

apparently less energetic action on bodies than the same acid diluted ; and it was just possible that the metallic compound, whatever it may be, constituting the dark part of a positive paper photograph, might pass unscathed through the ordeal ; the idea was at all events well worth putting to the test of experiment, and, accordingly, the same night, strips of photographs, selected as samples of different tones of printing, and various kinds of paper, were passed through the acid according to the plan above stated.

“The result was one which I had certainly not anticipated : the color and tint of the picture, even in the most delicate half-tones, remained perfectly intact, while the powerful yet uniform contraction of the paper added considerably to the sharpness ; the paper was, besides, suddenly gifted with such great strength, that not only would it bear the roughest handling during the washing operation, without even the possibility of tearing it ; but at any after-time, when finished and mounted, it would bear hard rubbing with soap and water and a wet cloth, without the slightest roughening or abrasion of the surface, if it were sufficiently dirty to render such a mode of treatment advantageous. Added to this, the surface (of an unalbumenized print) assumed a peculiar glossy appearance, giving a richer finish to the picture, without the glare which is so much objected to in albumenized pictures. Another effect, which time alone can decide whether or no it may be added to this long list of advantages, was this : a picture which was fading rapidly, was so treated on one-half only ; there was a powerful odor of hydro-sulphuric acid evolved, and certainly there has been no further fading since, although the short space of time which has elapsed since trying the experiment, makes it difficult, as yet, to appreciate any difference between the two halves as regards their intensity.”

*On the Preparation of a Writing-ink in Cakes.** By A. LEONHARDI.

After the author had discovered the mode of preparation of the so-called alizarine-ink, which is particularly useful, he was anxious to prepare it in a form which would allow it to be sent to a great distance and at any time of the year, render its transport convenient, and diminish its cost considerably, but at the same time fulfil all the requirements of an excellent article. This is attained by the dry alizarine-ink in cakes. The “ink-powders” hitherto found in commerce are not to be compared with it, for they not only possess a different composition, but never dissolve completely to form a clear solution in water, and their employment is attended with so many inconveniences and disadvantages, that they have been given up. Common black ink may indeed be evaporated to dryness, but it leaves a residue which does not again dissolve completely in water, and never furnishes a useful ink by this solution. The recipe for the preparation of the cake-ink is as follows :—

42 parts of Aleppo galls and 3 parts of Dutch madder are extracted with a sufficient quantity of hot water ; the fluid is then filtered, $5\frac{1}{2}$ parts of sulphate of iron are dissolved in it, and 2 parts of a solution of iron

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in wood-vinegar, with $1\frac{1}{2}$ part of solution of indigo, are added to it. The mixture is evaporated to dryness at a moderate heat, and formed into cakes of a proper size (for instance 5 inches long, $3\frac{1}{2}$ inches broad, and $\frac{3}{8}$ -inch thick).

1 part of this cake-ink dissolved in 6 parts of hot water, furnishes an excellent writing and copying ink, whilst even with 1 part of cake-ink and 10 to 15 parts of water, beautiful writing-inks are obtained.—*Mittheil. des Gewerbe-vereins für das Königr. Hannover*, 1856, p. 249.

On some Modifications of Woody Fibres and their Applications.

By the REV. J. BARLOW.

Having called attention to the chief physical peculiarities of woody fibre,—strength, flexibility, elasticity, combined with readiness to take a permanent set or bend, Mr. Barlow first noticed the ingenious application of these qualities devised by Mr. T. Blanchard, of New York, and adopted by the Timber Bending Company. Large beams of timber can be made by end pressure, to take any amount of flexure, are strongest in the bent portions, and yet will break before they can be straightened by mechanical force. Mr. Barlow then referred to the known chemical composition of woody fibre—the material of paper—as consisting of carbon, and of hydrogen and oxygen, in the same proportion as these elements exist in water. Although extremely averse to chemical change, this, in common with other organic substances, has been made to exchange a certain amount of its hydrogen constituent for an equivalent amount of hyponitric acid (NO_4). The discoveries of Braconnet, Pelouze, and Schönbein were briefly adverted to. It was shown, that paper, as operated on by Pelouze's process, is a substitution-product, and, consequently, increased in weight. It is also both combustible and electrical in the highest degree. In reference to this subject, Mr. Barlow invited attention to some recent experiments of M. Kuhlmann, of Lille,—the results of which the courtesy of that gentleman enabled him to exhibit to the meeting. M. Kuhlmann has ascertained that no form of gun-cotton, whether woven or not, will receive dyes, but that when it has lost part of its nitrous principle, by spontaneous or artificially produced decomposition, the vegetable fibre absorbs colors more energetically than it did in its natural state. But the chief subject of Mr. Barlow's discourse, was supplied by a recently invented method of investing ordinary paper with many of the most useful properties of parchment, and also of imparting to it some qualities which parchment does not possess. This discovery was made and patented by W. E. Gaine, Esq., C. E., and it is about to be introduced into commerce by Messrs. Thomas De La Rue & Co. That cold solutions of caustic alkali and chloride of zinc, as well as sulphuric acid, impart strength and fineness to textile fabrics, was discovered some years since, by Mr. J. Mercer; and the fact has been scientifically investigated by Dr. L. Playfair, C. B., and also by Dr. Gladstone. Mr. Gaine ascertained that, of these reagents, sulphuric acid alone was applicable to paper. The effect he

* From the Lond. Athenæum, April, 1857.