

Home

Photography

First Lesson.

“How to do your own
Developing.”

By David Charles.

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Developing Films and Plates

By David Charles.

TO watch a photograph grow, mysteriously from nothing on a blank white film, is one of the most fascinating sights imaginable. Nor, surprisingly enough, does the experience diminish in enchantment, even after many years. First in vague faint tinges of grey here and there; then forming into distinct images of the scenes one photographed but yesterday. A little further still, till they begin to disappear again, this time into the growing blackness; then, except for "fixing" and washing the job is done.

THAT is the simple process called developing. If it cost quite a lot those who practise it would count the experience well worth the money; but it actually costs less in cash to develop at home. This booklet tells you how!

Light and Darkness DEVELOPING, unless you possess a "daylight tank", must be done by the light of a photographic safety-lamp, red in colour. *No other light* must get on to the film.

While some can luxuriate in the proud possession of a photographic room apart—a dark-room—yet a simple light-proof shutter to the window makes the scullery or the bathroom quite suitable and a large cupboard is almost as good. By developing after dark, the ordinary window-blind is sufficient protection from any but the very brightest moonlight, or street-lamp.

Chemicals YOU need buy only two:—a bottle of AZOL and a tin of JOHNSON'S ACID-FIXING POWDER. Both of these are extraordinarily economical in use. WATER, free from the tap, is the only other chemical required.

Apparatus, Dishes, Etc. EXCEPTING a small graduated measure, say a 4 oz. one, and a thermometer, there is no real necessity to purchase anything. A big jug and a bowl and a couple of small pie-dishes can be bought or borrowed(?) from the kitchen. Enamel dishes are usually squarer than earthenware and are therefore more economical with solutions.

The Azol Method of Development.

THE word "method" does not imply that there is anything more difficult to perform or that it requires any more skill than slapdash ways; it is definite and therefore easier, it also means that you do the same things every time and so obtain a regular quality of negatives. Secondly, and as everyone who makes his own prints will readily admit, such regular grades of negatives produce first-rate prints with an ease and freedom from waste that is astonishing to those who do not develop their negatives by any sort of method.

THE AZOL method consists of developing for a certain length of time, varied only by the temperature of the developer. Clearly, if you can arrange to use the developer always at about the same temperature (and that is not so difficult in practice as it sounds) the same duration of development will always produce the same types of negatives, with the same brand of material.

Development Time

ON reference to page 3 of the AZOL leaflet you will find that most of the well-known brands of roll-films are included under Group D and, if developed in the normal strength of solution for dish development, namely, 1 part AZOL to 24 parts of water, at a temperature of 65° Fahr., the time of correct development will be 8½ minutes. Whatever brand of plate or film you are using ascertain in which Group it is included and the time of development is quickly determined from No. 1 Table on page 4 of the AZOL leaflet.

SHOULD it be desired to shorten the time of development the developer may be used stronger, one-part of AZOL to 12 parts of water, or 40 minims to each ounce, and in this case develop for only half the time mentioned in Table 1 on page 4.

Preparing the Solutions

PREPARE the Fixing-bath first. Dissolve 2 ozs. (half of a 4 oz. tin) in 15 ozs. of water. This quantity is three-quarters of a pint; pour this into the larger of the dishes and take care not to get any on your fingers or in the developer. The temperature of the Fixing-bath should be

about the temperature of the room—cold solutions are always slow in their action.

Developer THE developer is very easy to prepare. Take a $\frac{1}{4}$ oz. of AZOL in the glass measure and add 6 ozs. of water. This poured into the smallest pie-dish is a convenient quantity for developing an ordinary spool or film; and note that the best temperature of the solution is between 65° and 68° Fahr.

Water FILL a big jug with plain water.

Developing a Spool HAVING lit the red lamp and excluded all other light you are ready to develop a film. Work four feet from the light to prevent "fog".

Preparing the Film UNROLL the spool, remove the paper strip and attach a metal clip, such as the "Dallon," at each end of the film; take one of the clips in each hand and pass the film gently into the jug of water until it is completely submerged. It is unwise to let any part come above the water until the whole is quite saturated, which takes from twenty to thirty seconds.

Developing STILL holding the ends of the film lift it out and begin passing it through the developer from end to end. By keeping the strip in the form of a narrow loop and by steadily raising one hand as the other is lowered the bottom of the loop can be kept smoothly flowing through the liquid without rubbing on the sides of the dish.

Fixing AT the end of the required time lower the film again into the jug of water for a few seconds to remove some of the active developer, and then pass it to and fro through the fixing-bath in exactly the same way as you did in the developer; or, if you have the Fixing Solution in a jug or deep pie-dish make sure that the film does not overlap itself. It is advisable to allow the film to remain submerged in this solution for another minute or two after the whiteness has completely disappeared, then you can turn on the light and prepare for washing the film.

