within 1 or 2 grains to the ounce. There are a few points which, if observed, will add to the accuracy of the results:

1. In the first test, add the salt solution, half a drachm at a time, until the number of drachms required is known. In the second test, the standard solution may be added in greater quantity, until within a few

drachms of the critical point; after that is reached, add it only by drops, shaking well after each addition.

2. In order to drop the salt solution neatly, so that none of it runs down under the lip of the graduate (which would occasion loss, and vitiate the results of the experiment), rub a little soft wax or tallow just under the lip, up to the pouring edge; by this means the liquid may be dropped without any danger of spilling.

3. In order to read the graduate correctly, place it upon a level table, and have the sight upon a line with the markings. Owing to the adhesion of the liquid to the glass, it rises on the sides a little above the true level, and the readings should be made between the two liquid surfaces.

FADED COLORED PHOTOGRAPHS.*

BY F. A. WENDEROTH.

A FADED, plain photograph, I mean a photograph that has not been retouched or painted, is certainly something distressing; but a photograph that has been retouched with india-ink or painted in colors and faded, is no doubt an abomination. A plain photograph in fading disappears with the gradation of tints intact, presenting when on plain paper and when half gone the appearance of having been produced from an undertimed negative, the deeper shadows not fading quite as quick as the finer tints; whereas, in albumen prints, the shadows are affected in the same proportion or even more than the finer tints, and there is a certain degree of harmony preserved which is not the case with faded colored ones.

The unevenness of fading in the coloring of colored photographs is due to the different degrees of permanency in the pigments employed, some colors fading very quick, some slower, some not at all; and as some of these pigments are often mixed to produce certain tints, the effects produced by the different degrees of fading cannot be otherwise than destructive to the harmony of the picture, and often indescribably ugly.

Most of those engaged in coloring or

* Written for Mosaics, but received too late.

painting photographs have in general very little knowledge of the materials used by them, and perhaps do not care; all they care for is that the tints are brilliant; and when bought from a respectable dealer they think all is right, which is certainly a most unfortunate mistake.

As long as I have been practicing painting (for about the last forty years), it always has been my study to employ only permanent colors. But as, from my beginning in painting until many years after, I employed mostly oil-colors, I had fallen into mistaken convictions as to the stability of some coloring pigments. I have found that the permanency ascribed to certain pigments is to a great extent true only so long as they are used mixed with oils or varnishes. For this reason quite a number of them are accepted as permanent when they actually are not. Again, some are largely used which are so fugitive that even oils or varnishes cannot save them from destruction.

There are two causes which produce fading of color pigments when employed for water-coloring, viz., air and light. The first of course does not affect oil-colors, and in water-colors there are fortunately only two which are so affected, and these but slightly; they are red-lead and indigo-blue.

Oils and varnishes are to some extent a protection against the action even of light, but decidedly so with those that are subject to atmospheric influences. Water-colors, after their application, when dry, are in their natural state, and must succumb early to all injurious influences. Therefore those that are employed should be of unquestionable stability and permanency. The question now is which coloring pigments for water-coloring are absolutely permanent?

To answer this question is the object of these lines; and I think that after a series of extreme tests, I can give with perfect assurance the following results:

WHITES.

Winsor & Newton's flake-white, even when unprotected by any varnish, will remain untarnished or white for a long time, but is entirely unchangeable when protected by a thin coating of varnish of any kind.

Great care must be exercised in the selection of whites, as many that are sold are very unstable, and by oxidation become brownish; these should only be employed when the picture is to be varnished when finished.

YELLOWS.

In opaque yellows there is quite a variety of permanent ones. All the chrome-yellows, and those derived from iron-oxides, as yellow-ochre, gold-ochre, and other varieties, are absolutely permanent. The fugitive ones are Naples yellow, which is easily replaced by a mixture of chrome-yellow, madder-lake, or any iron-red, and flake-white.

Cadmium-yellow, which is so much employed and estimated in oil-painting, is very unstable; fortunately it can be dispensed with, as a mixture of chrome-yellow and some red will replace it.

With regret I must say that there is not one transparent yellow which is absolutely permanent. The most fugitive are the yellow-lakes, which in a strong light disappear in a short time; next gamboge (semi-transparent), then Indian yellow (semi-transparent), which lasts somewhat longer; last Winsor & Newton's aureolin (semi-transparent), which, when not exposed to strong sunlight, might be considered tolerably staple, but after an exposure of three months to summer sun showed signs of weakness.

This lack of transparent yellow is deplorable, as there is nothing with which to replace them, and to use the above-mentioned ones is suicidal.

REDS.

Red-lead, which actually is a cross between yellow and red, is one of those colors that will fade from atmospheric influences and light; when applied in water-coloring, unprotected, it will fade when in thin layers rather fast, but when protected, slow enough to employ it for work that is not exposed to strong light. As this color is extensively employed as a flesh-tint, I would advise its abandonment for this purpose, as it is easily replaced by a mixture of Winsor & Newton's pink-madder and deep chrome, both of which are permanent.

In reds there are only two kinds which

are absolutely permanent: those made from the madder-root, as pink, rose, deep brown, and purple-madder lakes. These, when genuine, can be relied on with the greatest confidence, as four months' summer sun, southern exposure, failed to make an impression. Those used in my tests were of Winsor & Newton's manufacture. With these madder-lakes, and the other permanent colors, all shades of red can be produced.

The other kinds are produced from iron-oxides, as Venetian, Indian, light, and other varieties, which all are, more or less, opaque.

All carmines, crimson, Florentine, scarlet, and other lakes, are worthless, disappearing entirely.

In vermilion I was sadly disappointed, having always (using the oil-color) looked upon it as a permanent color until using it with water. I submitted it to a strong sun test, when a comparatively short time sufficed to prove my error, and I found, instead of a bright red, a spotted, grainy, pale-brown smear. This is the more to be regretted, as it is a very useful color and difficult to replace. A mixture of flake-white, pink madder, and deep chrome or red-lead will yield a tolerable substitute in tint, but lacking body.

BLUES.

Cobalt blue, Winsor & Newton's new blue (an excellent substitute for ultramarine), French blue, and Prussian blue, are all permanent; a sun test during June, July, and August failed to produce the slightest wavering, but I was again disappointed in finding that I had to class indigo-blue among the worthless. Used as a dye it produces the more permanent blues, but when used in water-color painting it is not much better than vermilion, and has the other defect of being affected by atmospheric influences. It can readily be replaced by a mixture of Prussian blue, any of the madder-lakes, and a little india-ink or sepia, producing thus a permanent tint.

As greens can readily be mixed from other colors, I prefer to do so than to buy mixtures of which I do not know anything. Sap and kindred greens are too well known as fugitive colors to need mention. Prussian blue mixed with any of the above-

mentioned permanent yellows will yield any variety of green, and, with a little flake-white, opaque tints more reliable than any of the ready greens offered in the shops.

BROWNS.

In permanent browns there is an abundance; those prepared from iron-oxides, as burnt sienna and burnt umber, are absolutely unalterable. Raw sienna and raw umber should be avoided, as they grow deeper in tint in time, but they are easily replaced by tints mixed from ochres and blacks. Sepia, Vandyke brown, and asphaltum can be used without fear, and many more shades in brown can be produced by mixing madder and other tints with the natural browns.

BLACKS.

India-ink, bone- and lampblack, being of the same origin, are permanent. With these colors mentioned above, there is not a tint in nature that could not be reproduced by skilful combinations.

In painting the colors should be dissolved and applied with pure water; and when gum is used, it should be gum-arabic with a few drops of aqua ammonia to keep it fresh. Following the above advice there will be no more fading of the coloring of colored photographs.

LINOLEUM.*

BY JOHN C. BROWNE.

AFTER experiencing no end of annoyance from the use of carpets, mats, and oil-cloths, on the floors of my laboratory and dark-room, about five years ago I was induced to try what was then a new article, named *linoleum*. At that time but little information could be obtained in regard to its composition or ability to answer my requirements. I gave it a trial, and now, after many years' use, I must say that it has proved most excellent in every way. Chemicals of almost every kind have been spilled over its surface; water has been used on it in liberal quantities; but still it remains in the same excellent condition as when it was first laid on the floor.

* Written for Mosaics, but received too late.

Recently I have learned the composition of this floor-cloth, although a full description of its manufacture would be out of place in this paper. I will mention what articles are used in its preparation. A cement, made of oxidized linseed-oil, 60 parts; rosin, 11 parts; gum kaurie, 9 parts, is mixed with ground cork, in the proportion of equal parts. It is then rolled into broad sheets, which are afterwards stamped with an ornamental pattern.

Linoleum has one great advantage over oil-cloth, in not being cold to the feet when standing upon it. It is more like a carpet in that respect. This article would make an excellent covering for portions of the floors of skylight- and chemical-rooms.

A FEW REMARKS.*

BY CHARLES W. HEARN.

ON a former occasion, Mr. Taylor, of Philadelphia, called our attention to the direction of the eyes in the photograph. Not being willing that a good thing, like his article, should be lost, I would here allude to it, and cite the gist of his ideas on it.

Many photographers seem to be afraid to have the eyes anywhere but straight ahead, as the nose points, and the least variation either one way or another, seems to be cried against, when, on the contrary, it should be as customary to have them vary, as is now the custom *not* to have them so. Notice only for the next two days after reading this article, and you will observe that not one in fifty of the persons you converse with have their eyes as their nasal organ points, but almost always more or less to one side of it. A friend comes up to speak to you; you partly turn your head to address or to listen to him, and then turn your eyes the balance, if you can do so easily, otherwise you turn the body a little more, and the eyes still further around. Seldom do you turn your head fully around. Why should we, then, be so lame as to always have the eyes invariably straight ahead?

Then, again, this variety makes more animated, lively, and characteristic pic-

tures, possessing more energy, style, and effect.

Take up almost any photograph, and you will notice, in nine cases out of ten, that when the lighting is such as is known as the broad or old-fashioned, and not a "Rembrandt," that where all the "crows-feet" and lines from the corners of the eyes, nose, and mouth, show plainly on the light side (unless the retouching has been most ignorantly done), *there is little, if any, visible on the shadow side.* Why is this? In the majority of cases, it is because in making the negatives, the shadow has not had sufficient illumination to bring these lines out, etc. In my daily practice under the light, when it is inconvenient to me to light up these shadows (as they should be, to bring these traits out in the negative), on account of various local reasons, such as necessitating changes of position already obtained, and perhaps with some trouble, I make these crows-feet, etc., show in the negative, by simply taking an artist's stump, and rubbing the point of it on a piece of soft crayon, and very lightly darken those places on the shadow side of the face of the model, and then the negative will have definition on this side; whereas, before, it would have been a flat black shadow, with only definition discernible in the most observant places. It is better, however, to so illuminate your shadow, that by proper timing you can get all of the definition desired, without resorting to the dodge of soiling the face of the sitter.

Both sides of the human face, unless on account of some accident, are exactly alike, and in a photograph they should also appear so. Where there are lines under the eyes, by the nose and corners of the mouth, hollows in the cheek, etc., on one side, then should they also be on the other, *and to the same extent or degree of distinctness.* It should be the aim of the photographer that they come out so in his negatives, and also in the prints, after the negatives are retouched. Soften the lines, shadows, etc., in the retouching, if you wish, but do not utterly remove them.

Again, do not have your shadows as flat as a planed board, or as thin in substance as wet tissue-paper (if I may be allowed

* Written for *Mosaics*, but received too late.

the comparison). Endeavor to have them *nicely modeled*, and as rich and vigorous as on the light side of the face. If not so, the lighting and chemicals are faulty.

Avoid having bad catch-lights in the lights, as well as getting along without them in proper place. In the latter case the face is too far away from the light. A good catch-light is the life of the eyes.

Do not underexpose; give full time, and *do not* have your negatives any more intense than is required to give richness and brilliancy to the image. *There should be detail everywhere in the high-lights, as well as in the shadows*, and the only *pure white* should be the *catch-lights* in the eyes. This general difference of detail *need not necessitate flatness* at all; and it can be, and is, obtained without flatness in many galleries, I know. There is *meat*, then, in such a negative for the *artist-retoucher* to work upon, who will not overdo, and will preserve all those traits of character that make the life of a countenance. Print under several tissue-papers (to prevent rustiness), on paper silvered upon a bath with plenty of silver in it, and tone in about seven minutes, preserving an equal temperature throughout all the solutions, and you cannot fail to make good work.

ON PHOTOGRAPHING COLORS.

BY FRED. E. IVES.

EVERY photographer is acquainted with the fact that colors which look light will often photograph dark, while some colors that look dark photograph light. But I believe very few are aware of the fact that it is quite possible and practicable to entirely overcome this difficulty where short exposures are not essential.

Such a method is very valuable for copying oil paintings, and I use it to great advantage in making negatives of highly colored prints, and objects for photographs upon wood, where it is important that the details be very fine throughout.

Negatives of natural scenery, made in this way, are indescribably beautiful; the details develop richly throughout everything, whatever the color.

Hoping it may prove as useful to others

as it does to myself, I will describe the method which I have perfected.

