

THE OIL PIGMENT PROCESSES

By
BERTRAM COX, F.R.P.S.



THE AUTOTYPE COMPANY LTD.

74 NEW OXFORD ST.
LONDON W.C.1
WORKS • WEST EALING

THE OIL PIGMENT PROCESSES



By BERTRAM COX, F.R.P.S.



CHANGE OF ADDRESS

23, LITTLE RUSSELL ST.,
LONDON, W.C.1.

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FOREWORD

In publishing this book, the Autotype Company desire to record their appreciation of the valuable suggestions made to them by Mr. Bertram Cox, which have led to the manufacture of a series of Oil Papers which should satisfy the needs of the Beginner and the Adept.

The Company deem themselves particularly fortunate in having received the assistance of so capable a worker in testing the various Papers, Pigments, Mediums, etc., also in the designing of the Oil Transfer Machine now placed upon the market.

THE Oil Printing Processes owe their fascination to the fact that the image can be built up to the final stage, and is visible the whole of the time. In addition, there is an indefinable quality about a technically good result which is highly attractive. The processes are also amenable to a certain amount of control; not to the extent that some would imagine, if the quality of the result is not to suffer, but to control of a technical character which gives a great power in the hands of those who know what they are about.

TECHNICAL MASTERY.

These interesting processes have been condemned in no unmeasured terms by

many photographic workers. This condemnation, however, has been mis-applied, for it is not the processes which are to blame, but the workers who have abused them. The processes are capable of producing results, indistinguishable in photographic quality, from those of other processes. Just how much of this quality is desirable must be left to the taste of the individual worker, who should be prepared to give considerable time to the mastery of the technical difficulties.

VARIABLES.

The soundest advice that can be given to those intending to use the processes is to confine themselves to the use of as few variables as possible. Stick to one tanning solution, to one make of paper, and to one ink, until those are mastered. Then it will

be time to sigh for fresh fields to conquer.

PRINCIPLES.

The underlying principle of oil and bromoil printing is that bichromated gelatine possesses the power, under certain conditions, of tanning or hardening proportional to light action, or to chemical action as the case may be. Where light brings about this selective action, the method is known as the Oil Process, and where chemical means are employed, as the Bromoil Process. In the former process a negative is required of the same size as the desired result, while a bromide enlargement may be used in the latter case. So far as results are concerned, there is very little difference in the two processes, and one is often quite indistinguishable from the other. For small work, the oil process is undeniably the

simpler ; but for large work the bromoil process avoids the necessity for an enlarged negative. On the other hand, excellent results may be obtained by the oil process from enlarged paper negatives.

Another method of preparing a gelatine coated paper for pigmenting is to employ the procedure of the Carbro process. This means that enlargements may be on any bromide paper, and by using these in contact with an oil printing paper, an enlarged oil print is made. This method we shall describe later.

THE OIL PROCESS



MATERIALS.

The new papers produced by the AUTOTYPE COMPANY make oil printing a very simple matter. There is a good choice of surface and of colour, and they will keep, in an insensitive condition, for a long time. The worker must be guided entirely by taste in his choice of the various grades, but generally, the smooth paper is the more suitable for small sizes, and for transfer work, while the rougher papers are better for larger work. All papers are cut larger than the negative size so as to allow a margin for working purposes. The only chemical required is Bichromate of Potash, which should

be dissolved in warm water so as to make a 5% solution.

Potassium Bichromate	½ oz.
Water	10 ozs.

A few drops of strong ammonia may be added until the solution turns a yellow colour, but this is not absolutely necessary. Some workers prefer to use the solution at this strength, while others dilute it with an equal amount of water. The full strength is better for strong negatives, while the half strength is more suitable for thinner negatives, or for negatives which would otherwise give flat results.

SENSITISING.

