to avoid spots. Fixing is done as above described, in water acidulated with hydrochloric acid.—*Amer. Jl. Photography.*

Photographic Hints and Formulæ

REMOVING YELLOW, GREEN, RED, OR DICHROIC FOG.—Dr. Meniere, of Paris, advises the following treatment: Soak the negative in ordinary water for five minutes, and then immerse in

Water	100 parts.
Bromide of sodium	3 parts.
Bromine water	3 parts.

Leave in for ten or fifteen minutes. The bleached image is well washed and dried, and the image redeveloped with an amidol-sulphite developer.—*British Journal of Photograpy.*

Platinotypes with Sepia Tones and Hot Development.

Lainer summarises his experiments on this subject. With an addition of 1 per cent of mercuric chloride to the ordinary developer, brownish black tones are obtained; increase of the mercury gives yellowish-brown prints. The oxalate solution should always be heated before the mercury is added, or else mercuric oxalate may separate out. A fresh developer should be used each time. A simpler method of obtaining sepia platinotypes is by adding the mercury to the sensitising solution as follows:

Solution of Chloro-platinite of Potash	6 parts.
Normal Iron Solution	2.5 "
Chlorate Iron	3 "
Solution Mercuric Chloride (1 : 3 to 1 : 14)	1.2 "

The after treatment of the prints is as usual. The prints can be toned with uranium according to Dr. Strakosch's formula.

Water	1,000 parts.
Uranyl Nitrate	10 "
Potassium Ferridcyanide	2 "
Glacial Acetic Acid	60 "

—*Photogr. Corresp.*

Exposure.

In studying the image on the ground glass, it must be remembered that the brightest colors do not necessarily have the greatest effect on the plate. The initials of the seven spectrum colors spell the word "Vibgyor," those towards the beginning of the word being most effective chemically. Green foliage, therefore, stands about midway on the actinic scale, and would require more exposure than if it were blue, and less than if it were yellow and red, as in the fall of the year. At the same time, when brilliantly illuminated, so much white light is reflected that to all intents and purposes it is photographically white. In a landscape, or other subject in which the illumination is uneven, some portions will necessarily be over-exposed, and others under-exposed. It is necessary, then, to determine how far it is advisable to clog up the high lights, in order to obtain detail in the shadows, a question into which the development also largely enters.—*Snap Shots.*

How to Print on Marble.

Mr. Villon publishes the following process: Coat an unpolished plate of marble with the following solution: Benzine 500 parts, spirits of turpentine, 500 parts, asphaltum 50 parts, pure wax 5 parts. When dry expose under a negative, which will take in sunshine about twenty minutes. Develop with spirits of turpentine or benzine, and wash in plenty of water. Now cover the plate where it is intended to be left white with an alcholic solution of shellac, and immerse the same in any dye which is soluble in water. After a while, when enough of the coloring matter has entered the pores of the stone, it is taken out and polished. The effect is said to be very pretty.—*Photographisches Archiv.*

Paste for Mounting Photographs.

STARCH PASTE.

Arrow root	grs. 300
Gelatin	grs. 30
Alcohol	fl. drs. 5
Carbolic acid	gtt. 14
Water	fl. ozs. 7

Dissolve the gelatine in the water, then add the arrow root, and boil until the paste is clear. After cooling incorporate the alcohol and carbolic acid, or

MOUNTING GLUE.

Gelatine (Nelson's photographic No. 1)	ozs. 4
Water	fl. ozs. 16

Dissolve, then add

Glycerin	fl. ozs. 10
Alcohol	ozs. 5

The silver prints should be slightly moistened before mounting. When mounted it is advisable to subject them to pressure.

Thiosinamine as a Fixing Agent.

Thiosinamine is reported by R. E. Liesegang to be a desirable substitute for sodium hyposulphite (thiosulphate), as a fixing-agent. Its aqueous solution removes the silver salt from a silver-chloride gelatin plate just as quick as sodium hyposulphite does, it is claimed. Bromide of silver dissolves a little slower, but completely. Silver-chloride paper-prints are fully fixed after four minutes' immersion in a 1-% solution. If $\frac{1}{10}$ per cent. solution of gold-chloride is added to the liquid, a quick-acting, tone-fixing bath is obtained. Aristo pictures treated herewith have greater depths than platinum pictures. For warm tones the quantity of the gold is to be reduced. Thiosinamine can be mixed with an equal quantity of concentrated hydrochloric acid or other acids, without decomposition of the salt and without reduction of its solvent properties, it is stated. It can also be mixed with alum or chloride of sodium. An alkali which, by the way, would be unnecessary, should not be added to the solution. Such a mixture blackens unexposed chloride, or bromide of silver, and does not dissolve it any more. Concerning the influence of thiosinamine which remained after insufficient washing upon the duribility of the picture, nothing definite can be said as yet. Several prints, which, after fixing, had only been washed superficially, were kept for twenty days without perceiving the slightest change. Should this prove to be the case generally, another great advantage over sodium hyposulphite would be obtained.—*Photo. Bulletin.*

Photographing Animals.

As in the case of animal photography very often rapid movements are to be fixed by the camera, a first-class rapid lens of sufficiently long focal length, (seven to eight inches at least) should be used. If it is possible to previously determine the place where the exposures are to be made, it is well to set up a suitable background in a proper position, corresponding, of course, as regards color with the objects to be photographed. Thus, for instance, a white sheet should not be hung up if a white cat or goat is to be taken, nor a dark-colored material if dark-colored animals are to appear before it. This applies also to the ground over which the animal moves Besides, the background should be of sufficient size to cover the whole plate, and not leave an end or side vacant. Especially if the animals are small, the background should come down fully to the ground, otherwise there will always be an unsightly space just in the rear of the lower legs. In order to ensure accurate focussing, the moving subject should arrive at a point which has previously been determined and focussed upon.

As full sunlight will have to be used in order to obtain sufficient rapidity, great attention must be paid to the shadows, which very often are thrown heavily upon the background or on the ground, or both, and are more prominent than anything else in the picture. If this defect cannot be prevented, a great deal may be done on the finished negative by retouching.

White or light colored animals can, of course, be more easily photographed than dark-brown or black ones, as can also those whose natural movements are not particularly rapid. Among domestic animals, excellent results may be obtained with dogs almost all kinds, cats, rabbits, pigs, goats, donkeys, oxen, horses and calves. Tame water-fowl of every variety may also be taken either singly or in groups.—*Photo. Pastimes.*

The magnesium light was first applied to art photography in 1864.

The *British Journal* suggest the use of Sulphate of magnesia, added to the washing water instead of alum, for the purpose of preventing softening or "frilling" of the film.