I place the object to be photographed in a strong light if possible, and use a quick-working objective, directly in front of which is placed a lantern-tank, having thin plate-glass sides nearly half an inch apart. Fill the tank with a solution of bichromate of potash, containing 1 part of bichromate to 1000 parts of water. Focus as usual; then prepare a plate with *Newton's Emulsion* (I always manufacture it myself, and find it uniform and perfectly reliable) as follows:

As soon as the emulsion is set, pour upon it a little alcoholic solution of *chlorophyl* (formula below), and float it backwards and forwards for about thirty seconds, after which wash until smooth. Flow with tea organifier (tea $\frac{1}{2}$ ounce, water 10 ounces), rinse, and expose about two and a half times as long as is required with the plain emulsion without tank of yellow.

Develop with the sal-soda developer. (I make this double the strength recommended by Mr. Newton, and dilute where exposure is suspected.) If the bichromate of potash solution is too intense, blue and green will photograph too dark; if it is too weak, red will photograph too dark. I have given the proportions I find perfectly adapted to my tank, lens, and chemicals.

To prepare the chlorophyl, first extract everything soluble in water from myrtle or tea-leaves, by treating with a number of changes of hot water. Then dry the leaves, and the chlorophyl may be extracted at any time by treating about an ounce of leaves with four ounces of hot alcohol.

Myrtle-leaves yield the most chlorophyl, the solution of which should be a deep, pure, green color, and will remain good for a long while *if kept in the dark*. It spoils very soon if exposed to a strong light.

In manufacturing *Newton's Emulsion*, I find it advantageous to mix it in the morning. Try a plate once each hour after, and add the chloride as soon as it fogs, which is sometimes within three hours. The emulsion will then be good at once, and remain so. Be careful to give full exposures. Better over- than underexpose, and judicious development will make perfect.

The lantern-tank which I use is a "sci-

opticon-tank," made to order, with plate-glass sides; it cost \$1.25. Nothing could be better.

I have made two negatives from a highly colored chromo-lithograph, one by the usual method, the other by the method described above. The difference is wonderful. The effect in the first is hard and unsatisfactory, the graduations of light and shade all wrong. The second is remarkably soft, delicate, and brilliant. The colors photograph harmoniously, and not a detail is lost. The value of this method for making copies of oil paintings will be readily appreciated.

PLATINOTYPE.

BY WM. W. SEELER.

HAVING noticed, in a recent number of the *Philadelphia Photographer*, an article in reference to the above process, containing a statement that it was patented in Great Britain, it may not be amiss (pending the publication of the details) to state what has already been accomplished in that direction with a salt of iron as a base.

The *Dictionary of Photography*, by Thos. Sutton, B.A., published in London, 1858, speaking of the chlorides, says: "The chlorides of the alkalis and alkaline earths are used in photography, not as sensitive bodies, but as convenient salts for the production of those which are. . . ."

"The chlorides which would be especially likely to be affected by the light falling upon them, are the compounds of silver, *platinum*, and metals not easily oxidized; and also such metals as *iron*, which have several oxides and chlorides, and combine in more complex forms than those whose affinities for oxygen and chlorine are much stronger, and whose salts are much simpler. . . ."

"Iron, for instance, has four oxides and two chlorides, and the oxygen and the chlorine appear to have the power of replacing each other in some cases.

"Their relations resemble those of organic compounds more nearly than those of many simpler inorganic bodies, and would, therefore, appear to promise the production of compounds suitable for the production of photographic images. . . ."

"Cobalt, copper, iron, and manganese are especially remarkable for these properties, and many have been already found to be decomposed, or modified, by light and organic bodies. . . ."

"A persalt of iron in the pores of the paper is reduced by light to the state of proto-salt in the sunned portions, and upon this, by the reducing power of the iron itself, gold is precipitated in the metallic state, or silver, if nitrate of silver be used instead of the terchloride of gold.

"The chloride of gold is the basis of the *chryso-type* process, but it is merely a developer in this case.

"Chloride of gold (AuCl_3) forms, with chloride of barium, ammonium, etc., double salts containing an atom of each, and which crystallize in a regular manner with four or five atoms of water. . . ."

"The gold cannot be precipitated by alkalis from the solutions of these salts; and in this, and their constitution, they resemble the double salts of citrate of iron, citrate of ammonia, etc.

"Light does not appear to have the power of causing water alone to decompose chloride of platinum as it does chloride of silver; but when other substances are present which have an affinity for oxide of platinum (and, therefore, may be supposed to exert some force in its formation), then the decomposition by light will take place. . . ."

Again, referring to the chloride of platinum, the author speaks of the effect of light on its salts, and the decomposition of the same.

The following description of the "Uranium Printing Process," from the same author, shows that the results to be obtained from the use of uranium and gold and uranium and silver, are nearly identical with those proposed to be obtained from the use of platinum and iron.

URANIUM PRINTING PROCESS.

"A sheet of paper is first rendered sensitive to light by immersing it in a strong solution of a salt of the peroxide of uranium; it is then dried, and exposed under a negative to direct sunlight for about the same time as a silver print. A very faint visible image is thus obtained, which is then placed into a

weak solution of chloride of gold, or a strong solution of aceto-nitrate of silver. In the former case, a picture is obtained of a purple inky tint, and in the latter case, of a chocolate-brown tint; the print is then washed several times with pure water, and the operation is completed.

"These prints may be considered much more permanent than the ordinary sun-prints that have been fixed and toned by hypo and gold.

"This process is identical in principle with the CHRYSOTYPE PROCESS OF SIR JOHN HERSCHEL, PUBLISHED IN 1842, thus showing that the salts of uranium and iron are analogous."

It is interesting to note that at the time of the discovery of the "Uranium Printing Process," it was claimed that the pictures produced thereby would be more permanent than the ordinary sun-picture, but lapse of time has failed to confirm the claim so confidently asserted.

THE ARTOTYPE.

BY R. BENECKE.

THE P. P. stands for the *Philadelphia Photographer*, sometimes also for *Practical Photographer*. This time it stands for *præmissis prætermittendis*; and I will therefore go right in, *medias res*, and give you my opinion on the artotype, after working it constantly these past eight or nine months.

The artotype process has been for sale, and most photographers have had a chance, no doubt, to see samples of artotypes; so that pretty nearly every one of the craft will have had ample time to decide whether to invest a couple of hundred dollars or not.

The Artotype Company has spared no pains or trouble to draw the attention of the fraternity to it, yet there may be still some cautious ones who have waited until the excitement which was created after its appearance in this country had died out, and who will now, perhaps, be ready to make up their minds. Just for the benefit of these, I write these few lines.

About the process I have nothing to say now. A license is required, and this and

full instruction can be procured for money.

The only question remains now, who should go into it? If a candidate for artotypeship should present himself to me personally, and if I knew something about phrenology, I would examine my questioner's cranium first, and look for that big bump, "three inches above the left ear, on the other side of the head," indicating a *very large amount of perseverance*; for, take my word for it, it is required. To the fickle-minded I would say, "Desist, my friend; take ferrotypes, and be happy." Then I would decide whether it will pay him or not. This depends, in my opinion, upon the locality a photographer lives in. If he can create a demand for artotypes by making them, the public must have use for them. Therefore let us see what the artotype process is, at the present state of our knowledge, eminently good for.

On account of their lasting qualities, quicker and cheaper production, and not cockling like silver prints, artotypes are eminently fit for illustrating books, pamphlets, etc.; therefore a city in which books are made, or where a great deal of manufacturing is done, will offer a good opening. Being absolutely permanent, when printed in no fading colors (let me say here, in parenthesis, that artotypes will fade as well as carbon prints when printed in fugitive colors), they are just the thing for portraits, especially of larger size (8 x 10, and upwards), family pictures, etc., which you are anxious to preserve. Then, as an artotype, when printed on plain paper, offers the best possible surface to retouch and paint on, it is the process to copy old and fading pictures, excelling in this respect the carbon pictures by far.

From this you will see, that only in large cities and wealthy communities the artotype will flourish, but surely will not pay in places where the customers will visit all the galleries to find out who takes pictures for less than, say, seventy-five cents per dozen, and one or two *pro rata*.

For an amateur who does not care for money, it is decidedly the process, as the artotype, combined with dry-plate photography, will give more satisfaction than any process known to me at present.

Now, Mr. Editor, if these few remarks should help to lead a wavering friend in the right direction, I shall feel amply paid for the little trouble it gave me to jot them down.

A happy and prosperous New Year to us all! (Some would say, to *you* all, but *I* do not wish to be excluded.)

GERMAN CORRESPONDENCE.*

On Dr. Monckhoven's New Photometer—New Researches on Asphaltum and its Photo-chemical Properties—On Gelatin-emulsion Plates—New Enamel Plates—Stas's Researches on the Different Conditions of Bromide of Silver—Action of Sensitizers upon Gelatin-emulsion Plates—Monckhoven's Formula for making Gelatin emulsions—Bonnaud's Colored Photographs—Heliographic Decoration of Frames.

DR. MONCKHOVEN, who recently published such interesting experiments in gelatin emulsion, has since given us a description of a photometer for the use of the photographer, which, while being in construction very simple indeed, indicates, nevertheless, the chemical strength of the light almost as easily as the thermometer indicates the temperature.

The whole is based upon the development of gas through the influence of light. Ammoniated oxalate of uranium is decomposed in the light, in which process carbonic acid is liberated, and the quantity of the latter developed in a given time indicates the strength of the light.

The solution of ammoniated oxalate of uranium is poured into a bottle, *A*, which is closed with a cork, through which a fine glass pipe *D C* is passed, so as to protrude a few millimetres into the bottle. The developed carbonic acid gathers under the cork, and forces the liquid in the pipe to rise; and it is easy to determine to what extent the same has risen, by placing a slip of paper, *P*, containing a scale, *XX*, divided into centimetres upon the glass pipe.



* Received too late for our last issue.

If the light is strong and the pipe narrow (*i. e.*, of an aperture of about one millimetre), the liquid in the pipe will rise in clear weather several centimetres in a minute; and it is therefore practicable to use the instrument in the studio in taking pictures.

When not used, the instrument is kept under an opaque cover—pasteboard will do—and the same is only removed when an observation is to be made. The instrument can also be used in the carbon process; but then it will be better to use for the glass pipe a tube with a larger aperture, so that the liquid will rise slower.

The ammoniated oxalate of uranium is obtained by the following process: In 200 grammes of water 100 grammes of nitrate of uranium are dissolved. The solution is poured into a porcelain cup, warmed, and then a warm, concentrated solution of fresh carbonate of ammonium is slowly added by degrees, which causes frothing, and develops a yellow precipitation, which is dissolved again by adding some more carbonate of ammonium. The liquid is then left to cool till the next day, when the cup will be found covered with crystals of carbonate of ammoniated oxide of uranium, which are gathered up, dried between blotting-paper, and placed near a stove to dry thoroughly. Fifty grammes of the dry salt are now dissolved in a solution of thirty grammes of oxalic acid and two hundred grammes of water. Under development of carbonic acid, the carbonate is dissolved, and a solution of ammoniated oxalate of uranium is obtained.

The solution is filtered into a bottle of a capacity of about 250 c.c., which is filled with water up to the neck.

The extent to which the instrument will be serviceable has to be determined by practice. I made such an instrument, and it really showed sufficient sensitiveness; but I found that the temperature exercised a very marked influence upon the same. The solution is saturated with carbonic acid, and if the temperature rises, carbonic acid is set free, and, in consequence, the instrument will rise faster even when the chemical strength of the light remains unchanged. It is also observed that the instrument keeps on rising, even when the light is suddenly

shut off, as the carbonic acid is only gradually developed under the cork. Even an hour after shutting off the light, I noticed a material rising of the instrument; and therefore it is obvious, that while the contrivance will not give absolutely reliable information, it will, nevertheless, serve as an approximately correct indicator; and there is certainly room for improvement yet.

A few days ago Dr. Kayser, chemist at the Industrial Museum in Nuremberg, published a very interesting experiment upon asphaltum. In 1827 asphaltum was used by Nicéphore Niépce for producing heliographs. Later on, it led to a special process of heliography and photography; and although the chrome process has much infringed upon its general use, it is, nevertheless, used to this day in heliography. In spite of this long acquaintance, the nature of asphaltum is a mystery yet. It was generally assumed to be a hydrocarbonic mixture, the decomposition of which was not attempted, and it was not known which of those bodies was the one showing sensitiveness to light. In 1877 Helm traced sulphur in asphaltum in considerable quantities, and now Kayser repeats the old analysis, and finds that in the Syrian asphaltum, which is obtained from the Red Sea, there is ten per cent. sulphur.

The old assumption that asphaltum consisted only of hydrocarbon is therefore proved to be wrong. Kayser succeeded in reducing asphaltum to three different component parts; and Syrian asphaltum yielded, in boiling alcohol, four per cent. of an oily matter containing seven per cent. sulphur. Boiling ether dissolved from the residue forty-four per cent. of another substance, appearing dark-brown, resinous, and brittle, and containing about ten per cent. sulphur. The residue remaining after the treatment with alcohol and ether is easily dissolved in chloroform and oil of turpentine, but hardly soluble in benzole and petroleum. It is black, hard, and brittle, melting in 165° C. It contains thirteen per cent. of sulphur. It is possible, however, that the three bodies into which Kayser reduced asphaltum are not absolutely pure substances, but are in their stead a mixture of compound

bodies, which might probably be decomposed still further.

