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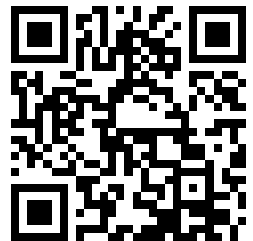
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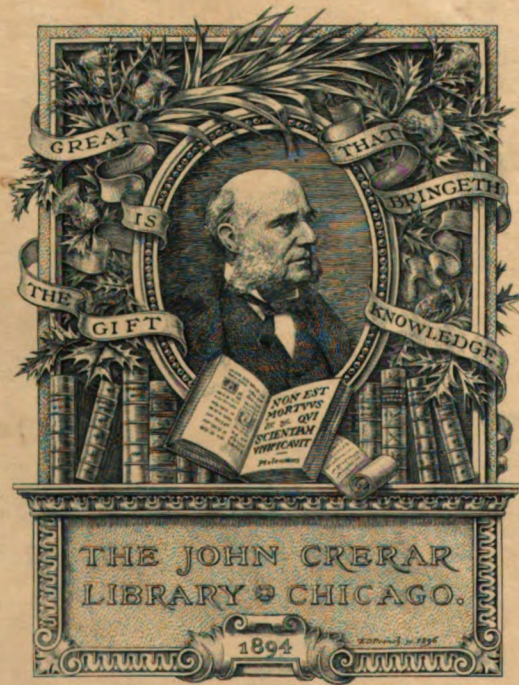
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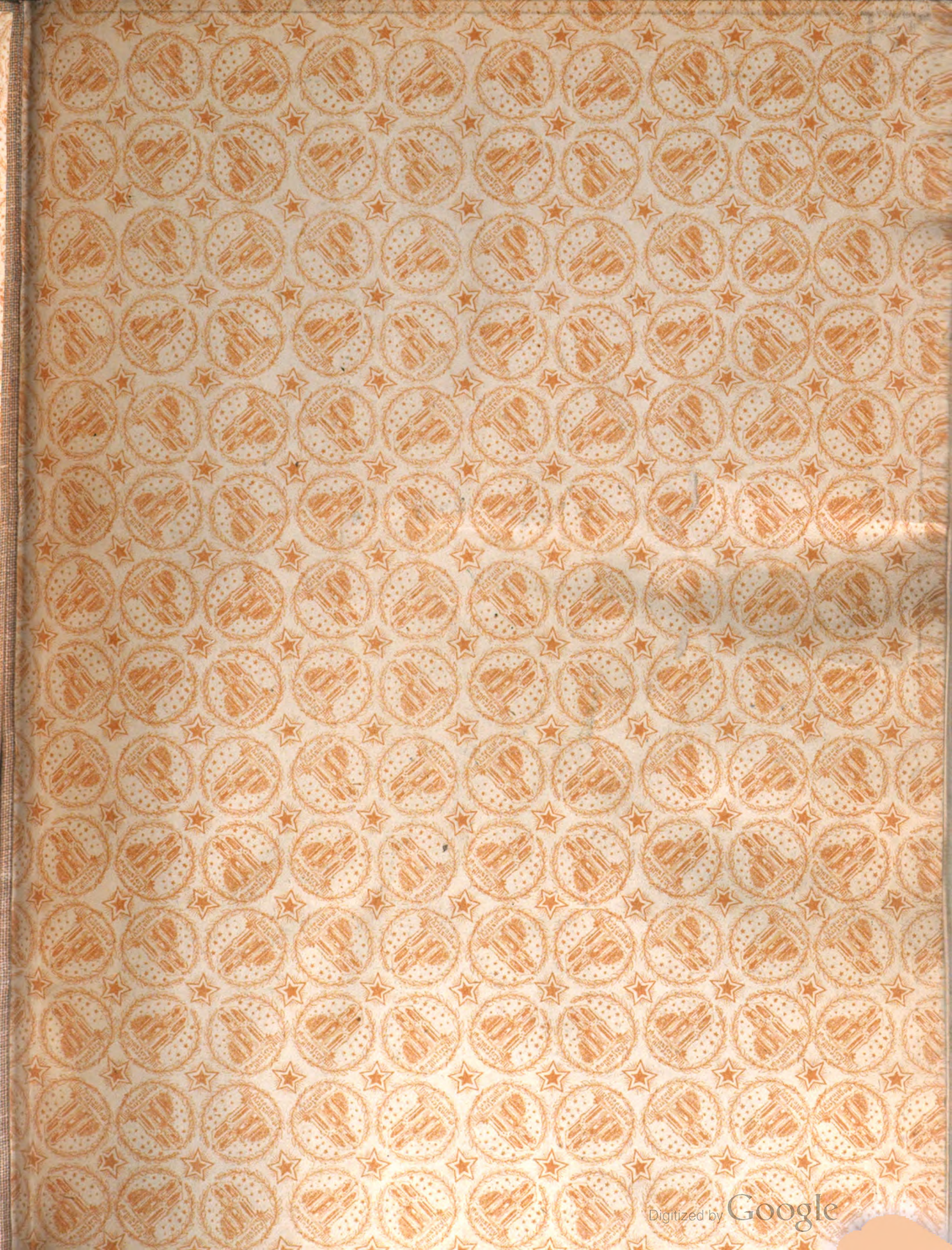
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The Process Engraver's Monthly

("The Process Photogram")

FOUNDED BY
H. Snowden Ward, F.R.P.S.

VOLUME XX.
1913.

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GEORGE ROUTLEDGE & SONS, LTD., 68/74 Carter Lane, E.C.

1917
RABBIT HOLE
YASULU

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JANUARY 1913.

AND ELECTROTYPERS' AND STEREOTYPERS' REVIEW.

*To our Readers in
all Parts of the
World.*

A Happy and Prosperous New
Year.

♦ ♦ ♦

Une Bonne Nouvelle Année.

♦ ♦ ♦

Frohlich Neu Jahr.

♦ ♦ ♦

Godt Nytt Ar.

♦ ♦ ♦

Godt Nytaar.

♦ ♦ ♦

Feliz Ano Nuevo.

♦ ♦ ♦

Buon Capodanno.

What of 1912?

*By Arthur Cox, President of the
Process Engravers' Association.*

THE above exclamation was the leading thought of an article in this magazine last year, the headline of which was "A Call to Arms." What has been the effect of that article, and what of 1912?

Some good friends outside the Process Engravers' Association will no doubt repeat, "Yes, what of 1912?" What has the Association done? Where can be seen the effect of their labours? The outcome of the year's work of the Council of the P.E.A. has during the last month of the year been published to all its members in the shape of a sound, simple system of cost finding, a system designed to fit the requirements of the process business, a system worth to every member more than ten times, yes, twenty times the total subscriptions he has ever paid into the said association coffers. Its value lies in its simplicity, its thoroughness, and its adaptability. The two small booklets published contain in a concentrated form the experience of years, the essence of piles upon piles of statistics of the peculiarities of the process engraver's business. The system as published is the outcome of a boiling down process of numberless forms and dockets, so as to place in the hands of the process man the concentrated essence of them

THE PROCESS MONTHLY.

all, and thus enable him without expense to apply their use to his own business, whether it be large or small. The booklets supply all the necessary information and forms for the laying of a foundation, and a sound foundation too, of a cost system, just as simple or elaborate as he pleases to make it. This is what has been accomplished during 1912. Anyone who has not seriously attempted to prepare a cost system that will be really workable under all conditions has the remotest idea of the amount of work and thought such an undertaking entails. To have done it so thoroughly as it has been done is something accomplished, something done. 1912, therefore, has accounted for itself as a year in which a real and lasting service has been rendered to the process engraving industry by its undervalued Association.

NOW WHAT OF 1913?

Will the trade make the best use of what has been done? Neither this nor any other system will work itself. It has been sent out to all members of the Association, and will be sent free of charge to every firm who joins the Association. If on receipt it is placed in a drawer and forgotten not much good will be derived from its possession. It will require a little study to grasp all its meanings and methods of working. There is not much to read; it won't take long to do that part, but don't despise it because it is not a large volume. It could have been made a very bulky volume, but, as practical men, the Council realised that a process business man has not the time to wade through page after page of unnecessary matter, therefore, everything was done to pack the whole scheme into as few words as possible. This took longer to do than it would to make a volume of it.

Having studied it, set to work and apply it. Every firm who conscientiously

applies it will undoubtedly reap much benefit from what it will reveal.

Having an association that has made a real start on something of tangible value to the trade, let the trade give their support to that association and see what else can be done for the mutual good. There are heaps of good work waiting our attention, all of which can be done if only the trade can be got together, and will stand together, and such things can be done in such a way that all may benefit, while none need suffer.

Right apart from the vexed question of any attempt at fixing or regulating selling prices, which, by the way, is the fond dream of many, when the word association crops up; there is plenty of other work to be done, which is far more practical and just as valuable in its effect on profits, perhaps more so.

When the foundation work of *costing* has been done correctly it will be found that many at present unconsidered trifles, amount in the course of a year to quite a considerable item of expense. Many of these unconsidered trifles and losses, for that is what they are, are caused by trade customs, little things that have crept in unnoticed during the growth of the business, can be altered, and money saved by united action on the part of the trade. The altering of them will not interfere with anybody's freedom in the general conduct of his own business. Let us consider one item alone, which is apparently a very small matter indeed—the extra proof or so. How many are there who have customers who want just a few extra proofs? How many have realised actually what those few extra proofs mean in the way of expense during a twelvemonth? Some will reply not much, but those that make such a remark simply know but little of their actual productive costs if they are running an ordinary business. It is

("The Process Photogram.") Jan., 1913.

safe to say that those extra proofs which are frequently given away without the slightest hesitation are costing every firm a sum each year, which, if it appeared in round figures as a bad debt, would grieve them terribly. This is only one small item. Yet there are others of much more importance. Cost systems have been devised, for which good money, and much of it, has been paid. There are experts who make good livings by working out costing schemes for various businesses. These men could not make good livings if business houses did not pay them for their labours, yet business houses would not pay them if their systems were of no value. Cost systems to-day are the foundation of every sound business, yet there are still firms whose proprietors imagine that by a rough and ready method they can guess at cost, and show a profit on their year's trading as proof of their ability. Such profit is no proof of sound business ability, and a firm making a profit without being able to definitely locate how and where such profit has been made is not running on sound business lines. This may seem strange, but it is nevertheless true. If a firm does not know on which orders they make their profit they do not know on which they make a loss, and at any time the losing lines of business may get in excess of the paying lines, with a result which is obvious.

Cost systems are valuable to all businesses, and to have one specially suited to any particular line of business is doubly valuable. The process engraver of Great Britain is in the unique position of being able to obtain such a system absolutely free of charge, by joining his own trade association, and so giving his assistance to the improvement of matters generally, both for himself and his fellow craftsmen.

Let 1913 see every process engraver

in Great Britain become a member of The Process Engravers' Association, and so give the Association the opportunity of carrying forward some of the good work there is yet to be done.

If only every man will, for the time being, forget that he is cleverer than his competitor, and remember that the other fellow, although not so clever, may know quite a bit, and works hard, thus making things equal from a buyer's standpoint, a lot of suspicion will be got rid of, and once rid of suspicion, things will become much easier.

1912 has seen a step forward. Let 1913 see a whole series of steps made in a similar direction.

With best of wishes for the year's prosperity to all.

WHOSE MIND?

It is a miserable mind that persuades its owner that he is the only person who has any right to be in the process business.

It is a false mind that persuades its owner that he is all that much cleverer all round than the other fellow.

It is a narrow mind that persuades its owner that it is bad policy to be on good terms with the other fellows in the same line of business as himself.

It is a warped mind that persuades its owner that he is even a bit of a business man if he hasn't a good cost system installed in his works.

It is a softened mind that persuades its owner that he is anything but a fool to quote a price for articles, the cost of which he doesn't know.

You are not big enough to do all the thinking for your business, and if you are one of those many men who think they are, your business is poorer than it ought to be.

A Foreword for the Year.

Our Greetings and Best Wishes.

AHAPPY and prosperous new year to all our readers. We are indeed inclined to adopt the old and homely, very homely, toast of the Yorkshire farmer: "Here's to us. All on us. May we ne'er want nowt. Noan on us. Nor me nowther." May this indeed be the best year the art and craft of plate-making has ever known, and the best year also in the two decades of the life of this, the only journal of the process engraving arts published in the English tongue.

"May it be," we say, using from habit the old and simple invocation. We may be reminded even as we write or utter the words, how cheap are mere wishes. Upon that let us pass on a short story just as we have had it from a London plate maker fresh home from the States. Two negro boys, Tom and Sambo, were lazing in the gloaming with nothing to do, and in those circumstances Tom, ordinarily matter-of-fact and practical enough, fell to sighing and to day dreaming. "I wish as I'd got a thousand melons," he cried. "Ef ye'd got a thousand melons wad ye gev me one?" queried Sambo. The reply was cruel. "No," he cried, "nary one. Wish for your own melons."

There really appear to be many people who are too lazy even to wish for their own melons. Too disheartened, perhaps we should say; but really it comes to the same thing, if the disheartenment takes the form of mere doing nothing and thinking nothing. This lack of volition is a tremendous and a terrible thing. It is all the more dire and operant an evil from the fact that its presence and its

baneful consequences are too often unsuspected. In our own craft, as in other spheres of life, some men seem unaware that they are shuffling aimlessly through life, and that the effect of this absence of definite purpose is sure to be disaster. When we wander nowhere—we get there.

Our first word, then, in the new year is "Wish"; our second is "Wish," and our third is "Wish." We may not get a thing because we desire it, but we are pretty sure not to get it unless we do desire it. "I became a judge," said Lord Esher, the Master of the Rolls, "because I made up my mind that I would be a judge." His wish took on the form of a resolve. That is the way of wishing. The old great writer and teacher, that pre-eminent man of affairs, named Paul of Tarsus, was propounding beyond question a very sound and, if you will, a very modern philosophy, when he enjoined his followers to "think on," in other words, to give their mind's attention to, such things as he was fain to see developed within them. How is will power developed (if developed it can be, as none can reasonably doubt), how is will power developed but by the effect of contemplation of a thing till the mere persistent viewing or attention imperceptibly changes into a disposition of the mind toward that thing's attainment. It is practical commonsense to wish for our melons, to wish for happy and prosperous business, to wish for a competence, and an early competence, to wish for harmonious relations with our workers or our employers, as the case may be; to wish for the advancement of the art and technique of our craft, to wish, in fine, for

(“The Process Photogram.”) Jan., 1913.

“a place in the sun,” for an adequate recognition by the public of the service we render, to wish, in a word, for a larger and a worthier life. Wish better, and you’ll work better and you’ll win better.

Self help.

Speaking for ourselves, we are not going to bother anyone to wish for our melons. There is no need. If engravers, employing and employed, will but adopt the very simple New Year’s virtue of wishing for plenty of melons for themselves—and set about getting them—they will incidentally and necessarily get all the lusciousness and substance that their heart can desire. A worker in the trade is not going to be really in earnest in the quest of prosperity for a single week without realising that he must take in the one trade journal in his craft, and must take it in to some purpose, that he must read it, or at least scan its contents, to extract the essence of its helpfulness.

If we wanted to illustrate this we need do no more than cite the counsel of Mr. Ralph Hazell, of the great and most prosperous firm of Hazell, Watson and Viney. He happened to be presiding recently at the starting of a new session by one of the principal schools of London, that at Camberwell. Mr. Hazell noted the presence in the company of a representative of this journal, and he said it recalled to his mind the important part played by the trade journals of the craft, and he impressed upon the young men before him the very great advantage they were likely to derive from making full use of these trade journals. Note that this was no case of a thing being commended that happened to be in evidence, and because it was in evidence. The thing which particularly was to the front that night was systematic class in-

struction. Even so very practical a man as Mr. Hazell, whose authority in the circles of the Master Printers’ Federation is perhaps unsurpassed, might have been forgiven if his mind had for that occasion been wholly occupied by the serviceableness of the trade school. He had indeed just been extolling its high usefulness. Even so he recognised the place that was also left for the trade journal, and he said for us what we naturally could not so well say for ourselves.

No two shops alike.

The remarkable diversity of the engraving establishments of the kingdom supplies another consideration why the master engraver who has got so far toward success as to wish for melons should make good use of THE PROCESS ENGRAVER. It is possible that the casual reader imagines that all engraving establishments are very much alike. Such an idea may arise from the circumstance that engravers are naturally not in the habit of inviting each other to inspect their respective works. The representatives of this journal have had exceptional opportunity of visiting ever so many engraving establishments all over the country and noting their equipment in detail, and they know that so far from these establishments being all alike, there are no two alike. What does that mean but that pretty well every one of them has something specific that it can, if it chooses, suggest to all the rest, or has something which it is peculiarly advisable that it should be learning from the rest? It may easily befall that a particular engraving house has something both to learn and to teach. The medium for both the learning and the teaching is THE PROCESS ENGRAVER.

A suggestion.

Start the New Year, then, with a vigor-

THE PROCESS MONTHLY.

ous wish and as the seal of the volition and also a direct step towards the realisation of the wish, sign right away your order for THE PROCESS ENGRAVER, to be sent to you each month, if you have not already done yourself that justice. And having secured its appearance upon your desk, make good use of it. If you are a supplier of things needed in the trade reflect upon the high probability that appearance in the one journal of a craft will be of advantage to you. The other day we heard of a firm who had timorously indulged, as they considered, in the luxury of a quarterly advertisement in a trade journal. They seemed to think they were in it, just because it was the proper thing to do. As for anything like results, they were not looking for them. They were not even wishing for their melons.

Upon that indifferent, fatalist, uninterested, unexpectant, unattent mind there broke one morning a light from the East—a memorandum from an important establishment in one of the Dominions beyond the seas calling their attention to one of these advertisements which had

appeared a year or more before, and ordering machines to over £600. That firm formed straightway a new conception of advertising, as not a luxury, but a necessity of progress. By the way, we may fitly cite again the great old document. Scholars tell us that the words in the text, "Lend, hoping for nothing again," give quite a wrong rendering. The sense is practically the opposite: "Lend, never despairing." There you have the conquering mind—the reasonable mind. Those whose philosophy of life is that the ultimate power and influence of things is beneficent, ought to have more faith in their own life creed. It follows from such a creed premiss that nothing is too good to be true. Whatever is untrue is untrue for some other reason than that it is too good for verity. In the spirit of a reasoned hopefulness we ourselves face the New Near, and we would suggest that it be thus hopefully faced by all the readers in the home land, and the very many readers in the lands afar, of the now old, yet never so young, sole journal of their craft, THE PROCESS ENGRAVER.

✓ *A Hint for Cover Designers.*

THE September number of the "American Delineator" shows a cover of quite an unusual character. The artist has unquestionably appreciated a point of interest in designing which is often lost sight of. We refer to the juvenile interest. A critic of this particular cover design pointed out that the reason why the covers of women's magazines seem to be more attractive than those of other publications, is probably because more thought is devoted to what will please and attract the particular readers.

