## PHOTOGRAPHIC NOTES.

*Making Lantern Slides on Dry Plates.*—From a paper read recently by B. J. Edwards before the Photographic Society of Great Britain, and published in the *British Journal of Photography*, on the above subject, we extract the following interesting particulars:

For contact printing from negatives of a suitable size, the gelatino-chloride process will be found especially suitable; it also has the further advantage that it is extremely easy to work.

This beautiful process was first described by Dr. Eder, of Vienna, who exhibited at the Technical Exhibition held in 1881, at the Society of Arts, in London, a series of fine transparencies made by the new process.

In April of the following year I had the honor of demonstrating the process before the South London Society at the same place, and I also introduced gelatino-chloride plates commercially in this country.

Since that time many improvements have been made. Dr. Eder's formula for gelatino-chloride emulsion was published, with instructions for modifying it in preparation so as to produce various tones in the transparency. Dr. Eder also published his formula for development by means of citrate of iron. Then came Captain Abney's ferrous citro-oxalate developer, which was much more rapid in its action, but which gives only black tones in the transparency. Shortly afterward, in the course of my experiments, I discovered that the tone or color of the transparency could be varied at will by simply altering or increasing the time of exposure and using a weak or restrained ferrous oxalate developer. This discovery was published at the time, and at the same time I ventured to predict that this or a similar modification of the gelatino-chloride process, applied to paper, would probably prove the quick printing process of the future. That my prediction has already been partially fulfilled is shown by the rapid printing papers already in the market and more or less extensively used. I have brought with me some of the results of my earlier experiments in this direction, which may be interesting.

With regard to the development of gelatino-chloride plates for transparencies, the rule above mentioned holds good. Short exposure and powerful development gives black tones, while full exposure and restrained development gives warm or red tones.

The following formula will give good results with any desired range of color:

STOCK SOLUTION.

*No. 1.*

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| Oxalate of potash | 2 ounces. |
| Chloride of ammonium | 40 grains. |
| Bromide of potassium | 20 " |
| Distilled water | 16 ounces. |

*No. 2.*

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| Sulphate of iron | 4 drachms. |
| Citric acid | 2 " |
| Alum | 2 " |
| Distilled water | 16 ounces. |

The developer is made when required for use by mixing equal parts of the above solution.

To print the transparency, the chloride plate is placed film side next the negative, in an ordinary pressure frame, taking care to adjust the plate exactly in position over that part of the negative which it is desired to reproduce. The manipulations may be safely done by candle light, or weak gaslight, as, although the plates are very sensitive to daylight, they are not very sensitive to ordinary artificial or yellow light.

The time of exposure to diffused daylight, two or three feet from the window of an ordinary room, will vary from two to twenty seconds, according to the power of the light and the density of the negative; full exposure in a dull light usually gives the best results.

With weak or thin negatives, it is better to cover the printing frame during exposure with a piece of opal glass or white tissue paper, giving sufficient exposure to compensate for the loss of light. A convenient method of printing by artificial light consists in burning an inch or so of magnesium ribbon at a distance of twelve inches from the printing frame; several plates in separate frames can be exposed at the same time to lessen the cost, which is, however, very trifling.

To develop the transparency, place the exposed plate film uppermost in a porcelain dish, mix equal parts of the above solutions, adding No. 2 to No. 1, and pour the mixture rapidly and evenly over the plate; rock the dish during the progress of development (which may be examined from time to time by yellow light). When sufficient detail and density is obtained, which will usually be in about two or three minutes, pour off the developer into a measure, and flood the plate with water, and wash well under the tap.

The above developer, with moderate exposure, will give positives of a rich black or purple color; warmer or redder tones may be easily obtained by simply diluting the mixed solutions with an equal quantity of distilled water, or by adding to each ounce three or four drops of a sixty-grain solution of bromide of potassium and proportionally increasing the time of exposure. In practice it will be found a good plan to make up two separate portions of developer, strong and weak, and commence with the latter. Should the plate prove to be underexposed, the developer must be poured off and the more concentrated solution used to bring out the picture and complete development. This method will allow considerable latitude in the time of exposure. Several plates may be developed in the same solution; but the developer gradually loses its energy, and will not keep long after being mixed.

To fix the pictures make up the following fixing solution:

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| Hyposulphite of soda | 1 ounce. |
| Water | 8 ounces. |

Pour sufficient of the above, when dissolved, into a separate dish kept for the purpose, and immerse the developed and washed plate for two or three minutes, or until fixed, taking care not to expose the plate to light during the operation; then wash well under the tap, and apply the following clearing solution:

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|---|---|
| Sulphuric acid | ½ ounce. |
| Saturated solution of alum | 20 ounces. |

Pour a small quantity of the above repeatedly over the plate for about a minute, or until the slight deposit of oxalate of lime (caused by the washing water) is dissolved away, and the picture becomes bright and clear; as soon as cleared, wash well in repeated changes of water, and allow the film to dry spontaneously. In working this process, great care must be taken that not the slighest trace of hyposulphite of soda comes into contact with the developing solution or with the plate, before or during development. Separate dishes must be used for each solution; the dishes, as well as the hands of the operator, should be frequently washed and kept scrupulously clean during the various manipulations, otherwise the films are liable to become stained and discolored.

When quite dry, the transparencies may be varnished with good clear negative varnish applied with heat in the usual way.