The point, however, most interesting to the photographer, lies in the relative bearing of the three bodies in regard to the light. Kayser obtained solutions of the three bodies in chloroform, coated glass plates with the same, and lighted them for an equal length of time in the sun. Then they were treated with a mixture of two parts oil of turpentine and one part olive oil, and it was found that the body which was soluble in alcohol remained perfectly soluble, while the one soluble in ether turned partially insoluble in the light; but the third component part, viz., the body insoluble in alcohol and ether, was found to have become perfectly coagulated through the light.

This experiment goes to prove that only the last-mentioned body is of use in the photographic laboratory; and as the Syrian asphaltum contains fifty-two per cent. of this body, and the American (Trinidad) only thirty-eight per cent., the former is the best adapted for photographic purposes.

These experiments also show in which way asphaltum ought to be purified, in order to insure its maximum sensitiveness to light.

Formerly this object was tried to be attained in different ways, but the only correct one, according to Kayser, is to treat asphaltum with boiling ether, and eliminate thereby all foreign ingredients which detract from the sensitiveness to light.

Until now oxygen was suspected to be at the bottom of the change worked in asphaltum in the light, similar to the change rosin undergoes in the light; but now Kayser has proved that this theory will probably not hold good. He has observed that a solution of asphaltum in oil of turpentine, or chloroform, even in tight, well filled vessels, which could not be reached by oxygen, became nevertheless insoluble; and he, therefore, draws the conclusion that the asphaltum undergoes only a molecular change. It is interesting that the asphaltum which is rendered insoluble in the light, becomes soluble again when heated.

About gelatin and gelatin emulsion so much has been written, that it is difficult to

gather up all the statements made in regard to them. There is yet much debating about the merits of the two methods to prepare emulsions, which have been published by Abney and Monckhoven. I believe both methods to be interesting, but that the old method of Kennett will retain its value.

It is an open question yet whether photographers will prepare their own gelatin plates for use in their studios, or whether they will find it more convenient to buy the same prepared for use.

To prepare such plates in summer is no easy job, and I for myself have never succeeded in obtaining such sensitiveness as, for example, Wrattan & Wainwright, in London, reach with their plates, which are twenty times more sensitive than the wet plate. Obernetter placed recently a dried emulsion in the market, which is about ten times more sensitive than wet.

It is a curious fact, that this solid emulsion (pellicle) turns quite insoluble when it is freed from water.

Recently there was patented a process for making so-called porcelain pictures, in which iron plates are covered with a white coating resembling enamel, on which afterwards chlor-silver collodion is put. Such iron plates are certainly no novelty; but it is a new idea to prepare the coating representing the enamel with collodion. Raw collodion is mixed together with fine-ground baryta, so that it forms a homogeneous mass, and with this "emulsion" the iron plates are coated. The advantage the new process offers is, that the collodion dries much quicker than the gelatin, which was formerly used for the same purpose, in conjunction with baryta.

There are many interesting discoveries and observations in this world which are passed by unnoticed, because nobody seems to have discernment enough to grasp their import and value. Was not America visited by the Normans long before Columbus tartled the world with his discovery? Were they not even in the neighborhood of New York without having the slightest idea of being then in another part of the globe? Only a long time afterwards, after Columbus, their exploits were at last duly appreciated.

Quite a similar case meets our eyes just now. The whole photographic world in Europe speaks and writes about the recently discovered wonderful properties of the gelatin plates. The photographic chemists are burning to explain their behavior, and only just now it becomes known that Stas, the Belgian chemist, so long as five years ago, had already made interesting observations in regard to brome-silver, and which had escaped all notice, and yet they are capable of explaining the astounding behavior of the gelatin brome-silver plates.

I referred to those experiments in my last letter but one, but all the facts at my disposal then were obtained from incomplete German translators, so that I could not do the subject full justice then.

Only lately have I come into possession of the original work in the *Annales de Chemie et Physique*, volume XIII, and to my surprise I see what rich and interesting material for the photographer is contained therein.

In my next I will give you a synopsis of the most important part.

Recently a coloring process, invented by Bonnaud, has been patented, some samples of which are exhibited in the *Verein zur Forderung der Photographie*. The process is as follows: A picture is printed quite faintly on matt paper, then colored in smooth tones, with colors which are specially prepared to endure the following operations. The picture is now coated with salted albumen, silvered, the printing finished under the same negative, and finished as usual. There were samples shown in the first stage of coloring, and also finished pictures. The finished pictures looked very handsome indeed, but it is believed that the same effect might be reached by skilfully coloring common pictures, which would render the complicated second preparation unnecessary. According to the inventor, the second preparation protects the colors, and makes them more durable.

Another novelty is metallic photograph frames, which are embellished with elegant etched designs. Mr. Falks decorates these frames with the use of heliography, by copying the ornament upon a layer of asphaltum which has a base of metal. The as-

phaltum becomes insoluble in the light, but the parts which are protected by the lines in the picture remain soluble, and are dissolved with lavender oil. A corrosive fluid is then brought to act upon the metal, which is, of course, only affected on the clean spaces. The effect is very nice, and these frames are especially in place in rooms furnished in Renaissance style.

Very truly yours,
H. VOGEL.

BERLIN, October 29th, 1879.

SOCIETY GOSSIP.

THE CHICAGO PHOTOGRAPHIC ASSOCIATION.—The regular meeting was held at their rooms (Charles W. Stevens's photographic warehouse), Nos. 229 and 231 State Street, Wednesday evening, November 5th, 1879, at 8 o'clock P. M.; President Greene in the chair.

The Secretary read the following paper from a corresponding member, Jay Densmore, Kalamazoo, Michigan:

"PURE WATER.

"Pure water is something in which everybody should be interested, but to the photographer it is a necessity, if he would avoid numerous vexations and trouble. There are many methods employed by the disciples of the art for obtaining the necessary article, but most of them are open to more or less objection.

"During my recent experiments with bromized gelatin emulsion, knowing the very sensitive nature of gelatin to evil influences, and its proneness to act just as bad as it can under all circumstances, sometimes taking advantage of the slightest departure from the proper course and procedure on the part of the operator to spoil the whole batch, I found myself at a loss to know how to obtain *pure water*. "Melted ice" and doctored stuff in common use as such by the brethren of the "black art" was easily obtainable, but my faith in the *purity* of all such was wanting. I overcame the difficulty in the following manner:

"I took a round, smooth quart bottle to a tin-shop, and had a tin can made three inches greater in diameter than the bottle,

and three inches deeper. One end of the can was left open, and a tin bottom placed in the other end, with a neck in its centre a half inch larger in diameter than the neck of the bottle, and a little shorter.

"The bottle was then placed in the can bottom up, the neck of the bottle inside of the neck of the can. Tin braces, four of them, were then soldered to the sides of the can inside, around the bottom of the can, their object being to hold the bottle in place in the centre of the can.

"A strip of tin two inches wide, with turned edges to render it stiff, was then placed across the centre of the inside of the can, one edge resting firmly against the bottom of the bottle, and its ends were firmly soldered to the size of the can.

"The object of this strip is to hold the bottle down securely when the can is full of water. The space between the tin neck of the can and the neck of the bottle was then filled with plaster of Paris cement, rendering it water-tight.

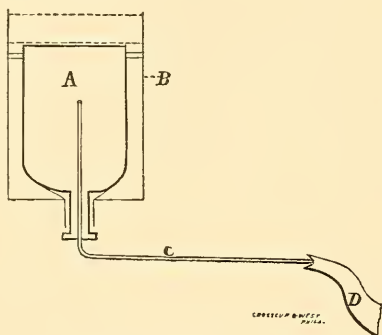
"I then took a piece of glass tube about eighteen inches long, and six inches from one end I made a right-angled bend, by holding the tube in the flame of a spirit-lamp until heated sufficiently to bend. The can was then set upright on a suitable support, which, of course, placed the bottle inside of it inverted, with its neck protruding downwards through the bottom of the can. The can was then filled with cold water.

"The short arm of the glass tube was then placed upward through the neck of the bottle fitting loosely, and the other end of the tube was placed in the spout of a boiling tea-kettle, the joint between the spout and tube being wound with a strip of muslin, to render it nearly steam-tight. The steam from the tea-kettle now passed through the glass tube up into the bottle, and coming against the cold sides of the bottle was condensed, and ran down out of the neck of the bottle into a glass dish placed below to receive it.

"The condensed steam coming only in contact with glass surfaces produces water absolutely pure, provided the manipulation is intelligently and carefully conducted.

"The accompanying rough diagram will give a general idea of the construction of

the apparatus. *A* is the bottle, *B* the tin can, *C* the bent glass tube, and *D* the spout of the tea-kettle."



A vote of thanks was passed for Mr. Densmore's contribution.

The Secretary stated he had received several inquiries from Iowa relative to a process for coloring photographs, which was being offered photographers for various sums, the venders claiming a patent. He found the following record of the process: "No. of patent, 206,968, to William V. Price and John G. Klingaman, Laporte City, Iowa; filed May 27th, 1878. To all whom it may concern, etc. Improvements for coloring photographs and other prints.—The invention consists in treating the photograph, after being mounted upon canvas or other suitable material, with a composition whereby the photograph and its mounting are made transparent. In carrying out our invention, we first mount the photograph on canvas or other suitable material, which has preferably been before secured on a stretcher. Before mounting the photograph, it should be made as thin as possible. This may be accomplished by saturating it with water, and then rubbing the back with the finger or a sponge until it is worn down. The photograph is then secured to the canvas with paste, which is applied to its back, so that when mounted the face is outside. As soon as the photograph is dry, it is made transparent by a composition consisting of equal parts of castor-oil, alcohol, turpentine, and balsam of fir, applied on both sides. The colors are then applied to the back of the print on the canvas with a brush, as is well un-

derstood by artists. By treating the picture with a composition of the above-mentioned parts, the shadows thereof are more plainly shown through the canvas, and the colors are applied with better effect than if castor-oil and alcohol alone are used to render the picture transparent. Having thus fully described our invention, what we claim as new, and desire to secure by letters-patent, is the hereinbefore described method of rendering photographs previously mounted upon canvas, transparent for coloring, by treating the same on both sides with a composition consisting of equal parts of castor-oil, alcohol, turpentine, and balsam of fir, as set forth."

Mr. HARRIS.—These gentlemen called on me with their specimens, and wanted to sell the right; but the work was so thoroughly miserable, that I paid but little attention to it.

After a short discussion, it seemed to be the sense of the meeting that it was a first-class humbug and swindle.

The President introduced Mr. C. Gentile, who exhibited a large number of prints, made by the Willis platinum process, and although covered by a patent, was meeting with great success in Eastern cities.

Mr. Gentile then proceeded to develop and fix a large number of prints he had prepared during the day. He stated that the paper prepared with the platinum salts was considerably more sensitive than the silvered paper, and more simple and surer in its results. He showed that any sort of paper or white fabric could be used; but in paper the finest results were obtainable on the Saxe or Rives. Prints were developed on muslin, satin, and silk. Although the formula has been published several times, he thought best to give a brief summary of the method and chemicals used. Paper, or any fabric you are using, is coated with a mixture of platinum and iron salts. This preparation is compounded and sold by the patentees. The paper or fabric is then dried; after which it is exposed under a negative in the usual manner, until you have an image in full detail, but not a strong print. After exposure, you float the print for a few seconds on a hot solution, containing oxalate of potash and a salt of platinum. This is

also prepared, all ready for use, by the patentee. This hot solution develops the print, which, after development, has merely to be washed in a weak solution of citric acid, to remove the iron salt from the print; after which wash for fifteen or twenty minutes in clean water. The chemicals actually used in the operation are as follows:

A solution of ferric-oxalate, containing about one hundred and twenty grains of the salt in each ounce. This makes the iron solution. A solution containing thirty to forty grains of potassic-chloroplatinite, and three to four grains of plumbic-chloride; this and the former being mixed, form the sensitizing solution, which is swabbed or mopped on the paper or fabric, and having dried spontaneously a short time, can be dried thoroughly by the aid of heat, and is ready for the printing-frame; this, of course, being done in a room closed against all actinic light. The developing solution is one hundred and twenty grains potassic-oxalate and seven grains potassic-chloroplatinite, and fixed in a weak solution of citric acid. This is the whole of the process, and by it you see I have produced some fine prints, and also exhibited a large number made from time to time, as I have demonstrated the process.

Mr. McDONALD.—How about the permanency of the platinum prints?

Mr. GENTILE.—I have here a concentrated solution of cyanide of potassium; also in this dish some C. P. nitric acid. We will lay a print in each, and leave them for a time, and see if any change occurs. Mr. Willis has made a large number of tests, and found nothing to change the prints but boiling aqua regia, in which the metal platinum is soluble.

Mr. GREENE.—Will the paper, or fabric, after being prepared, keep any length of time?

Mr. GENTILE.—Yes, if in a dry place, it can be kept for months. In Europe it is preserved in closed boxes, with chloride of calcium.

Mr. SMITH.—What is the comparative expense with silver?

Mr. GENTILE.—About the same.

Mr. AIKEN.—After printing, do they have to be developed immediately?

Mr. GENTILE.—No, they can be kept any length of time, before developing and fixing. They are absolutely unchangeable. In the processes noted, the platinum changes to its original form.

Mr. Gentile showed the prints which had stood the test of cyanide of potassium and C. P. nitric acid. No effect was noted.

