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COLOR PHOTOGRAPHY

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Our present invention relates to a process for after-treating photographic color pictures.

It is known that basic and acid dyestuffs are mutual precipitants. This fact has been applied for preventing the migration of dyestuffs in colloids and colloid layers by producing by means of precipitation in such layers or on their boundaries particles of enhanced diameter which have a smaller speed of migration than that of the original dyestuffs. Thus in or on the layer an acid dyestuff incorporated with the colloid behaves as a mordant for the subsequently added basic dyestuff and vice versa.

It is an object of our invention to use this method of after-treating with dyestuffs of opposite reaction in the production of color pictures in individual layers which are superimposed on each other. Not only is it possible in this manner to hinder the migration of the dyestuff present in the layer, but also in processes in which several separate component pictures are concerned, for example on a film coated on both sides with a layer, corrections may be made in a simple manner by thus increasing the density of the individual component pictures.

Further objects of our invention will be seen from the following description.

It has been found that a component picture consisting of Fuller's Yellow O (Walkgelb O; see Schultz, Farbstofftabellen, 7th edition, 2nd volume, page 227) which has been produced for example by the silver dyestuff bleaching out process may be strengthened by being bathed in a solution of 0.5 per cent strength of Thioflavine T (see Schultz, 1st volume, page 401). After this subsequent treatment the picture is washed with water to which acetic acid may be added for accelerating the removal of the dyestuff from the portions of the picture which are not to be colored. For the subsequent coloring of a purple picture in Supranol Brilliant Red B (see Schultz, 2nd volume, page 204) there may be used for example the dyestuff Pyronine G (see Schultz, 1st volume, page 361) and for a blue-green picture in Brilliant Benzo Fast Green (see Schultz, 2nd supplementary volume, page 131) there may be used the basic dyestuff Methylene Blue HGG (see Schultz, 1st volume, page 452).

It is not necessary that the substance which is to act on the dyestuff picture and has a reaction opposed to that of the dyestuff should be a dyestuff. The same result may be obtained when a slightly colored or even a colorless substance of corresponding chemical reaction is used so long as it produces an effect on the color tint in the treated layer.

A special application of the process is its use to vary in controllable manner the content of black in a dyestuff image. For example a three-layer film produced by one of the known subtractive processes, for example by the silver dyestuff bleaching out process, may carry on one side the blue-green layer and on the other the purple layer and the yellow layer. Should the picture thus obtained exhibit excessively brilliant coloring it may be treated with a solution which, as described above, consists of a mixture of the dyestuffs Thioflavine T, Pyronine G and Methylene Blue HGG. In general this solution is so adjusted that a neutral grey tint is produced. In case, however, depending on the conditions in the layer, one of these three dyestuffs diffuses more quickly than the others there may be produced in this treatment a picture which no longer has the same color value as that of the original copy, but a value which has shifted for example towards the yellow. In this event the solution used for the further coloring must be so adjusted that it contains a smaller proportion of yellow so that as a final effect there is produced a neutral grey. On the other hand an original picture having an undesirable color strain may be corrected by a preponderance of a dyestuff in the after-coloring solution. For example if the picture is as a whole too greenish the content of the after-dyeing solution in Pyronine G will be increased so that in the finished color picture besides the desired darkening there will be a correction to pure grey.

We claim:

1. A process for strengthening the hue of dyestuff pictures in a multi-layer material in each layer of which a different dyestuff picture is located which comprises precipitating the dyestuffs of said pictures by treating said material with a solution of as many dyestuffs as there are dyestuff pictures, each dyestuff having a color approximating that of a dyestuff picture but a pH on the side of the neutral point opposite to that of the dyestuff of said picture.

2. The process as defined in claim 1 including a correction of the color values due to an undesirable strain in one of the dyestuff pictures by maintaining in the dyestuff solution a greater concentration of that dyestuff which has a color complementary to the undesirable color strain to thereby effect a correction thereof.

3. In a process for intensifying and correcting the hue of a photographic dyestuff picture con-

sisting of Fuller's Yellow, the step which comprises after-treating said dyestuff picture with Thioflavine.

4. In a process for intensifying and correcting the hue of a photographic dyestuff picture consisting of Supranol Brilliant Red, the step which comprises after-treating said dyestuff picture with Pyronine.

5. In a process for intensifying and correcting the hue of the photographic dyestuff picture consisting of Brilliant Benzo Fast Green, the step which comprises after-treating said dyestuff picture with Methylene Blue.

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