The paper is sensitised by immersing in the solution (taking care to remove all air bubbles) for about three minutes, or until it lies perfectly flat. The temperature should

be 60°F. This should not be done in a very strong light although the paper is not sensitive until it is dry. Needless to say the dish must be perfectly clean. Dry *in the dark* by hanging the paper from one corner, and attach a small piece of blotting paper to the lower corner to absorb any surplus solution. The wet paper may be squeegeed to a ferro-type sheet and dried in this way. Take care not to peel it off until quite dry. The paper is now exceedingly sensitive, and must not be exposed to strong daylight unless in the printing frame. The inward curl denotes the sensitive side. If kept in the dark, the paper remains in good condition for a few days, especially if kept dry and away from gas fumes.

A SPIRIT SENSITISER.

For quick drying, the AUTOTYPE

SPIRIT SENSITIZER is recommended. This may be applied to the gelatine coated paper with a large soft brush, or with a pad of soft fluffless material wrapped round a ball of cotton wool. The sensitiser should be applied in long strokes in one direction, and then in strokes crossing these at right angles. A paper sensitised in this way takes about half an hour to dry.

PRINTING.

Hard, under exposed and over developed negatives are unsuitable for oil printing ; a negative which will give a good contact bromide is about right, and subsequent operations will be simplified if an opaque mask is placed round the edge of the negative. This allows for a white margin, which may afterwards be trimmed to any desired width.

Do not print in direct sunlight, and take care not to over-print. The image will be of a faint brown colour, and the depth of printing is about correct when details can just be seen in the highest lights. The masked margins of the negative will allow an unexposed strip round the paper to act as a guide in this respect.

The most satisfactory method of estimating the exposure is to use an actinometer. SAWYER'S actinometer is an extremely convenient form to use. This is provided with a glass scale of "tints," each succeeding one a degree denser than the last. They are marked in transparent figures, 1—9.

Select the required "tint"—3, for instance—and expose the Actinometer until the *background* of figure 3 on the sensitive paper has printed to the same shade as the strip of chocolate paper on either side of the

bed of the Actinometer. Three "tints" will then have been printed. The correct tint may be found by trial and error. Once found, the number of the tint should be marked on the negative for future use and for comparison with other negatives.

WASHING.

The print should now be washed, for it is important to note that, so long as bichromate is present in the gelatine, *the printing action continues*. Washing may occupy half an hour, for all traces of the bichromate must be removed, and the water should not be of a higher temperature than 65 degrees F. The print is now ready for pigmenting, or this operation may be deferred until any future time. In any case it is advisable to pry the print and to re-soak some time before pigmenting. Tear drops should not be

allowed to form on the print while drying, as they cause light spots which are difficult to ink up.

Printing may be done by artificial light if a strong arc or similar light is available.

As the pigmenting operations in both processes are practically the same, this will be dealt with after a description of the preparation of the bromoil print.

THE CARBRO METHOD



The CARBRO method of preparing an oil print is new and the Autotype Company are still experimenting.

They will at any time welcome correspondence on improved methods of working.

This process allows the use of an enlarged bromide print in place of an enlarged negative. This bromide should have received approximately $1\frac{1}{2}$ times the normal exposure, and should have been fully developed. If the bromide has clear margins, subsequent operations will be facilitated. The working baths are as follows :—

CONCENTRATED SOLUTION No. 1.

Potassium Bichromate	1 oz. or 10 grammes.
„ Ferricyanide	1 oz. or 10 grammes.
„ Bromide	1 oz. or 10 grammes.
Water	20 ozs. or 200 c.c.

CONCENTRATED SOLUTION No. 2.

Glacial Acetic Acid	1 oz. or 10 c.c.
Hydrochloric Acid (pure)	1 oz. or 10 c.c.
Formaldehyde 40 per cent.	22 ozs. or 220 c.c.

In making up the Concentrated Solution No. 2 the addition of $1\frac{1}{4}$ ozs. or 12 c.c. of water will prevent any precipitation in cold weather.

WORKING BATH

No. 1 Solution	4 ozs.
No. 2 Solution	2 drs.
Water	4 ozs.

PROCEDURE

Two dishes are required, the first containing water into which the bromide print is placed to soak. Cut a piece of oil paper about half an inch larger than the bromide, and soak in the working bath for 5 minutes. Allow the oil paper to drain for a few seconds and place it on a sheet of glass. Lift the bromide from the water and lower it into contact with the oil paper. As it is

absolutely essential that there should be no slipping, the papers should be gripped along one edge with a strong clip. Squeegee them together with a flat squeegee, making the strokes in a direction from the clip, and then place the two papers back into the working bath for 20 minutes. While here they must not be allowed to separate until the expiration of that time.