The cover of the "Delineator" has a title also, "The Little Lady with the Violet Hat." The child has wandered into her mother's room, and seeing the attractive things about, seized the opportunity to adorn herself. Little girls love to dress themselves in the finery of their elders.

It is said of the "Delineator" that "it has always struck a high note in its art features, and has, in conjunction with other artistic interests, consistently encouraged the art of wood engraving."

Review of Process during 1912.

PHOTO-MECHANICAL process during 1912 has been good and steady, without any startling developments to record. The output of photo-engraving has probably been as great, if not greater, than last year which had the work called for by the Coronation to keep engravers busy. But trade generally continuing to boom, extra work has come to our craft, so that the old-established firms appear to have had plenty of work, and some new plants have successfully started, a model one being that installed for the *Daily Telegraph*. The agitation concerning unprofitable selling prices has continued with unabated vigour, particularly in the columns of the *PROCESS MONTHLY* and there are a few firms now that are not alive to the necessity for an accurate costing system. The great convention of American photographers at Boston in June last devoted itself to this problem, and the report of the proceedings was full of interest for English engravers.

Of really novel processes there appear to have been none produced during the year, unless we so regard the minor process of Mr. A. E. Bawtree for the reproduction of line engravings in facsimile. A screenless, irregular grain process, called “Stagmatypie,” has been patented by Dr. Stricker. In this the grain is obtained by mixing gum arabic with the glue solution, but the same idea was used years ago in the “Spitzertypie” process of Defregger; in fact, there has been a lively controversy in the German technical papers concerning the priority of this method.

Rotary photo-gravure still probably excites more interest than any other process, and we suppose half a dozen firms or more are now working this process. “The Illustrated London News” was the

first English newspaper to install the plant and use the process. Last October it printed eight pages of illustration by this method, which were very creditable. It would appear that inverted half tone is not now being used, for even the licensees of Mertens are said to be now using a “carbon” resist. The Miller and Motley process of making accurately large numbers of duplicates appears to have passed the demonstration stage, and this firm advertise that they are now ready to enter into arrangements to install their method. In colour work we have the patent of E. H. Gamble, which provides an ingenious, more or less automatic way of compensation for defective inks, and so saves fine etching. On the question of inks for three-colour printing, there has been quite a brisk controversy in these columns arising out of a brochure published by Messrs. Kidd and Co., which attempted to explain why three-colour inks were not so perfect as engravers would like. Pring and Thompson have obtained a patent for a plan of giving impasto effects to three-colour reproductions, and they had a show of large three-colour prints, which displayed the results of the method. In commercial three-colour work there is a noticeable increase in the reproduction of autochromes.

The lithographic revival, which was to be such a serious blow to process, has not yet happened; in fact, even the simple photo-mechanical processes, such as bromoil transfers, which one would imagine to be such an economy to the lithographer, appear to be ignored by him. Offset work is, no doubt, quietly making headway, but the use of this printing method for photo-mechanically-produced plates does not seem to be so extensive as one could wish. No doubt a

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few firms who are using it successfully are not boasting about their methods; after all, these are not very important to the customer as long as he gets the results he wants. The improvement in appearance of ordinary half-tone relief printing is being attempted by the wider use of matt surface papers, by printing with matt inks, and by over-printing with anti-lustre varnish.

With regard to apparatus also, the year has been uneventful, nothing very novel has appeared, and although Dr. Albert has been granted a patent for a blast etching machine, it does not appear to have yet been put upon the market in England. The L.C.C. School of Photo-Engraving and Lithography has entered its fine new premises in Bolt Court. During the year under review the Principal, Mr. A. J. Newton, resigned in order

to take up a position with Messrs. Wratten and Wainwright, Ltd. Mr. A. J. Bull was appointed his successor. A notable photo-engraver, George Meisenbach, passed away, age 71, during 1912. His name was at one time almost synonymous with half-tone. A still greater loss to the English-speaking photo-engravers was that of H. Snowden Ward, the founder of the Journal, who died just at the end of 1911, in New York. He probably had a wider acquaintance with the trade, both here and in America, than anyone else, and his breezy optimism was ever an inspiration.

We may conclude this review by recommending our fellow craftsmen to do as Ward would have wished, viz.: Go forward with the work in the coming year with courage and hope.

Be Original.

WHEN a man is called on to do something which is entirely new to him, usually his first step is to find out how someone else has done the same thing. If he has a catalogue to prepare, he looks at other catalogues. If he has an article to advertise, he studies the methods which others have used to exploit the selling points.

So far, so good. A man has a right to take advantage of what others have done to aid him in doing his own work; it is through studying what has gone before that progress is made. The distinction between the right and the wrong way of employing the work of others comes in when the use which is made of this borrowed brain power is considered. If it is used simply for the purpose of copying, and thus to save time and effort, it is bad policy as well as, in many cases, bad

ethics. Business progress, as an average, is not made through copying the methods of others. It can be aided, however, by studying these methods, and then with their help devising new and original ones which shall be better and more closely fitted to the particular problem in hand.

Those who are to devote their lives to the study of some branch of science start out by learning all that they can of what the experience of others can teach them, and then they start out on original work—that for which they have planned from the beginning and upon which they intend to base their reputations. Your own methods are better for you than those of anyone else, for without them you lose your individuality; individuality is the most important influence which can push you to success.

Some Practical Printing Pointers.

By R. B. Fishenden, F.R.P.S.

Don't etch deep unless necessary.

MR. FISHENDEN, in a lecture to the Manchester Jobbing Printers' Guild and the Printing Crafts Guild in the Municipal School of Technology, Manchester, dealt with the question of Illustrations, and made some pertinent remarks anent the finish of half-tone blocks.

So that the block maker may derive what benefit he can from the lecture we print the salient points from the same.

Mr. Fishenden treated his theme *ab initio*, though briefly:—

In order that the characteristics of a half-tone block may be understood, some explanation of the reason for the existence of the half-tone process may be advantageous.

Printing ink, when used in letterpress, is only capable of rendering one tone. In cases where it is required to reproduce in printing ink a photograph, or other subject, possessing an infinite variety of tones or gradations, such gradations must be translated in a suitable manner.

The purpose of the half-tone process is to convert the gradations, or closed tones, of the subject into broken tones, in the form of black dots on white paper.

The ease of printing depends not only on the closeness, and upon the depth of the etched cavity between the dots, but upon the straightness and regularity of the sides of the dots, because any roughness would catch the ink in rough printing, and make the dots print larger than they should do.

Many printers demand that their blocks shall always be etched deeply, but this should only be done for rough work. Shallow blocks will print well providing the adjustments of the printing machine are properly made and the other condi-

tions are good. It should be remembered that smoothness and evenness of tone are sacrificed to a large extent when the plates are etched excessively deep. Much of the high-grade catalogue work which has made the name of some English photo engravers is shallow etched, and the majority of American plates are similar in this respect.

Mounting wood is by no means satisfactory. Many experiments have been made to obviate warping and shrinkage, probably the most satisfactory being the three-ply board having the grain of the several sections running in contrary directions so that the strain is equalised.

In the event of a soft piece of wood being used for mounting, the overlay forces the shadow portions of the plate into the mount, thus counteracting the effect of the overlay and causing the lighter tones to receive the heaviest rolling.

The type and furniture used by the letterpress printer have been brought to a high standard of accuracy, and everything is true to probably one thousandth part of an inch excepting the blocks. A machine has been introduced to finish blocks “true to pica,” but such an appliance is of little value whilst the present unsatisfactory conditions prevail. In many cases blocks shrink across the grain of the wood as much as $\frac{1}{32}$ of an inch in four inches in twenty-four hours if kept in a hot dry atmosphere. Undoubtedly the most satisfactory method of mounting at present is to solder the plate on to soft stereo metal, but the increase in cost is a serious drawback to its adoption.

Machine-minders sometimes find difficulty in “making ready” the edges of a vignettted block. A simple interlay should soften the edges, and a machine exists for

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chamfering the under side of the plate so that the margins are depressed. The use of hammers and punches with serrated faces to beat down the edges of the face of the block is not to be recommended, because there is a risk of causing serious damage even in the hands of the most skilful machine-minder. No properly etched and underlaid vignette should need more than the simplest interlay in "making ready."

A perfect proof of a half-tone block is one in which all the dots are exactly the same size as the corresponding dots in the block. This is important because the depth of tone depends on the relative proportion of black to white, and should it be changed by the spreading of the ink beyond the edges of the dot (the effect known as "squashing") the depth of the tone will be increased and a general "flattening" of the proof result. The paper should be perfectly smooth, slightly elastic, and sufficiently porous to absorb the varnish of the ink. The impression must be only sufficient to transfer the ink to the paper, an increase in pressure causing the defect of "squashing."

So-called "art," or coated papers, are technically satisfactory for half-tone printing because the surface is absorbent, slightly elastic, and level. Photo-micrographs of half-tone proofs on coated papers are clean and sharp, the dots being solid and of a similar size to those from which they were printed, whilst with uncoated, super-calendered paper the fibres may be seen standing up in disordered prominence. A proof taken with the same pressure as was used for the coated paper shows that only the tops of the fibres have touched the ink, producing a grey uneven impression. An increase in the amount of pressure and ink forces the ink down into the fibres of the paper, the topmost fibres being now partially uncovered. The ink also spreads

beyond the edges of the dots, the general effect being a grey flat impression.

When rollers are old and shrunk the form cannot be properly inked, even though the height is readjusted, because the surface of the rollers then travels at a slower speed than the form, the ink being actually wiped from the surface of the dots and piled up at the front edge. If rollers are adjusted too low the ink is squeezed from the surface of the dots, which print grey with a surrounding black ring.

In Dr. Albert's method of interlaying blocks to supersede overlaying, an impression of the block is taken on thin zinc protected on the back, which is then etched; the etching is continued until only the shadows are unaffected, the thickness thereby becoming graduated from the darkest to the lightest tones. This is fastened to the underside of the plate and before mounting, considerable pressure is applied on a level slab, so that the contour of the surface of the plate is made to conform to the thickness of the interlay. A similar process to the above is in use successfully as the Arthur Cox metallic overlay.

The Merkel Chalk overlay is prepared by taking proofs on both sides of a special overlay folio, which is a paper coated on both sides with a chalk composition. The proof on the back is an offset one prepared by obtaining a triple impression on the top sheet of the packing of the cylinder or platen, and then, the forme being again inked, the overlay folio is fed into the machine producing a double-sided impression. The folio is then etched in a bath of chloride of lime, the portions of the surface unprotected by the ink on the impressions being etched away, the middle tones being attacked a little later. The etching only occupies about four minutes and any necessary modifications can as readily be made as in a hand-cut overlay.

A New Instrument for Colour Workers.

Translated from the “Zeitschrift fuer Reproduktionstechnik,” by H. Entwistle.

UNDER the name of “Koloriskop,” the firm of R. Lechner (Wilh. Muller), of Vienna, have placed on the market an apparatus for determining the colour of light for photographic purposes, which will, no doubt, be largely used in the future for scientific and technical photography.

Those operators who have had to undertake the production of colour photographs of landscapes, but more particularly the reproduction of paintings and objects in art galleries, museums, etc., know through practical experience how changes in the colour of daylight, especially in the evening hours, and also occasionally the reflections from opposite buildings, coloured glass in the windows, etc., can so influence the result that it is practically useless. The worst feature, however, is that faults due to the colour of the light, either when using Screen Plate Processes, such as the Autochrome, or in the usual three-colour process, are not discovered until the reproductions are finished, owing to the human eye not being able to distinguish the actual colour of the light at the time of exposure from that of normal white.

Various methods have certainly been at the disposal of operators in the past for determining the spectral composition of particular light sources, but the necessary photo-spectroscopes or colourimeters were rather costly and complicated apparatus, and, in addition, it was most important for purposes of comparison, to have at hand a source of illumination of known spectral composition.

The “Koloriskop,” of which Baron von Hübl gave a full account in the “Wiener Mitteilungen,” 1912, page 449 ff., as there mentioned, does not serve, perhaps,

for the definite determination and comparison of different light sources. It is more in the nature of a cheap, small, and handy instrument, which enables one to recognise in a moment the prevailing colour of any particular illumination.

The principle of the “Koloriskop” is based upon the use of two adjacent patches of grey, which in white light appear alike as neutral grey. In any coloured light, however, their different compositions are at once apparent. One of the grey patches is a true neutral grey formed by a mixture of black plus white, while the other is a grey formed by the mixture of two complementary colours, and for this purpose a mixture of blue and yellow colours with sharp absorption bands are used, for example, B Filter blue plus Filter yellow. The two grey patches are placed at one end of a tube, the other end of which is fitted with an observing lens of about 8 cm. focus. In order to test the colour of any source of illumination, one has only to look through the tube at a sheet of white paper, illuminated as well as possible by the light which is to be used, and to notice the colour of the two grey patches. When both the patches appear equally grey the source of illumination is white; if, however, one of the patches appears more or less red, this proves that an excess of red and yellow rays are present (for example, when electric incandescent lamps, arc lamps, or incandescent gas mantles are used), whilst a greenish blue colouration of the same patch denotes a preponderance of blue rays. The last appearance is often noticed in the morning and evening hours, and naturally always with a clear blue sky.

The differences in the behaviour of the

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two films to coloured light is accounted for by their differences in absorption, whilst the real neutral grey (black plus white) absorbs equally all rays, the grey patch formed by the mixture of yellow and blue, absorbs principally the red and blue green rays. Therefore with coloured light, the equilibrium of the latter grey is readily upset, with the result that the colour of such a grey patch is altered from its appearance in white light.

The possible uses of the "Koloriskop" are very numerous. With the aid of this simple instrument one can readily determine the nature of any source of light in any locality (such as studios, museums, art galleries, etc.). In many cases one is therefore enabled to use means to compensate for the particular nature of the prevailing illumination, either through the choice of suitable filters, the use of coloured reflectors, curtains, etc. When making colour records in the open air, the operator can vary the usual exposure ratios, according to the particular colour of the prevailing light as determined by the "Koloriskop." When making colour prints by the "Bleach out" process, one

can select a suitable compensation filter, and it also enables one to regulate the colour of the illumination in colour printing works, in addition to many other uses.

It would, perhaps, be as well to consider, if instead of the evenly tinted grey patches, wedges with small differences in thickness between their two ends, could not be used, in order to facilitate comparisons by the use of intense and weak sources of illumination. By the use of a slit movable over both grey patches, one could easily cover up the unnecessary parts. The preparation of these wedges could be readily accomplished according to the method of Prof. Goldberg, previously published in the "Zeitschrift fuer Reproduktionstechnik."

It is scarcely necessary to mention that the "Koloriskop" can only be used with light sources whose spectra form a continuous band. The usual light sources used in photography (with the exception of the Mercury Vapour, Moore Light, etc.), are all easily comparable by the use of this simple instrument. Price 10 Kronen (say about 8s. 6d.).

Open and Enclosed Arcs.

OUR readers have noted the differing preferences manifested in different studios for modes of lighting. The enclosed arc was hailed with great delight because of its creating a certain gas which produces a bluish white light of comparatively much greater actinic power than the open arc, which is usually of a yellowish blue. Mr. Houser does well to bring to the notice of the whole craft that a pure white light is best of all; and that a lamp has been produced which burns a special carbon for this purpose, a lamp which gives forth a great volume of the whitest electric light now in use. These

lamps are now regarded as standard for both monochrome photography and colour photography.

In colour photography it is becoming frequent for large engravers to employ in addition to the arc light a type of search light, the nearest substitute for sunlight known to us. The search lights generate on an average 25,000 candle power, and will illuminate a copy as large as 9×12 feet, suitable for colour reproduction, at a distance of from 6 to 8 feet from the copy. A search light augmented by open arc lamps will illuminate practically everything intended for reproduction.

✓ *New Things in the "Process Year Book."*

W^E should like to guard against misunderstanding. We should welcome the "Process Year Book" (or "Penrose's Pictorial Annual" as is its first title), even if we could not honestly say that we found in it much that was new. By no means all that is due to be said about the old things has yet been said. And, as Herbert Spencer points out somewhat indignantly for one of his philosophic habit, one of the worst features of modern industrialism is the incessant forcing out of a good thing from the market by a worse thing, simply owing to the worse thing being "something new." We hope, then, that just as cordial a welcome will be given to those parts of the "Annual" which deal with topics already much canvassed, as to any which seem to have more of the stamp of novelty. At the same time we, as the organ of the engraving craft, are naturally expected to indicate at the outset some of the things which do distinctively mark off the "Annual" from those which have preceded it.

"Rotary intaglio work," says Mr. William Gamble (the "Annual's" gifted and devoted Editor), has made "a most marvellous stride to the front in the past year." "Where there was only one firm doing the work successfully, there are now half-a-dozen or more firms in Europe and America executing work in quite a satisfactory way, as is shown by the various insets by this process in the present volume. . . . In Germany several newspapers are regularly illustrated by this system of printing. We are not, however, so hopeful of the adaptability

of the process to newspaper work as we are of its usefulness to weekly journals, magazines, bookwork, etc."

Mr. Gamble notes that there has arisen a hybrid form of intaglio engraving, which is nothing more than inverted half-tone, that is to say, with the same character of dots as those in a relief block, but sunk into the copper and mechanically wiped after being filled with ink. The result is in no true sense a photogravure effect.

As regards photo-lithography, the Editor thinks, certainly with every warrant, that "pure line photo-litho. has greatly improved, both in the number of transfers and in direct prints on zinc. One drawback to the utilization of the direct process was the difficulty of making repeats on the same plate, but this has been successfully overcome by Messrs. Miller and Motley, through their construction of a remarkably ingenious machine, which will not only enable a large number of repeats of the same subject to be put down on the same plate, but will make a series of repeats of other colours in exact register on other plates. A similarly successful accomplishment by Messrs. Ker, but more particularly applied to textile printing, is described in an article in another part of this volume under the title of the "Polytype Machine."

✓ **The Ker process described.**

We turn to this article and find Mr. W. T. Hesketh, the writer, describes at the outset the ordinary printing of calico. Rollers about 16 ins. in circumference are engraved by mill or pentagraph. In the

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mill method the design is engraved on a soft steel cylinder called a die. This die is put into a stove and case-hardened. Another soft steel cylinder of same girth is pressed against the first, the engraved cylinder, in a powerful machine. The soft cylinder "is pressed smaller," leaving projecting on its surface the engraved parts of the case-hardened die. The soft cylinder is then in turn case-hardened, and becomes the mill. It is placed in a machine in which it works on the surface of a copper roller. The copper roller revolves. The raised portions on the mill press into the copper roller, leaving the sunk impression of the design."

