

PHOTOGRAPHY IN GERMANY.

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HELIOCHROMY—REDUCING HARD NEGATIVES—HYALINE—
DEVELOPER FOR GELATINO-BROMIDE PRINTS—SOLUBILITY
OF ZINC.

Heliochromy.—To judge from a leader in the *Phot. Archiv*, it seems that a new step forward has been made in the solution of the problem of photographing in the colours of nature. It is said that a young scientist of Munster, in Switzerland, Dr. R. Kopp, who has been engaged with heliochromic experiments for three years, has elaborated a method which enabled him to obtain, with comparatively short exposures, photographic prints on which the various colours are produced all at the same time, and not separately, as is the case with the method of Professor Lippmann. The working details of this much-promising method are, of course, not published by the author, but he claims the following. All the colours and tints, together with black and white, are produced directly by means of a heliochromic process. The time of exposure is a comparatively short one, requiring from thirty to fifty seconds in direct sunlight. The prints, after being fixed, keep very well, only if exposed to the action of direct sunlight they will suffer to a slight degree. The editors of the above-mentioned journal, judging from the prints the author has sent to them, state that the prints have been obtained from transparencies and diapositives on glass; red, violet, yellow, and green being well represented, the lights of the pictures being purely white. The latter is of special value, it being well known that all the predecessors of the author found special difficulty in producing a pure white on their heliochromic pictures. Even the heliochromic prints obtained by Veress show a yellowish-brown ground. The author has also made experiments to produce the colours directly in the camera, and he says that especially the yellow and the green of the trees and of the meadows are reproduced quite naturally. He has no doubt that his process will be soon perfected.

Reducing Hard Negatives.—The following method, recommended by P. Ladewig, has proved in my hands to be a good one in the case of too hard negatives which are to be reduced. The negative, after being fixed and thoroughly washed, is placed in the following solution:—

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|-----------------------------|-----------------|
| Bichromate of potash | 1 gramme |
| Hydrochloric acid | 3 grammes |
| Alum | 5 „ |
| Water | 100 to 150 c.c. |

As soon as the negative is thoroughly bleached, it is well washed until the yellowness has disappeared, and then placed (in daylight) in any old or diluted developing solution. The image is developed slowly, and, at first, on the surface, so that the details in the shadows will be perfectly distinct before the lights have acquired sufficient density. By observing the negative image repeatedly by transmitted light, it will be easy to ascertain the point at which its density will be sufficient; it is then well rinsed, and the remaining silver chloride which has not been decomposed is removed by fixing the negative in hypo. I am quite aware that the method is not new, but it is a good one which deserves to be recommended afresh.

Hyaline.—A new material has been invented by F. Eikstein called "hyaline," which resembles externally the well-known celluloid; but whilst the latter is manufactured by combining camphor with nitro-cellulose, the

new material contains other resinous substances instead of camphor—for instance, copal, dammar, shellac, or a mixture of them. It is very tough, semi-transparent, very extensible, odourless, and much less inflammable than celluloid; it may even be rendered entirely incombustible. The new material should be tried by manufacturers for photographic purposes.

Developing Gelatino-Bromide Prints.—The following developer is highly recommended by Dr. F. M. Eder for gelatino-bromide paper, it giving prints with perfectly clear whites. Two solutions are prepared:—

Solution No. 1.

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|----------------------------------|------------|
| Pyrogallic acid... .. | 4 grammes |
| Potassium meta-bisulphite | 1.5 gramme |
| Distilled water... .. | 100 c.c. |

This solution keeps for many weeks if kept in a well-stoppered bottle.

Solution No. 2.

| | |
|--------------------------|------------|
| Crystallised soda | 10 grammes |
| Sodium sulphite | 15 „ |
| Distilled water... .. | 100 c.c. |

For use, equal parts of solution No. 1 and No. 2, and of distilled water, are mixed. This developer acts less energetically than the ordinary pyro-soda developer, but by increasing the quantity of the soda, and by diminishing the bulk of the water, the intensity of the pictures may be much increased.

Why Chemically Pure Zinc is Sparingly Soluble in Acids.—It is a well-known fact to photographers that chemically pure zinc is almost insoluble in diluted cold sulphuric acid, and that only nitric acid attacks this metal in the chemically pure state. The reason for this strange behaviour of the zinc has not, however, been sufficiently cleared up hitherto. Jul. M. Weeren has now made experiments in this direction, and he found that the chemically pure zinc is very sparingly soluble in acids because, directly it is immersed in the acid solution, it is surrounded by a condensed hydrogenic atmosphere, by which, in normal circumstances, a further attack of the acid is rendered impossible. In the case of nitric acid, the hydrogen which is formed on the zinc surface is, immediately after its formation, oxidised by the acid, so that it cannot condense itself in the form of a protecting covering around the zinc. A means to remove the protecting hydrogenic atmosphere from the pure metal consists in boiling the acid. Whilst at 0° the diluted sulphuric acid dissolved only 2.1 milligrammes of the metal, the quantity of the dissolved metal amounted to 9.8 mg. at 98°, and at 100° it amounted to 122.1 mg.

THE Fry Manufacturing Company have just issued supplementary catalogues containing full description and price list of their dry plates, lantern plates, celluloid films, enlargements on opal, paper, and canvas; bromide paper, ready-made developers, and all the other useful things which this Company deals with in such vast quantities. It can be truly said that the quality of these goods is as good as the quantity is great.

THE camera is not without its practical side. On at least one of the railroads running out of Boston, a camera is used in the legal department to take pictures of wrecks and other matters wherein a presentment of the situation can be made pictorially. A photograph tells the whole story at a glance; and not only does it save time, and therefore money, but it tells the story much better than words could possibly do it. The road in question, it is stated, has saved many thousand dollars in successfully opposing claims for damages which, but for the camera with its picturesque portrayal of the situation, it would have been compelled to pay.—*Boston Transcript.*