A large number of photographs, showing the Wenderoth restoring process, were now distributed by Mr. Gentile. Each picture had been cut in half, and one end restored, while the other showed the faded condition of the print.

Mr. SMITH.—I claim that there is no destruction of the image; it undergoes a change simply, and can be restored by proper chemicals, which Mr. Wenderoth has patiently sought for and evidently discovered.

Mr. GREENE.—Is the process for sale?

Mr. GENTILE.—Yes, and price is according to size of place. Mr. Wenderoth, in perfecting his process, made over a thousand experiments, and after completing it, submitted it to the criticism of the best photographers of his acquaintance, getting the unqualified indorsements of such eminent men as Kent, Baker, Gutekunst, and others.

Mr. SHAW.—I have secured evidently the same results as Mr. Wenderoth shows to-night, by taking 16 ounces of water, 4 ounces of copperas, adding 25 grains bromide of potassium, and 2 grains of chloride of gold. Put your prints in this solution; they will turn blue. Wash well in pure water, and then immerse in a saturated solution of bichloride of mercury, muriate of ammonium, and water. Wash thoroughly in clean water after this last bath. I will also give my way of preparing a negative for printing in the solar camera. If I have a negative to reduce, I take off the varnish in my alcohol bath, which is made of tin, with a cover, same shape as our ordinary baths, and placed inside of a larger tin vessel, same shape, which has pieces soldered on the bottom to raise the smaller bath from the bottom. This outside bath I fill with hot water; that raises the temperature of the alcohol, and it attacks the varnish much quicker than cold alcohol. After

taking off the alcohol, I reduce with mercury and cyanide in the usual way. I then prepare a varnish as follows: One ounce of Cox's gelatin, cover with water, let soak two or three hours; when swelled, lift it out of the water, and place in a glass flask, and heat over a flame or fire until dissolved, when set aside to cool, but not to set. When sufficiently cool, put the white of one egg in the flask with the melted gelatin, and shake until thoroughly incorporated. Then heat again to boiling-point, and strain through a flannel bag into a heated glass bottle or jar. Before straining the gelatin-albumen varnish, have your negatives ready on levelling-stands. These I make with bits of wood and three screws. When ready, pour the prepared gelatin-albumen varnish on the centre of the negative, and let it spread to the corners. You can assist in the flow by drawing it to the edge with a glass rod. When the negative is coated evenly, place a clean glass above the varnished surface, supported so it will not touch, which keeps any dust or dirt from falling on it while drying spontaneously. When thoroughly dry, retouch, and it is ready for your solar. The thick gelatin-albumen surface softens the print, and you have the same effect as given by the best patented or secret processes you pay large sums for.

MR. AIKEN.—I use the water varnish for my solar negatives, and find it just the thing. Have used gelatin varnish, but do not like it as well. For printing my solars, I focus from the negative; then put in a plate glass, and print through that. I have found the same soft effect also, by focussing through the plate glass and negative, and before printing, removing the plate glass. The objection to the gelatin varnish is, that it takes about twenty-four hours for it to dry spontaneously.

The President introduced Mr. Barthold Meyer, who stated he had established an institute for artistic retouching, india-ink, water-color, and crayon work. Particular attention would be given to the altering and improving of faulty negatives, so that the finest results might be obtained. Instruction in retouching would be given when required, by the hour, day, or in any way to suit the applicant. Photographers

requiring the services of skilful retouchers would be supplied through the institute.

Mr. Neeles moved a vote of thanks to Mr. Gentile, for exhibiting the Willis and Wenderoth processes. Carried.

The Secretary called the attention of the members, and spoke as follows:

MR. PRESIDENT AND GENTLEMEN: You are all aware that efforts have been made looking towards the revival of the N. P. A., and the holding of a convention at some central point at an early day. Although in sympathy with the movement, I am not sanguine of success; and believing the N. P. A. thoroughly dead, and beyond all possible hope of a resurrection, I think it time to inaugurate a movement for the formation of a new society. I had thought that we might have a sectional interest awakened that would develop into a photographers' association of the northwest, holding yearly conventions in our city. But consulting quite a number in our city, and the result of an extensive correspondence, leads me to take a broader view of the matter, and offer the suggestion that we try to establish the Photographers' Association of America, having its first meeting in Chicago the coming year. I cannot, as the hour is late, go into the details of the proposed movement, but I am gratified to say that several of our members have taken the matter in hand, and offered to share the expense of circulars, which will be sent to every photographer on the American continent, inviting co-operation in the movement; and we expect enough encouragement to go and have a convention of photographers this coming summer. The circulars will be ready shortly, and copies furnished the various journals for publication.

The President thanked the members for the individual interest shown by the large attendance, and assured them that the meetings of the coming winter would be of special benefit, as arrangements for valuable and instructive lectures had been made.

No further business appearing, on motion, adjourned. G. A. DOUGLASS, Secretary.

—————
 SUBSCRIPTION EXPIRED! Whose? Yours? If so, please *renew now*, that you may certainly secure the January number.

ART EDUCATION FOR PHOTOGRAPHERS.

EVER since last August we have been striving, in a feeble way, to interest our readers again in art principles as applied to their profession, directing especial attention to the choice and use of accessories in photographs.

So many tokens of approval and assurances of the acceptability of such a course have we received, that as announced in our prospectus this month (page 3 of our cover), we have determined that a vein of similar instruction shall run through each part of our next volume, and that we cannot secure more healthy matter to course through that vein than what is supplied by that unrivalled teacher, Mr. John Burnet, in his famed work, *The Education of the Eye*. The whole of this shall be reproduced in our volume for next year, including all of his splendid wood-cuts, etchings, and drawings, as well from the works of the old masters, which are to be reproduced by the Crosseup & West Wood and Photo-Engraving Company, 702 Chestnut Street, Philadelphia.

Photographers could not buy this work for less than \$25, if at all. We beg of you to take full advantage of its teachings by reading them, and giving them heed in your practice.

Mr. Burnet opens his essay with a valuable introductory, and then plunging into his subject, treats of and illustrates lavishly, in the most graphic way, of the departments of Measurement, Form, Perspective, Lines, Diminution, Angles, Circles, Aerial Perspective, Chiaro-Oscuro, Invention, Composition, Arrangement, Harmony, Harmony of Color, and Studying from Nature.

Although this work was originally published in 1837, no more recent one has ever driven it from its place in the esteem of artists. It is solidly standard.

We have been confirmed in our resolve to publish a second work by him, by certain sentiments expressed by several of the gentlemen who contribute to *Mosaics*, 1880, which show how the matter is reviving among the craft, and a few of which we quote from, viz.:

"In fact, what we all need now is a better

art education."—FRANK THOMAS, *Mosaics*, 1880, page 26.

"The photographers who make cheap work can hardly have the true artistic feeling that produces the best the art aspires to."—CALIXTRO, *Mosaics*, 1880, page 32.

"The last *Philadelphia Photographer* (October) I have read twice; I think it the best copy yet published. You must have had a *tearing headache* after you got that ready for the printer. The art department is just what we all need. There has been too little attention paid to that branch of the business. The time is coming, and not far distant, when we must make *artistic photographs*. This making pictures *straight* will not do. *Pictorial Effect in Photography*, by H. P. Robinson, was a grand work in that line. Every one should have a copy and study it. Your present plan is in the same direction, and will be appreciated by all who are interested in their business, and wish to raise it to a high standard."—S. M. ROBINSON, *Mosaics*, 1880, page 47.

And the following is a sample letter recently received:

CAMSTED, N. Y., November 10th, 1879.

EDWARD L. WILSON.

DEAR SIR: Accept my thanks for your efforts in the last two numbers of the *Philadelphia Photographer*, to give us an art education.

They are so good that I feel constrained to write this to encourage you in your present course.

Most respectfully,

A. B. STEBBINS.

HOW BUSINESS IS, AND WHAT OF IT.

RESPONSES TO OUR CIRCULAR LETTER.

IN our last number, on page 334, we printed a *circular letter* to our readers, and since then almost every mail has brought us some interesting response.

We cannot begin to find room for them all in our current issue, for doubtless they will continue to come until we go to press, and for some time after, we trust; for we want to hear from all who can find time to give us their views on these vital topics. From the many so far received, we take

what we can place, and will print a further instalment in our next, and so on following until all appear before you. We want to hear from every quarter of our continent and from abroad, too, if our friends there will favor us.

FROM T. M. V. DOUGHTY, CONNECTICUT.

1. Business is very poor; I cannot say that it improves.

2. I do not see any *bright* prospect ahead.

3. I very rarely finish a proof. It is my theory, founded on experience, that *generally* persons who will not be satisfied without a proof, will not be satisfied with a dozen of them.

I blacken the negative with a solution that I call iodide of mercury, which I make thus: Make a *strong* solution of iodide of potassium in water in a bottle of six ounces or so. In another similar bottle make a strong solution in water of bichloride of mercury. In order to do this, add a very little muriatic acid, as water alone will dissolve but a *very* little of the bichloride.

To mix the two solutions, pour a little of the bichloride solution in a wide-mouthed bottle, such as you can pour from on your negative, and add the iodide of potassium solution, *gradually* shaking each time until the solution is *just clear*. Reduce with water as much as you choose. *Do not use it too strong*. Flow your negative with it, after fixing and *thoroughly* washing, until it is black enough to show well, looking on the glass side with something black behind it. Strengthen with the bichloride solution as needed, keep filtered clean, and do not drink any of the bichloride solution unless you want to get out of the photograph business.

After washing off the iodide of mercury solution *thoroughly*, and finding all satisfactory with your customer, you can intensify your negative now if you wish with weak silver solution and iron developer. Pour on and off the silver solution, saving it each time, and apply the developer as usual.

To many, this is not new. Many have used some modification of it for intensifying, but if you wish to preserve your negatives, use nothing for intensifying but silver solution and iron developer.

Customers can see then as plainly as an ambrotype or ferrotype, and nineteen times out of twenty will be *better* satisfied than they would be with the abomination called a "proof," which is better calculated than all other things to make them dissatisfied.

4. It is my *custom* to require pay in advance. Frequently, when I depart from the rule, I rue it. *Most* people who are willing to pay are just as willing to pay in advance. When any whom I do not know thoroughly, or know too well, commence business by *refusing* to pay in advance, I do not work for them.

5. It is in my nature to wish to do the best I can, therefore I *must* make continued effort to improve.

6. I believe my work is well appreciated by my patrons, and that I please them better than I do myself.

7. Low-priced competition, I think, does not increase. I always had plenty of it, and it doubtless does *some* damage, but I think not as much as many imagine. It enables the people to see the difference in work.

9. I think they are becoming more capable of judging, and require a better quality of photographic work, and *most* expect to pay for it, and are *generally* willing.

8. I make every effort to please both my customer and myself, and usually succeed in pleasing my customer first. I generally *prefer* to make more than one sitting, and always do so if my customer has any wish for it.

10. The carte-de-visite size, large head medallion, or vignette is most popular with me. I make *some* imperial cards (or cabinets) in the same way as the cartes, but make more on 8 x 10 cards (4-4) vignette. I would just as soon make them as cabinets or imperials, and can get more for them. I might perhaps make more imperials if I used fancy backgrounds and accessories, but I do not realize that there is

11. Any requirement in that line to warrant me in spending money for such things that I never considered of immense importance. They are good things for the manufacturer to make money on, and well enough for those who can afford them.

12. I consider proper retouching and bur-nishing the great improvements, and with-

out them I should not be making pictures now, for I should have no customers. They are real improvements because they enable us to really improve on many of our customers when it was really needed.

13. I have not reduced prices in years. I used to make card pictures for \$3.00 per dozen, 8 x 10, \$2.00 for the first; but when retouching came into fashion, I raised prices; for cards, \$4.00 per dozen, \$2.25 for half a dozen; for 8 x 10 or 4-4, \$3.00 for the first, \$1.00 each for duplicates. Imperials, \$7.00 per dozen, \$4.00 for half a dozen. I cannot and will not work any cheaper, *for the best work.*

We have many customers who are such bad subjects, that their pictures cost us twice as much as we get for them. I make ferrotypes in cards for 50 cents each. I do not make any "tintypes," nor allow people to speak of "tintypes" in my establishment, and would like to hang the man who invented the name. The very name suggests the idea of cheapness, and all decent photographers should only encourage the idea of first-class work at prices they can live by, and leave "tintypes," and all such trash to the fellows who make cartes for \$1.00 per dozen (club rates), of which noble company the famous Rogers is one.

FROM C. F. RICHARDSON, MASS.

1. How is business? Does it improve? There is an improvement, but it is not yet very great.

2. What are the prospects for the coming season? I think the coming season will show a decided increase of business, but we shall have no such kiting times as ten years ago.

3. Do you show proofs, and what is your system?

4. Do you secure pay in advance?

8. Do you usually make more than one sitting and allow a choice?

I generally make two or more negatives of a sitter, and after the sitting is made the name is entered in a book, and \$1.00 is collected, which is credited in the same book.