The most successful results in the adaptation of process work to engraving for calico printing have (in the opinion of Mr. Hesketh) been effected by two brothers, William A. and Charles A. Ker, of the Process Engraving Co., High Street, Glasgow, both practical engravers to calico printers, one as sketch maker, the other as die cutter. They sought to cheapen the production of mills by transferring a photo film on to the steel mill, etching with acid to get the relief effect, and then using the mill in the old way to engrave the copper roller by pressure. They gradually discarded the use of the mill altogether, by transferring the photo film on to the copper roller and simply etching the copper. When this system had to be applied to designs of several colours (there being a copper roller to each colour) register difficulties arose. Hence they invented the Polytype machine, which enables them to make the transfers simultaneously, and in perfect register on any number of rollers.

That this machine is practicable, and promises profitable results will be inferred from the fact that the patent rights for Great Britain have been secured by the Calico Printers' Association, Ltd., who have also made arrangements to

secure the services of the Messrs. Ker.

The rationale of the Polytype machine is simple. "The designs when suitable are photographed and etched direct on to plates," but in some cases it appears to be "more convenient to have the plates cut or drawn upon by the sketch maker, this being determined by the demands of the designs. The plates are then mounted in the Polytype machine, on beds at the right distance, and the copper rollers to be engraved, having been covered with varnish, are placed over the plates. The plates are inked on their raised parts and this ink is printed on the rollers, transferring part of the design to each roller. The plates are then moved transversely, to be printed again and again where the desired repeats are to occur, until the whole surface of the rollers has been printed with the parts of the design that have to be engraved on them. The effect of the ink is to soften the varnish on the part of the surface of the copper roller that it touches, and washing away the ink with a suitable solvent, the clear surface of the copper is exposed. The copper roller is then ready to be etched in a bath of acid."

At present we do not hear much as to the applicability of the method to paper. Its use regarding calico excites Mr. Hesketh's enthusiasm. "The simplicity of the process, its cleanliness, its rapidity of production are quite astounding to one who only knows the old methods and watches the engraving of a design of several colours by the Polytype for the first time; and there is practically no limit to the number of rollers that may be engraved simultaneously." He found it "a great saving as against Pentagraphing and hand engraving; patterns in many cases being engraved in hours by the Kers' Monotype and Polytype machines, instead of requiring days, and in some cases weeks by the old method.

("The Process Photogram.") Jan., 1913.

✓ **Hayes' Cloth Printing.**

Related to this is the progress made by the Hayes (Universal) Printing Machinery, Ltd., at Letchworth. The printing machines are now producing printed cloth at the rate of 80 yards per minute, and a large machine is now printing high-class work in four colours (capable of any number of superimposed colour effects) on cloth 56 ins. wide. This machine can produce designs 56 x 36 ins. in four colours printed simultaneously, and 56 x 108 ins. in two colours printed simultaneously. Fifteen minutes suffices to change completely from one job to another.

Mr. Gamble notes a technical point which is of considerable interest, especially as coming from him. He says:—"This process has definitely proved that lithographic colours when correctly applied can be superimposed perfectly and sharply in multi-colour printing, which is contrary to the general belief of the trade. But success depends on the method of application, which is different from that of all other lithographic printing machines."

The machine is small considering what it does, and its construction is such that its use is actually simpler than that of a single colour flat bed litho machine

✓ **Other New Processes.**

Mr. Shawcross's new Identograph transfer process, a modification of his Amphitype, yields identical copies of glass transparencies, a positive transfer from a positive transparency, and a negative transfer from a negative transparency. The sensitised paper appears to keep good "practically for ever." Only water is required to develop it.

The Penrose-Tellkampf process rivals the Vandyke means of reproducing plans and maps by printing through the actual drawing instead of making a negative. The new method claims to be a great

improvement upon this. No water dye nor any chemical dissolved in water is used, except in the sensitising solution, which consists of gum and bichromate dissolved in water. The sensitising solution does not need to spread on the plate with a whirler, which removes one difficulty for the inexperienced.

It is a little curious perhaps that the things one has to speak of first as novelties should have rather indirect than direct reference to the precise work of plate engraving as we know it. It suggests how hard it is becoming to devise much that is new in our exact field. No doubt it is necessary for the process engraver to keep his attention acutely fixed upon the advances and the modifications of processes which are now or may be competitive with his own. But what now of changes directly affecting our studios or etching or finishing rooms or our foundries?

There is a new Tellkampf method of exposing metal plates directly in the camera. The principle has, of course, been adopted in Paynetype and in Immediography. What apparently we are to secure by this new Tellkampf development, in the belief of the inventor, is a greater ease in handling and a greater certainty in the issue.

Those exceptionally fine printers, Messrs. W. S. Cowell, Ltd., of Ipswich, illustrate strikingly in one colour print the depth that can be obtained in an offset litho print. Morris and Bolton's offset litho inks are used. The effect is worth naming among new things, in this sense, that it is comparatively new to realise offset as capable of such extraordinary vigour of full tone. By the way, the article facing this remarkable print speaks of the great improvement that has resulted from the use of dye dust. In the old way of putting offsets down

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on to stone, zinc or aluminium there was much trouble at times when the dust used was Venetian red or rouge, as the dust left on the stone so soon clogged the artists' brushes and pens, and the lines were very often ragged when the dust became coarse.

Collotype has seemed to be losing its place in British practice. That place at no time was a very prominent one. We are not forgetting the Medici prints, which are very fine specimens of coloured collotype at its best. What, however, we are, and necessarily must be, primarily concerned with here is small work-a-day commercial work. The pleasant picture, "The Old, Old Story," by which Messrs. W. H. T. Gaines, of Leeds, illustrate their collotype under the name of Arto-type, is a very good specimen of what after all can be done by this beautiful gelatine method in this country, and we can say, in view of it, that collotype is worthily represented in the volume even if it be true that there is but one collotype picture, and thus to call it a large representation would puzzle even a Frenchman, as he could not even talk of "all the two."

"Photoloid" is discussed by Dr. Henry E. Kock. It consists of a colloid emulsion on a cellulose base. This cellulose base is white, insoluble in water, and does not absorb water in any form. It lies flat without curling. Permanency of the picture is assured, because we have

in the result a pure metallic silver reduction. A true estimate of its worth for photo-mechanical purposes can hardly be given at the present time.

Mr. Ilston Cox demonstrates with a convincing specimen print that it is possible to illustrate textile fabrics by printing on a paper very different in substance from that usually employed for such work. The material used is known to the trade as flock paper, and is similar to that supplied by makers of paper hangings for the interior decoration of walls. Messrs. Shackell, Edwards and Co., Ltd., have been experimenting with flock paper for some time, and provide inks that they claim will not pull the surface of the flock, nor otherwise worry the printer using this material. It prints best slightly damp.

A New Hint by Max Levy.

A short article, very difficult to condense, is one by Max Levy on an "Analyser for Colour Work." He had noted that work printed in three or four colours often shows a pattern or moiré. This pattern or moiré is usually due to some inaccuracy in the crossing of the lines. It may also be due to the lines of the screen not crossing at right angles. He has long had the means in his own practice of determining the precise characteristics of a colour job as to the angles and disposition of the lines. But the reader should consult these two pages, 35 and 36.

"PUBLICITY—THE UTILITY OF PRINTING," issued by Messrs. F. W. S. Clarke and Co., Ltd., of Leicester, is an exceedingly well produced specimen of the printer's art, giving specimens of their ability to print illustrations as they should be printed.

The specimens of various screens used in making illustrations and printing them on various classes of paper are very attractive, and the reading matter is no less well done, so far as its literary ability is concerned.

It is a beautiful specimen book, and we shall be surprised if it does not prove a very successful way of securing new customers.

VICTORIA, the monthly journal of the Victoria Press Manufacturing Co., published in Dresden, is well produced and well illustrated, and reflects much credit upon all concerned. The cover in its simple colourings with gold embossing is a work of art, and certainly gives distinction to the production.

✓ *The Process Engravers' Association and its System of Costing.*

Is there another epidemic abroad? Epidemics sometimes are dangerous to the community; at other times they seem to come as “friends in disguise”; they tell of danger lurking somewhere, and bid us stir ourselves to remove the cause, and so prevent further direful effects.

As in the physical world, so in the world of business there are occasional epidemics, some bad, some good. A survey of the business world of to-day reveals the fact that there is abroad an epidemic of costing. Turn where we will we hear of costing schemes. Here, there and everywhere, whether we stay in our own country, or cross to the Continent, or go further afield and visit our cousins in America, it is all the same, costing! costing!! costing!!! in every trade and every country until one sometimes tires of the continual iteration and reiteration of the idea.

This fact seems to call for consideration at the hands of all responsible business men. Why this fevered haste to-day to know the cost of products? Business has gone on for many years without any highly scientific systems by which costs could be ascertained. Why the necessity to-day? Or is there any real necessity, or is it a mere passing phase of thought and experience, an epidemic that comes from, no one knows where, and passes away leaving all as before?

To us the answer to the question seems to be that business to-day demands a far more scientific treatment than it needed in the days of our fathers. Then business was leisurely done, demands were not great, time was plentiful, and profits

good, but with the growth of population and the constantly increasing demands for articles of all kinds at prices that our fathers never even dreamed of, the constantly increasing use of machinery in practically every trade, and the continued increase in the price of labour and raw material, the up grade of cost and the down grade of price in so many businesses makes such demands upon the manufacturer that he is compelled in self-defence to turn his attention to the question of costing, and to make a careful study of the question, so that by a scientific application of the facts he finds to exist, he may thereby secure for himself a fair share of the profits that should result from his willingness to risk his time, experience and money in manufacturing an article of necessity to the community. Is not this the explanation of the prevailing epidemic?

The process engraver is no exception to the rule. If report is to be trusted, practically every process engraver in the country has felt the necessity of finding out for himself some way of raising prices or reducing costs, and eliminating waste, all or either of which will result in an improved balance sheet.

The Council of the Process Engravers' Association have worked out, with their President, a scheme of costing particularly suited to process engravers. It does not profess to be highly technical. Probably a chartered accountant would tell you it was not built upon scientific lines. Probably not, but there is one thing he could not say, that is, that it is not practical. It has one very strong point indeed; that is, its simplicity. It is so simple that the most *unlearned* process engraver can easily

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master it if he has the mind to, yet so thorough that it will tell him everything he needs to know to put him in full possession of the facts of his business.

Now, can anything more be needed? Yes; when once the system is installed it is astonishing the many subsidiary ideas that come to one's aid to help to make business run more smoothly and the results more profitable, yet for a beginning you have here all the essentials. The other ideas will come along at the proper time.

For several years past we have been interested in the question of costing, and have followed with much care the systems devised by some of the American experts, also those devised by some of the more practical workers in that country. Having a fairly all-round acquaintance with the question, we looked forward to the production of the Process Engravers' Association system with much interest, and in the earnest hope it would be devised upon the two important lines of simplicity and accuracy.

We have had the opportunity to consider the system here referred to, and as editors are notoriously poor business men, we hardly felt like asking our readers to accept our verdict upon so important a subject, so induced a very progressive process house to help us, we prevailed upon them to give the system a trial for six months, and give us the results of their experiment.

After six months careful and systematic trial we are assured that it works admirably—that the results are every bit as good as promised in the introduction to the same. It has enabled the house in question to tell from month to month

I.—The profit or loss on the month's work.

II.—Which departments of the business have made a gain or loss.

III.—The classes of work which produce a profit or make a loss.

IV.—The average cost per square inch.

V.—The actual cost per square inch of any individual block or job passing through the house.

VI.—That all this has been accomplished without in any way adding to the cost of the clerical staff.

These are a few of the important points gained by a use of the system, and we venture to think they are sufficient for all practical purposes, and are well worth the annual subscription demanded by the Association.

With these facts before a house it is simple work to eliminate the unproductive work, if it is so desired, but until this, or some other system is installed, the engraver cannot possibly discriminate between the classes of work as productive or unproductive, for, if we are not mistaken, he will find that in some cases work he thought was giving him a good profit is actually making a loss.

In a future number we may return to this subject and give more details of its working, etc., etc., but for the present we feel that the system deserves our most hearty commendation. This we give, without stint, for having had it thoroughly and severely tested, we hear nothing but good of it, and believing that we are doing the process engravers of the country an exceedingly valuable service, we cannot do other than very earnestly impress upon them the consideration of the benefits that will come to them from its adoption.

We understand it will be supplied free to members of the Association. We therefore advise all process houses to join the Association forthwith, and secure the benefits that will accrue from its adoption; if they do this we feel sure that before the year is out they will thank us for the advice.

Profit-Sharing Co-partnership or Trade Agreement.

THE unrest so prevalent in the industrial world to-day must be matter of grave concern to those who have the conduct of large manufacturing businesses, and no less to those in a smaller way, who, however, have embarked their all in building up a business that is expected to yield them a fair return for the organising ability and the capital embarked in the same.

It is not our purpose to enquire into the question of merit or blame, or attempt to apportion these to one side or the other, for it is recognised that blame is not all on one side or the other. It is well known there are unreasonable masters as well as unreasonable men, and that there are good and considerate masters as well as conscientious workmen, yet, when all this is admitted, there remains the fact that from some cause or other the masters and men usually range themselves upon opposite sides and look at the question from their own standpoint alone, and ignore that of their opponents.

Now it is this attitude of mutual suspicion and distrust that we wish to attack, and, if possible, to induce both masters and men to view questions that arise from time to time from the standpoint of the other side. If we can aid in so laudable a cause we shall have done our share toward the settlement of industrial strife in the trade we represent.

We are not so vain as to suppose that any effort of ours will be of service outside the process trade. For the moment we have no interest in any trade other than our own, and it appears to us that now, while there is a good feeling ex-

isting between employers and employees, it would be an opportune moment to consider whether anything could be done to help make conditions in the trade as satisfactory as they can possibly be.

It is quite true that attempts at something of the kind have already been made, and have turned out to be failures, but this should not be allowed to stand in the way of an attempt to find a firm foundation of mutual trust and mutual endeavour to make the future of "Process" one that shall bring entire satisfaction to every one who gives his time and brain to the trade.

The process engravers of the United Kingdom cannot number more than some 3,000 operatives, spread over some 150 workshops, so that, in so small a trade, it should not be an impossible task to get the masters and men together and come to some common agreement that shall be mutually satisfactory.

In other trades we hear of much being done in this direction. We have co-partnership in gas and iron works, profit-sharing in printing works and jam factories, trade agreements in the British electrotypers and the process houses of Norway, all of which appear to be giving complete satisfaction, or at any rate, are so satisfactory that we hear of no complaints respecting them, and we venture to believe that what has proved valuable in other directions may prove equally valuable in the process trade.

Which of the methods mentioned in this article would prove most suitable for the trade we do not venture to say. Each has its claim to consideration, and each has its features that will appeal to dif-

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ferent minds, but whichever was found most suitable, if it is taken up and seriously and conscientiously applied, we believe an era of more perfect confidence would open, and that we should be saved from the troubles that have done so much to disturb the harmony in other lines of business.

In our May issue we gave an outline of the trade agreement existing between masters and men in the Process Houses of Norway, an agreement that seems to have given much satisfaction, and which, we understand, has replaced an era of strife by an era of peace. This agreement has been in existence for some years, and has, therefore, had a very fair trial, and is intended to last till 1916, and includes in its terms the settlement for at least five years of all questions at issue between the men's union and that of the masters.

Following the example of the Norwegian process men, the British electrotyping houses, we believe, without knowing of the other agreement, came to a somewhat similar arrangement with their employees. The masters formed themselves into a trade union and bargained with the men's union, and after very considerable negotiations and careful thought and discussion, a system of working was arranged by which both masters and men would benefit, and it is along this line that we think the greatest chance of success lies, for it cannot be denied that the employees as a whole prefer to accept an increased amount per week, even if it eventually proves to be slightly smaller, than take the chance of gaining a larger amount at the end of the quarter or year.

We think it may be of interest to our readers to have before them the terms of the agreement between the masters' and men's electrotypers' unions, which has now been operative for over a year, and, we understand upon reliable authority,

has proved very satisfactory. Practically every electrotyping house in London joined the Union, and nearly every workman was a member of the men's Union. These facts, of course, facilitated the negotiations, and are accountable in a great measure for the happy results achieved.

Is it possible to come to such a working agreement for the process engraver?

The following is the agreement made between the Electrotypers Masters' and Men's Associations :—

THIS AGREEMENT, made the Twenty-Second day of September, One Thousand Nine Hundred and Eleven, between the Electrotypers' and Stereotypers' Trade Protection Association (a registered Trade Union) hereinafter called "the Association" of the first part and the London Branch of the Federated Society of Electrotypers and Stereotypers of Great Britain and Ireland (a registered Trade Union) hereinafter called "the Society" of the second part.

WITNESSETH that in consideration of the covenants hereinafter contained on behalf of the said Society the Association hereby accepts and agrees to the following conditions of employment by the Association of the Members of the said Society for a period of five years from November the First next. The conditions of employment shall be as follow, that is to say, as and from the First day of November, One Thousand Nine Hundred and Eleven until the termination of this Agreement the Association accepts and agrees to a working week of fifty hours for Members of the Society employed by Members of the Association subject always to any general movement in the Printing and Allied Trades for a reduction of hours in which case the Association pledges itself to accept and abide by whatever may be generally adopted by the said Printing and Allied

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Trades as the working week. The recognised hours for the working day shall be between 8 a.m. and 6 p.m., for the first five working days of the week and 8 a.m. to 1 p.m. on Saturdays, beyond this will be subject to overtime rates. The Association further agrees during the said period to recognise the sum of two pounds four shillings per week to be the minimum wage for Members of the Society and further will and shall pay for all public holidays such as Good Friday, Easter Monday, Monday in Whit week, first Monday in August, Christmas Day, Boxing Day and any national holiday which may occur from time to time. If on any of the above holidays it is necessary for any of the Members of the Society to be at work in any of the Association's shops they shall receive in addition to the above payment overtime rate for any part of any holiday during which they may be employed.

In addition to the foregoing holidays the Association hereby agrees to grant one week's holiday each year at full pay to every Member of the Society employed by Members of the Association provided that such Members of the Society shall have been in the employment of any one or more Members of the Association for a period of one year calculated from the first day of November One Thousand Nine Hundred and Eleven.

In the event of any Member of the Society leaving the employment of any Member of the Association before completing one year's inclusive service calculated from the date above mentioned, and obtaining a situation in a news or printing office such Member or Members of the Society shall be entitled to a pro rata allowance in respect of the week's holiday either in cash or time at the option of the employed for any period exceeding six months.

The Association further pledges itself

to abide by the Rules of the Society in existence on the first day of March, One Thousand Nine Hundred and Eleven and other alterations that may be effected from time to time shall be mutually agreed upon.