The papers should now be separated, both being well washed. This will take some time as the solutions used are highly concentrated, and the oil paper is thick. A final clearing may be given in a bath of 5% Potassium Metabisulphite, and the oil print again washed, when it should be dried. On resoaking, the print is ready for inking.

After a thorough washing the bleached bromide may be inked, or it may be redeveloped with any ordinary developer,

when it is ready for making further Carbrosols. A fixing bath after redevelopment is unnecessary.

ADVANTAGES.

The CARBRO method has several advantages over the Bromoil process. The first is that if the pigmented print is intended to be used for the Transfer process, there is no need to make a reversed bromide print. The reason is that a reversal of the image as regards right and left is made twice; once in bringing the oil paper into contact with the bromide, and again when the pigment is transferred. On the other hand if the pigment is not intended to be transferred, then the pigmented print will be reversed.

RELIABILITY.

Owing to variations in the behaviour of different batches of bromoil paper, the

Bromoil process is not so certain as it might be. It is reasonable to contend that a simple gelatine coated paper will be more reliable than a bromide paper for the purpose of pig-menting. There is no need for overcoating to avoid stress markings, and no need for a baryta protection from desensitising impurities in the paper base.

NO ENLARGED NEGATIVE.

The bromoil process has become more popular than the oil process simply on account of the necessity for an enlarged negative in the latter. This is no longer the case, for the oil paper can be used in contact with an enlargement as well as with a contact bromide. Those experimentally inclined may be tempted to use a gaslight print.

THE BROMOIL PROCESS



THE BROMIDE PRINT.

The first requirement for the bromoil process is a first-class bromide print on a paper especially recommended for the purpose. Whether smooth or rough, thin or thick, is a matter entirely for the choice of the worker. For transfer purposes the final appearance depends upon the transfer paper, and any paper may be used provided it will stand the wear and tear of the press. The bromide print should be clean and free from fog, not too heavy in its shadows, correctly exposed and fully developed. It is also very important that it should not have been subjected to violent changes of temperature at

any stage of its production. The safest plan is to carry out all operations until the final stage, at a temperature of from 60 to 65 degrees F. The developer may be Amidol, or Azol, as these are not likely to have any non-selective tanning effect upon the gelatine. Fixing should take place with plain hypo, and there should be thorough washing between all stages of the operations. The prints should not be rolled at any time or troublesome markings may appear.

If the transfer method is to be employed, the bromide should be reversed in printing.

TANNING.

Having made a perfect bromide, the next step is to remove the silver image, and at the same time to harden the gelatine in exact proportion to the amount of silver

originally contained there. Several good formulæ are available, and the following can be recommended :—

1.

Stock Solution. A.

Common Salt	4 ozs.
Copper Chloride	$\frac{1}{2}$ oz.
Water (warm)	16 ozs.

Stock Solution. B.

Potassium Bichromate	5% solution.
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Working Solution.

A	1 oz.	
B	60 minims	
Water	1 oz.	(Garner).

2.

Stock Solution.

Copper Sulphate	2 ozs.
Potassium Bromide	2 ozs.
Potassium Bichromate	50 grains.
Sulphuric Acid	40 minims.
Water	25 ozs.

Add the acid to the water first.

Working Solution.

One part of Stock Solution to 5 parts of water.

3.

10% Solution	Copper Sulphate	170 minims.
10% "	Potass. Bromide	130 minims.
1% "	Chromic Acid	45 minims.
	Water	to 3½ ozs.

(Crowther)

Decide upon one of these and stick to it.

Use these solutions at a temperature of 65 degrees F.