Washing ALL the chemicals must now be washed out of the film. To prevent parts touching and to

allow of free circulation of water the ends can be clipped together, so forming a loop. The bowl placed under the tap provides a convenient means of washing.

Drying AFTER about half-an-hour's washing lift the film out of the water and pin up to dry where the air can get all round it. A clip on the lower end will serve to prevent it curling up.

Warning IF you are using Panchromatic films or plates they must be developed in absolute darkness; no light must be allowed to reach the emulsion on these.

Developing Plates THE difference between developing plates and roll films is that the plate is laid in the bottom of a dry flat dish and the solution is poured over it with no preliminary wetting.

THE pouring must be done steadily so that the liquid flows in a smooth even wave and that no part, once wetted, is uncovered; this is best done by sliding the measure along the side of the dish as you pour; this becomes very easy after a little practice with plain water poured into an empty dish. The dish should be *gently* rocked during the time of developing instead of moving the plate.

TIME of development is ascertained in the same way as for films, see AZOL Groups and Tables, and after development is complete the plate should be rinsed in water and may be placed in the fixing-bath and left without rocking.

WASHING under a gentle flow of water into a dish completes the process. To dry a plate, stand it in a rack, or on edge on a clean sheet of blotting paper, and do not handle it again till it is quite dry.

Tank Development

DEVELOPMENT by the AZOL method in a tank offers many advantages; with some tanks it affords a means of dispensing entirely with the need for a dark-room.

FOR the user of film-packs and for the plate user who wishes to save time by developing a number together a tank is almost indispensable.

EACH make of tank has its own instructions for loading and they may differ in the quantity of solution required to fill them.

AZOL is the ideal tank developer from every point of view, scientifically, and on account of the readiness and ease in preparing, and also its cheapness.

ASCERTAIN how much water is required to fill the tank and stir into the water (before pouring into the tank) the necessary amount of "neat" AZOL to bring the solution to the required strength of 1 oz. AZOL to 40 ozs. water or $\frac{1}{4}$ oz. AZOL to every 10 ozs. water.

Temperature

It is important to accurately take the temperature of the solution when it is poured into the tank. Times for tank development are stated in the leaflet given with every bottle of AZOL.

Fixing in Tanks

THE instructions for using any particular tank will state whether it is possible to pour out the developer and then pour in the fixer, which is usually the most convenient method; or whether the contents should be lifted out and fixed in another container.

"Watkins" Factor Method of Development

THERE is another convenient system of timing the length of development, especially for those who have no thermometer. It consists in noting the time it takes for the first visible image to appear; then by multiplying that period by a certain "factor" the total time required to complete development is obtained. THE "factor number" for AZOL is 30 for average negatives. If, therefore, the first signs of the image appear in 20 seconds, then this time is multiplied by 30, which produces 600 seconds, that is ten minutes, and development will be completed when ten minutes has elapsed from the start.

It is important to note that every developer has its own "factor", for instance the factor-number of Johnson's 3d. M.Q. Developer Packet is 18.

For developing by the factorial method these 3d. packets are particularly excellent, and they are as good for developing negatives as for prints.

JOHNSON'S CHEMICALS
FOR
HOME PHOTOGRAPHY.

JOHNSON'S PACKETS.

DEVELOPERS :

| | | | | |
|--------------|------|-------------------------------|------|----------|
| Amidol | .... | to make 4 to 10 ozs. Solution | .... | 4d. each |
| Chlorquinol | .... | to make 10 " " | .... | 4d. " |
| Gaslight | .... | " 6 " " | .... | 3d. " |
| Metol-Quinol | .... | " 10 " " | .... | 3d. " |
| Pyro-Soda | .... | " 8 " " | .... | 3d. " |

TONINGS :

| | | | | |
|-------------------------------------------|------|---------------|------|-------|
| Toning and Fixing Packets | | | | |
| | | to make 4 " " | .... | 3d. " |
| Pactum Toners (Blue, Green, Red or Sepia) | .... |  | .... | 6d. " |

SCALOIDS—Photographic Reagents in Compressed Tablet form.