The Association further agrees that all Members of the Society in the employ of their Members shall receive an immediate increase of four shillings per week on the first day of November, One Thousand Nine Hundred and Eleven whatever the present wages of such Members of the Society may be and it is hereby expressly understood that it is not the intention or desire of the Association that the minimum wage of two pounds four shillings per week shall become the prevalent wage for all Members of the Society.

In consideration of the foregoing concessions and covenants on the part of the Association the Society agrees to uphold, maintain and sustain by every means in its power the scale of prices and discounts adopted by the Association and especially binds itself to withdraw its Members from any electrotyping or stereotyping firm or company dealing in the products of the Members of the Society at prices below those adopted by the Association provided that reasonable proof of such underselling is adduced by the Association to the Committee of the Society and that the house so complained of by the Association can properly be described as a trade house. The term “trade house” shall for the purposes of this Agreement be deemed to mean any house taking or accepting orders for the products of Members of the Society other than such as may be necessary for the due carrying on by the house in question of or in connection with *bona fide* orders for printing entrusted to such house. And that any fresh advance or alteration of price determined upon by the Association shall be notified to the Society at the time, and

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mutually agreed upon before putting into operation. All journeymen withdrawn from any firm for non-compliance by such firm with the rules and regulations of the Association will be found employment at once by Members of the Association at the same wages as they were hitherto receiving provided they had been in receipt of such wages for a period of at least three months and such situations to be guaranteed by the Association for a period of thirteen weeks. Journeymen withdrawn from houses not belonging to the Association shall receive four shillings per week beyond the rate of wages they had been in receipt of for the previous three months on the understanding that such Members of the Society shall have the option of returning to their former employment immediately the dispute with the Association is settled and during the period that Members are so employed in any Association shop as a consequence of this Agreement the number of the ordinary staff of any shop so affected shall not be reduced from any reason

whatever except misconduct.

If at any time the occasion should arise to put into operation the clause dealing with the withdrawal of Members of the Society no step shall be taken in this direction, nor shall the Members of the Society be expected so to act until the case in question has been considered and such action agreed upon by representatives of both the Association and the Society.

The covenants and agreements on the part of the Association and the Society hereinbefore contained notwithstanding it is hereby expressly agreed and understood that should circumstances arise which in the opinion of either of the parties hereto render this Agreement unworkable in practice after consideration by joint representatives of the Association and the Society three calendar months' notice shall be deemed a good and sufficient notice by either side to terminate this Agreement and the parties hereto shall at the expiry of such notice return to the *status quo ante*.

Knowing His Business.

WE often meet the man who is very confident that he "knows his business." He is very supercilious in regard to technical schools. They are so theoretical. He is a practical man, if you please. He knows his business; and business is just exactly what the people at the schools don't know. With much more to the same effect. And yet how often it happens that a man who knows his business and who, to be sure, has repeated certain operations hundreds of times and with fair effect, is non-plussed or at any rate is brought to a stop during some golden minutes, when the least thing out of the

ordinary is presented to him. There are operators to be met with who don't know off-hand how to put in a square stop for colour work? Having had to turn the screen, they have to turn the stop. And how? They "don't know." They guess at it no doubt, and they may guess right. But is that knowing? We cite it as one of very many little things which would be picked up at a craft school; one of many little gleanings which the man who, "knowing his business," is above attending such a school, is in consequence apt to miss.

An Artist's Claim against a Process Engraver.

Randall v. Stoll.

AN important case concerning the respective rights and liabilities of an artist and process engraver was heard before His Honour Judge Woodfall on the 6th December last at the Westminster County Court, and as the facts are of interest to the trade we report the case as fully as needful.

Mr. Maurice Randall, the well-known artist, of Baker Street, sued Mr. Ernest Stoll, an artists' agent, for the price of a water-colour marine sketch, value seven guineas, which was supplied to Mr. Stoll for the purpose of reproduction. The account had not been paid because Mr. Stoll said the picture supplied was worthless, and had been refused both by his customers, a well-known firm of process engravers, and also in turn by their customers, a publishing house.

Mr. G. A. Borradaile, of Messrs. Woodhams, Smith and Borradaile, representing the Artists' Trade Protection Society, was for the plaintiff, and Mr. E. A. Walmisley, of Messrs. Mullis and Walmisley (who is also the Secretary of the Process Engravers' Association), was for the defendant.

The plaintiff in his evidence stated that he had not sufficient material to work upon. The picture was an old wooden man-of-war, and no complete details were supplied to him, and further he had no proper time allowed for the proper completion of the work. After he had done one sketch from verbal instructions a print of the vessel was supplied to him, and it was necessary for another drawing to be made.

In cross-examination, he admitted that even good artists sometimes did bad

work and he supposed that possibly he might himself sometimes do work which was not his best work. On being shown the drawing he admitted that it was only “fair” work; it was good work considering the price and time allowed. He would not care to risk his reputation by signing work which was not good work. He had not signed this picture, but that fact did not necessarily imply it was bad work. He admitted knowing that Mr. Stoll was merely an agent, and that the picture was required for the purpose of reproduction.

Mr. Ernest Stoll, called, said he was an artists' agent, and had placed the order for the picture in question with Mr. Randall. He had explained that it was required for the purpose of reproduction, and the price was arranged without anything being said that the work would be of an inferior quality for the price agreed to be paid. He certainly would not have placed the order if the plaintiff had made any stipulation that the work was not to be his best work.

When the picture arrived he showed it to his customers, The Anglo Engraving Co., Ltd., who in turn showed it to the firm for whom the work was being done, and the unanimous opinion was that it was quite unfit for reproduction. The picture was flat and lifeless.

Mr. Hugh Hunter, a director of the Anglo Engraving Co., Ltd., in evidence, stated that the picture in question was required by his firm to the order of another firm. When he saw it he immediately realized that it was quite useless, and he refused to believe that Mr. Randall could have done the work himself. The work itself was flat

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and lifeless and the colouring crude.

Cross examined, the crudity of colours would affect the reproduction in monochrome because the tone values would be all wrong.

Mr. Anderson Dyer, an artist, who was called, said that in his opinion the picture was quite unsuitable for reproduction purposes; the colouring was crude and the whole effect was flat and lifeless.

Mr. Walmisley was in the act of calling Mr. Plumb, of the Graphic Art Gallery, another expert, when His Honour stopped the case, and stated that in view of the plaintiff's own admissions he had come to the conclusion that judgment must be for the defendant. He found for the defendant very regretfully, as to do so he had to find that the plaintiff, who was a well-known artist, had supplied work which, on his own showing, could only be described as "fair," whereas the defendant was entitled to expect his best work only.

It may have been perfectly true that the time was not ample, but shortness of time did not justify a man in supplying work which was not his best work unless he had so stipulated, and here there was no suggestion that any such stipulation had been made, neither was there anything said about the price not being adequate. Although he was not an expert, he would not have thought the picture was worth a tenth part of the sum agreed to be paid for it. He found that the picture was unsuitable for reproduction purposes and that the plaintiff knew that it was required for that purpose, and he gave judgment for the defendant with full costs.

THERE are portions of brains in the heads of your employees that are better than the same portions of brains in your cranium. It is up to you to use all the ability that you control.

Seasoning Wood by Electricity.

THE following item from a technical paper concerns a new process of seasoning wood by electricity.

"A large tank is filled with a solution containing ten per cent. of borax and five per cent. resin, with just a trace of carbonate of soda. In the bottom of the tank is a lead plate, which is electrically connected to the positive pole of the dynamo. The timber to be treated is stacked on this plate, and when the tank has been filled another plate is superimposed and connected to the negative pole of the dynamo. When the current is switched on, it passes through the stack of wood between the two plates, and in its passage it is said to drive out the sap in the timber and deposit borax and resin in its place, completely filling up all pores and interstices. When the process is completed the timber is removed and dried, after which it is ready for use. It is claimed that the timber submitted to this treatment, no matter how green it may be, becomes completely seasoned."

Metol Poisoning.

THE process engraver and photographer are constantly troubled with irritations, the result of using the different chemicals employed in the trade. Splashes of enamel solution get on the skin and dry, causing in some cases an irritation which may result in a bad sore, the cause being the bichromate in the solution.

Constantly having the fingers in strong chemicals may cause the tips of the fingers to harden and then split, these

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cracks being very painful and difficult to heal. Developers containing metol have a very irritating effect on some workers' skin, causing what is known as metol poisoning.

There has lately been placed upon the market a soap and salve called “Petol,” which we can highly recommend to anyone suffering from either of these complaints, as we have known bad cases of bichromate and metol sores very quickly cured by using this Petol salve and soap. The salve quickly sinks into the skin and affords relief and cure. The proprietors and makers are Petol, Limited, 17 Hart Street, W.C.

✓ *The Foundry.*

By Ion.

WHEN should nickel steel electros be used?

Probably in about one-seventh of the cases in which electros are wanted at all. It may seem a rough calculation, yet it is not a mere guess; it derives from some experience. It would be anything but sensible to use nickel steel every time one wants electros, simply because of its endurance and because its preservation of fine lines is greater than that of ordinary electros. It has its field; and this may be defined as the field where there is a very long run in the job, or where there is some fine rule, say, some one-point, or one seventy-second of an inch rule.

Or again, use nickel steel where the stock to be printed from is very rough and hard, as in the case of carbons. Use it and pay gladly its one-fourth or so extra price. You will be money in pocket, and will have better result.

But you will be money out of pocket and get no appreciably better result—

or no better result at all—in many of the ordinary cases demanding an electro. It is of the utmost importance to remember this fitness and unfitness of things, their special time and special place.

Celluloid stereos, to give them that accepted-seeming, but not perhaps very accurate name, are apparently making now a new entrance into London printing practice. A little while ago it seemed as if we were just on the point of seeing a pretty wide use of them in the Metropolis, at any rate, of seeing a good many giving them a fair trial. But almost suddenly all sign of their inroad vanished for a time. The makers, or the business handlers of the method, seemed to judge it wise to make first yet some little further improvement somewhere. However, here they are again, and the results apparently are quite satisfactory. We have this week encountered the well-content user.

There are some things that cannot well be greatly hurried, organise how one will. For instance, there is the time needed for making binders' electros. Let your plant, your process, be as good as they may, you will ordinarily find that something like six hours are needed for making the binders' electro. For making embossing electros something like twelve hours may be more like the needed time. Binders' electros must be exceptionally well routed, too, and that all means time and trouble.

The old, old truth must never be forgotten that any scampering or scampering with plate-making is peculiarly bad because of the peculiar impossibility of correcting a plate. You cannot doctor plates as readily as you can doctor inks, and you cannot mature plates as you can often mature paper. If “the work” isn't in the plates you can't put it there afterwards. You can bring it out, perhaps, even if it is only very faintly

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present; but if it's not present at all, what *can* you do?

The cold matrix stereo system of the "Daily Mail" offices seems to be quite satisfactory. It does not, however, seem to be conquering its way into offices generally as yet. To be sure, the world is not yet very much older since Mr. Hawkins came to this cold matrix preference.

Aluminotypes are practically certain to find some favour in British circles. They yield most excellent prints. But the suggestion that one should scrap one's electrotyping plant and adopt aluminotypes is not perhaps quite British in its sound. We are not so fond of that sort of thing as the Americans seem to be. And they can't equal electros, we believe, however they *may* surpass stereos. No doubt even the most conservative Briton is open to sufficient persuasion as to quality and as to economy when the demonstration of a saving is brought down to absolute pounds, shillings and pence. and will stand all testing.

The foundry, too, is commonly something of a bugbear. So aluminotype may get in here before some of its critics expect it. Messrs. Penrose seem to be interested in its handling.

Talking of the foundry being a bugbear, it is not only in the case of rash Colonial buyers that one hears of a costly duplicating plant being got rid of at almost any sort of price by a buyer who has repented of his enterprise. The same thing has been observed in London, the stowing away in a corner or even the covering up pending sale of quite a valuable foundry plant. "Excess facilities" have been purchased now and again, and the purchase has naturally been soon regretted. But, per contra, it is remarkable how one sees a sort of converse to this—sees, that is to say, a really important printing plant having attached

to it a quite trifling, almost a toy foundry, out of which it yet manages to get a very appreciable service. I have in mind a provincial house which has stored away hundreds of moulds of its jobs, all instantly available against the repeat orders, and yet about £50 might be the outside going concern value of its little duplicating plant.

One of the old-time bits of gossips of Fleet Street was as to the good fortune of "Mr. Punch" in this regard. When the question of reprinting from some of the old "Punch" plates first came up it was found that the old flongs of "Punch" formes which had been stowed away in some vault were in thoroughly good order; or, at any rate, most of them. In printers' parlance, this was most decidedly a "bit of fat."

Long decades of Flongs undecayed.

Talking of old storage, a flong was lately on view in the Museum at Lewes, in Sussex. I believe it was about sixty years old. It was papier maché. Vanoni introduced one form of stereotyping into Great Britain in 1848. The Swiss, B. Dellagana, introduced in 1859 the curved stereo. The "Times" listened to him, and Mr. Macdonald, its general manager, conferred with him and gave him every assistance in his experiments. These evidently were very many, for it was not until 1863 that all difficulties in the way of the commercial production of curved stereos had been overcome, and "The Times" was able to secure its impressions in this new manner.

There is another very interesting association of the great journal with stereotyping. "The Times" itself is an outcome, a by-product, of an effort to popularise one curious form of stereotyping, known as Walter's or Johnson's "Logography." Jno. Walter financed and controlled the enterprise which gave form

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to ideas of a compositor named Johnson. His idea was to make stereos of certain frequently recurring words or endings or beginnings of words, logotypes so-called. He worked with letters whose shanks were shorter than those of ordinary type. The h-a-v-e of "have" were placed together in a mould, so fashioned that when molten metal was poured into the top of the mould the whole formed a word which ranged with ordinary type. Walter printed books with his logotypes, "Robinson Crusoe" being one; and he claimed that the opposition which he encountered from the book-selling trade was due to his books being better printed than books composed with single types.

He started "The Universal Daily Intelligencer and Times" in order to give a daily demonstration of the advantage of logotypes. No doubt he hoped for incidental advantage from the paper, but he thought he was making, or might make, a printing revolution, and that his main fortune might be earned thus. But he had disappointment. King George III. would not receive his gift of a very handsome set of four great logotype cases in rose or satin wood. Compositors

wanted about as much for lifting logotypes as for lifting words; and in the end the whole process was dropped.

Yet half a century later a Mr. Greene, M.P., secured the appointment of a Select Committee, despite Mr. Gladstone's opposition, to inquire whether there might not be an economy in public printing through use of such logotypes. The Committee had tests made (calling in experts), and reported that there might be a very substantial saving, but that the parallelism of the lines logographically printed was not so good as that of lines ordinarily composed.

The inventor declared that any faults under that head were due to his use of tinfoil, and he could make a better cementing. However, he never got another chance and the thing went out of public notice.

It has never had a chance since, for with our typefounders leaguely together, as the principal houses have done for so long a time, there has not always been the best of opportunities for a man to introduce a new thing in any way connected with types which may be deemed to threaten the industry.

✓
HALF-TONES ON ROUGH PAPER.—A well-known offset printer remarked in the presence of the writer the other day: "I can print a 150 mesh half-tone on a piece of alligator skin with an offset press, and make every line show up."

A few years ago such an expression would have laid the speaker open to an investigation as to his sanity. Now-a-days people pay more attention to extraordinary statements, because, especially in offset, the extraordinary of other days is the commonplace of to-day.

The speaker mentioned previously

meant just what he said and was capable of doing all he said he could do. It is possible to print the finest of half-tones on the roughest of paper if you have the proper materials and know how to use them.

In printing half-tones on rough paper the cut should be made "direct" in the first place. The film should not be stripped from the plate and reversed in the making, as is customary in ordinary half-tones. The "direct" half-tone prints much clearer and better, naturally, and it is not necessary to reverse it when putting the transfer down on the printing plate. That also helps a great deal in

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the production of first-class work.

After the plate is ready for printing a soft para rubber blanket should be used if "alligator skin" or other very rough paper is to be run. With a soft rubber blanket, properly adjusted, one can come mighty near printing "around the corner" with an off-set press. The rubber with the image in ink, will sink down into the low places and give to the high places so that the entire surface will show up almost as well as if the paper was perfectly plain and smooth. It is absolutely impossible to print on paper of this kind by any other known process.

SOME STAGES IN EVOLUTION.

THE booklet bearing the above title, recently issued by Linotype and Machinery, Ltd., maintains the very high standard of excellence for which they are noted.

What is worth doing is worth doing well seems to be quite to the fore with them, for whether it is their machinery, their advertisements, their printing matter, or their illustrations, everything is of the highest standard.

The booklet referred to is no exception to the rule, for had it been turned out as a specimen of beautiful production in printing it could hardly have been done better than the copy before us, and the half-tone illustrations are likewise real works of art.

The selling power of such productions as this must be great indeed, for anyone intending to purchase and looking for particulars of what is for sale must be attracted by the splendid production and having secured the admiration of a prospective customer, the rest is easy indeed. We congratulate the company on their booklet.

All we have said respecting the foregoing is likewise true of another booklet issued by the same company, viz., "Your Magazine Quick Change Linotype"; their "Monthly Notes" are also beautifully produced, though not of so high a quality as the booklets.

It is a pleasure to have the opportunity of giving a word of praise where it is so richly deserved.

A DICTIONARY OF ENGRAVING.

THE Eclipse Electrotype and Engraving Company, of Cleveland, have done a distinct service in issuing their Dictionary, the first of its kind.

It embraces all the modern commercial processes, together with the terms used in the related branches of electrotyping, lithography, advertising, printing, art, photography, etc., etc., both idiomatic and technical.

The author claims that the definition of technical and essential terms are believed to be accurate, as many authorities have been consulted respecting them.

Certainly some of the definitions seem to be far-fetched, take, for instance, the following:—"Dummy man—not an idiot, but a variety of genius employed by engravers and printers who desire bright schemes for getting business from concerns who otherwise might have no use for printers or engravers, and who puts his ideas into concrete shape, as by dummies, sketches, etc., with cost estimates, etc., before presenting them."

Do any of our readers recognise this man? or Advertising manager—were there less of them, there would be fewer engraving houses!

Definitions such as these hardly tend to make the dictionary a serious work; nevertheless it is a laudable attempt to bring together in one volume all the terms, etc., used in the various processes of producing illustration letterpress, and is well worth a perusal.

THE THEOSOPHICAL PATH, Point Loma, Cal., (Katherine Tingley, Editor) in its current issues (English and Spanish) scores a journalistic triumph in it being the only publication in the United States and probably in the whole Western world to publish the latest portrait of the late Japanese Emperor—many leading American journals having stated their inability to obtain such a portrait.

Of distinct scientific merit is "What is Matter?" by H. T. Edge, B.A. (Cantab), M.A., a discussion of the most recent philosophical aspects of the subject, showing the gradual approach by the most advanced thinkers to the teachings of antiquity.

