

monium nitrate, a mere bye-product which is removed by passing into solution. This plate is used wet—just after sensitizing—and is the kind generally employed for photo-engraving.

Dry plates, such as are commonly used for ordinary photographic purposes, are prepared by coating glass plates with a gelatin emulsion of sensitive silver salts. These plates are used dry and at any time.

If we should take a sensitized plate and expose it to actinic rays a change would be wrought in the sensitive mass; and, if the whole plate be evenly exposed, the change wrought will be uniform, but, if different parts be unequally exposed, the change wrought will be proportional to the exposure and to the intensity of the action. If, then, such a plate be exposed in a camera, properly focussed upon some object, the rays of light, varying in intensity with the different parts from which they are reflected, will affect the plate with different intensities, causing an image to be formed upon it. The action leaves an invisible result. To bring out the image it is necessary to "develop" it.

Development is effected by the action of such reducing substances as pyrogallic acid or ferrous sulphate. These compounds act upon the sensitive film wherever it has been affected by light, separating metallic silver as a dark powder in a very finely divided state. Those portions of the plate which were exposed to light reflected from white objects or high lights appear first, then those from half tones and, finally, the detail in the shadows. Further, as pure white light affects the sensitive film strongest we will have the densest precipitation of metallic silver at those parts of the negative corresponding to the high lights, gradually diminishing, through the various shades, until at those parts corresponding to blacks the negative will be found unaffected. This then gives us a picture in black and white but in reverse of the object photographed. When the process of development has proceeded sufficiently to render details visible the plate is washed and then placed in a "fixing" bath.

The object of this bath is to completely remove all the unreduced salts, i. e., those which were unaffected by the light and subsequently reduced by the developer. This is effected by a solution of potassium cyanide or hyposulphite of soda; the action is a chemical one, the insoluble sensitive salt of silver being converted into a soluble salt corresponding to that of the fixing bath,