Using a clean dish, immerse the dry print in one of the above tanning solutions so that the liquid passes in an even wave over the surface. In 5 minutes the black silver image should have turned to a pale bright yellow colour, when the print is washed for not less than 20 minutes in water at a temperature not higher than 65°. It is next fixed for 10 minutes in hypo, 1 oz. in 10 of water, again well washed for 20 minutes, and hung up by one corner to dry. Should the final traces of image be objectionable, they may be removed by the addition

of 1 dr. of Potassium Metabisulphite to the fixing bath. Touching the surface of the print should be avoided, and on no account should it be hung to dry over a rail or cord, as this will produce a state of tension in the gelatine, causing markings to appear on inking. The bromoil print is now in a corresponding condition to the dried oil print or the print by the Carbro method, and all are ready for the next stage, which is that of swelling.

SWELLING.

It should be clearly understood that when once gelatine has been swelled to a certain temperature and then dried, any future swelling below that temperature will result in the previous condition being repeated. In other words, once a certain degree of swelling has been arrived at, a

lesser degree cannot be obtained by drying and re-swelling at a lower temperature. Therefore the oil and bromoil worker must be careful not to over-swell. The gelatine has been locally tanned according to the amount of silver in the original image, and is incapable of absorbing water to the extent that the untanned gelatine is capable, at any given temperature. Visible swelling is only a sign of the amount of water absorbed by the gelatine in the lighter parts of the print. Greasy matter is repelled by water, so that a greasy ink may be persuaded to adhere to the tanned portions of the gelatine, while the untanned portions, because they contain water, repel the ink. The ink will adhere to the tanned portions in accordance with the amount of the tanning, due to the amount of light action, or to the amount of silver.

As we have recommended all operations

to take place at a temperature of 65 degrees F., this will be a convenient temperature at which to commence the swelling of prints in all the processes. See that the paper is entirely immersed, and that bubbles are removed. Two glass rods will keep the paper under water, and it should remain there for at least 15 minutes. Meanwhile preparations may be made for inking.

INKING



MATERIALS.

Two or three sheets of blotting paper or board such as are supplied by the AUTO-TYPE COMPANY, are made thoroughly wet, and the surplus moisture blotted off. These sheets must be larger than the print to be inked, and are placed on a sheet of glass or zinc, the heavier the better. A very small quantity of the stiffest ink is spread with a palette knife on to a white smooth surface, and there is nothing better than a large white glazed tile. The ink should be spread as thinly as possible. On another corner spread the same quantity of the soft ink, and remember which is which. Place the swelled print on the pad, and with an old linen handkerchief gently dab off all surface

moisture, until on looking obliquely across the print, no water can be seen.

HOW TO APPLY THE INK.

Using a one-inch diameter brush for a half plate print, dab it on the patch of stiff ink, and then several times on a clean part of the palette so as to distribute the ink evenly and lightly over the tips of the hairs. Apply the brush with a gentle smudging action to a part of the print which is intended to be dark. If the ink adheres, recharge frequently, and ink up the darker parts; but if the ink refuses to adhere after exercising a little patience, then it is too stiff and must be thinned with a little of the soft ink. The merest trace is sufficient to make a great difference in behaviour, and the thinner ink must be well worked in with the stiffer ink before applying to the print.

If on first applying the stiff ink the print becomes dark irrespective of the image, then the print is insufficiently swelled, and must be returned to the water at a higher temperature. An increase of 5 degrees F. will make a considerable difference ; but some papers may require the temperature raising to 90 degrees F. This will not usually apply to the oil papers, and it will be found that 70 degrees F. will be the maximum temperature required, unless the print is very much over exposed, when the most economical plan is to throw it away, as laboured working only ruins the brushes. After re-soaking, it is very necessary to make sure that no water remains on the surface of the print, as this is picked up by the brush and results in white spots which may cause considerable trouble.

BRUSH ACTION.

Brush action cannot be explained in words. Each worker must experiment and find out what happens ; but it must be said at once that heavy working and thumping is an indication that something is wrong. The ink lies on the tips of the hairs, and these only should come in contact with the gelatine. If the action described as smudging is used, ink is deposited, but if the hairs come into contact with the paper and rebound, then the tendency is to remove the ink. This characteristic is made use of in bringing out details, for the ink is lifted from the swelled parts and deposited on the darker parts. The Hopper is a tool which can be very useful, and is also a tool very much abused. It gives, when used correctly, a vibratory action to the brush so that it may be made to tickle the paper, thus

bringing out the finest detail. Thumping with this tool breaks the hairs of the brush, and firmly attaches them to the print.