"Hidden Lessons in Shakespeare," by Kenneth Morris, is a noteworthy article, which will hold its place in vindication of Shakespeare the man, when the Baconian craze is dead and forgotten.

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AND ELECTROTYPERS' AND STEREOTYPERS' REVIEW.

Machine Printed Photogravure.

By W. T. WILKINSON.

THE process of printing rotary photogravure is analogous to the methods of calico, and wallpaper printing from cylinders engraved in intaglio, the ink used being a glutinous paste impregnated with colour, the printing surface being wiped by a thin metal strip pressed in contact with the cylinder.

To engrave a cylinder for photogravure in continuous tone, a transparent positive is used; from this a print is made upon carbon tissue, which also receives a second exposure to light through a copy from a ruled grating, the exposed carbon negative is then mounted upon the brass cylinder, and the image developed exactly as is usually done with carbon prints on (say) an opal support. When the carbon print on the cylinder is dry, the metal outside the picture is coated with black varnish.

The etching fluid is iron perchloride used at various densities, 43 deg., 40 deg., 38 deg. representing good average etching strength, for perhaps the majority of subjects, but where the subject is rather flat this method does not yield quite sufficient brilliancy, as can be obtained by using one bath only for the etching.

The transparency for photogravure may be made by the carbon process, and when the negative is good no method can be

better, but this method is not always convenient, then the transparency may be made upon an ordinary dry plate in the camera, but not by contact unless the negative is a reversed one.

The transparency must be perfect, the high lights just covered, and the shadows transparent.

The image required to show on the finished print must be quite isolated on the transparency by masking with thin tinfoil, or opaque paper, the tinfoil being best as it does not retain moisture, paper is always difficult to keep dry, and damp paper as a safe edge to a carbon print introduces troubles that are difficult to account for, especially when artificial light throwing out great heat is used for printing.

The carbon tissue for the resist should be dried upon glass, so that no stretching of image is likely; this tissue must be dried by heat in a drying chamber, and should be kept warm until it is put into the printing frame, the transparency also must be warm.

The screen used to form the printing grain is a copy from a ruled grating, the black lines being very fine indeed, the white line between being at least four times as thick.

The copy or printing screen should be made on slow process dry plates backed,

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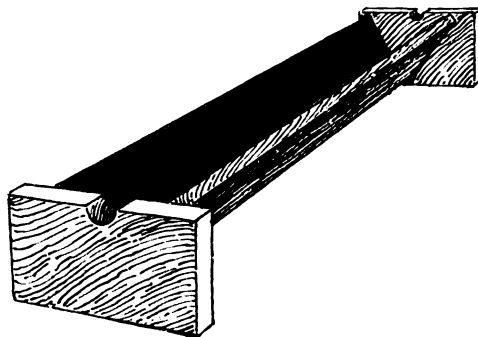
and made in the camera so as to get a maximum of density in the thick line, and also perfectly clear thin lines; these screen copies should be carefully made, well washed, and, when *perfectly* dry, coated with celluloid varnish.

The correct exposure for the negative print from the transparency should be ascertained by trial prints developed upon opal glass. Mercury vapour lamps are the best for this kind of work, and if mounted underneath a bench with a plate-glass top, the frames will not need to be moved after the transparency and tissue have been put in.

The carbon tissue is exposed to light

cylinder, in due time developed in warm water, washed and dried, just as a carbon print would be upon a sheet of opal glass, the cylinder being mounted upon a mandril fitted with cones to keep the cylinder in position during this and subsequent operations; previous to mounting the carbon print upon the cylinder the surface must be thoroughly cleaned with well washed whiting moistened with a 10 per cent. solution of potass cyanide, then well washed, and wiped clean with chamois leather, there are other detergents to mix with the whiting, but none so good for this purpose as cyanide potash.

The negative image on the cylinder



ETCHING TROUGH.

under the transparency for the full time necessary to obtain a fully exposed negative image, then the tissue is subjected to a second exposure to light, this time under the copy from the ruled screen; the correct time necessary for this supplementary exposure can only be got at by preliminary trial, but when once the proper ratio has been ascertained, little or no variation will be necessary, as a guide, it may be taken that this supplemental exposure under the screen copy will be from one-third to one-half of the time required for the exposure under the transparency of image.

The carbon negative is soaked in cold water, mounted upon the smooth brass

being dry (the drying may be accelerated by using methylated spirit), the next step is to cover all the surface outside the picture with a good black varnish, lining in the picture itself with a drawing pen.

For etching, four long, narrow troughs are required, three for the etching fluid, one for water. The shape of these troughs is something like the illustration. These should be in a row on the bench, the one in front to contain solution of perchloride of iron at 43 deg. Beaume, the next perchloride 40 deg., the third at 38 deg., and the fourth one clean water. The cylinder is revolved in the first trough until the brass surface underneath the deep shadows is evenly and deeply

(“The Process Photogram.”) Feb., 1913.

discoloured. The cylinder is then lifted into the second solution, and remains here until the half-tones are decidedly discoloured; then a short time in the third trough will discolour the metal under the high lights of image. When this happens the cylinder is at once placed in the water and the resist washed off.

The black varnish is removed by rubbing with a rag soaked in benzol, and is well cleaned with whiting, etc., care being taken to use nothing but soft brushes or cloths; a single scratch on the surface would spoil the whole engraving.

With some subjects one solution only may be used for etching, especially if the subject is inclined to flatness.

The time necessary for etching a cylinder will vary with the appliances, and the room, a properly equipped etching room in which the temperature can be kept constant, the time of etching would be: First bath, 20 to 30 minutes; the second, 10

to 15; the third, from 3 to 8. If the two densest fluids only are used, they each require about equal times, viz., 20 to 30 minutes. Great care must be taken that the shadows are sufficiently etched, they cannot be easily manipulated afterwards, whilst the high lights can be touched up either to flatten or make brighter.

Photogravure with letterpress makes a nice combination if properly done, but to attempt it by copying the plain letterpress with a continuous tone photograph invites failure. If the letterpress has to be reduced in scale, then a negative must be made from it, and from that a transparency; but if the letterpress is to be printed at original scale, then a pull in good black ink on tracing paper or cloth, or sheet gelatine, will give a transparent positive ready for the printing frame. The pictures that are to illustrate the letterpress should be stripped, and then can be built into the letterpress as required.

Colour and Typographic Education by Correspondence.

WE have received from the International Typographical Commission one of the handsomest and at the same time one of the most significant and suggestive booklets or brochures we have ever seen. Its size is notable (14 ins. x 7½ ins.), and notable, too, is the dignified, balanced, reposeful and quite beautiful front of its folder cover. We have buff board with appropriate black line panels, not of too pronounced a structure; we have a sheeny light blue as a tint ground within these black line frames, and with Latin caps. just over half an inch deep in a brown red. The letters make a panel of caps., of 4¼ x 2¾ ins. As the top line is short—simply “The I.T.U.”—it is eked out by

square corner ornaments. We have a feeling that we could have wished these ornaments to be of the same tint as the lettering, or, at any rate, a little darker than they are. The lettering would, we think, meet with the approval of masters like Edward Johnston. It certainly pleases us. It is in sympathy with the style of the famous characters on the Trajan column at Rome, that ancient model for us all. The serifs are aslant and in the same direction so far as regards individual letters.

The eight inner pages are of a rough cream, according well with the buff cover. The border is a red, on the light brown side; tawny, one might say. Everywhere in colour, in margination,

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in inset and in mode of inseting and in the cord binding—through it all there is “keeping,” there is restraint, there is dignity, and there is the artistic spirit. It is altogether fine.

We emphasise these details and this “ensemble” because they point the enormous advance upon former American style—upon the loud vehemence of old colour schemes or colour chances. Talk of printing that “he who runs may read”—they used to print in the States so that he who read might run—as far as possible from the paper nightmare! It seemed to be subconsciously determined that in every printing job there must be a colour or a fount or a style for every State in the Union.

That was what mere unrestricted competition was making of art, whatever it was making of other things. The journeymen themselves with a very real chivalry have come to the rescue of the fair maiden Beauty—like any Perseus of old days. They have done in America very much what the litho. artists did when they started the trade union classes which have eventuated in the rate-supported Bolt Court School in London, only they have had no such help as came in the way of our enthusiasts, and so they have done without it.

What has happened appears fully and clearly enough on the first page. None the less, that page does not look congested. Its abundant title matter is suitably panelled and leaves so much surrounding expanse of blank as itself to be easily picked out, as one says; easily commanded, easily read.

Here we learn at once that this brochure deals with “The I.T.U. course of instruction in printing.” This, we are told, is “a system of education by correspondence in which are being taught the art principles underlying typog-

raphy,” which principles are subsequently applied by the students in exercises which comprise practically every class of commercial printing, in type or pencil sketches.

“The instruction is given by ‘The Inland Printer’ Technical School at approximately the cost price on easy terms under the direction of the Commission on Supplemental Trade Education of the International Typographical Union. That organisation defrays all promotional expenses and returns 70 per cent. of tuition fees to students who finish the course with ordinary diligence and intelligence. Many subordinate unions augment this inducement by various offers to apprentices.”

Five years ago the Union of Journeymen Compositors and Machinemen (or pressmen as they are sensibly styled in American parlance) in annual conference assembled began the important work of which this is one of the issues. It began it by appointing “The I.T.U. Commission on Supplemental Trade Education.”

That fine journal, “The Inland Printer” had “developed a system of oral instruction” by which “dependence on the personal taste of the instructor was eliminated, and rational reasons were given when work was being criticised.” It was arranged that this should be reduced to a correspondence course. In consideration of the Typographical Union defraying advertising expenses and giving a prize or rebate to graduates, “the Inland Printer” undertook to sell the course for a fee just covering the cost of tuition, postage, outfit and other miscellanies. In March, 1908, the course was presented to the trade, and in four years 3,000 students were enrolled. Everything is done to encourage and stimulate students, and they are not required to buy books or materials to complete their studies.

The reputation which the system won soon became world-wide; to judge, at any rate, from the fact that the Government of New South Wales requested and received permission to adapt the principles of craft education expanded in the I.T.U. Course to the scheme of printing instruction in that State.

By the way, the working out of the system makes a commentary on the old reproach that no place does honour to that to which it has given birth. In the district which saw the assembling of the conference which discussed this matter in its agenda and adopted it, there has since come into existence an arrangement between the local Typographical Union and the Employing Printers' Association which provides that apprentices must take the course. A similar policy is being advocated in other cities.

As our principal interest is in colour it may be enough to add on the matter of the typographical teaching; that what the instructors appear to do, as a general rule, is to sketch out with a pen the re-arrangement of an unsatisfactorily composed page, with accompanying notes explanatory of the principles of balance and draughtsmanship on which their drawings and correction are based. This brochure illustrates some specimens as students submit them, and as they are corrected by the teachers with the reasoning as developed by the corrector in each case.

THE COLOUR TEACHING.

The "I.T.U." Course Colour Wheel, embodied in this brochure, consists of five concentric colour circles; or seven circles, including white in the centre and a white band midmost. This midmost band helpfully breaks the colour rings and itself bears lettering sufficing for naming the colours or colour blends in any particular section of the circle.

There are many sections and ninety

distinct colour effects. The various letterings are Y, GY and YG for yellow, green-yellow and yellow-green. Then G, BG and GB — green, blue-green and green-blue. There follow B, VB, BV, V, RV, VR, R, OR, RO.

The printing of the colours in the wheel in the number before us leaves a good deal to be desired, but the wheel is none the less very illuminating and helpful, as the accompanying illustration makes plain. It reads:

"The printer wishes to run a letter head in two colours on blue paper stock. He consults his colour wheel, notes which one of the blues shown thereon corresponds with the colour of his stock, and runs the job in a shade and tint of that colour (the shades of the colour being towards the outer edge of the wheel, and the tints towards the centre of the circle). Perhaps, however, he does not care for a shade and a tint of blue, but would prefer the dark blue and some other colour. So he goes directly across the wheel and finds orange, the colour which will always contrast most effectively with the blue. If his colour forme consists of but a small spot or two, he may run it in the brighter orange, but if it forms a greater proportion of the job, he subdues his orange with black, making of it a shade, the principle being that the greater the area of space covered, the more subdued should be the colour."

In another paragraph the pendulum character of colour sensation is discussed in elucidation of the seeming strangeness of the fact that colours as far removed as possible from each other in the circle should harmonise. "The optic nerve becoming satiated with one colour, reacts when that colour is removed, to the exact opposite of that colour. It is like a pendulum which, drawn up on one side and released, does not remain at a normal position at the bottom, but reacts to prac-

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tically the same height on the reverse side."

When one turns from this little colour talk it is interesting to encounter a man who owns to being fifty-six years old, writing that he is very glad he decided to take the course; he felt he could not possibly have made a better use of five pounds. "I would willingly have paid that sum for the lessons in colour harmony alone."

We figure out that of those who thus acknowledge benefit rather over a third are young journeymen in their twenties, about a sixth are in their thirties, and something like a fifth are in their forties or fifties. They all seem to realise that they have not only got sound artistic teaching, but that they have also got something that is very inexpensive. Apparently those lessons could not be provided under a £13 fee if this were a purely commercial venture, but owing to the liberality of the International Typographical Union in defraying all "promotional expenses," the course is sold for less than cost, that is, for twenty-three dollars cash, or for twenty-five dollars (roughly £5) if it is taken on the instalment system of two dollars down, and one dollar a week till

paid. In addition, as already mentioned, the International Union returns a sovereign to each student who finishes the course "with ordinary diligence and intelligence." We wonder if there are some wonderful young men among the students, who feel that the five dollars are but a poor amends for suggesting that their intelligence is only ordinary.

However, there is no need to be suspicious; and as regards the phraseology, there certainly ought to be, and no doubt there is considerable freedom of speech as between fellow members of one trade union organisation. For ourselves we are content to rejoice whole heartedly in the happy inspiration and the large mindedness which impelled those who took action in this matter. It is a great thing to find the sense of inter-responsibility so wide spread and so strong. It is fine to see a lot of journeymen setting themselves to do not simply what they must, but all they can. It is good, too, to see technical journalism realising its educative power. And it is in all senses delightful to find these several things not simply existent individually and in isolation, but co-operant for the behoof and the advancement of the whole great craft.

✓ *A Lithographic Surprise.*

AT such a time as this, when we are all on the *qui vive* as regards new things, it is by no means easy to give us a genuine surprise. Yet we were quite prepared to confess to some considerable surprise when we were confronted with particulars of a new lithographic printing machine.

We have described it as a *new* machine. Well, it is not altogether new, or rather it is new only to the trade generally, for

it has been running in the workshop of the inventor for three years, during which it has fully justified the claims made on its behalf.

"The Wogden Improved Litho Press" is entirely novel in construction, inasmuch as the stone, ink table and damping board remain stationary, while the cylinder inking rollers and damping rollers travel from end to end of the machine. In the absence of any illustrations or construc-

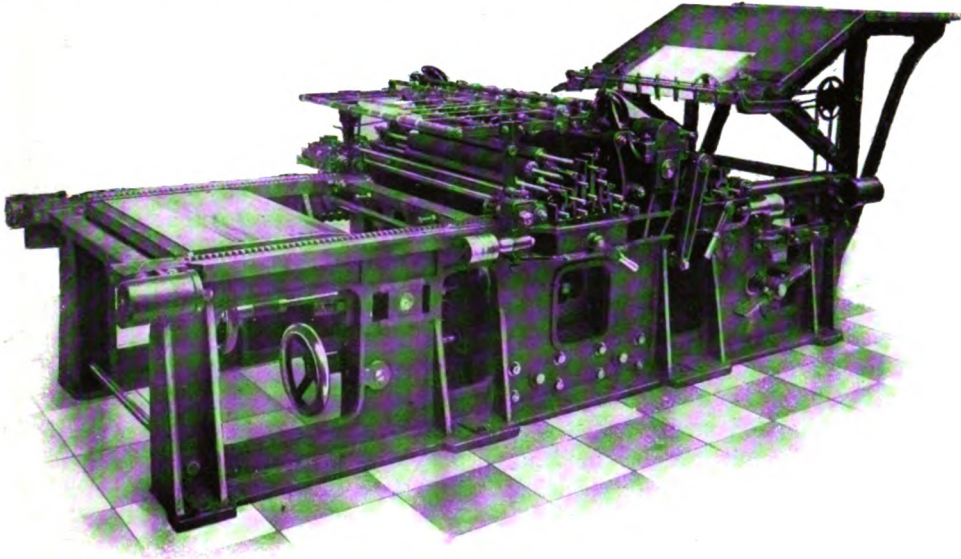
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tional diagrams it is difficult to clearly describe the outstanding peculiarities of this machine, but we have already given sufficient data to indicate a distinct novelty.

In the first place the Wogden machine is the invention of a lithographic printer—perhaps this also is somewhat of a novelty—and it can be used either as a transfer-press or a printing machine.

should be extremely interesting to many.

Transferring can be accomplished much quicker on the Wogden machine than on the litho power press, and reverse transfers can be pulled for offset work. The machine can also be used for off-set proving, and therefore can be utilised for the proving of tin printing. The speed at which it can be made ready is remarkable



It is an excellent proving press, either litho or typo, and might possibly serve for process blocks. Not only is it rapid in operation, but it enables actual machine proofs to be made, a point which

and the forme is always get-at-able.

We would note again that the Wogden Press can be used for either lithography or typography. It is supplied by Messrs. Griffin and Sons.

✓ *Photogravure and Offset.*

Q.E.D.

THE extraordinary interest which has recently been displayed in the photogravure printing process has naturally led to many novel and, in some instances, unreasonable propositions, and this tendency has been particularly noticeable in connection with the offset develop-

ment. I am referring now to the combination of offset printing with photogravure, and not to offset printing generally. I have always understood that the peculiar characteristics of a photogravure print were mainly due to the piling up, as it were, of the colour in varying depths on

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the picture, and to this end the chief virtue of the photogravure plate was its capacity for holding colour in varying depths also. In this, then, we have a cause and an effect, and the natural assumption is, of course, that if the operation of such cause and effect can be *completely* carried out, or, without any serious modifications, the results must be satisfactory. Very well, then, why suggest the introduction of a serious modification? That, I take it, is the actual meaning of a combination of photogravure with offset printing. Now, I wish the reader to distinctly bear in mind that I am not depreciating offset printing as such. My point concerns the unreasonableness of a combination such as I have already referred to. The characteristic feature of offset printing is the requisite softness of its impressions, while, on the other hand, photogravure possesses a vigour, or "pluck" as it is sometimes termed, which can never be mistaken. It is difficult to understand how such emphatically antagonistic principles can be reconciled, although it might be

possible to combine offset-photogravure colour prints, with a final direct photogravure print. This would, of course, involve a very careful arrangement of the formes, but it is by no means an impossible proposition.