Untoned proofs are given the same or the next afternoon, but the worst negatives are not proved; usually, however, each sitter receives two proofs. The only exceptions to

the rule of payment at time of sitting are intimate friends whom I am willing to sit for nothing, and the few to whom the work may be safely charged. These together do not amount to five per cent. of my sitters. If orders are not given by these in a reasonable time, varying with the circumstances of the case, a bill is sent. Before adopting this plan, some five years since, nearly twenty per cent. of my sittings were a dead loss. If the proofs are rejected, fresh sittings are made, and it does not pay to make much talk about it.

5. Are you encouraged to make continual effort to improve the quality of your pictures?

6. Are your efforts to please your patrons appreciated?

All efforts to please *are* appreciated, but encouragement to improve must come from within, and not from the public, who do not know what improvement is, but consider it some kind of varnish.

7. Has low-priced competition increased, and does it do real damage?

The very cheap competition has not much increased in the past two or three years, but better firms have gone into medium prices.

9. Has the public taste improved, and is it more exacting? Taste has improved much in five or six years, but the demands of whims and fancies have increased in greater proportion.

10. The most popular sizes and styles are cabinets and card vignettes.

11. I do not find fancy backgrounds and accessories are much demanded.

12. Retouching properly used is an improvement, and there is room for advance in this and in printing, but burnishing I consider an unmitigated nuisance; but it is the "improvement" most appreciated by the public.

FROM WALTER C. NORTH, NEW YORK.

I received yesterday your letter with queries.

As I have been here but about ten months, I can only answer for that period.

To question No. 1, business is improving; to No. 2, the prospects are good for a better trade than usual.

To No. 3, I generally show proofs, and let

them choose, and if not satisfactory, give a resitting. Sometimes retouch out the parts that I consider might be objectionable, and often save a resitting.

To No. 4, I generally secure pay after sitting, but with many patrons that I know are good, I do not suggest it, for it might offend, and lose trade in some family by distrusting their ability to be honorable.

To No. 5, most certainly.

To No. 6, certainly, and good judges appreciate our efforts.

To No. 7, low-priced competition is a great curse to our business, and I believe does great damage, as well as the infernal tinctures. I do not believe in them, and hope they will all be weeded out in time, and good prices and good work rule.

To No. 8, I generally make two or three sittings and allow a choice, and often sell a dozen where but half a dozen was first thought of.

To No. 9, I think the public taste has improved among the more cultivated portion of the people, but there are many ignorant ones left yet that want cheap work, that will have to be *born over* before they can ever appreciate the difference.

To No. 10, the favorite size with me is the cabinet and larger sizes, including panels.

To No. 11, we find that fancy backgrounds and appropriate accessories are the things necessary for a continued revival of trade, and to make a general variety of work, and that they are fully appreciated.

To No. 12, I think that retouching, if properly done, is in many cases a necessity and improvement, but in many cases is only a burlesque, and does great harm.

Burnishing, I think, is a good thing, for the public like a fine finish to their pictures, and it often improves the tone of our work. I do not believe in too much burnishing, however.

To No. 13, I put the price of cabinets at \$7.00, and carte-de-visites \$3.50, and believe that to be a good, fair, decent price, and do not think it unreasonable at all for good work. I think that any good photographer shows his weak points in some way when he commences to lower his prices; to be sure, in some cases he may be compelled to by

his opposition, but if his work is appreciated, and his own personal character is in keeping, he can make as much by keeping up his prices, but he must not forever keep in one old *rut*, but he must get out and do something better or different, or he will be left by his more ambitious rivals.

My experiences travelling among the fraternity the few years while away from here were very instructive to me. I never thought that there were so many curious minded people among the members of the fraternity as I found. You have had a good chance to judge of them. I found some noble minded men among them, and so many mean, thin-skinned ones, that I do not wonder at the poor reputation of the craft generally.

I am afraid that the efforts of the Executive Committee to secure another meeting of the N. P. A. will come to naught. For myself, I should like to see it flourish, and be in as good favor as it was in days of yore, like at Cleveland, for instance; but there are too many *mean dispositions* among the fraternity to ever make a happy and prosperous and united Association.

"Fitz" made a great mistake the first year in belaboring you so unjustly, and helped fill the minds of photographers with distrust and disgust. I notice he has toned down considerably.

If the Association should decide to meet again, I should be in favor of New York or Saratoga, and would be willing to do my share at any time towards paying the expenses. It is a hard matter for many to leave their business for a week, for so many either do their own operating, or cannot afford the trip, that I fear for a grand success of the N. P. A., but I *go for it* at any rate every time, and wish all success to it and all the committee.

I invested in the Wolfe process last week for enlarged photographs, and believe it to be a grand thing. Their specimens were elegant, and I hope to make some nice work for the holidays.

Must close with best wishes.

FROM J. F. RYDER, OHIO.

1. Business is better than for two or three years past.

2. The prospects indicate that a season of prosperity is just before us.

3. We show untuned proofs, printed solid.

4. The rule with us is to secure pay in advance.

5. We feel encouraged to make constant effort to improve, and keep up the standard of quality in our work.

6. We believe our efforts to please are generally appreciated.

7. We do not feel that low-priced competition hurts; we hardly regard it as competition. Card sizes are made here as low as \$1.00 per dozen; cabinet size, \$3.00 per dozen. We get for the same sizes \$5.00 and \$10.00 per dozen.

8. We make two or more sittings, to give our patrons the benefit of choice.

9. The public taste has advanced. Its vanities and exactions are also on the move.

10. The cabinet is the most popular size. Vignette, bust, and three-quarter length the favorite styles.

11. Fancy backgrounds and accessories are more in demand than formerly.

12. The alleged improvements of retouching and burnishing are improvements or not, according to the manner of their application and use, and extent to which they are carried.

13. We have *not* reduced our prices for several years, our aim being to see how good we can make our work rather than how cheap.

FROM S. M. ROBINSON, PENNSYLVANIA.

I am very glad to do something for you, and will try to answer the questions.

Business is dull yet; the weather has been much against us here. The warm weather has made fog, which has lasted sometimes the whole day, yet people are talking of work, and there is an improvement.

We show proofs when asked. Our regular customers have always had them, and expect them. New ones, if they do not ask, we make without. We discourage it as much as possible.

We intend to get all or part pay in advance. With strangers we *insist* on the above.

I believe our effort to make first-class work is appreciated. We retain our old

families, and new ones speak of our work as being as good, and sometimes better than—.

I think low-priced galleries have been benefited by the hard times, but no real damage has been done. The class that buy four for twenty-five cents would have nothing else, so we lose nothing.

I think it best to make more than one sitting; then there is a choice, and it gives satisfaction. The customers look at it as square dealing. If no proofs are shown, I make the best I can; one or more sittings being required, then use the best.

The public are more exacting. I question the taste sometimes.

I am making more cabinets than any other style; about an equal of full length, three-quarter length, and heads.

Fancy backgrounds are always used in the figure pictures. The so-called improvements make pictures look much better as articles of trade, but to say that they are really improved is an open question.

We have not reduced our prices only on the cartes-de-visite; all other sizes remain the same, and the people are willing to pay. With many shakes I submit this.

PHOTOGRAPHIC MOSAICS FOR 1880.

WE have the pleasure again to announce ourselves ready to supply a new issue of our well-known and popular year-book, *Photographic Mosaics*, the printer having delivered us a goodly pile of copies several days ago, a large portion of which are on their way in all directions to, or in the hands of, early purchasers.

Owing to the peculiar fact that we are the editor of this annual, we are prevented from saying much about it.

It is now sixteen years of age, and never during its life have better papers been contributed to its pages by generous and willing authors, than those sent for the current issue. They cover almost every department of the practice of the photographer, and include everything new in the business.

After "A Backward Look," a review of the past year's work by the editor, follows a list of nearly seventy-five useful and valuable papers by practical men, whose sub-

jects and names are given in the advertisement. It would be hard to specify one as better than the other. They are every one good; and, with *Mosaics* on hand, any photographer may be a perfect salamander against the red-hot appeals of the process-vender, for it gives him enough to keep him profitably busy during 1880 at least.

In anticipation of an increased demand, we have printed an unusually large edition, yet, judging from the orders already filled from dealers and photographers, the supply will soon be exhausted, hence the importance of ordering early. One hundred and forty-four pages of such solid good for fifty cents is rarely offered to photographers.

Let us say too much about it, we close now, first asking you to be sure to read the advertisements, for they come from an unusually large number of parties, and some of them call your attention to entirely new articles of use.

In conclusion, we add a brief extract or two from articles contained in the book, as follows:

"I believe that every one who buys this little book has an earnest desire for improvement."—M. WOLFE, page 35.

"I was somewhat skeptical as to the *real* worth of *Mosaics*, and thought I would not pay fifty cents to see a copy, and yet I wanted one. Thanks to our friend Wilson, he sent me a copy for 1879. . . .

"I was more than surprised, and so well pleased with the copy I received that I concluded it paid, and I was not satisfied until I had procured a few copies of the former years, which I also found very interesting and instructive.

"In the one issued for 1877, page 28, I found an article which I thought was intended to stiffen *my backbone*, and I concluded to try the formulæ the first chance I had. *I have tried it*, and right here I will say, 'Friend Spooner, *accept thanks.*' *It does pay.*"—M. P. BROWN, page 37.

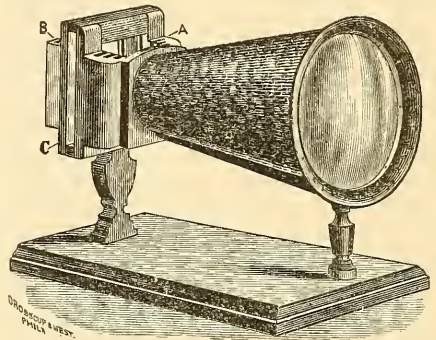
THE TOUROSCOPE.

THIS instrument is for the purpose of exhibiting plain and colored transparencies and lantern slides, singly or in combination with each other, and is capable of

producing some very rich, beautiful, and even surprising effects.

It consists of a very fine large lens, similar to those used in the graphoscope, with a dark chamber, in connection with (what is its greatest novelty) a system or series of slots or grooves, for the insertion of the glass or other transparent pictures to be looked upon.

Referring to the drawing, at *A* are three or more receptacles for the pictures. At *B* a thin plate of plain or colored ground-glass is inserted, in order to soften the effect



of the light which is transmitted through the pictures. At *C* is a larger receptacle for the same purpose as those at *A*, only of a size to accommodate such pictures as are mounted in wood, as many lantern-slides are.

To produce the intended effects in endless variety, a picture of statuary, say, is inserted in the first slot at *A*. Now examine its lovely appearance, and then insert in the next slot, behind it, a view of an interior of a cathedral or a picture gallery, and you at once find the statuary piece to have new beauty and interest, for it is located properly in some harmonious interior. The effect of the whole is now heightened by placing a blue, or red, or golden tint in the groove next behind, or at *C*.

Or the first picture may be a view with splendid foreground and empty sky. Natural clouds may be made to treble the effect by placing a cloud transparency behind the other, and the tinter may then be used or not, as you please. Or it may be you have a beautiful waterfall in first, which you can variously tint, and then from its foaming of

face bring out a splendid statue, with effect almost equal to that of a dissolving lantern. Sunset and sunrise, and moonlight effects may be added to properly chosen landscapes, and day turned into night, and *vice versa*.

The majority of the effects obtainable with a lantern may be secured with the tourscope, and the number of changes possible with it are only limited by the genius of the one working it, and the quantity of pictures at hand to work with.

To those who have a variety of transparencies, it will be particularly welcome, for by its means they can be used at day or night, and in any light just as effectively, and as well singly as in combination.

If the portrait photographer would have one on his reception-room table, with a few portrait and other transparencies, he could, by properly pushing the thing, sell many

transparencies from his negatives, and Tourscopes to exhibit them in. Here is real business for those who want it. Undoubtedly the Tourscope, if taken hold of, will open up a new avenue for the growth of photography, and create a demand for a new style of picture. Neither the stereoscope nor the graphoscope were much thought of at first, but see what wonderfully profitable things they have been for our art.

The Tourscope comes next. It has been handsomely gotten up by the American Optical Company, New York, with superior lenses (which are a necessity), and is advertised in proper place in our current issue. The inventor has named it *Touroscope* because with it, a proper selection of ordinary transparencies, and a copy of Wilson's *Lantern Journeys*, you can make tours all over the world at small cost, and with no sea misery.

Editor's Table.