CONSISTENCY OF INK.

Stiff ink tends to produce a coarser grain, and if this is objected to, then the print must be swelled further and the ink correspondingly thinned. With large prints long in their range of tone, the best results are obtained by inking the darkest portions with a stiff ink (too stiff to adhere to the lightest tones) then swelling, and inking with a softer ink for the half tones, repeating the operation for the lightest tones of all. In fact there is no limit to the variety of ways in which the print may be built up. If the details are too hard and bright, the final working with a minute quantity of very soft ink on the brush will soften them down ;

but it should be remembered that the print usually dries rather flatter, although not to the extent usual in other processes. The Auto-type oil medium may be used for thinning down the soft tube inks. Prints intended for transfer purposes should be kept on the bright side, as the tendency is for the merest trace of ink on the high lights to give a considerable tone on the transfer.

USE AND CARE OF BRUSHES.

The hog hair brushes are very suitable for the earlier stages of inking. They tend to give a coarser result, but they save wear and tear of the finer fitch brushes, and the latter may be used for finishing only. Some experienced workers prefer to use the hog brush throughout especially if the finer gradations in the high lights are not required. The small brushes are convenient for spot-

ting, but they tend to lift the ink as a rule, and are not recommended for general inking as the result is inclined to be patchy. The largest brush available is always the one to use, and it is wise to have a clean brush in reserve, as clogging of the hairs soon takes place, and the only remedy is cleaning. This may be done temporarily by rubbing on a dry rag, or a clean piece of paper. Petrol leaves a trace of oil behind, and this is likely to cause trouble unless the brush is thoroughly dry. The best method of cleaning is to rub the brush on the palm of the hand with soap, and rinse under the tap. The brushes should always be returned to the conical protectors, and when these are worn, there is nothing like a conical zinc protector. These may be made very cheaply.

CLEANING THE PRINT.

However carefully the brushes may

have been used, there is always sure to be a good crop of hairs left on the print, especially if the brushes are new. These hairs may be removed quite easily when the print is dry by gently dusting over with an old handkerchief; any stubborn specimens may be persuaded with the aid of the small retouching knife. This tool will also effectually remove any black spots due to pinholes. In fact it is far easier to remove dark spots than to fill in light ones.

PREPARATION FOR TRANSFER.

If the print is intended for transfer purposes, the hairs should be removed before transferring, or dark lines of ink will appear wherever there was a hair. The hairs themselves, however, are left on the gelatine print. A small pointed, and moist brush is best for this purpose, the hairs being lifted one at a

time. If the margins of the print have become degraded, they should be cleaned with a moist rag, but care is needed not to overstep the print.

DRYING.

The finished print should be hung up to dry, or be pinned by the four corners to a board, and placed out of the dust. In 24 hours it will be dry enough to clean, but the heavier parts are still very tender, and in certain circumstances weeks may elapse before these are quite hard. A drying oven with the prints contained in sheaths has been devised by Mr. A. C. Banfield, F.R.P.S., and this works very well indeed. When thoroughly dry, the print may be varnished, but this is not recommended on account of the disagreeable effect produced.

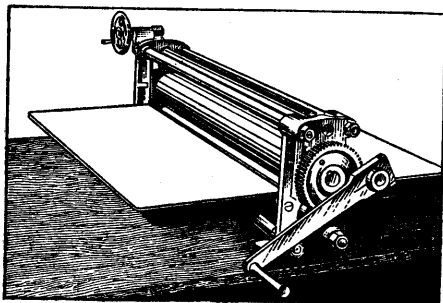
TRANSFERRING THE PIGMENTED PRINT



THE PRESS.

