

Home

Photography

*Fifth Lesson.*

“How to make Enlargements”

By P. C. Smethurst.

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# How to make Enlargements.

By P. C. Smethurst.

THE AMATEUR PHOTOGRAPHER can only experience the fullest enjoyment of the hobby when he starts enlarging, for then pictorial photography in its truest sense can be practised. Sometimes contact prints have pictorial details which are so small as to be almost unnoticeable and which can be only appreciated on an enlargement; there is also the opportunity of controlling the printing of parts of the negative or even a complete masking of undesirable portions; it is these points which make enlarging so fascinating and which helps the keen amateur to acquire skill in composition and pictorial effect.

It is a mistake to think that enlarging is difficult, very little experience is needed and the process becomes so intensely interesting as to make progress quick.

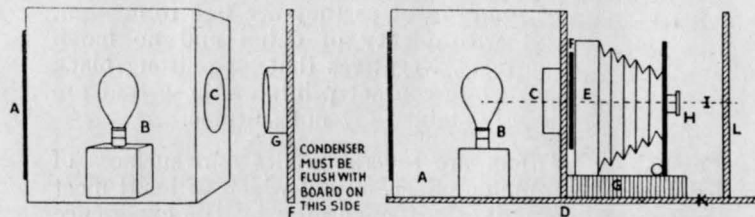
For those who possess miniature cameras enlarging is almost a necessity, otherwise prints are so small as to lack interest and usefulness and the full opportunities of the camera lost. Further, it is nearly as quick, quite as simple and certainly more enjoyable to enlarge from these small films as to make contact prints.

At the commencement it is not necessary to purchase an expensive apparatus, it is easy to make an enlarger that will prove perfectly satisfactory for the cost of a second-hand  $\frac{1}{4}$  or  $\frac{1}{2}$  pl. stand camera with a double dark-slide or plate holder included and a few shillings spent on a condenser and lamp. Anyone can build the apparatus on lines as suggested by the illustration that will give enlargements almost to any size. A box must be made to hold the light, and having a hole the same diameter as the condenser cut in one end of it; the centre of this hole must be in a direct and parallel line with the centre of the light. At the other end of the box there must be a door to allow access to the light. In a piece of wood  $\frac{3}{4}$  in. or 1 in. thick, the same height and width as the box, cut a hole the same diameter and exactly the same position as the hole in the box, place the condenser in this so that part of it protrudes, which part should be pushed into the hole in the box. Bring the rectangular piece of wood into close contact with the box, where it should be either screwed or fastened with hooks to keep it in a firm position.

Screw the box to one end of a baseboard of sufficient length to take the box, the condenser board and

the camera fully extended; the camera has to be fastened to the baseboard in such a position that an imaginary straight line running parallel to the baseboard will pass directly through the centre of the lens, through the camera to the centre of the condenser and centre of the light. To enable this to be done accurately it may be necessary to interpose a block of wood between the camera and baseboard. Before fastening the camera remove the focussing glass and its frame, also remove the dividing partition from the inside of the double darkslide, reinsert the darkslide in its position in the back and place the camera with its back to the condenser with just sufficient space to allow the darkslide to be withdrawn easily.

Now make sure that the camera is at right angles and centred to the condenser and fix it firmly to the baseboard.



**A** Door at back of Light Chamber  
**B** Light with movable Base.  
**C** Hole into which Condenser has to pass.  
**F** Side view of the Board showing position of Condenser (**G**) and the section to be inserted in box.

**A** Light Chamber showing Light and Condenser (**C**).  
**D** Board flush with Light Chamber and holding Condenser.  
**E** Camera Back. **F** Darkslide in position.  
**G** Possible dummy Base to ensure centring the Camera Lens. **H** Lens.  
**I** Imaginary line passing through centre of Lens, Condenser and Light and parallel with the Baseboard.  
**K** Baseboard. **L** Easel.

An orange cap for the lens must be obtained, also an easel; a drawing board makes an excellent easel on which to attach the bromide paper. This board should be covered with a sheet of white paper on which rectangular lines have been drawn, indicating the exact sizes in which bromide paper can be purchased; the easel can be made to stand upright in front of the enlarger on a table or to hang on the wall.

If desired, a horizontal enlarger of this type can be purchased through any dealer; there is a very good selection with a fairly wide range of prices.

THERE is another class of enlarger, the **Vertical type**, which is certainly convenient where space is limited, these have an easel as the baseboard resting flat on the table or bench and all the other parts of the apparatus are overhead; with this type only electric light can be used. There is also a

series of **Daylight enlargers**, very simple box-like constructions, having a film holder at one end, a fixed lens in the body and the paper carrier at the other end. These, however, have limitations as daylight is not constant and is not always available.

**Darkroom Light** ENLARGING must be done in a room where all daylight can be excluded, but it is not necessary to work with a ruby light; an orange light is more suitable and much more pleasant to work with as the different objects in the room can be easily distinguished.