PICTURES RECEIVED.—MR. J. T. BUTTERFIELD, Prairie du Chien, Wis., sends us over a dozen of his babies, ranging in ages from three months to three years. Judging from these samples, he must be eminently successful with the little folks. By their expressions we should say they rather enjoyed the fun of sitting; not one of them looks cross or ready to cry. Some very fine stereoscopic views, rock-scenery, and the Passaic Falls, from Mr. IRVING SAUNDERS, Alfred Centre, N. Y. Also a cabinet head of an aged lady. These are all excellent pictures; good throughout. Specimens such as any photographer might feel proud to exhibit. From Mr. F. M. SPENCER, Mansfield, Pa., cabinet photographs. One of these is a little girl looking at a picture-book, while at her feet lies her pet dog, asleep with his head on a book. The whole pose is easy and graceful, making a pretty picture. Mr. H. B. HILLYER, Austin, Texas, sends us samples of his work. Two of them illustrate an experiment for giving variety to two exposures on one plate without disturbing the position of the sitter. The pictures in question are of a gentleman seated at a centre-table reading. The background is that of an ordinary drawing-room, with mantel and window. By slipping the background along, between exposures, the man is made to appear to have changed his

seat. The idea, though not new, is quite good, and makes a very pleasing variety. A portrait of himself, and several other cabinet pictures, from Mr. WM. MYLES, Wheeling, W. Va. Among them we notice a sample of platinum printing, and a silver print from the same negative. Several specimens of platinotype from Mr. GEO. G. ROCKWOOD, New York. Our readers have no doubt noticed Mr. Rockwood's advertisement in our pages, of making solar prints by this process for the trade. He seems to like the new process, and is using "perpetual sunshine" for his work. Mr. SAMUEL ARMSTRONG, Washington, Iowa, sends specimens of his cabinet work. A little girl dressed as a fairy, wings and all, is posed similarly to Mr. ELTON's "Little Ladies," which we published a few months ago. It is certainly a very graceful position, and comfortable for the child. From Mr. GEORGE H. ELLIOTT, Columbus, Ohio, two stereoscopic views of the Corbin House, Westerville, Ohio, which was blown up with gunpowder by temperance crusaders in September last. From Mr. JULIUS HALL, Great Barrington, Mass., we have a parcel of admirable cabinets. Mr. HALL's vignettes are from particularly well modelled negatives, which have been judiciously retouched and splendidly printed. From Mr. A. N. HARDY, Boston, two very novel pictures of boudoir size,

in which the subjects are printed obliquely from left upper to the right lower, and the other corners filled up with fancy designs from engravings. Certainly they are pictures with the accessories largely "thrown out," but of questionable taste. The photography is fine. Messrs. THOS. HOUSEWORTH & Co., San Francisco, have favored us with photographs of Gen. GRANT, made during his recent visit to that city, and one of an "old soldier" (cigar-stump) left by that distinguished visitor at their studio. Also group pictures of TONY PASTOR and company, and of Manager HAVERLY and his Mastodon troupe; all admirable. Mr. WALTER C. NORTH, Utica, N. Y., sends us several cabinet photographs, including some children in a boat, which make very pretty pictures. The work is also very excellent, for Mr. NORTH is not only able to teach how, but to make the best of work. Some of the cleanest and nicest work we have seen comes to us from Mr. C. RIPPEL, Milton, Pa. The pictures are cabinet size, and subjects all young ladies and girls, except one of a venerable, white-haired old gentleman. The work is most excellent in every point. Lighting and posing good; accessories few and judiciously arranged; chemical manipulation clean and sharp; prints as fine as one could wish for. We do congratulate Mr. RIPPEL on such photography, and feel sure he must be successful, financially, when he offers such pictures to his customers. We have received from Mr. J. E. BEEBE, Chicago, Ills., some very excellent specimens of his cabinet and card work. The positions of his subjects are novel, but not obtrusive; the lighting very delicate and artistic; and chemical manipulation clean and perfect. Mr. BEEBE is indeed a *growing* photographer, improving constantly. Every time he sends in samples of his work, they show some progress over former ones. Undoubtedly Chicago is favored in having one who so diligently keeps pace with the progress of his art. From Mr. W. G. C. KIMBALL, Concord, N. H., a fine lot of panel, promenade, and cabinet pictures. It is a long while since we have had the pleasure of seeing samples of Mr. KIMBALL's work, and he has now astonished us with his great improvement, evidenced by these beautiful pictures. We should judge he must be particularly successful in posing children. The subjects in these pictures show several stages, from the little miss of three summers to the blooming bride of—who shall say how many summers? and closing up the list are some very seasonable snow scenes. Both photography and art are represented in these pictures of Messrs. BEEBE & KIMBALL, to an eminent degree.

PRESS NOTICES OF PHOTOGRAPHERS.—The San Francisco *Bulletin* gives a very pleasing notice to our old friend, Mr. E. D. ORMSBY, who a few months ago settled in that city, and has been doing a successful business ever since. The *Bulletin* extracts largely from our own pages in reference to Mr. ORMSBY, so that to give the article fully would only be a repetition of what we said some time back.

We are always glad to see a photographer's services to the public acknowledged. At the late Paris Exhibition an honorable diploma was awarded to the American Society of Civil Engineering. Not the least efficient aid in contributing to this result was the excellent collection of photographs of fine bridges, taken by Mr. J. MULLEN, Lexington, Ky. In recognition of Mr. MULLEN's services to the association, and as a contributor to its magnificent success, the association has sent to him a copy of the diploma and medal received from the French government.

The local papers of Titusville, Pa., give a notice of Mr. J. A. MATHER's photographic rooms. The article contains this remarkable fact, that Mr. MATHER once photographed a corpse resurrected for the purpose. He says he is the only living photographer that has ever done such a job for the dead, and that he will never do it again.

The Eureka, Ills., local journal congratulates its townmen on having among them such an efficient photographer as Mr. B. L. MOORE. It is well to know one's abilities are appreciated, and we hope the good people testify to such appreciation by taking advantage of his services, and giving him abundant patronage.

Mr. W. H. JACKSON, Denver City, is now under full sway in his new rooms, and the Denver papers give him a grand send-off.

Mr. McMICHAEL, 246 Main Street, Buffalo, N. Y., is also over the excitement of "opening," and has settled down to the production of excellent work, an example of which he sends us.

Mr. J. A. W. PITTMAN, Springfield, Ills., received two silver medals and a diploma at the recent Illinois State Fair. He has made a group 54 x 72 inches of the House and Senate, and offers copies, 22 x 28 inches, for five dollars. It is said to be the largest original group in the world.

ITEMS OF NEWS.—Messrs. CHAS. COOPER & Co., 191 Worth Street, New York, faithfully send us their complete catalogue of prices each month. Thanks.—Photographic card stock has advanced in price, Messrs. A. M. COLLINS, SON & Co. informs us. Many other articles in the "stock" line, such as are made of iron specially, are also

advanced. But agate ironware (Seovill Manufacturing Company's) has been recently greatly improved in quality without any advance in price, and guaranteed, too.—Mr. E. LONG, formerly of LONG & SMITH, Quincy, Ills., has opened a "copying-house," for the purpose of copying, enlarging, and coloring for the trade, and issues a neat circular and price-list, to which all interested are freely welcome.—Our old friend, H. H. SNELLING, Esq., is now editor-in-chief of the Cornwall *Mirror*, Cornwall, N. Y. We wish him a fortune from it.—In our October editorial we noticed a group from Mr. DE SILVA, which he described more at length in his letter in the same issue. The group was made by Mr. D. BOURDON for Messrs. NOTMAN & CAMPBELL, and the exposure, Mr. BOURDON writes us, was not thirty seconds, but only twelve seconds, stop one-twelfth the focal length of the admirable Enroscope lens used, which, Mr. BOURDON says, "I do not hesitate to say is the best lens for the purpose." B. FRENCH & Co., Boston, agents.

BACK NUMBERS WANTED.—We are entirely out of January and October (1879) numbers of the *Photographer*, and wishing to make up some whole sets, we would ask if any of our readers are willing to dispose of the above numbers. If so we will be glad to exchange them for coming numbers or others. You may keep the pictures.

WAYMOUTH'S VIGNETTE PAPERS, No. 15½.—This is a new size, pear-shaped, between Nos. 15 and 16, made at the suggestion of Mr. E. D. ORMSBY, San Francisco, Cal., and is known as the ORMSBY pattern. Over three thousand of these admirable "papers" were sold during October.

THE Heliotype Printing Company, Boston, whose advertisement appears elsewhere, have recently made great improvements in their various processes for producing all classes of photographic, lithographic, and relief plate-work for the trade, including the artotype. The examples sent us are admirable.

MR. WM. J. HAZENSTAB, the well-known St. Louis stock-dealer, has already been obliged to remove to more commodious quarters, and may now be found at his new store, No. 406 Market Street, instead of No. 302, as before. Go see or try him once.

"THE best, most uniform, and most reliable," is the claim made by Mr. G. GENNERT for his importation of S. & M. Extra Brilliant Dresden paper. We cannot give it a better word than to state that we use it constantly for our pictures,

to which our readers may at any time refer. Mr. GENNERT recently visited Europe for the purpose of securing from the makers still greater improvements. All dealers sell his papers.

WE fall heir to several admirable articles this month by Messrs. WENDEROTH, BROWNE, HEARN, and PHILLIPS, which were crowded out of *Mosaics*, 1880. They are worth a special reading, being all upon points of importance; and *Mosaics* has about seventy-five more such.

THE SHULTZ tie envelope, advertised by Mr. WILLY WALLACH, 4 Beckman Street, New York, is now improved by being made of parchment or bond paper. They are therefore lighter, cost less postage, and are just as strong. One end is tied according to law, all ready, while the other end is open, gummed ready for sealing as soon as the photographs are inserted. It is the very best and safest envelope for mailing photographs there is. Send to Mr. WALLACH for a price-list.

ABSORBENT COTTON.—Our attention having been called to this preparation, we made some experiments with it which proved eminently satisfactory. We do not see why it should not take the place of the ordinary filtering-paper, being much cheaper. It does not draw up in knots like ordinary cotton, and it needs no wetting with alcohol before using. We would recommend it to photographers as a most valuable improvement on the old mode of filtering solutions. Manufactured by HANCE BROS. & WHITE, corner of Marshall and Callowhill Streets, Philadelphia.

WE would call our readers' special attention to Mr. G. BRINTON PHILLIPS's article on another page. It is a long time since any more valuable paper has appeared in our pages. Inasmuch as every photographer knows by experience the difficulty of finding an exact test for his solutions, Mr. PHILLIPS's article on this subject will seem all the more acceptable. His method is so simple, and yet so sure. The materials for carrying it out will be found readily at hand in the most modestly furnished gallery, and any one can use the test. Mr. PHILLIPS is a member of the well-known firm of PHILLIPS & JACOBS.

ASHE'S FANCY BACKGROUNDS, ETC.—When recently visiting New York, we had the pleasure of personally examining some of the late productions of Mr. W. F. ASHE, No. 106 Bleecker Street. His studio is a busy place, and the

variety of accessories very pleasing. He has adopted the plan of numbering his backgrounds instead of giving them descriptive names, and supplies photographs of the different varieties to prospective purchasers. His staircase, balustrade, and pedestal are elegant in design, and so constructed as to form various changes. In fact his goods prove valuable accessories in judicious hands.

TESTIMONIALS have come in so strong this month that we cannot give place to them. At the same time we hope our friends will not discontinue writing them, for they do us good.

WE would call to our readers' notice the sign for good luck on another page, viz., Mr. GEORGE MURPHY'S horse-shoe. Mr. MURPHY has been for the past fifteen years connected with two of the leading stock-houses in New York. He has now started in business for himself. One of his specialties is his horse-shoe brand outfit. We would recommend photographers to give him a trial when about to purchase new apparatus.

ONE of the greatest evidences of the growth of photography, and things pertaining thereto, was presented to us on our late visit to Messrs. L. PATTBURG & BROS., 709 Broadway, New York. We remember the time when these gentlemen occupied but one floor as office, salesroom, and factory. Now that floor is all occupied as office and salesroom, and a large manufactory of passepartouts, bevelled mats, etc., is located at Jersey City. All this is the outgrowth of persevering application to business, attention to wants of customers, and promptness in filling orders. The Messrs. PATTBURG are now the leading manufacturers in this branch of trade.

FROM Mr. F. GUTENKUNST, 712 Arch Street, Philadelphia, we have some very excellent examples of portraiture, by a new process, called "phototypy." The pictures in appearance resemble artotype prints, but they are essentially different in production. Some 14 x 17 heads, slightly retouched in india-ink, present most beautiful examples of what may probably be called "permanent photographs." Mr. GUTENKUNST is prepared to fill orders for the trade by his new process. Any one desiring to procure such work will do well to confer with him.

SEAVEY'S studio, No. 8 Lafayette Place, New York, is one of the busiest places we have seen for a long time. Not only does Mr. SEAVEY employ a large staff of artists and workmen, but he personally superintends them, and with

brush and palette in hand, is the most active of all. We had a pleasant chat with him about matters of art in photography, and will have something from his pen and his studio during next year to present to our readers, which will be very helpful to them, we know. Mr. SEAVEY has always something new to announce in his monthly advertisements, which you should carefully read.

MESSRS. CHAS. PAXSON & BRO., 612 Broadway, New York, gave us a private exhibition of their solar-printing facilities a short time ago, which we found so interesting that we shall shortly describe it in full in our magazine. We saw them make several splendid solar enlargements by development, averaging one each four minutes. Their method is rapid and certain, and their results most excellent. We commend them to the trade as good solar printers.

ABOUT ARTOTYPE.—Material for a very long story with an unfinished sequel is in our hands concerning the "Co.," whose desire concerning artotype was to find "millions in it," but we have not the space for it, and, besides, our readers are tired of it. We can only congratulate ourselves upon the fact that once more the *famed* process-vender has failed to carry the photographic fraternity with him by misrepresentation, and has had to back down and sell out. Matters are swaying just as we predicted they would, and are coming around all right. There is room for any one desiring it, to get it yet; but the great vender is crowded out ignominiously, and doubtless sits thinking, in his showman style, as the old play says,

"It is and is not—'tis the thing I sought for,
Have kneel'd for, pray'd for, risked my fame
and life for.