The above method of making lantern slides by contact printing from small negatives will be found all that can be desired. In cases where it is desired to obtain slides for the lantern from larger negatives by printing in the camera, the chloride plates are not found so suitable, owing to their comparative want of sensitiveness to the weaker rays of light which pass through the lens, therefore it becomes desirable to use a more sensitive film. For this purpose it is found that gelatino-bromide plates having the sensitive compound in the film in an extremely fine state of division will, with suitable development, give excellent results, and be sufficiently rapid for all purposes; in fact, plates of any rapidity may be used, provided the development be modified to suit the degree of sensitiveness in the film. Care must also be taken to avoid fogging the plates by actinic light previous to exposure, or during development; at least some portion of the highest lights in the picture should be represented by absolutely clear glass, without a trace of fog or deposit of any kind, which would detract from the brilliancy of the image. These plates are also suitable for contact printing by gaslight, and with a plate of moderate rapidity, about eight or ten seconds' exposure to the light of a good "fish tail" burner, at a distance of about twelve inches from the flame, will be found sufficient for negatives of ordinary printing density; thinner negatives should be exposed less time or at a greater distance from the light. Exposure may also be made by diffused daylight, in the dull light of an ordinary room; it is, however, far more difficult to judge the correct time, therefore it is preferable to use artificial light.

It is important that as nearly as possible correct exposure be given, according to the density of the negative and the power of the light; underexposed plates when developed appear hard, with black shadows and want of detail in the half tones, while very much overexposed pictures are usually thin and flat, without sufficient contrast.

For printing lantern slides in the camera, it will be found a convenient plan to diffuse the light which passes through the negative by means of a sheet of white tissue paper stretched on a frame, and arranged about two inches from the back of the negative; a shallow tray or box without lid, with an open space for the negative cut in the bottom of the tray, and the other side of the tray covered with tissue paper, will answer admirably for the purpose. The space between the camera and the negative should be covered so as to exclude the light. This may be done by means of a sleeve or tube of dark cloth or velvet attached to the tray, and tied at the other end around the lens of the camera. The exposure may be made at a window by diffused daylight, or by burning a few inches of magnesium ribbon a few inches from the tissue paper screen. The flame should be moved about during combustion to insure equal distribution of the light through all parts of the negative.

The plates may be developed with any of the usual formulæ for ferrous oxalate or alkaline pyro, taking care to use sufficient bromide as a restrainer; the iron developer already given for chloride plates answers well.

Ordinary tea saucers form capital dishes for washing lantern slide plates, the transparencies being placed film side downward, so that the plate is supported by the corners a little above the bottom of the vessel. An hour's washing in this manner with several changes water will be found amply sufficient to remove the hyposulphite from the film.

### How the New Mexicans Capture Ants.

An automatic combination self-adjusting ant trap and intoxicating machine has been in use for years in New Mexico and Arizona, which is worthy of careful civilized attention. The chief blessing of that arid section is held to be *mescal*, a fiery liquor distilled from a species of cactus, and the principal curse is an immense black ant that considers himself proprietor of any premises to which his nest may belong. It is said that the natives could not live without either the *mescal* or the ants, for while it is only *mescal* that can make a Mexican's life endurable with the ants, it is only the ants that can wake a Mexican from the profound coma into which the *mescal* plunges him.

The ancient Mexican method of trying to get rid of an ant's nest was to fill up the main hatch with fine gunpowder and touch it off, keep a fire boiling over it night and day for a week, or drown it out with boiling lye. The only result was that the ants would stay down cellar until the trouble was over, and then cheerfully repair the damage done to their dwelling, and "lay for" the Mexican in the silent watches of the night with a vigor and alacrity that were truly awful.

One day a desperate Mexican poured a quart of *mescal* down his throat and buried the bottle in the center of the principal ant's nest in his yard, with the intention of filling it with gunpowder and blowing both himself and his enemies out of the Territory. Having buried the bottle to its neck, he went to the trader's to get the powder. When he returned, he found that the bottle was filled with ants, whom curiosity had prompted to drop in, and who, unable to climb out, were indulging in a rough and tumble free fight that did the Mexican's heart no end of good. Another bottle was quickly procured and filled, and by sunset the Mexican found himsel proprietor of seven quarts of ants in various stages of mutilation and wrath. To shake these into a bonfire was easy, and thus in a day the colony was broken up forever.

The writer has seen two pounds of rifle powder rammed into an ant's nest and prove ineffective in its destruction, while by the bottle system the work was thoroughly accomplished in less than a week by the capture of the last ant in the community.

### Importation of Carriages by Americans.

Mr. Phelps, the new Minister to England, declared in a recent speech before one of the London guilds that "America makes better carriages than England, and makes them cheaper." The London correspondent of the Liverpool *Mercury* disputes this statement, and says that "while America makes lighter and stronger conveyances than England, the landaus and broughams of New York are most of them built in England; and that, in spite of a heavy duty, carriages are bought in London and shipped to New York."

In response to the last statement, *Coach, Harness and Saddlery*, of this city, has published the following energetic rejoinder. It says: "It is true, carriages are purchased in London and shipped to the United States, but the statement that 'the landaus and broughams of New York are most of them built in England' is sheer nonsense. The total appraised value of carriages imported into the United States during the year ending November 30, 1885, was a trifle over $70,000, more than one-half of which were from France. The total number of carriages imported is less than one hundred. Of these, judging from the values appended, at least one-quarter were small vehicles. One of the leading houses in the city of New York has sold more broughams since the 1st of July, 1885, than the total imported from Europe in a year. The larger number of imports are by Americans who purchase vehicles when visiting England or France. One fact is notorious: the vehicles imported are, as a rule, plainer than would be accepted from home builders."

"HORSE SENSE" is well illustrated in the way that some of them perform their duties on the top floors of New York warehouses, where other power is not available, in the work of hoisting goods to the different floors. In one case a horse has thus been kept at the top of a high warehouse for eleven years, without having been down to *terra firma* but twice in the whole time. The horses are directed when to pull and when to stop, pulling by the sound of the check rope when shaken from below, to which they invariably give a prompt attention that might well be imitated by many workers in a higher field, but otherwise they are always left to themselves.