

alcohol. Then scour with a piece of white Canton flannel, until you get the glass perfectly clean and dry. Upon this you pour a thin film, called *collodion*. Then immerse it in the bath, or silver solution, the collodion side up. Let it remain from one-half to three minutes, until it looks smooth, and of a bluish-white colour. Place it in the *tablet*, and then expose it in the *camera* from five to thirty seconds. The time will depend upon the power of the light and the quality of the silver solution. Then take it into the dark room. Immerse in the developing solution, until faint outlines of the picture are seen. Take it out, and from a faucet let a stream of pure rain-water run upon the collodion side, washing the other side with your hand until the oily appearance disappears. Then immerse in the fixing solution, or pour this solution on it, until the bluish appearance is gone. Again wash in pure water from the faucet, and stand it upon its edge to dry. If you wish to colour the lips, use a little rouge on the collodion side. Then pour on the negative varnish in the same manner as you did the collodion, drain well, and dry with a spirit lamp; then put on the black japan, dry it, and put in the case.

Now you have gone through the process, let us see what the bath solution, &c., are composed of.

Collodion.—This is made of gun-cotton, alcohol, and sulphuric ether. To make the gun-cotton, use nitre, sulphuric acid, and cotton. Powder the nitre in a druggist's mortar, pour in the acid and put in the cotton, and stir it with a piece of glass. It must then be washed until it is free from the acid. This is gun-cotton.

Put the ether, ten ounces, and alcohol, eight ounces, into a bottle. Then add the gun-cotton, eighty grains, and shake well, and most of the cotton will be cut or dissolved. Let it stand and settle. Pour off, and then make it ready for use, thus:—

Dissolve iodine of potassium, twenty-four grains, and bromide of potassium, seventeen grains, in as little water as possible, then pour this into collodion, six ounces, and shake well. Then add iodide of cadmium, nine grains, and a few drops of tincture of iodine. This makes the collodion. Most operators buy this collodion already made, and thus escape the trouble and perplexity of making it.

Bath, or Silver Solution.—Make a solution of nitrate of silver, in the proportion of forty grains of the silver to one ounce of water.

Dissolve five grains each of iodide of potassium and nitrate of silver in an ounce of water. This will form a yellow precipitate or settling. Put this precipitate into the silver solution, shake well, let it stand over night, and then filter it. This has a tendency to keep the bath good for a long time. A few drops of nitric acid should be added to the solution.

The *tablet* is a little frame-work into which the glass is placed before it is placed in the *camera*. It has a slide to it to keep the light from it until you are ready to let the image of the one whose picture you want, fall upon it.

The *dark room* is a place in which silver solution and developing solution are kept—from which all natural light should be excluded. The light here used is that of a spirit lamp. Natural light destroys the chemicals, or changes them, so as to make them unfit for taking pictures. It is the action of the light upon the chemicals that makes the image.

Developing Solution.—Dissolve proto-sulphate of iron, one and a half ounces, in water, one quart, and add acetic acid, four ounces; or take five ounces of this solution, and to that add six drachms of acetic acid.

Fixing Solution.—With one quart of water put cyanide of potassium, one ounce; nitrate of silver, ten grains; chloride of gold, five grains.

Transparent negative varnish is gum-damar, thinned with spirits of turpentine.

These preparations are varied by different artists; but the ones I have showed you here will work like a charm.

The *japan*, which is gum asphaltum cut or dissolved in turpentine, is used on the glass plate to secure the picture, and at the same time make it visible—as it is very difficult to see the picture unless it has a dark substance behind it. Sometimes two glasses are used. On one is the image; the other is simply a piece of glass with the japan on it. They are held together by a strip of paper with gum-arabic on it.