And yet it is not—no more than the shadow
Upon the hard, cold, flat, and polish'd mirror,
Is the warm, graceful, rounded, living substance
Which it presents in form and lineament."

He was seen a short time ago looking for a copy of the *Philadelphia Photographer*, in which he expected to find a "good notice." In this he shall be disappointed until he attempts his trickery again, which he will probably do, for he says he has "three or four other things" he "can take up." Please refer to us if information is wanted at any time. Meanwhile Messrs. HARROUN & BIERSTADT will manage artotype. We are assured by these gentlemen that the formula printed in our last issue is "false, and intended to mislead and do injustice to the artotype." More of this in our next.

Specialties.

ADVERTISING RATES FOR SPECIALTIES.—It will be understood that matter under this head is not to be considered as always having editorial sanction, though we shall endeavor to clear it of anything tending to deceive or mislead. Stock-dealers will find this a beneficial mode of advertising, and sure to pay largely. Six lines, one insertion, \$2.00, and 25 cents for each additional line, seven words to a line—in advance. *Operators desiring situations, no charge.* Matter must be received by the 23d to secure insertion. Advertisers will please not ask us for recommendations. We cannot undertake to mail answers to parties who advertise. Please always add your address to the advertisement.

SOLAR PRINTING,

THE WILLIS PROCESS.

Convinced of the permanency of the prints made by the Willis Platinum Process, I have purchased a license for my establishment.

On account of our splendid facilities and long experience in Solar Printing, we have already produced enlargements which the inventor, Mr. WILLIS, pronounces the finest he has ever seen.

We rest our case on this testimony.

If dark weather threatens to delay orders, we shall use the Electric Light for printing. Annexed are the rates for Platinotype Enlargements:

Size, 16 x 20, unmounted	\$1.75;	mounted	\$2.25
“ 18 x 22, “	2.25;	“	2.75
“ 20 x 24, “	2.50;	“	3.00
“ 22 x 27, “	2.75;	“	3.50
“ 25 x 30, “	3.00;	“	3.75
“ 26 x 32, “	3.25;	“	4.00
“ 29 x 36, “	4.50;	“	5.50
“ 30 x 40, “	6.00;	“	7.25
“ 35 x 45, “	7.75;	“	10.00
“ 40 x 50, “	10.00;	“	13.00

BY THE SILVER PROCESS.

PLAIN OR ALBUMENIZED PAPER.

Size, 16 x 20,.....	\$1.50;	on strainers,.....	\$2.00
“ 20 x 24,.....	2.00;	“	2.50
“ 25 x 30,.....	2.50;	“	3.00
“ 30 x 40,.....	4.00;	“	5.00

Mounting on Card Board (22 x 28) 50 cents.

All orders must be accompanied by the cash.

SPECIAL NOTICE.

As so much depends upon the good printing qualities of a solar negative, I have concluded to make solar negatives from copies *without charge*, if the originals are sent to us with the orders for enlargements.

GEO. G. ROCKWOOD,
17 Union Square, New York.

PERPETUAL SUNLIGHT.

OUR SOLAR PRINTING business has so suddenly and rapidly increased (the result of careful and excellent work), as to oblige us to PUT IN AN ARTIFICIAL LIGHT, and it is working with excellent success. We congratulate both ourselves and our customers that the annoying delays, so often caused by cloudy weather, are at an end.

See our Price List in adjoining column, and below, what our friends say.

GEORGE G. ROCKWOOD,

17 Union Square, N. Y.

“I think the print very fine and of excellent color for finishing. M. F. KING,

“Portland.”

“The print is at hand; it is excellent.

“L. R. BLISS,

“Groton.”

“The last print is a splendid tone.

“C. F. SIMMONS,

“Augusta.”

“The albumen (print) came safe, and I was well pleased with it. I am in hopes to have more for you. THEODORE F. CHASE,

“Providence.”

“DEAR SIR: I have been making crayon portraits in Dunkirk for the past two years with general success, and I feel it is owing in a great measure to the very fine solar prints you have sent me. Believe me I have long wished to express my admiration for your excellent work, and shall use no other solar prints than those made by you.

“Respectfully yours,

“GEORGE A. H. EGGERS.”

A GOOD CHANCE FOR A GOOD ARTIST.—Photograph Gallery for sale in Sherman, N. Y. Town of 1300 population, growing business, only gallery in the place. Will sell for \$250, or inventory price. Reason for selling, failing health.

Address, J. P. GOODRICH,
Sherman, Chautauqua County, N. Y.

**The Photographer to his Patrons.
The Great Christmas Advertising
medium for Photographers. \$15
per Thousand. See Adv't.**

FOR SALE—The Lake Shore Studio, Skaneateles, N. Y. Population of the town about 4600; growing village; rich farming country; only gallery in town. With the increasing business prospects, this is a rare chance. If sold before April 1st, 1880, can be bought cheap.

For further particulars, address
O. H. WILDEY,
P. O. Box 43, Skaneateles,
Onondaga Co., N. Y.

FOR SALE.—Eight hundred dollars will buy the best located Gallery in a city of 30,000 inhabitants. Rooms up one flight. Rent only \$10 per month. Instruments of all kinds, including Solar Camera, direct printer. Address

Box 1157, Springfield, Mass.

FOR SALE—A first-class Gallery in a large city in Massachusetts. It is well fitted up, and has been managed with the sole view to retain it. Terms, \$1200 cash; worth \$2000. Any one who means business (others please not reply), address

E. W. HARLON,
Brattleboro, Vermont.

FOR SALE—A Gallery in Minneapolis, Ottawa County, Kan. The only one in the county. Population 12,000. Doing a business of \$141 per month for the last eighteen months. Will sell for \$500 cash. If you are looking for a location write to me. Reasons for selling, have a half interest in a mine in Colorado, and want to go there and look it up. Address

Box 10, Minneapolis,
Ottawa Co., Kan.

FOR SALE CHEAP.—First-class Oxyhydrogen Lanterns (dissolving) and outfit.

Address CHAS. STAFFORD,
Lock Box K, Palmyra, Mo.

JANUARY, 1879, AND OCTOBER, 1879, PHILADELPHIA PHOTOGRAPHER WANTED.—Will exchange for current numbers or pay fifty cents each for them in books. Parties sending them may keep the pictures if they wish. We want the letter-press to make up volumes for our friends.

EDWARD L. WILSON,
Photo. Publisher,
116 N. Seventh St., Philadelphia.

BACK VOLUMES OF THE PHILADELPHIA PHOTOGRAPHER FOR SALE.—Nicely bound, from Vol. 1. Also the *Photographic World*, Vols. 1 and 2. *Photographic Mosaics*, from No. 1, and a few year-books, and *British Journal Almanacs*. Having stopped working at my once beloved hobby, I want to sell out my books. Address

"AMATEUR,"
Care Philadelphia Photographer.

NEGATIVES WANTED—Of all the large cities of the United States, Canadas, and South America (stereoscopic size), Panoramas, Harbors, and Bridges only. Parties having new, unused negatives will do well to send proofs with prices. Would contract with a good photographer for making negatives. Address

EDWARD L. WILSON,
116 N. Seventh St., Philadelphia.

PHOTOGRAPHERS, ATTENTION!!—Unmounted Stereoscopic or Cabinet-size Views of Washington will be sent to any address on receipt of the following prices:

Two dozen,	. . . . .	\$1 00
Per gross,	. . . . .	4 50
Per 1000,	. . . . .	25 00

Printed with care on Dresden or Hovey's paper. Satisfaction guaranteed.

Negatives made for Photographers.

RANALD DOUGLAS,
819 Market Space, Washington. D. C.

**The Photographer to his Patrons.
The Great Christmas Advertising
Medium for Photographers. \$15
per Thousand. See Adv't.**

FOR SALE VERY CHEAP.—Marcy's Sciopiticon, in box, with 200 Slides, Screen, etc., a splendid outfit, nearly new, and a bargain. Price, \$80. Cost \$175. Address, with stamps,

E. E. GAYLORD,
Concord, Minn.

A GRAND OPPORTUNITY for making money, in the healthiest locality and finest climate in the United States. I have outside enterprises that demand my attention, and therefore offer a first-class business for sale—a fine Gallery, fitted up with every modern improvement, the finest instruments, and everything in best order. A business of \$5000 per annum, and possible increase of double that amount. Will sell at invoice. Address

H. L. BINGHAM,
San Antonio, Texas.

FOR SALE CHEAP.—Good Gallery. No opposition. Address

C. STAFFORD,
Lock Box K, Palmyra, Mo.

The Photographer to his Patrons.
The Great Christmas Advertising
Medium for Photographers. \$15
per Thousand. See Adv't.

SEAVEY

Again takes the field with a host of *Winter Landscapes*, Winter Cottages, Sleighs, Bridges, Snow-covered Rocks, Artificial Snow, Ice, etc. Suitable for men, women, and children, standing, walking, sleighing, coasting, or skating, in clear weather or in storm.

Full instructions sent enabling any photographer to get up a *great snow-storm in five minutes*, even in warm weather.

A new sheet of reduced photographs, showing poses and various effects, also sent gratis with each Background.

Plain and Rich Modern Exteriors, Fire-places, Antique Cabinets, Bric-a-brac, Vases, Pitchers, Plaques, Papier Mache and Genuine Richly Carved Chairs, Children's Chairs, Stands, Japanese Screens, etc.

Address for Sample Photographs, and mentioning the articles on which you wish information, to

LAFAYETTE W. SEAVEY,
No. 8 Lafayette Place. N. Y.

Studio established 1865.

GREAT BARGAINS.—We have some second-hand portrait and view lenses for sale, of nearly all sizes. To any one in want of a good lens, at low price, we will send list of all sizes we have.

BENJAMIN FRENCH & Co., Boston.

ONE HUNDRED DOLLARS will buy a Room with Instruments, doing a small but reliable business. healthy town. Address

J. C. YOUNG,
Gadsden, Ala.

VOIGTLANDER & SON'S new *Back Lens*. Now is the time to provide your Voigtlander Tubes with the new back lens, which will enable them to work in one-third less time, a great advantage in short days and cloudy weather. They give greater depth of focus, and more brilliant pictures.

Wilson's Lantern Journeys. Vol. II. See Advertisement.

WILLIS'S PLATINUM PRINTING PROCESS.—C. GENTILE, representing WILLIS & CLEMENT, Proprietors of the Patents for the United States, is now in the West selling Rights.

Photographers wishing him to visit them in the Western, Southern or Northern States, will address

C. GENTILE,
Oakwood Boulevard, Chicago.

J. L. CLARK, Wm. F. HAAS.
CLARK & HAAS,

Sweep smelters, gold and silver refiners, assayers. Special attention paid to refinings of photographers' waste. No. 10 Fayette St., between 9th and 10th, below Arch St., Phila., Pa.

References: Wm. H. Rhoads, artist-photographer, Phila.; Messrs. Schreiber & Sons, photographers, Phila.; H. M. Clifford, photographer, Phila.

NEW LENS.

HARTFORD, CONN., April 4th, 1879.

MESSRS. B. FRENCH & Co.

After giving the "New Back Lens" a thorough trial, I find the average time of exposure reduced *one half*; while it exceeds the old lens both in sharpness, field, and depth of focus. I have now been a patron of your house twenty-seven years, and it affords me pleasure (for the sake of the fraternity as well as myself), to say that you have never engaged in the sale of ANY of the multitude of humbugs that have (so extensively) been in vogue. Photographers will more and more appreciate a house that rests firmly on the solid foundation of fidelity, truth, and integrity, and studies the PRACTICAL wants of its patrons.

Yours truly, H. J. RODGERS.

A FIRST-CLASS business opportunity is offered to a party with small capital and business capacity, in a gallery at the corner of two of the principal shopping streets in Philadelphia. Present owner is a superior crayon artist and negative retoucher. Call on the premises.

E. W. HEACKLE,
S. E. cor. Ninth and Arch Sts., Philada.

IMPORTANT ANNOUNCEMENT.

DRY PLATES FOR GALLERY USE.

I have commenced the manufacture of *Bromo-Gelatin Emulsion Plates* for gallery use. They are *ten times as sensitive* as the best wet collodion plates, and equally as good in every particular. Seldom or never requiring re-development. Just as easily developed, and sure every time. By their use no weather is too dark. They are cheaper than collodion plates, because you save *alcohol, ether, gun-cotton, iodine, and silver baths*, and because failures are reduced down to a minimum.

I will keep in stock all sizes up to 8 x 10. Larger sizes made to order.

Price per dozen :

1/4 size,.....	\$1.00.	5 x 8 size,.....	\$2.50
1/2 "	2.00.	4-4 "	3.00
8 x 10 size,.....			4.50

Full directions for development, etc., accompany each package.

No photographer can afford to do without them. Send for sample photographs made with my emulsion.

Direct your orders to J. H. SCOTFORD,
Lansing, Mich.

Or to your stockdealer.

**The Photographer to his Patrons.
The Great Christmas Advertising
Medium for Photographers. \$15
per Thousand. See Adv't.**

WAYMOUTH'S VIGNETTE PAPERS continue to be in great demand, such orders as the following from the trade are frequent:

"NEW YORK, Nov. 4, 1879.