**Negatives** THE most suitable are those that have been correctly exposed and correctly developed. Negatives developed with AZOL according to the AZOL Time and Temperature tables will be found ideal, as they are free from stain, soft with plenty of detail and no harsh contrasts. Negatives that give strong black and white contact prints or those that are heavily stained are not suitable.

**Papers for Enlargements** THERE are several grades and surfaces of Bromide paper, any of which will suit most negatives, although after a little experience it may be found that some papers are more suitable than others for certain negatives.

**Making Enlargements** LET us assume you are now going to make an enlargement with a horizontal enlarger as described. The orange light illuminates the room and the easel is placed about 2 ft. in front of the lens. A negative is in the darkslide in the back of the camera with the film side facing the easel, and turned upside down. All light except that in the enlarger is turned out and, for focussing, the lens is opened to its fullest aperture with the orange cap removed; the image becomes visible on the easel, by racking the front of the camera or lens backward or forward and by increasing or reducing the distance between the lens and the easel, the image becomes sharp and clear at the size required for the enlargement. If light escapes between the condenser and camera a cloth should be placed over this section. If there is a colour

fringe showing in the circle of illumination the light requires a slight adjustment backward or forward in the light chamber, and to do this it is best to remove the negative so as to get a clear circle of light on the screen.

### Test Exposure

EVERYTHING being ready, make a test exposure by the following method.

Switch on the orange light and replace the orange cap on the lens. Now take one piece of the bromide paper, cut this into six narrow strips, place one of these on the easel where the image appears, find a piece of card and cover the paper with this whilst you remove the orange cap from the lens. Now expose a quarter of the paper and count 10 seconds, lower the card a further quarter, so that half the paper is exposed, and count for a further 10 seconds, repeat this for another quarter counting 10 seconds, and, for the final quarter when the whole of the paper is exposed, count another 10 seconds; you have now a strip of four exposures, one each of 10, 20, 30 and 40 seconds. Develop this strip in a solution made by dissolving one packet of Amidol-Johnsons in 10 ounces of water; the image will appear in about 15 seconds and development complete in 1½ to 2 minutes. Do not remove the strip until it is fully developed; if the image does not appear in any section from 25 to 30 seconds it indicates that the whole strip is underexposed and you must repeat the trial, giving 50, 60, 70 and 80 seconds, but this long exposure would only be necessary where oil lamp is used or a very small stop (aperture) on the lens; if the strip is completely black it indicates over-exposure and the times must be reduced. One of the exposures, however, should be more or less right and enable the correct time to be estimated. Make a note of this time.

### Development

### Making the Picture

Now proceed to make your picture; place the orange cap on the lens, take a sheet of paper from your packet, taking care to replace the packet in its cover, pin the sheet to the easel and expose for the time noted; then switch

### Developing and Fixing

off the light in your enlarger and remove the paper from the easel.

THE solution which you have made by dissolving the contents of one Amidol-Johnson's Packet is the best for bromide papers. Have two extra dishes handy, one containing water and the other about 30 ozs. of Acid Fixing Solution made by dissolving 2 ounces of Johnson's Acid Fixing powder in this quantity of water; place the print face upwards in the bottom of the developing dish and pour the 10 ounces of developer carefully over it: to avoid air bells it is best to run your measure along the edge of the dish pouring the solution all the time, carefully rock the dish so that the whole of the paper is well covered; to remove airbells take two corners of the bromide paper, turn it over and draw it gradually over the edge of the dish and then replace it in the solution. At the end of 1½ to 2 minutes remove the print, rinse it in the dish of water, taking care to submerge it and put it immediately into the fixing bath, again taking care that it is completely submerged; turn it over two or three times and allow it to remain in the fixing bath for 15 minutes.

### Washing and Drying

AFTER fixing, wash the print in running water for half-an-hour, or in 10 or 12 changes of water. The print is then surface dried with a piece of clean linen and laid on a drying net or pinned by one corner to a shelf.

### Finished Pictures

THE dried enlargements can be flattened by carefully drawing them, face downwards, under a round ruler on a flat surface. They are then ready for trimming and mounting. No picture can be judged to be at its best unless it has been carefully mounted; for this purpose a pure mountant must be used, otherwise chemical action may occur and destroy the delicate half-tones or otherwise damage the print. Johnson's Mountant has been regularly used by professionals and amateurs for over 30 years. It is chemically pure and free from acid or other properties likely to cause deterioration.

## 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 ozs. Solution	....	3d. "
Pactum Toners (Blue, Green, Red and 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 and 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 " "	....	10½d. "
8 oz. " "	"	24 to 40 " "	....	1/3 "

## SUNDRY SOLUTIONS.

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

## 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. bottles	....	4/6 each
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 „

## SUNDRY CHEMICALS.

		1 oz. bott.	4 oz. bott.	16 oz. bott.
Potass. Bromide	....	9d. each	1/6 each	—
Potass. Metabisulphite	....	9d. „	1/3 „	—
Potass. Ferricyanide	....	9d. „	2/- „	—
Soda Carbonate Rec.	....	—	9d. „	1/3 each
Soda Sulphite Rec.	....	—	9d. „	1/3 „
Soda Sulphide Pure	....	9d. „	1/3 „	—