—*North-Western Christian Advocate.*

18. HOW A MONEY PANIC WAS MADE IN LONDON.

Panics have been produced by extraordinary means. That of 1832, in Great Britain is thus described in Timbs's "Curiosities of History":—

In May, 1832, a run upon the Bank of England was produced by the walls of London being placarded with the emphatic words, "To stop the Duke, go for gold;" advice which was followed as soon as given, to a prodigious extent. The Duke of Wellington was then very unpopular; and on Monday, the 14th of May, it being currently believed that the Duke had formed a cabinet, the panic became universal, and a run upon the Bank of England for coin was so incessant that in a few hours upward of two millions of dollars was carried off. Mr. Doubleday, in his "Life of Sir Robert Peel," states it to be well known

that the above placards were "the devices of four gentlemen, two of whom were elected members of the reformed Parliament. Each put down £20, and the sum thus clubbed was expended in printing thousands of those terrible missives, which were eagerly circulated, and were speedily seen upon every wall in London. The effect is hardly to be described. It was electric."

14. A HEARTY LAUGH.

AFTER all, what a capital, kindly, honest, glorious thing a good laugh is! What a tonic! What a digester! What a febrifuge! What an exorciser of evil spirits! Better than a walk before breakfast or a nap after dinner. How it shuts the mouth of malice and opens the brow of kindness! Whether it discovers the gums of age, the grinders of folly or the pearls of beauty; whether it racks the sides and deforms the countenance of vulgarity, or dimples the visage or moistens the eye of refinement—in all its phases, and on all faces, contorting, relaxing, overwhelming, convulsing, throwing the human form into the happy shaking and quaking of idiocy, and turning the human countenance into something appropriate to Billy Burton's transformation—under every circumstance, and where a laugh is a glorious thing. Like "a thing of beauty," it is a "joy forever." There is no remorse in it. It leaves no sting—except in the sides, and that goes off. Even a single unparticipated laugh is a great affair to witness. But it is seldom single. It is more infectious than scarlet fever. You can not gravely contemplate a laugh. If there is one laugher and one witness, there are forthwith two laughers. And so on. The convulsion is propagated like sound. What a thing it is when it becomes epidemic.—*Dublin University Magazine.*

VII. Educational Intelligence.

CANADA.

— **UNIVERSITY OF MCGILL COLLEGE, MONTREAL.**—The *Montreal Witness* states that this institution is progressing most favourably. More pupils applied for admission to the Normal School on the day of opening than could be accommodated, although room can be found for 230. There are 62 teachers in training, and the High School department numbers 242 scholars. The Faculty of Arts has raised its number of regular students to 30. In the Medical and Law Faculties, which opened last week, the classes are scarcely fully organised, but will probably reach to 100 students in both. In all about 650 pupils and students of various grades, will, during the present session, be receiving instruction from this institution, in addition to occasional students who may attend particular courses or popular lectures.

— **THE HAMILTON PUBLIC SCHOOLS.**—The examinations of the different Public Schools in the city, concluded with the Primary Schools, yesterday. In those schools which we visited, we noticed that very good order was kept, and that the children cheerfully obeyed the teachers. These are also prominent characteristics at the Central. There appears to be neither oppressive harshness nor unwarrantable laxity on the part of the teachers—neither servile fear nor rudeness on the part of the children.

The pupils in the Central School number..... 850

In the Primary Schools..... 1,150

Total..... 2,000

Such has been the progress of the various classes that it will become necessary at the commencement of the New Year to organize a new department in advance of any hitherto existing in the school, and designed for the prosecution of only the higher branches of study. Pupils in the Central School may acquire not only a good English, but a classical education, embracing, in addition to the common branches, History, Algebra, Euclid, Trigonometry. History of English Literature and Language; Latin, Greek and French Languages; Elements of Botany, Philosophy, Zoology, and Physiology, Vocal Music, Linear Drawing, &c. The classes in the Mechanics' Hall, in the evening, were examined in Electricity, Physiology, and Mental Philosophy; and the proceedings were interspersed by very excellent vocal music. Relative to the proficiency of the pupils we have nothing to add, further than that Mr. Ormiston, in his remarks at the Mechanics' Hall, said he had visited all the prominent public schools in Western Canada, and he had no hesitation in saying that the Central School of Hamilton, stood foremost among them.—*Hamilton Banner.*

— **METEOROLOGICAL OBSERVATIONS.**—THE EDUCATION OFFICE AND THE GRAMMAR SCHOOLS.—Some years since a clause in the school law author-