"Please send us 3 dozen Waymouth's Vignette, each, Nos. 1, 4, 5, 17; 6 dozen each, Nos. 2, 3, 4, 6; 4 dozen each, Nos. 9, 11, 14; 4 dozen each, Nos. 13, 15, 16; 2 dozen, No. 10; 6 dozen, No. 15 1/2, 'Ormsby pattern.'

"SCOVILL MANUFACTURING Co.

"419 & 421 Broome St."

PERFECTION VIGNETTES for the SOLAR CAMERA.

—A full set, five sizes, sent by mail on receipt of price, \$2.50.

W. L. SHOEMAKER,

828 Wood Street, Philadelphia.

FOR SALE.—The best paying gallery in Michigan. Business for twelve months past averaging over \$400 per month. Best location in the city, on second floor. Price, \$2500 cash. Am manufacturing bromo-gelatin emulsion plates for gallery use, and need all my capital in the manufacture. See advertisements in another place.

J. H. SCOTFORD,

Lansing, Mich.

The Photographer to his Patrons.

**The Great Christmas Advertising
Medium for Photographers. \$15
per Thousand. See Adv't.**

SITUATIONS WANTED.

No charge for advertisements under this head; limited to four lines. Inserted once only, unless by request.

By a young man to do retouching; can assist in the general work of a gallery, if necessary. Has had considerable experience in the business, and can furnish good references. Address O. H. Perry, Ballston Spa, New York. Care T. J. Arnold.

By a young lady, as retoucher. Samples of work sent on application. Address Lock Box 124, Janesville, Wis.

A first-class operator and retoucher is open for an engagement. Twelve years practical experience. At present engaged with Mr. A. M. Allen, Pottsville, Pa. Specimens and photograph of self will be sent on application. Address F. W. Kerrison, Pottsville, Pa. Care A. M. Allen.

By a young man, 24 years of age, single, of six years' experience in first-class galleries. Will accept position as retoucher and printer, or general worker. Can operate. Will work a gallery on percentage. Address H. S. Keller, Little Falls, N. Y., for further particulars.

By a retoucher of five years' experience. Can also work india-ink, crayon, and water colors. Address Thomas Blackwood, 196 W. Fifth St., Cincinnati, Ohio.

By a young lady of several years' experience as reception-room attendant or retoucher. Can also "spot out" prints and assist in printing. Address Miss S., care A. H. Beal, No. 18 South Fourth Street, Minneapolis, Minn.

By a lady with five years' experience in mounting and finishing prints, in some first class studio. Can also do retouching. Can give reference if required. Address, D. M., 171 Superior St., Cleveland Ohio. Folyambe's Studio.

An india-ink and crayon artist desires a situation. The South preferred. Address G. H. Rupp, Akron, Ohio.

In some good gallery, to do general work. Address, J. W. Selby, Photographer, Crawfordsville, Ind. Box 333.

By a young man that can print and tone and make himself useful in a gallery. Address O. Snyder, care of W. H. Stauffer, Trenton, N. J.

As printer and toner or assistant operator, or would do general gallery work. Good reference given. Address W. F. Moody, Whitewater, Wis.

By a young man that thoroughly understands all branches of the business, a position as dark-room operator. Also understands photo-lithography. Address "Operator," 369 E. Sixty-second Street, New York.

By a young man as operator, retoucher, and general man. Can make good work, or would buy gallery on easy terms. Address "Photo," Box 797, Meadville, Pa.

IMPROVED PHOTOGRAPH COVERS.

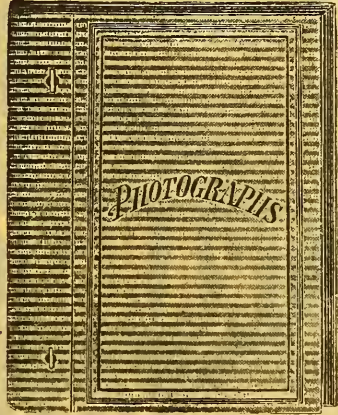
Frequent inquiries for something at a much lower price than an album, for the holding together and preservation of photographs, has induced us to manufacture an article which we think will meet the want.

It Serves all the Purposes of an Album,
FOR

A Series or a Set of Portraits,
A Series or a Set of Landscapes,

A Series or a Set of Photographs of any kind may be neatly and cheaply bound in these covers.

They are made with expanding backs, so that from six to twenty-four pictures may be inserted in one cover. The pictures are mounted in the usual way, and then strips of linen, or strong paper, of the proper width, are pasted on one edge, by which the picture is inserted and held in place in the cover by a paper fastener. For binding together views of your town or city, or portraits of celebrities, they are very neat. The following is a list of sizes and prices, without cards:



	Per dozen.	Per hundred.		Per dozen.	Per hundred.
For Photograph. Card Size,	\$1.50	\$10.00	For Photographs, Cabinet Size,	\$2.25	\$13.00
<small>EXTRA HEAVY COVERS.</small>					
5-8 Size,	4.50	33.00	4-4 Size,	6.00	40.00
8-10 "	8.00	56.50	11-14 "	9.00	65.00

Larger or special sizes made to order. Samples mailed at dozen price. *Send for some.*

EDWARD L. WILSON, Photo. Publisher, 116 North Seventh St., PHILADELPHIA.

REVIVAL IN CENTENNIAL OF TRADE VIEWS! OF TRADE


Silver Medal Awarded at the Paris Exposition, 1878.

Every Photographer can sell them by getting up clubs among his patrons. Mr. E. L. Parker, Brattleboro, Vt., recently sent us a club order for 106 Dozen Stereoscopic Views. Why can't YOU do the same?

The Price has been greatly reduced.—**TRY!**—New Catalogues Issued Free.


STEREOSCOPIC VIEWS, GRADE 1 AND GRADE 2.

We have also been } **LARGER VIEWS IN PORTFOLIOS** { in Selected Sets, and
 urged to publish our } now offer them low.

 Photographers and others, during the winter, day and evening, would find it lucrative employment to canvass for these views. Profits Good! Agents doing well!

Lectures supplied on two hundred subjects, including the best views.

Every reception-room should have a set of these Souvenirs. Exquisite for the enjoyment of waiting patrons. Also, **Magic Lantern Slides**, 500 fine subjects.

 Any active person desiring to canvass certain territory for these Views, can obtain special terms and hints from

CENTENNIAL PHOTOGRAPHIC CO.,

EDWARD L. WILSON, Prop'r.

116 North Seventh St., Phila.

WILSON'S
DISSOLVING
TRANSFORMATIONS
FOR THE
LANTERN

EDWARD L. WILSON, MFR

116. N. 7TH ST. PHILADA.

The Most Astonishing Effects Ever Produced in the Lantern.
Have One or More of them. See list below, and consult our Supplementary Catalogue.

- Flight of Mercury.
- Journey of Aurora.
- Flying Time.
- Birth of the Water
Babies.
- The World.
- Tour with the Goddesses.
- The Pigtail Comedy.
- Tragedy among the
Pigtails.
- Hebe's Revenge on Cupid.



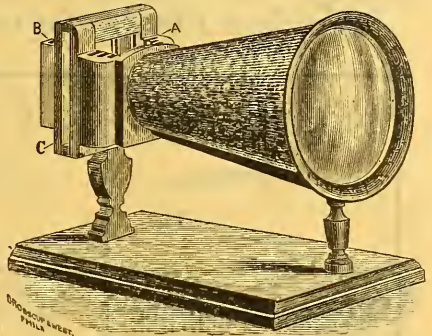
- Girl and Butterfly.
- Little Bird-Catcher.
- The Resurrection.
- 7 Stages of Girlhood.
- 7 Periods of Young
America.
- Noted Women of the
Bible.
- Statuary-Curtain and
Pedestal.

ALL ARE OUR OWN INVENTION AND MANUFACTURE.

Magic Lantern Slides, Lanterns, and Appliances.

THE LATEST NOVELTY,
THE TOUROSCOPE.

A NEW AND NOVEL INSTRUMENT
 FOR
 EXHIBITING GLASS and other TRANSPARENCIES
 BY WHICH
 ENCHANTING EFFECTS,
 LOVELY COMBINATIONS,
 AND BEAUTIFUL RESULTS,
 Are obtained without end in any Light—Day or
 Night.



For description, see the *Philadelphia Photographer* this month, page 380. An instrument every photographer ought to have to help

OPEN UP A NEW BRANCH OF PORTRAITURE.

— PRICE, \$10. —

Parties desiring employment can, with a few of these instruments, and a selection of transparencies, give charming **DAY EXHIBITIONS** all over the country. Its powers to give beauty and create pleasure are unlimited. **PATENT APPLIED FOR.**

Mr. E. K. Hough (well known to the readers of this magazine), says of it:
 "I think the idea is splendid and ought to sell thousands of transparencies."

PHOTOGRAPHERS LOOK INTO IT!

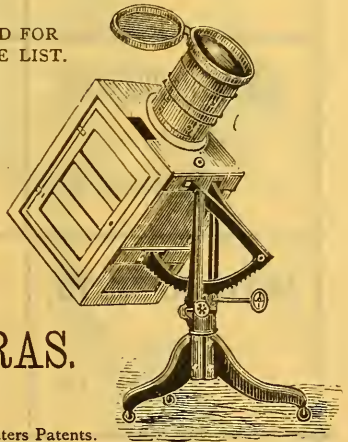
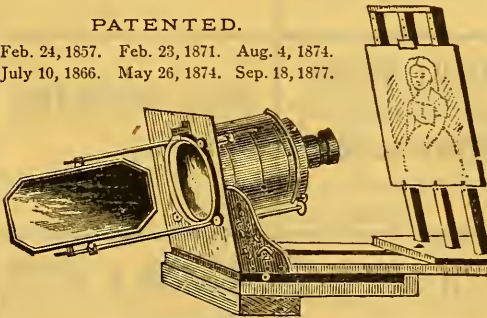
EDWARD L. WILSON, 116 N. Seventh Street, Philadelphia.

REDUCTION OF PRICES!

PATENTED.

Feb. 24, 1857. Feb. 23, 1871. Aug. 4, 1874.
 July 10, 1866. May 26, 1874. Sep. 18, 1877.

SEND FOR
 PRICE LIST.



IMPROVED SOLAR CAMERAS.

D. A. WOODWARD, Baltimore, Maryland.

All persons are warned not to infringe the Letters Patents.

DEALERS' DIRECTORY.

The following houses are to be recommended as the best for photographers in their localities.

S. T. BLESSING, New Orleans, La.	C. W. STEVENS, Chicago, Ills.	OSCAR FOSS, San Francisco, Cal.
BLESSING & BROTHER, Galveston, Texas.	D. J. RYAN, Savannah, Ga.	J. C. SOMERVILLE, St. Louis, Mo.
A. H. BALDWIN, 1 Chambers St., New York.	D. TUCKER & CO., Buffalo, N. Y.	HOWE & BEECHER, Columbus, Ohio.
G. S. BRYANT & CO. Boston, Mass.	WILSON, HOOD & CO., 825 Arch Street, Philadelphia, Pa.	B. FRENCH & CO. Boston, Mass.
WM. J. HAZENSTAB, 302 Market St., St. Louis, Mo.	EDWARD L. WILSON, Photo. Publisher, LANTERN SLIDES, 116 N. Seventh St., Philadelphia.	THEO. SCHUMANN, Atlanta, Ga.
JAMES H. SMITH, Quincy, Ills.	G. BODE, Milwaukee, Wisconsin.	GATCHEL & HYATT, Louisville, Cincinnati, St. Louis.

STOCK-DEALERS ONLY SUPPLIED.

JAMES F. MAGEE & CO.

MANUFACTURERS OF

— PURE —

Photographic Chemicals

108 North Fifth Street, Philadelphia.

SPECIAL ATTENTION PAID TO THE REFINING
OF PHOTOGRAPHIC WASTES.

Robinson's Straight-Cut Photograph Trimmer.

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The accompanying cut shows the shape of the tool and the manner of using it.

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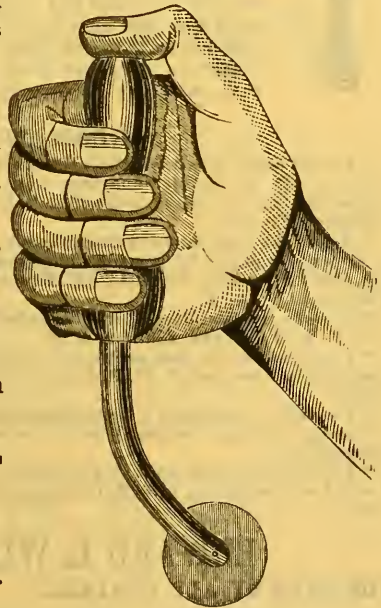
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2½ x 3½	4 x 5½	6½ x 8½	2½ x 3½	2½ x 4½	4½ x 5½
2½ x 3½	4½ x 6½	6½ x 8½	2½ x 3½	2½ x 4½	3½ x 6
2½ x 3½	5 x 7	7 x 9	2½ x 3½		4 x 6½
2½ x 4½	5½ x 7½	7½ x 9½		FOR STEREOGRAPHS.	
3½ x 4½	5½ x 7½	7½ x 9½	Arch Tops.	Round Cornered.	Round.
3½ x 4½	5½ x 7½	7½ x 9½	3½ x 3½	3½ x 3½	3 x 3
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