I wonder if my argument is perfectly clear. Perhaps I might discuss the question a little differently, and thereby make my point more conclusive. I think that those peculiar characteristics of the photogravure print, which I have already described, are generally agreed upon. It is due to *a deposit of ink in varying depths*. If, therefore, you make such a print on the rubber offset blanket, and then transfer it to the paper, for that is simple offset printing, then you must, to some extent, destroy the piled up effect of the ink. You will certainly secure a softer result, but you will lose the vigour, and therefore much of the *tone*, which a photogravure print should have.

I prefaced my argument with Euclid's well-known abbreviation. I maintain that there is only one conclusion, and that is a perfectly logical one.

New Things in the "Process Year Book."

CONTINUING our narrative and comment upon some contents of "The Process Year Book," we come to a most suggestive article by Mr. J. Hodgson Hunter upon "Practical Three-colour Printing." It is almost a manual boiled down into three and a-half pages.

"In starting in a new office," says Mr. J. Hodgson Hunter, "I have always made a point of adjusting the machine." He likes to adjust the bearers to suit the cylinder. Remove the bearers altogether, turn the cylinder halfway round, and with a type-high gauge try it between the beard of cylinder and the carriage. Mr.

Hunter proceeds to detail his operation, and tells how he makes a strip of paper a revealing thing, telling him if the impression is too heavy or not.

Set the pusher rod to ensure the cylinder being pushed up to the short stop. Any runners worn or with flats should be replaced before setting the pusher rod. Timing of grippers and gauges and their squareness is not, Mr. Hunter thinks, so likely to be at fault on the Wharfedale as on the Summit or two-revolution presses. Either of the latter can be set by feeding in a sheet and turning by hand. On the Summit the grip-

pers should hold the sheet firm before the gauges lift (this Mr. Hunter pronounces a strong point in favour of the Summit), but "on the two-revolutions a little clearance must be allowed, otherwise the edge of the sheets will be turned up by being pulled against the foot or feed gauges. In that case the gauges should be lifted to just clear the sheet edge; this gives the maximum time of gauges holding the sheet."

Adjusting the rollers is next treated; this at some length, but without a waste word apparently.

After a few words on lining up and underlay and overlay he comes to colour, and writes:—

"The colour of ink for making the yellow ready is optional, but I prefer green, a mixture of blue and yellow. This gives a good impression and at the same time prepares the rollers better for yellow than red or brown, and is a good aid in setting the ink-duct level. . . . Slip sheeting (during the job) is necessary if first-class results are required, as it protects the paper and enables the job to be stacked. . . . To have plates mounted on a board is, I think, the cheapest method. Given a good board such as a sectional metal-clamped board, the register would then be made by lifting the plate in the first case, and at the same time inserting interlays. The plates can then be remounted somewhere near the correct positions, pinning down with two pins at opposite corners of the plates and afterwards tapping them in register. Care should be taken to prevent damaging the plates, especially if electros are used."

The writer notes that using a light blue will give vivid greens, whereas a dark or purple blue gives sombre greens and bright purples very suitable for landscapes. In running off the blue there is not so much need for protecting the

sheets as, the job being finished and register done with, it is advisable to put them in racks; if stacked, there is a risk of sticking to the slip sheets, the blue as a rule being quick-drying.

"I should like," says Mr. Hunter, "to add some words of encouragement to those many printers who have not had the opportunity of doing three-colour work. There is nothing in colour printing which a good careful workman cannot work himself up to, given ambition, an eye for colour, and a fair mechanical knowledge, which, I think, is common to Britishers."

Mr. George E. Dunton writes again this year upon electrotyping; this time chiefly upon cost. His experience, by the way, indicates that in the mad scramble, master electrotypers "have not devoted sufficient time and thought along lines of legitimate improvement in the manufacture of their goods, looking after a little improvement here and another there which in the completed product might be far more valuable than all the revolutionising will-o'-the-wisp schemes which have of late been worked off on them." He proceeds to speak of iron and nickel work, and he reproduces one of the claims from a basic patent "granted to the perpetrator and propagator" of a certain process company. He disguises its actual name under the title of the (Get-Rich-Quick) Process Co. "The process of producing a printing plate in an electrotypic bath, which consists in preparing a mould bearing the characters to be reproduced in the plate, metallizing the surface thereof, suspending the same in the bath, simultaneously depositing nickel and iron electrolytically as an alloy on said metallized surface to form the plate, with the nickel as an anode and the iron salt in the solution, removing the mould and the plate from the bath, and then depositing in another bath a different metal on the back of

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the plate to form a backing therefor."

"I have heard it claimed," says Mr. Dunton, "that one little Welsh rarebit could develop into a gigantic nightmare, but it certainly hasn't anything on nickel-iron-alloy as a dream raiser. A great number of electrotypers in America are parting with good money for the privilege of adding a little iron sulphate to their nickel baths."

We believe we have advised in these pages that something like one-seventh of the jobs going through the foundry appear to be suitable to be done by lead-moulding process—particularly jobs with some very fine work or, say, some one-point rule, or hairline ornament, or, again, jobs having to be worked off on very hard stock, or jobs for exceptionally long runs. We have consistently taken the line that it was a great mistake to use lead moulding all the time, and the sort of mistake likely to be doubly a mistake, as being likely in the end to lead to lead-moulding being abandoned in some reactionary mood, even in those cases for which it was specially well adapted. It is interesting to find Mr. Dunton writing:—"The advocates of lead moulding process are becoming more rational in what they hand out to the electrotypers, but the owners of the patented press for moulding by the spasmodic or step method, which in reality is their valuable basic patent and the only patent of moment, are charging such an exorbitant price for their machine and the right to operate it that it is beyond the electrotyper who is hunting for unit cost systems."

It is an old story among good judges of print, that a very plain job may look absolutely artistic if it is set in good plain type, and is well placed upon the paper. This proper placing is the one thing not realised by many a printer. Correspondingly, some engravers fail to realise how important is the careful locating of the

plate upon the block, so that the engraved subject shall occupy its true-to-life position on the mount. Mr. Vernon Royle deals with this subject, and who could handle it better? He illustrates his points by reproductions of views which misrepresent or even uglify their subject simply because a man has made a mistake as to which line in the subject should be made quite vertical, or quite horizontal. Such determination ought not to be left to the blocking room at all.

It is altogether wrong, says Mr. Royle, to burden a machine operator with matters of artistic technique. For one thing the image as seen in the metal plate is too obscure. Keen analysis of the subject may be demanded, or knowledge of the laws of perspective. It is a matter for the art room.

Compare what happens in a large litho press-room. You see a man of mature years, probably—at any rate, of much experience—at work at his desk by the window doing just one thing, and that of the utmost importance. He receives a transfer sheet, one for each colour of the, say 10 colours, in a job. There may be "eight-up" in the sheet. How carefully he checks the eighty prints to see that everything is in its proper place before printing off. Is there corresponding care in block making? We think not, and are glad that Mr. Royle calls attention to the matter.

We like the ending of this article: "No attempt has been made to include glaringly evident examples of blocking room errors. On the contrary, the effort has been to select subjects in which the contrast between right and wrong mounting is not especially striking, but which present a real need for the artist's trained judgment to square correctly according to the subject."

We get a reminder of the flight of time since first Penrose's Annual cheered our

December, by the article on artists and aeroplanes. Even such an optimist, not to say scientist, as its editor, Mr. Wm. Gamble, would not have ventured a confident prophecy that we would see a flying machine cross the Straits of Dover. Here we find Mr. C. G. Grey, editor of "The Aeroplane." He gives eight line drawings of different types of biplanes or monoplanes, with also some useful photos. Not before this help was wanted by artists working on such drawings for advertisements or other purposes. "It is the commonest thing," Mr. Grey says, "to see a machine drawn with wings, which, in proportion to the man sitting on the machine, would measure about 100 feet across, fitted with a tiny propeller, which, if drawn to scale, would be about 4 feet long, and the whole thing mounted on wheels which bear the same relation to the size of the whole machine as the castors do to an average armchair." Mr. Grey gives some measurements for which various artists will bless his name. Sometimes critics find fault, but give no help to the one who is only wishful to do better.

That old-time, much experienced colliotypist, Mr. W. T. Wilkinson, gives the outcome of some experiments for circumventing damp troubles, and for securing more uniformity when working the ordinary methods. He submits, with confidence, his resulting counsels. He makes a collotype in the usual way. When dry and cold he removes all the bichromate from the film with clean cold water; dries the plate on a rack; and when it is required for the printing frame sensitises it with a spirit sensitiser of ammonia bichromate, 10 grammes, potash carbonate, 2 grammes, water, 250 grammes.

He takes one part of this stock solution and 3 parts of methylated spirits of wine, mixes well, and sensitises the collotype plate by means of a pad of

swansdown saturated with the sensitiser. The film is dry in a few minutes and may be finished by placing in a warm place. About a third of the ordinary exposure now suffices. Another method is to coat clean ground glass with soda silicate, acetic acid, tannin and water in proportions as set forth by Mr. Wilkinson, and after drying, coat with warm gelatine (Simeon's or Creutz's), zinc sulphate and water. It will be necessary, the writer says, to turn to a Penrose catalogue (Fig. 260, p. 131) to follow fully his directions. That catalogue is, or should be, on the desks of all our plate-making readers.

There is a useful reminder by Mr. Walter Avery (passing on a quotation from that clever artist Mr. Stanley Baxter). "I firmly believe that what success I have attained as a designer of advertisements has been due to my having made it my aim all along that commercial drawings shall, above all, possess suitability." Apropos, Mr. Edmund G. Gress, associate editor of that splendid art-craft journal, "The American Printer," dealing with the printing business in America, which seems to be very good, incidentally notes that "it has been a difficult task to make plain to the business men of America, that their advertisements should be designed with the same good taste and in the same artistic manner as the goods they sell." He notes, incidentally, the improvement in American cartooning. It may be curious to some, it is certainly very refreshing, considering the authority of the writer, to read of "the moral movement that has wro't a change in the business of America. Some years ago the average advertiser seemed to work on the basis of a recorded saying of Barnum's, that 'people like to be humbugged,' but to-day the business conscience is so finely attuned that an advertising manager was recently discharged because of over enthusiasm, and an innocent tend-

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ency to misrepresent and exaggerate the goods about which he wrote. Here in America the business man and the advertiser have been thoroughly investigated, and business is generally conducted on a high moral plane. Many think it is now time to investigate and improve the morals of the buying public, which on one pretext or another refuses to pay the bills it owes. It is, indeed, a reflection upon buyers of printing and engraving, when an international congress has decided that it is necessary to add two per cent. of the amount of the year's business to the overhead charges to take care of uncollectable accounts. Dickens did a great work years ago when he stopped the custom of imprisoning for debt, but printers and engravers now need someone to show them how they can prevent a man ordering and obtaining something for which he does not intend to pay."

"During the past year," says Mr. Gress, "printers and engravers have gathered together in various parts of the United States and Canada for the discussion of cost finding, and to-day there are hundreds of such systems in use in printing, engraving and electrotyping establishments. I fear it will not be long before a new subject will be introduced at these congresses, and that is 'How are we going to install cost systems if our employees won't let us?' At a recent meeting of the Engravers' International Union a protest was made against the installation of cost systems, as it is claimed the purpose is to spy upon the workmen. The Union electrotypers in New York City have also discouraged the use of cost systems in electrotyping plants of that city. The attitude of the men is far from just. If any concern is to prosper it is necessary that it shall know its cost of production, and employees should assist and make

easy the installations of cost systems."

Mr. A. J. Newton, whom now we greet in his new character as general manager of Wratten and Wainwright, Ltd, argues for a wider and wiser use of dry plate for reproduction work. He points to its adoption in all other branches of photography. We should only look on our negative as the means to the end. And we should think, not simply of first, but of final economies. "Considering all things, and especially the production of negatives possible, wet collodion is probably finally much more expensive than dry plates." He notes the "greater ease of handling at every stage. Mr. Elwin Neame recently stated that he makes 15,000 negatives per annum." "The economy of wet plate begins and ends with the saving in first cost of the material." "A corrosive chemical like silver of nitrate solution means added wear and tear of apparatus." Every collodion plate must be considerably larger than the image required, because of imperfect edges; a dry plate can be used up to the margin. Further, each wet plate must be carried through completely and immediately by itself. The speed of dry plates is known and is constant for any given batch. There are fewer spoils. This uniformity helps the etcher. Every failure in a process job means much more expense than the mere cost of the material wasted. Wet collodion cannot be used for photography of coloured originals. Most pigments don't reflect ultra violet. Even some Chinese whites come in this category. As collodion is mainly sensitive to ultra-violet, coloured originals will photograph incorrectly on a wet plate. Ordinary dry plates surpass wet collodion for monochromes that are other than neutral black and white. Originals with reddish or greenish shade require a colour sensitive plate, such as a Wratten "Process Panchromatic" or "Panchromatic."

(“The Process Photogram.”) Feb., 1913.

A filter must generally be used to compensate for the excessive blue sensitiveness. These conclusions apply whether the negative is to be made for photogravure, colotype or photo-litho in continuous tone, or is for lime work, or is a grained negative such as one made through cross line or Metzograph screen for half-tone work.

Mr. Gamble, the editor, is perfectly correct in his short article on “An Optical Illusion.” But an arrangement of cubes, piled up, and with three sides shaded, would afford a far better illustration than the biscuits inset, which apparently was the only one available for his purpose. That is hard lines on the editor, but it must not lead us to disbelieve in his contention. That contention has reference to the fact that a subject, when turned upside down, will often show in relief parts which, looked at in the ordinary position,

appear sunk; and vice versa. You do see this splendidly in the cubes case. It is a well-known optical illusion. Mr. Gamble refers to Dr. R. S. Clay’s article in an earlier volume on the “Pseudoscopic appearance of the dots on a process plate when viewed in a microscope.” Most photographic reproductions, even in natural size, which are from objects in relief, will show similar effects. “Usually when I am examining any reproduction of relief objects, I turn the proof or photo upside down to look for this illusion, and invariably find some startling effect. Reproduction of coins and medals show the illusion very well as a rule. Also photographs from printers’ type formes, stereo matrices, plaster casts, etc. . . . It ought to be possible,” Mr. Gamble thinks, “to make some very good advertising devices based on this illusion.” We quite agree with him.

An Interesting Evening at Manchester.

Latest things in Platen Making—A Two-colour Suggestion.

THE Soiree of the School of Technology at Manchester, was held on December 14th, there were about 800 guests, who were received by Principal Garnett and Mrs. Garnett.

Of course, in Manchester the Engineering, Textile and Chemistry Departments prove great attractions, but our special interests were with the printing department, the whole of which was in operation. The Photographic Studio had all its cameras and the usual apparatus removed, and there was displayed a unique collection of apparatus used in the investigations of photographic problems—photometers of many kinds, Hurter and Driffield apparatus, the lens testing bench, and all the standards which are found in a well-equipped photographic

laboratory. A student engaged on photographing spectral absorptions of three-colour pigments, attracted considerable attention.

There was also shown an excellent collection of examples of modern illustration work with special reference to the recent development in intaglio printing. We noticed some typical newspaper sheets produced on the Mertons’ machine, which bore striking testimony to the need of some modification in our English method of newspaper illustration. No doubt the speed at which these specimens are said to be produced, namely from 10,000 to 12,000 an hour, does not compare with the speed per unit at which our big dailies are run; yet in some cases the illustration sheets are now produced

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at a lower speed and surely some arrangement could be made to meet the later developments. There were some sheets of first intaglio supplements of the Illustrated London News and also some others which had been sent up from London for the occasion, by the courtesy of Mr. Rudd, Printing Manager of the "Illustrated London News."

In the section of intaglio work concerned with better class productions, most of the firms who are engaged were represented, and it was interesting to compare the different quality and the characteristics manifested by the different processes. Some at least of the newer firms compete very favourably with the older ones in having mastered the intricate details of ink and of wiping quite apart from the technical qualities of the engravings themselves.

The Rembrandt Intaglio Printing Co. were well represented by examples of their Mezzochrome process, which so far as we know is a process of rotary photogravure in colour. The only other example of this class of work was that by the Saalberg process which was remarkable for the delicacy and harmony of treatment. As a contrast to the purely commercial side of intaglio work, we noticed some fine specimens of German photogravure colour printing, some of which were mounted on panels and varnished, and without actual knowledge it would be very difficult to say the exact means that had been used in their production.

There were also some prints in colour collotype, which show the great capacity of the process when properly worked, to secure fidelity of texture. In the etching room attention was given to a demonstration of work on the Mark Smith Etching Machine, and the Levy Acid Blast Etching Machine, which latter has been recently installed. The fit-up is to the usual standard of installation which

is associated with the School, and there should be some useful experimental work produced by its aid.

In the Lecture Room were shown some interesting examples of two colour photography by projection which had been produced, and were being shown, by students.

This, of course, is parallel to the idea, by means of which Kinemacolor effects are obtained, and it would seem that there is a big opening for an application of two colour work of this kind by photo engravers for advertising and such like purposes. The printing would be done in two inks, complementary one to the other; and with many classes of originals excellent results could be produced.

Visitors seemed very interested in a display of the apparatus used in a well-equipped studio for stamp photography and the examples of this work which were on view bore ample testimony to the high technical skill displayed by the best operators.

In the printing section we saw a No. 4 Triplex Magazine Linotype Machine busily producing the slugs of the names of the guests. The ladies did not have their fingers burned; they mostly wore gloves. The making of mechanical Merkel Chalk Overlays was demonstrated in the Letterpress Machine Room. This seems to be one of the most popular and successful processes available for overlaying. The Madeley Mole Mechanical Underlay with its characteristic and pungent odour was also to be seen and smelt.

The only other department which we visited was the Lithographic Machine Room, where the processes of collotype Printing and Photogravure Printing were demonstrated, and where there was also shown an interesting collection of examples of Chromo Lithography and Offset Printing.

Should Bolt Court School be Divided ?

Grave Suggestions and Protests : The Annual Supper.

IT was a very jovial company which crowded the Antique Room for the annual supper of the Bolt Court students. An antique usage was observed, in this particular, that there was an upper table on the dais; the knight, however, sat below the salt this time; for the dais upper table was an improvisation to accommodate the overplus of guests, the superfluity, as one sinner called it.

Of course, Sir George Frampton, R.A., F.S.A., presided. He was not going to break through his Bolt Court supper habit. He was supported by Mr. Emery Walker—we were nearly writing Emery Christmas, for he always joins in this Christmas fun—by Mr. W. A. Casson, L.C.C., Mr. E. M. Rich, of the Education Office, L.C.C.; Mr. S. Hicks, Principal of the Shoreditch Technical Institute; Mr. W. Gamble, and other old friends of the School.