While the freshly inked print is still wet, it may be placed face downwards in contact with a piece of drawing or other paper, pressure applied, and the ink transferred to the paper. This is the transfer process, and the results so produced have a peculiar charm and quality when well done. The transferring is, however, not quite so simple as it sounds, for considerable pressure is required, and the contact must be perfectly uniform over the whole surface of the print. The ideal form of securing pressure is by the use of a flat press ; but this means heavy apparatus out of the reach of the ordinary

person. A kitchen mangle can be made to do quite satisfactory work, especially if the rollers are in good condition. In order to secure perfect contact between the gelatine print and the transfer paper a "pack" has to be made up according to the condition of the rollers.



THE AUTOTYPE PRESS

THE AUTOTYPE PRESS.

The AUTOTYPE COMPANY has produced a press especially designed for the purpose. This press does not require the making up of a complicated "pack," for the rollers give perfectly even contact with great pressure. The pressure can be adjusted gradually and evenly throughout the length of the rollers by turning a small hand wheel. The rollers themselves have very large end bearings, and are turned by reduction gearing, thus avoiding a jerky passage of the pack through the press.

THE AUTOTYPE PACK.

With this press no blanket is required to even up the pressure. The pigmented print is placed face downwards on the transfer paper, and the two are enclosed between two sheets of blotting board. The whole is then

inserted between two zinc sheets and passed through the press.

OTHER PACKS.

If the press used has wooden rollers, the pack must be made up as shown in the diagram.

- | | |
|--------------|------------------------------|
| 1. _____ | 1. Hard card or sheet zinc. |
| 2. | 2. Printer's blanket. |
| 3. - - - - - | 3. Sheets of blotting paper. |
| 4. _____ | 4. The pigmented print. |
| 5. - - - - - | 5. The transfer paper. |
| 6. - - - - - | 6. Blotting paper. |
| 7. _____ | 7. Card or zinc. |

The lengths of the lines indicate the comparative sizes of the sheets used. The

two outer sheets must be larger in order to give an easy lead into the press.

THE TRANSFER PAPER.

The choice of a final transfer paper must rest entirely upon the taste of the worker. The AUTOTYPE papers are carefully selected and will satisfy most needs. There is a good range in texture and in colour, and the size selected should be considerably larger than that of the print, for this will give a margin wide enough to avoid the necessity for mounting.

DAMP AND DRY PAPER.

The transfer paper may be used dry or it may be damped. There is a distinct difference in the results obtained by the two methods ; but it will be safer for the beginner to try the damp method first. This prevents the print sticking, and also wrinkling

of the transfer paper through unequal expansion caused by the moisture expressed from the gelatine print. The simplest method of damping the paper is to soak it thoroughly, drain it off, place between several sheets of blotting paper and pass it through the press once or twice under light pressure. The paper must be placed between sheets of zinc or card for this purpose. The exact degree of dampness required can only be found by trial ; but sufficient damping to make the paper lie flat is all that is required, for it will be obvious that the ink will refuse to transfer to a wet paper.

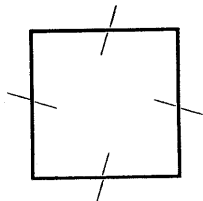
If the surface of a transfer paper tends to pull away, this may be obviated by giving the paper a coating of wax or of Lustraline dissolved in benzine. The merest trace will be sufficient for the purpose.

MAKING THE TRANSFER.

In building up the pack begin at the bottom, and see that there is no danger of slipping while placing between the rollers. The rollers being separated to allow of easy insertion, a slight pressure is applied by means of the pressure screws, which must be adjusted so as to give even pressure at both ends where this type of pressure adjustment is used. The pack is now passed evenly through and back, giving the papers a chance to get into close contact, and expelling most of the moisture. Tighten the screws, and pass through again. Repeat this under still greater pressure, but do not allow the pack to pass from between the rollers. Lift one corner of the print to see if the transfer has been complete ; if not allow it to fall into position, and pass through again under greater pressure.

DOUBLE TRANSFER. REGISTRATION.

Before separating the print from the transfer, make three or four registration marks thus :—



If the impression seems weaker than is required, the gelatine print may be re-soaked, cleaned, and inked up again, wholly or in parts as required, and transferred in perfect registration. This matter of registration is easier than might be imagined.

It will be seen that by methods of double transfer a great power is placed in the hands of a worker who knows what he is after.