DEVELOPERS :

| | | | | |
|--------------|------|--------------------------------|------|-------------|
| Amidol | .... | to make 20 to 40 ozs. Solution | .... | 1/6 per box |
| Gaslight | .... | to make 30 " " | .... | 1/6 " " |
| Glycin | .... | " 20 " " | .... | 1/6 " " |
| Metol-Quinol | .... | " 44 " " | .... | 1/6 " " |
| Pyro-Soda | .... | " 40 " " | .... | 1/6 " " |
| Vedol | .... | " 100 " " | .... | 1/6 " " |

TONINGS :

| | | | | |
|---------------------------|------|----------------|------|-------------|
| Gold Toning | .... | " 40 " " | .... | 2/- per box |
| Gold Toning & Fixing | .... | " 20 " " | .... | 2/- " " |
| Blue, Green or Red Toning | .... |  |  |  |
| | | to make 24 " " | .... | 2/- " " |
| Sepia Toning | .... | " 48 " " | .... | 2/- " " |

SUNDRIES :

| | | | | |
|-------------------------|------|----------|------|-------------|
| Hypo Eliminator | .... | " 15 " " | .... | 1/- per box |
| Intensifier (redevelop) | .... | " 18 " " | .... | 2/- " |
| Reducer (Persulphate) | .... | " 15 " " | .... | 1/- " |
| Reducer (Ferricyanide) | .... | " 10 " " | .... | 1/- " |

DEVELOPERS (Solutions).

AZOL :

| | | | | |
|--------------|------|--------------------------|------|----------|
| 3 oz. bottle | .... | to make 75 ozs. Solution | .... | 2/- each |
| 8 oz. " " | .... | " 200 " " | .... | 4/- " |
| 16 oz. " " | .... | " 400 " " | .... | 7/- " |

ONE-SOLUTION :

| | | | | |
|--------------|------|----------|------|-------|
| 4 oz. bottle | .... | " 28 " " | .... | 1/- " |
| 8 oz. " " | .... | " 56 " " | .... | 1/9 " |

GASLIGHT SOLUTION :

| | | | | |
|--------------|---------|--------------|------|------------|
| 4 oz. bottle | to make | 12 to 20 " " | .... | 10 1/2d. " |
| 8 oz. " " | | 24 to 40 " " | .... | 1/3 " |

SUNDRY SOLUTIONS.

| | | | | |
|---------------------------------|--------------------------------------------------------------|------|------|------|
| Desensitiser | 4 oz. bottle to make 20 ozs. Solution | .... | 2/- | each |
| Glazing Solution | 4 oz. " " 40 " " | .... | 1/- | " |
| | 8 oz. " " 80 " " | .... | 1/9 | " |
| Hypo Killer | 6 oz. " " 24 pints " | .... | 1/- | " |
| | 16 oz. " " 64 " " | .... | 2/- | " |
| Ilford Tropical Hardener | 3 oz. bottle to make 24 ozs. Solution | .... | 2/- | " |
| Redevelop Intensifier Solution. | 4 oz. bottles | .... | 2/- | " |
| Uranium Intensifier | 3 oz. bottles | .... | 1/- | " |
| | 6 oz. " " | .... | 2/- | " |
| Acid Fixing | ½lb. tins | .... | 7d. | " |
| | To make 30 ozs. for Plates and Films and 60 ozs. for Papers. | | | |
| Acid Fixing | ½lb. tins | .... | 10d. | " |
| " " | 1lb. " | .... | 1/6 | " |
| Johnson's Soda Hypo | 1lb. cartons | .... | 4½d. | " |

SUNDRIES.

| | | | | |
|-----------------------------------------------------------------------------------------|---------------------------|------|-------------|---------|
| Fine Grain Developer.—For Leica and all miniature films | Tins to make 20 ozs. | .... | 1/- | " |
| Mountant.—The original Photographic Mountant which has stood the test for over 30 years | In tubes | .... | 6d. | " |
| | or bottles at 1/- and 1/9 | .... |  | " |
| Photo Tints—Complete sets consisting of nine of the finest tints in concentration form |  | .... | 2/6 | per box |
| Larger sets including Brushes, Saucers, etc. |  | .... | 5/- | |
| Pastels.—Consisting of 15 selected Pastels, stumps, rubber and surface powder |  | .... | 2/6 | " |
| White Ink | .... | .... | 1/- | bottle |
| Flashpowder | .... | .... | 1/- and 1/9 | boxes |
| | 1 oz. bottles | .... | 3/- | each |
| | 2 oz. " | .... | 4/6 | " |
| Flashboxes | .... | .... | 6d. | " |

DEVELOPERS.—These developing reagents are for those who prefer to make their own solutions, and are obtainable everywhere.

| | | | | |
|------------------------|--------------------|------|------|------|
| Amidol-Johnson's | 1 oz. bottles | .... | 2/- | each |
| Acid Pyrogallic Cryst. | 1 oz. " | .... | 1/10 | " |
| Chlorquinol | 1 oz. " | .... | 2/6 | " |
| Glycin | 1 oz. " | .... | 2/3 | " |
| Hydroquinone | 1 oz. " | .... | 1/3 | " |
| Metol-Johnson's | 1 oz. " | .... | 2/3 | " |