Brother students and guests, said Sir George, though I can't make a speech I must offer my sincere congratulations to the winner of the Badge. For some years we have had many distinguished winners, Cox and Peters and Barber and Nicholson. I am happy to see all of them present, and wearing their badges. (Applause.) I hope those badges, which I consider a very great distinction, will go with them to the end of their days. I have to call on the winner of the badge this year. I'm not going to say his work is better than that of the earlier winners. It is not better, still we consider it was a very high average of work; and we have accordingly awarded that Mr. Morris Goldstein should receive this distinction. (Loud applause.) In the Sketch Club the

prize was divided between Morris Goldstein and Max Goldberg, equals. Mr. Clifford Webb gets the second prize. Life class: First, Morris Goldstein; second, Max Goldberg. In the colour class Clifford Webb gets the first prize; second prize, Leonard Fryer. We gave an honourable mention, nearly as good as the prize, to Ernest Summerford.

And so the distribution went on. Other awards were as follow:—For design, Bernard Wisking; photogravure, A. C. Hall; lithography, A. J. Withers; line etching, W. Chalker; tri-colour blocks, T. Shearer; preparation of originals, W. H. Tubbs; map and plan, J. E. Nash.

A City and Guilds certificate was won by E. L. Turner. A very excellent thing, said Sir George, to Turner, to have won this from the City of London. He added: I must congratulate all those students who have taken prizes, and I want to say to those now more or less unsuccessful that there is one consolation. Although the good of prizes now won does come in to some extent in after life, it does not come in to the same extent as does the personality of the student. My experience tells me that if you chaps keep up the fine personality that you have shown to-night, with that generous feeling you have manifested towards the successful, there is not much fear but that in a short time you will distinguish yourself in your own calling. There is nothing so charming in nature as a generous man. I am merely giving you a bit of my own experience of life, which is probably larger than most of yours, so far. I say it is a fine touch when an older man, especially when he is a man of your own calling,

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takes you by the hand and pats you on the back. It is a splendid thing; it seems to shoot you forward in life and bring nearer the goal that you are making for. By that goal I mean winning a place in what I always think of as the aristocracy of your profession.

You may take it from me that it doesn't matter whether you are a designer, or a lithographer, or a process block maker, or even a taxi chauffeur, or the conductor of a motor 'bus; if you are an aristocrat in your calling, you are somebody in the world. (Applause.) However humble you may think your calling, it is much better to be an aristocrat in that calling than to be merely a camp follower and a runner after another man. I just throw that out, and I say, if you stick to your work you may bet your bottom dollar that everyone will stick to you. To intelligent men there is nothing in the world so beautiful as the fine work of man. I repeat that I haven't felt it particularly incumbent on me to encourage the unsuccessful, as I am convinced by their fine open-minded bearing to-night that they are all right. Certainly the unsuccessful need not go away at all downhearted. They have plenty of time. I hope to be here next year and to see many of you chaps come up and take the shine out of the men who have been up to-night. I heartily congratulate you and your school. (Applause.)

Mr. Croxall having given a song,

Mr. Bayes, the head of the Art School, proposed the health of the London County Council in an eloquent and interesting speech. Touching upon machinery in relation to art, Mr. Bayes said a machine was really only a more elaborate tool. It was only despicable when it made an effort at imitating handicraft. The product of a machine, frankly used for what it is, may be just as first-rate a piece of

art as any more simply-made article. Mr. Bayes dealt with the threatened separation of the Art School; a proposal which he greatly deprecated.

Mr. Casson replied. He is not only a member of the London County Council, but also a member of the Advisory Committee, and, incidentally, a fine amateur photographer, and one of the most successful workers with Lumiere autochrome plates. It is quite true, he said, there is, or has been, some attempt to divorce the art section of this school and ally it to some other master. I have done what I can to stop that. (Applause.) I can assure you the Committee of this School are unanimous. I think we shall be able to put enough spirit into the contest—(loud laughter, for Mr. Casson's hand happened to rest on a bottle bearing the famous Black and White label)—to win it. Speaking of the spirit of the School, Mr. Casson said: You have heard the gentlemen who were not ashamed to say they belonged to one of the lost tribes, and you will all appreciate good work, not caring anything as to who it is that does the good work, Welshman, Scotsman, or whatever race.

Mr. A. J. Newton, the late Principal and now a member of the Advisory Committee, proposed "The Principal and Staff." He believed Mr. Bull was the right man in the right place. He believed he would do better than his predecessor. (Laughter.) He (the speaker) would not have done anything like so well without Mr. Bull's cordial and ungrudging support. There had never been any spirit of antagonism between the various sections of the School. Of course, in the photo-mechanical side they had had to train students to do commercial work. The Art School was conditioned in much the same way. It was of no use to say "This three-colour process is not ideal." Whatever view might be held about that.

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the School had got to teach it. They would always be only too anxious to teach the students anything better in the Art School.

With Mr. Howard exercising responsibilities in the lithographic work, he was sure there would be no sort of reluctance to try any experiments consistent with the progress of students. Regarding all others in the staff, he could similarly testify to harmonious working. Of course the Principal must be the figure-head, but he had always been only too ready to give everyone as much credit as possible. He did not suppose there was another school in which there was so much interest shown by all the staff and all responsibly connected with it.

Mr. Bull warmly acknowledged the toast. He fully recognised that he was a convenient figure-head standing for the whole working staff. (Laughter and applause.) He was glad of that opportunity of expressing his great appreciation of the manner in which the staff had worked during the last four months. It had been no easy matter to get the School thoroughly organised in the new building, but there was no hitch when the opening took place — thanks to the energies of the staff. Every class started real work on the first night.

I am very pleased to be able to welcome you back to the old spot, and I am particularly pleased to see around us so many familiar faces, some of which I have not seen for some years. Many old students are with us to-night. That is a good sign. I have no doubt, said Mr. Bull, in conclusion, that in these new premises, with the splendid equipment which the Council have provided us with, we shall be able to do excellent work in the future. We wish you all success in the New Year. (Loud applause.)

An admirable personation performance was then given by a student.

“Our Guests” was proposed by the Principal. Their guests that night were their “visitors” on other occasions. Upon the work done by these gentlemen as their “Visitors” the School depended for its prosperity in many ways. It was very necessary that the School should keep in close touch with all branches of the trades concerned. Their “visitors” were intimately connected with photo-engraving and the photo-lithographic trades. They were dependent, too, largely upon their guests for their “Sketch Club” criticisms. They were peculiarly welcome at that festive time. (Applause.)

Mr. Hicks, Principal of Shoreditch Technical Institute, responded. He liked a dinner as much as most men, and he liked a Bolt Court dinner as well as any in the world. He was able as a Principal of a corresponding institution, to speak with perhaps peculiar satisfaction as to the work being carried on at Bolt Court.

Mr. E. M. Rich proposed “Sir George Frampton,” who seemed to grow younger every year.

Sir George: I hope to be with you for a good many years. Just one thing, let me again impress that there is no distinction so precious to a workman as appreciation by his fellow-workmen. And with that I wish you a Merry Christmas, a Happy New Year, and a prosperous life.

The end was more apposite—yet distant—even than that would have been. It was, as it always is at Bolt Court, the singing of “Auld Lang Syne,” with all the honours of joined hands and mounted chairs. But before this came the great event of the evening. This was a “Dramatic Phantasm in one act.” Its sibilant title was “The Shimmering Shiner’s Shadowy Sheen.” It was presented by the author, Mr. H. C. Hammond, and his “All Star Company.” The

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play was splendidly acted. East and West were made to meet, whatever Kipling may say; for we had all the Orientalism of a Sultan's surroundings, an Arabian Nights sort of absurdity, mingled with allusions peculiar to Bolt Court. The Eastern monarch's court was interrupted during one of its most characteristically Eastern scenes and ceremonies and converse, with the sudden demand, "Excuse me, have you signed the register?" "By the beard of the sacred bull, thou liest," is a variant in explosives. The villain's plea before beheading was certainly up-to-date. He attributed all his villainy to halfpenny sensational, pandering newspapers and penny dreadfuls.

"Those wretched scribes, 'twas they that lured me on."

Some talk of L.C.C. regulations was mixed up with the most recondite and the most intimate talk of the Sultanate. And, to be sure, the Sultan's palace was that of Bhoolt Koort, by Temp-el-Bar.

Persistent calls for author brought Mr. Hammond to the front. "I am glad you like it. I am no use at making a speech, but I would like to say that there is a lot of credit due to Mr. R. C. Peter and Mr. Burbage who helped us behind the scenes. It was none too easy. For one thing, we did not know exactly what size place we should have to play upon."

Here's to the students, and the teachers, and to the good work they have it in their power to accomplish, and evidently mean to persist in, and to perfect, as far as mortals may.

F.C.

There's a Reason.

THERE'S a reason for everything.

If your present selling prices are not high enough to pay you the profit to which you are entitled, what's the reason.

It is because the public cannot afford to pay you a just price for your product?

Certainly not! The public pays the price for everything it has to have and for everything it wants. Present-day business needs photo-engravings and needs them in immense quantities. They are no longer a luxury; they are an absolute necessity. Furthermore, there is a steadily increasing demand for our products and we are fortunate to be in a growing market.

The selling price of every commodity is based upon its cost of production. It always embraces the cost of production plus a profit.

If you accept the foregoing as correct,

and the mere fact that institutions remain in business proves it, then we come to the point where we can properly ask the question, Why don't you raise your prices to a level where they will enable you to make a legitimate profit?

Why do you continue to sell your products at prices that only net you a profit on a part of your sales and force you to take a loss on another part of your sales?

There's a reason. The reason is competition.

Suppose that you were the only man engaged in the manufacture of photo-engravings and that you were protected in such a manner that no one else could make the same thing. Would you continue to sell your products at your present rates? How much would you charge for a minimum half-tone? What would you charge for zinc etchings? In that

case you would enjoy a complete monopoly and you could charge whatever you pleased as long as you did not enforce prices that would absolutely prohibit the use of your wares.

Now let us suppose that another man is engaged in the photo-engraving business. You now have a competitor. You no longer have a complete monopoly; you have competition. Up to this time you could name your price to the buyer with the positive knowledge that your word was final. The buyer would either have to purchase at your price or go without. You were the sole authority on the price question. Now things are different.

Here is what happens. You start in by fearing your competitor. You have been told that he sells goods exactly like yours for less money than you do. Occasionally a prospective buyer leaves your office after refusing to purchase at your price and you know he has gone to your competitor. Fear of the latter grows upon you day by day, and as each of you is suspicious of the other, and as each views the other with alarm and even hatred, both of you lower your selling prices.

Now you have ten competitors (we are still supposing) and your troubles are multiplied that number of times—in your mind—and prices suffer proportionately.

What, then, is the reason for present conditions and prices?

Competition! Your competitors are responsible for your prices and you, in turn, are responsible for their prices, which are just as low as yours.

If the public made your prices, and you wanted to raise them because they left you too scanty a margin of profit, or no profit at all, you would direct your efforts toward the public.

If the cost of materials were the cause of your lack of profits, you would direct your efforts toward the supply dealer.

If the cost of labour were responsible for your lack of profits, you would direct your efforts toward the institution that represents labour.

Since your competitors alone are responsible for your lack of profits, direct your efforts toward your competitors.

The whole problem is one of extending your efforts and energies in the right direction—in the direction of your fellow-engravers.

The Photo-Engravers' Association is an organization of men who realize the true state of affairs as here explained and who have enough confidence in themselves and the officers they have elected, to invest their energies and money in it. They know that in order to improve conditions, they must have a starting-point, an underlying theory, that is as firm and true as the laws of nature. The starting-point is the cost of production. With the cost of production known to all, selling prices will rise to their proper level.

The members of the Association are the men who not only talk about present conditions, but who are actually working to make them better. As the desired improvements are based upon the acquisition of knowledge, the process is not one in which great speed can be expected or made. The organization advances no faster than its slowest thinking and slowest acting member. One individual cannot lastingly reform an entire industry. He can do his share—and no more. The photo-engraving industry can be improved only from within. You must help to improve it.

Here is the situation in a nutshell.

There are little more than one hundred establishments in the United Kingdom engaged in the photo-engraving business, all of which compete with one another. A part of this number are members of the Association, and are doing everything in their power to improve conditions. They

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pay their money toward its support, they help in its work and they are in the front rank of battle. They rank as "assets" in the photo-engraving industry.

There is another faction of photo-engravers who sit back, criticize and ridicule every effort put forth by the first class. They, by their attitude, even if it is no worse than non-participation, delay improvements, and add to the troubles and losses of the others, as well as their

own. They pretend to possess superior wisdom and have a weakness of accusing others of their faults. They act as a brake upon all that's good, and grease the ways for all that's bad in this business. They, by the comparison, are the "liabilities" of the engraving industry.

As a business institution, the Process Engraving Association must increase its assets and reduce its liabilities.

Don't you be a liability. Be an asset.

"Shut the Window before a Storm."

A Hint for the Process Engraver.

IT was related of a well-known American colour printer that, "feeling in his joints" the approach of a storm, he ordered the windows of his printing department to be shut until the storm had passed.

The whimsicality of its expression in no wise depreciates the value of this shrewdly practical precaution, by which excessive humidity was excluded from the workroom atmosphere.

That, however, is by the way, for there are very many ways in which you may "Shut the window before a storm."

SQUARE INCH FOLLY.

A short time ago the Employing Photo-Engravers Association of America held its annual convention, and one of its members, Geo. H. Benedict, made a common sense appeal on the question of "Square inch Folly." He showed how little relation the cost of producing half-tones and zinc etchings really sustained to the usual selling inch rate of measurement. He very clearly demonstrated that "the cost of making zinc etchings is far more nearly that of engraving half-tones than the prevalent selling rates would indicate." There was a general consensus of

opinion that the present prices charged for zinc etchings, i.e., zinc line blocks, is much lower than it ought to be, and now we come to "shutting the window before a storm." *Action will soon be taken towards remedying that condition.* In this case the safeguard was not anticipated although it might have been, for, like the old printer's rheumatic joints there have been many painful indications of an approaching storm.

THE PRINTER'S OPPORTUNITY.

It is a deplorable fact that the printer has not an unqualified reputation for business acumen, and the same remark may be applied to the photo engraver. Take for example the introduction of a new machine or process. The competitive advantages they offer to the trade are often entirely lost by an insane desire to ask for a certain class of work the price which the new invention has made possible. In this way the customer alone benefits by this introduction of progressive features, unless we care to place to the printer's credit a certain degree of up-to-dateness with its attendant responsibilities. H. P. Porter, of Boston, addressing a representative gathering of seventeen

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hundred printers, etc., on “The Printer’s Opportunity,” called attention not only to the printer’s opportunity, but to his duty as well. He declared that “Every man owes something to his trade in the way of service in its interest. He also owes a duty to himself to see to it that his business returns a fair profit.” He further stated that there were some cases of imposition upon printers by customers, and deplored *the apparent willingness of the craft to submit to it*. He gave some figures of estimates made in competition by printers that justified the low opinion held by many customers of printers as business men.

Here again there have been repeated warnings of the approaching storm, and just now, surrounded as we are, by a perfect whirl of new things, one cannot help wondering when we are going to “shut our windows.”

AN EXAMPLE WORTH NOTING.

So much has been said and written about the “Value of Valuation” that a further discussion would almost seem to be superfluous. However, I am not a valuer myself, therefore there can be no suspicion of an axe to grind in my remarks. The point I wish to emphasise was brought to my notice by the action of a well-known firm of printers, who have recently decided to have *an outside valuation* of their plant. The decision was a remarkable one, inasmuch as this particular firm has never had an outside valuation before. Fortunately they have never had their own valuation disputed. That is to say, its application has only been a simple commercial one—no fire, or any other such disaster, throughout the many years of their existence—yet they have wisely decided to take no further risks; in other words, they are “shutting their windows.”

ORGANISATION.

Just one more reference to what we might describe as the commercial aspect of our text, before we pass on to its practical application.

Organisation has been preached at us so insistently in connection with the “Printing and Kindred Trades” that its claims have compelled attention, even amidst the many other distractions of a work-a-day life. The printer philosopher, whom we have already quoted—H. P. Porter—defines organisation as “orderliness, systematization, and invisible, yet very material binding cement, the greatest force for good or evil in the world. The world’s progress is due primarily to organisation; we are each of us, to-day, the subjects of organisation, and if we are to journey from the non-profitableness of Egyptian bondage to the promised land of fair profits, decent dividends, and reasonable compensation for labour performed, we must bring ourselves into harmony with Nature’s inexorable law and organise.”

H. P. Porter is an exhilarating type of pessimist, and his heartiness is invariably infectious. He concludes by a convincing declaration that, “If all you printers, or even a considerable number of you, should make up your minds that the things you hope for, and which your trade ought to give you, were going to be accomplished, you would be indeed surprised at the things you would directly accomplish. You owe it to the greatest industry in this country to do it. Organisation is, in effect, the “shutting of the window” before the storm of trouble overwhelms.

The question of workshop organisation in particular is of vast importance to the printing trade, but it is not our intention to enlarge upon it now. Yet we might with advantage point out an ever-present danger which may, and very

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often does, minimise the value of a really first-class system. Over elaboration is by no means an uncommon stumbling block. You "get there" but the effort to get there is completely exhausting. Washington Irving once told a story which is an excellent illustration of this point. A Dutchman set out to jump over a mountain, and ran a couple of miles to get a sufficient impetus for his jump. When he reached the point at which he should make the spring he was out of breath and had to sit down for a rest.

SOME PRACTICAL PRECAUTIONS.

So far we have regarded this shutting of the window in a somewhat broad sense, but it has quite a direct and practical application to almost every phase of workshop routine. It is, after all, the taking of precautions which is quite as essential to the success of technical features, as to the more commercial interest. A simple notion was suggested by a worker quite recently as a precautionary measure when handling electros, especially fine electros. The reference was to careful cleaning, or rather to a perfect cleaning after use. A residue of printing ink will oxidise very quickly and in time must damage the surface of the electro. The suggestion appears to be an absurdly elementary one, yet the warning is undoubtedly necessary, for I remember a printer asking me to recommend something which would remove hard, dried printing ink from electros, and I advised him to use creosote—an old dodge of the copperplate printers. But, after all, that is not a "shutting of the window before the storm."

We all know something of precautionary measures which are necessary in connection with the photographic dark room. This question was discussed in the "British Journal of Photography," by Mr. W. Ridel, when he gave his readers the

following valuable piece of advice:—

"Let the walls of the dark-room be of yellow colour and matt surface, and use a powerful ruby lamp, the light of which is turned towards the wall. You will then obtain a strong reflected orange light, in which work may be done in great comfort, which illuminates all parts of the room and does not fog the most sensitive orthochromatic plate."