A first impression may be obtained for the high lights, using a thin ink, and a second impression made with stiff ink to obtain the desired strength in the shadows. There is no limit to the exercise of personal taste, and the number of impressions which may be made from one print may exceed twenty if reasonable care be exercised.

COLOUR PRINTING.

By these methods prints may be made from colour selection negatives, trimmed in register, inked with tri-colour inks, and transferred. Arbitrary coloured inking may be resorted to, and transferred, with results more or less pleasing according to the skill of the operator. The AUTOTYPE COMPANY supplies inks for this purpose, and these tricolour inks may also be used to make any coloured ink desired. When using

tricolour inks it is desirable to have a good selection of brushes, so as to reserve a brush for a particular colour.

DRYING.

The transferred image dries much more quickly than one untransferred, and may quite safely be touched as soon as it comes from the press. Retouching may take place immediately the paper is dry.

Dainty souvenirs may be made by binding up small transfers with wide margins into book form. In this case the print should be placed slightly to one side of the transfer paper, to allow for binding space.

A MEDLEY OF POINTS.

Do not handle the surface of the gelatine any more than is absolutely necessary, otherwise markings will appear.

If the print does not take the ink readily

at first do not be in a hurry to use a thinner ink, but give the gelatine time to settle to the temperature of the room.

Be sure the sensitised oil paper is quite dry before placing in the printing frame, or good contact will not be made.

The masked negative will give an unexposed border with which to compare the tone of the highest light.

The presence of hypo is fatal to success.

No moisture must be allowed to get on the surface of the print when inking. The brushes must be thoroughly dry.

Take care of the brushes. After cleaning with soap and water, petrol, or Carbona, whirl between the hands to dry.

Trim your transfer prints before inking them.

Keep your fingers out of the press or they may be transferred also.

HOG'S HAIR BRUSHES

Diameter of ferrules in Millimetres

Price . . . $\frac{26}{5/-}$ $\frac{38}{7/6}$

OIL PROCESS TRIAL OUTFITS

Real Fitch Brush

Pot Ivory Black Ink (stiff)

Tube Ivory Black Ink (soft)

Hopper

Bottle Spirit Sensitizer

"The Oil Pigment Processes" by Bertram Cox, F.R.P.S.

12 Sheets of Assorted Oil Paper

Prices $\frac{1}{2}$ -plate 10/- 1/1-plate 12/-

Inland Postage 9d.

BROMOIL TRIAL OUTFITS

Real Fitch Brush

Pot Ivory Black Ink (Stiff)

Tube Ivory Black Ink (soft)

Bottle Bromoil Bleacher

Hopper

"The Oil Pigment Processes" by Bertram Cox, F.R.P.S.

1 Packet of Bromide Paper

(Supplied in one grade only—not assorted)

Prices $\frac{1}{2}$ plate 10/- 1/1 plate 12/-

Inland Postage 9d.

OIL TRANSFER PAPERS

A Slightly rough matt white

B Slightly rough matt cream

C Medium rough white

D Medium rough cream

Sizes 9 x 7 ins. 11 x 9 ins. 13 x 11 ins. 16 x 13 ins. 18 x 15 ins.
Price 1/- $\frac{1}{6}$ $\frac{2}{3}$ 3/- $\frac{3}{9}$

The Company also supply Hand-made Drawing, Michallet papers, etc. in sheets. Details on application.

SPECIAL APPARATUS and MATERIALS

Thinning Medium 2/- per tube
Autotype Bromoil Bleacher ... 2/- per bottle
Palettes 1/- each
Palette Knives 2/6 "
Hopper 1/- "
Spirit Sensitizer 1/6 per bottle
Carbro Solutions (concentrated) For use in the
Carbro Oil Process, No. 1 and No. 2 1/3 each

THE AUTOTYPE TRANSFER PRESS

This Press has been specially designed and made for Oil and Bromoil Transfer.

No Blanket is required, there is no creep and the impression is perfectly clear cut.

DIMENSIONS

ROLLERS:—Diameter $3\frac{1}{8}$ inches. Effective width 20 inches

PRICE £11 15s. including Zinc Sheets and running boards.