



## UNEXPECTED ACTION OF LIGHT.

THOSE to whom photography is something more than a mere amusement will be interested in knowing that Prof. Wood, of Wisconsin University, has apparently solved a problem that has puzzled the best equipped scientists of the time, the cause of the so-called dark lightning flashes.

It has long been known that in the formation of the latent image the light, before it could do its actual work, whatever that may be, expended some of its power in overcoming a certain amount of inertia, and if there was only sufficient to do that, no image would be impressed; but in his search after the cause of the dark flash the professor has found that the first action of the light is to effect a change equal to the rendering of the film insensitive.

It had previously been shown that the dark flash, or reversal as it had been supposed, appeared only when the plate got the necessary fogging light after, not before, the flash; a fact that led the professor to believe it due to a cause other than reversal. It is needless to relate all the experiments he made until he had eliminated every probable cause but time, and showed conclusively that he could produce a flash at will by an exposure of not longer than 1-55,000 of a second.

This is how he did it: Two plates, in each of which there was a narrow slit, were arranged so as to slide rapidly past each other, with a duration of coincidence of the slits of the fraction of a second already mentioned, and a powerful arc light focused on the point of coincidence, the light being sufficient to char paper. To this intense light, and for the short period mentioned, plates were exposed, and in every case where the fogging light was given *after* the exposure, the flash was dark, that is, clear on the negative, but never when the fogging light was given *before* the flash.

Professor Wood sums up the result of his experiments as follows: "*The action of an intense light on a plate for a very brief time-interval decreases the sensitiveness of the plate to light.*" This may not seem very much, but when we remember that little or nothing is really known of the nature of the latent image, we should accept with thanks every little help, and the settling of the long controversy about the dark flash is surely something.

## A NEW FILM.

One of the questions of the past year has been the support for the sensitive film—glass paper, and celluloid, each having had its advocates. In a recent review I called attention to that known as "secco," and expressed the opinion that it would probably take the place of all others; but Sandell, of the Sandell

plate fame, has recently patented what I think, if all that is claimed for it be true, will be the favorite. He gets over the difficulty by doing away with it altogether, and making the film support itself.

The film, like the Sandell plate, is a multi-coated one, the several layers of emulsion, rendered insoluble by chrome alum or formalin, being spread on a suitable temporary support, and when dry, stript, made into rolls or cut sizes, and handled in every way as the films at present in use. In this way the support is done away with, and nothing remains but a film that, according to the inventor, is simply faultless.

## PRINTING BY ACETYLENE.

When bromide paper was introduced, we were taught that as the light varied with the square of the distance, an exposure of four minutes at a distance of two feet would be the same as an exposure of one minute at a distance of one foot; but experience soon showed that there was a difference. With a negative of average quality, the short time at the short distance was found to give a more brilliant print, and since then photographers have acted accordingly. Keeping in mind that fact, recent experiments have shown me that acetylene is an ideal printing light. Size with size of flame, acetylene is about sixteen times more actinic than the flame of a well-trimmed kerosene lamp, and the flame of a burner consuming three-quarter foot gives a print in just one-fourth of the time required for the one-inch wick of the lamp hitherto employed, and a more brilliant result at that. I have been employing the "Winchester" lamp, made in Chicago, but the ordinary acetylene bicycle lamp will answer the purpose.

## A NEW SENSITIZING SOLUTION.

Dr. Johannes Meyer, of New York, has patented what may be called a citro or tartro-phosphate of silver sensitizing solution, for which he claims a sensitiveness sufficient for "printing out" by artificial light. The instructions, as is usual in such cases, are rather ambiguous, but the following will give some idea of its nature.

To a solution of silver nitrate is added a solution of sodium phosphate as long as a precipitate falls, and the precipitate is well washed by decantation, and water added to make an ounce. To this is added five drams of tartaric acid dissolved in five drams of water, stirring the while. This is said to form a jelly-like mass and should be in bulk about two ounces. This forms the sensitive solution, and should be applied with a brush to any surface on which it is desired to print.

If, instead of adding tartaric acid, two drams of citric acid be added, a clear transparent solution is obtained, which is said to be much more sensitive, although the silver is said to crystallize out if left standing. I shall look into the matter, and possibly be able to give a better formula in next review. There is, of course, nothing new in the employment of silver phosphate, and what the patentee can claim is only its combination with an organic acid, but we will not grudge him his patent if all he claims for it be true.

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