Trouble with stereo and electro plates, according to the "British Printer," often results from bad or low letters not having been marked in proof. A forme for stereo is treated by many just the same as one going to the machine, instead of taking as light an impression as possible so that the reader may detect anything faulty. A soft impression is the cause of the evil. It does not matter so much when formes are not going to be stereotyped, for when machine proofs are submitted low letters are detected, and if too low to patch, have to be altered, although this means the stoppage of a machine, which should never occur if it can be at all avoided. The best suggestion with regard to proof pulling is the use of a stout piece of paste-board which must be used by all who pull for "reading," for besides giving a fairly hard impression it also prevents rules cutting through the tympan, a very common occurrence where a number of comps. are engaged, and no one is responsible for the press.

A FINAL WARNING.

And so we might continue passing from phase to phase of any particular branch of the craft which interests us. Are we not constantly "shutting the window" after the storm, or trouble, or by whatever name we may wish to know it, is upon us, when, by the exercise of a little forethought we might anticipate its approach, and *prevent* that which might afterwards be difficult to *cure*.

The National Insurance Act and Employers.

Facts that call for careful attention.

YOUR attention has been called to the increased burdens laid upon employers by the introduction of the National Insurance Act, not merely in the payment of the weekly 3d. or 4d. which has been assumed to be the extent of this new tax upon industry, that if it stood alone could be fairly easily dealt with, but the framers of the Act had seemingly far more wide and far reaching thoughts upon the matter.

It would seem to have escaped the notice of employers in general that the provisions of the new Act are such as to considerably increase their responsibility under the Workmen's Compensation and Employers' Liability Acts.

That it is essential to be completely protected against liability under the Workmen's Compensation Acts is emphasised by the following facts:—

1. The National Insurance Act stipulates that compensation in respect of any accident or disease for which liability exists under the Workmen's Compensation Act or Employers' Liability Act must be claimed under those Acts and not under the National Insurance Act.

2. A person injured by accident has not previously been compelled to claim under the Workmen's Compensation Act. The Insurance Act, however, gives power for proceedings to be taken, by the Society or Committee interested, in the name of the injured person, should he unreasonably refrain from claiming.

3. Any lump sum settlement under the Workmen's Compensation Act with a person insured under the National Insurance Act must be notified to the Insurance

Commissioners or the Society or Committee concerned in order to be valid.

The following is a reproduction of Section 11 of the National Insurance Act, showing how it relates to the Workmen's Compensation Act:—

Section 11. 1. Where an insured person has received or recovered or is entitled to receive or recover, whether from his employer or any other person, any compensation or damages under the Workmen's Compensation Act, 1906, or any scheme certified thereunder, or under the Employers' Liability Act, 1880, or at common law, in respect of any injury or disease, the following provisions shall apply:—

(a) No sickness benefit or disablement benefit shall be paid to such person in respect of that injury or disease in any case where any weekly sum or the weekly value of any lump sum paid or payable by way of compensation or damages is equal to or greater than the benefit otherwise payable to such person, and, where any such weekly sum or the weekly value of any such lump sum is less than the benefit in question, such part only of the benefit shall be paid as, together with the weekly sum or the weekly value of the lump sum, will be equal to the benefit.

(b) The weekly value of any such lump sum as aforesaid may be determined by the society or committee by which the sickness and disablement benefits payable to such person are administered, but, if the insured person is

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aggrieved by such determination, the matter shall be settled in manner provided by this part of this Act for settling disputes between insured persons and societies or committees.

- (c) Where an agreement is made as to the amount of such compensation as aforesaid, and the amount so agreed is less than ten shillings a week, or as to the redemption of a weekly payment by a lump sum, under the Workmen's Compensation Act, 1906, the employer shall, within three days thereafter, or such longer times as may be prescribed, send to the Insurance Commissioners, or to the society or committee concerned, notice in writing of such agreement giving the prescribed particulars thereof, and proviso (d) to paragraph (g) of the Second Schedule of the Workmen's Compensation Act, 1906 (which relates to the powers of the Registrars of County Courts to refuse to record memoranda of agreements and to refer the matter to the Judge) shall, in cases where the workman is an insured person, apply to agreements as to the amount of compensation in like

manner as to agreements as to the redemption of weekly payments by lump sums.

2. Where an insured person appears to be entitled to any such compensation or damages as aforesaid and unreasonably refuses or neglects to take proceedings to enforce his claim, it shall be lawful for the Society or Committee concerned, either—

(a) At its own expense, to take in the name and on behalf of such person such proceedings, in which case any compensation or damages recovered shall be held by the society or committee as trustee for the insured person; or

(b) To withhold payment of any benefit to which apart from this section such person would be entitled.

With such facts as these clearly brought to notice, it is of the utmost importance that every employer should see that he is completely covered by his Insurance Policy from all the risks to which he is liable under these various acts, otherwise it might prove that a very trifling lapse or want of clearness in the Policy might land him in a serious difficulty.

Why not Study Line Etching ?

W^E mean "Why should not our younger men take advantage of the unique opportunities at the L.C.C. Engraving School to work various machine etchers and study more thoroughly this most important matter? It is exactly in the work of line etching that there seems to be somewhat of a failure to make the fullest avail of the benefits of the School. In other respects the Session is working out very well. But what an extraordinary thing it is, that line etching should be the one thing

that is not "going very strong." Why surely one would have predicated that this would be exactly the one direction in which the School would have shown at most advantage, and that this would have appeared at any point of time at which one chanced to make enquiry.

For consider the conditions. Line etching now-a-days cannot be considered as having been learnt all round by a man who has not really operated one or other of the machine etchers. Yet how many etching establishments are there, even

to-day, in which no etching machine has been installed? How few are there in which there is more than one type of machine etcher to be encountered? We might pursue this thought and enquire further if it is not the case that a very real prejudice against a particular type of etching machine is sometimes manifested in a particular office. We have in mind the fact, that among the larger engravers there are some who actually install more machine etchers than they use. That is, they conclude that one of the makes is quite unsatisfactory; with the result that they do not simply decide not to use it so much as they use the others—they decide not to use it at all. Yet the very machine which, though they have it in the place, they do not use at all, is the machine on which some other and also large engravers absolutely rely.

Now all this it seems to us constitutes an especial reason why the very fullest avail should be made of the line etching department of the Bolt Court School. Upon this floor can be seen and

worked pretty well every important etching machine that is made. We say “every one” not forgetting that at the moment the Axel Holstroem type is not represented. One was ordered and put in. For some reasons which do not concern us here the particular one sent in was displaced. We will simply say that this return of the machine had nothing whatever to do with a judgment upon its mechanical or chemical principles. Another Axel Holstroem will almost certainly be placed in the line etching room at an early date. The very capital Holt will probably also be obtained. Meantime the opportunity to see and investigate and handle the other types of these machines—blast or other—as encountered on the School floor most certainly must not be overlooked. The very utmost should be made of it. Yet, so far from this, it is the one thing in which the School drags. We hope this word will be noted and perhaps passed round, and may amount to just that particular little fillip which seems to be needed.

Screens and Screen Makers.

THE question is often asked, can we procure good, reliable screens of English makers? Messrs. F. E. Brown and Co., of Leicester, answer emphatically Yes. They say that “the only medal ever awarded by the Royal Photographic Society for ruled screens” was given to them for their perfected “Diamond” engraved screens.

They further point to testimonials received as to the merits of their screens from satisfied users all over the world.

They further say: “We confidently affirm that our English-made screens will compare most favourably in all high-class qualities with screens of any make on the market, and a comparison of their prices will show that the ‘Diamond’

screens offer purchasers an advantage that no other screen of a permanent type can do.

The difference in price between ours and others simply represents what you save by buying from the makers direct instead of through the usual ‘middle-man.’

Being actual manufacturers, we have every facility for turning out rapidly and efficiently special screens to any specification, and shall be pleased to quote most favourable prices.”

We hope to have something further to say respecting these screens in a future issue, in the meantime process engravers requiring new screens should communicate with the firm in question and carefully enquire into the claims of these English-made screens.

Some Pointers from our Season's Greeting Cards.

LOOKING round on the mantel display of the expressions of goodwill which have reached my home at Christmas or the New Year, it occurs to me that there may be a pointer or two for Process readers. They are put forward with all due modesty. The missives are not particularly numerous, perhaps about eighty. No particular expense is represented; the writer is certainly not bragging about that.

There would seem to be chances for engravers in the Chinese and Russian empires, judging from a card which has come to me from Peking, sent by a friend who had done Russia and China. "Siberia takes the cake," my correspondent writes, delighted apparently with his business experience of that mysterious country. In his card great junks and a small sailing boat are traversing a sea which is a curious pattern study in green and yellow curves; rather suggestive of a fret-saw puzzle. A vessel is inset amid these striking colours. It is printed as an ordinary fine half-tone. The brown sails and bordering of the inset vessel are embossed, so is the dove below the inset, and there is plenty of silver on the dove and elsewhere. As my correspondent is an extraordinary globe trotter, who has often gone round the world, I judge that the card is characteristic and the indication is that there should be plenty of colour and sheen about anything prepared for the Orient.

From Holland comes a very pleasant ordinary three-colour, rather of the Aldin type. The picture is in an oblong panel with plenty of writing space. From Vancouver comes a collotype portrait post

card, reminding one that similar cards from the old country would be warmly welcomed by friends abroad. From Canary Island, comes a chromo-collotype and litho card. From America (U.S.A.), a simply printed card with no colour work at all—suggestive of the great change that is coming over American graphic arts; a change mainly in the direction of restraint, and good style. From Germany a written card of greeting is accompanied by the Christmas Number of the "Buch und Steindrucker," a feature of which is a very remarkable autochrome of a fruiterer's display. The lemons seem almost tumbling out upon you, so veritable and so stereoscopic they are. A relative in New Zealand sends the Christmas number of the "Auckland Weekly News" as his seasonal reminder. The plates are very large three colour; much of it is very good, but there is some fuzziness over much of the work which one does not quite like.

From India comes a missive which indicates, incidentally, that the Indian Government or Governments are more and more disposed to do their own printing. Egypt, the "Halfway House" to India, comes to mind; greetings pass between the writer and the printing office of the Egyptian Survey, a great department of that country's government, and one which has an independent existence. The Government of Egypt appears to be tripartite, so far as the division of responsibility is concerned. The engraver wanting work for the Egyptian administration has three chances: rejected by the "State" he may get in with the "Survey" or with the "Railways." Another Egyp-

(“The Process Photogram.”) Feb., 1913.

tian note is that a fine collotype of Luxour comes from a relative doing the Pyramids and the ancient cities of that wondrous land.

I ought to have attached to the Vancouver note that another Canadian friend sends a beautiful three colour of a cluster of heather. Most of the writer's cards, however, are chromo-litho. Many of them are plate sunk. Those which have simply a few words of typed matter, have that matter thus distinguished.

Among the less conventional cards is a very beautiful group of portraits of an engraver friend's family, all silhouetted, with tint pattern surround. Of course, embossing, especially of holly and its berries, is still very much favoured. A collotype study of a girl playing the violin, filling an entire cover and gilt edged, is one card which makes a really perfect picture. The light effect of the four shaded candles upon the piano is very soft and good. There is a general hint as one turns these cards over, as to the soft, rich, satisfactory—that seems the right word—the satisfactory nature of good rich, brown ground; or of yellows tending towards brown. A like reminder is enforced by the really exclusive calendar sent in by the Mezzogravure Co., Ltd. The subject is *Le Casque D'Or*, and we have a fine study of the head and shoulders of an armoured knight. The play of light is everything the eye could desire. The printing is in dark olive green in beautiful lettering, an encompassing border is of peacock blue; both showing most harmoniously upon the rich brown ground.

A simple folder of the plainest type, and yet of perfect fitness and keeping, comes from lithographic friends who have lost during the year the much-honoured head of their business. The binder is not the familiar bright silk ribbon, but is a slight black cord. There is a grey

in the card; the whole is at once pathetic and unobtrusive, and withal most friendly.

One process engraver of fine taste uses a pink roughened paper; prints it on one side with a dark grey tint almost a slate, and then folds it four-wise. The lettering of the legend “Old customs and old friendship heed not the flight of time,” appears in the original pink of the paper stock. This legend has a thin black border with silver points at the corners. The sender's monogram and a fine broad pink silk bow complete the front. “Right Hearty Greetings,” similarly bordered, look out upon the left of the inside pages, being faced by a most delicate study of line work and tint. It is a wintry scene. The sky's rosin harmonises with the other pinks. Gold and silver lined ornaments surround this central picture.

The calendars received by the writer suggest that in calendars there is yet some opportunity that the engraver has not yet quite grasped. The question arises almost instantly after Christmas, “What am I going to do with these cards, beautiful as they are?” and the better the cards are, i.e., the more peculiarly fitted to be sent to particular recipients, the less easy is it to make some permanently satisfactory after-Christmas use of them. No such question arises with regard to the calendars.

Perhaps then the best hint to be offered to the trade from such a survey of my own receipt of greeting cards, is that the application of three-colour and monochrome half-tone and line work to calendars is well worthy of more serious study, and the early Spring of 1913 is the time in which the engraver should be giving thought to making profit from the Christmas and New Year's greeting business of 1913-14.

F. COLEBROOK.

The Newspaper as Engraver.

PUBLISHING our Journal practically in the heart of Fleet Street region, it is but natural that the affairs of newspapers should be very constantly and very especially before our mind. The public, in general, if it comes to that, is much more interested in newspaper affairs than it used to be. Witness the abundant talk about Lord Northcliffe as Uncle Five-heads. But whatever the public's interest or apathy, we at any rate, as a craft, are woefully concerned at times with newspaper developments. It is a far cry from to-day to the time when the "Daily Chronicle" was glad to have its blocks made by an engraver in Fleet Street, and to let his name appear in prominence upon the plate, and further was glad to let the plates appear in all their own proper quality, undiminished in fineness by any duplicating mode. The "Chronicle" installed its own plant, the "Star" did the like; so the "Mirror;" so many another; the "Daily News and Leader" put in a studio; and even the very independent "Daily Telegraph" adopted the same policy, the "Telegraph" equipping itself with, we think, the very best plant of its exact scale and type we have ever seen. Altogether one quite understands, though one may doubt the wisdom of the engraver who says, "I never mean to interest myself any more in any newspaper work. Newspaper work is a delusion and a snare. The moment you have got into your stride and are making comfortable profit, that moment you may expect to hear that the newspaper has decided to make its own plates."

This is the more regrettable from the fact that there was often a chance to do pretty well with some of the newspaper plates, for very often a quite substan-

tial percentage of the price obtained for a plate was profit, from the simple fact that there was no possibility of putting into the job such an amount of time as to make its production costly. The newspaper man was waiting on the doorstep and as often as not he blessed his happy stars when he could rush away with any sort of a block that would stain paper. A similar plate, the commercial equivalent in jobs, may be pressed for in the order, but is not usually rushed in the same urgent time-record sense. There is the opportunity to put a lot of work in, and there is a benevolent disposition on the part of the customer to prevent the plate-maker forming the bad habit of scamping his jobs. A sovereign taken for newspaper work might therefore, and commonly did, so far as we have observed, yield much more profit than a sovereign for a similarly sized and similarly conditioned plate, carried through for a commercial customer.

What is the moral of this? Surely an old familiar one—we cannot make past things as though they had not been. We cannot recapture the bulk of the newspaper business, although we may possibly get back some part of it. Clearly then, for such work as is done for newspapers to help them out when their own studio is overtaxed, a good price should be charged, and our commercial work, the main thing left, should be most sedulously watched to see that it yields a fair return. Clearly, too, fresh fields should be sought; even restricted fields (like, for an instance, the making of intaglio plates for offset); and such new plates should be priced with some thought of opportunities which have vanished, and which leave their message, "Make the most of new opportunities which now occur."

Estab. Jan. 1894.

“The Process
Photogram.”



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AND ELECTROTYPYER'S AND STEREOTYPYER'S REVIEW.

The Right Engraving and Type for Children's Eyesight.

The "Scrapping" of L.C.C. Schoolbooks Foreshadowed.

IT is perhaps not too much to say that the report issued by the British Association following its meetings at Dundee last year is likely to have in the end an immense bearing upon the whole world of print and, incidentally, upon our own particular art. For the report is likely to lead to action, and prompt action. We hear from an educational source that tens of thousands of pounds' worth of L.C.C. educational books are likely, before long, to be called in and replaced.

The whole question as to the kinds of paper—to start with—and the most suitable kinds of engraving and printing for children of different ages is most fully, and, it would seem, most scientifically discussed in the report of thirty-four pages which the British Association has just issued in pamphlet form. The pamphlet is headed, "Report of the Influence of School Books upon Eyesight," and is sold for 4d. at the offices of the Association at Burlington House, W.

The first part of the report deals with the present practice of local education authorities. After considerable treatment of the general subject in manner which, though hygienically valuable, has no special technical interest for us, we get almost suddenly to very close quarters with our own workshop matters. But

here it will be as well, for the convenience of those who may not see the report, for us to quote its ipsissima verba :—

"The factors which have been taken into consideration are: (1) The nature of the psychological process involved in reading; (2) the quality of the workmanship employed in book-production; (3) the quality of the paper on which text and illustrations are printed; (4) the character of the illustrations and the process employed for their reproduction; (5) the colour and quality of the ink used in printing the text; (6) the mode of printing; (7) the character of the type; (8) the size of the type-faces and their vertical and horizontal separation; (9) the length of the lines; (10 to 18) particular requirements of special subjects.

1. *The Psychology of the Reading Process.*—The special consideration to be here noted is that the printing should be such as will facilitate the main aim of reading—viz., the getting of the meaning of what is read. The trained reader generally recognises whole words and phrases at a glance. It is therefore important that the process of beginners should be made as easy as possible towards the recognition of word-wholes and phrase-wholes by the use of type suitable in character and judiciously spaced. The best type for isolated letters is not

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necessarily the best for word-wholes, and attention must be given to the comparative legibility of letters as seen in context.

2. *Workmanship*.—It is possible to neutralise much of the good effect of well-selected type, paper, etc., by inefficient workmanship. In all the recommendations which follow, good workmanship will be assumed.

3. *Paper*.—The paper should be without gloss. Glazed paper is trying to the eyes by reason of reflections which are apt to interfere with binocular vision. Pure white paper gives the greatest contrast with the ink, and therefore a paper which is white or slightly toned towards cream-colour is to be preferred under average conditions of class-room illumination. A hard-pressed paper of suitable quality should be used, as a soft paper has two defects—(1) it is readily soiled, (2) the surface is easily rubbed off and the detritus is injurious. The print of one side must not show through from the other, and the printing must not affect the evenness of the surface of the other side. These rules also apply to illustrations, which afford a good test of the opacity of the paper. Books are occasionally bound and pressed before the ink is dried, and a faint impression of the opposite sheets causes a haze. Copies with this defect should be rejected.

4. *Illustrations* include (1) pictures for young readers, (2) diagrams and sketches, and (3) photographic reproductions involving considerable elaboration of detail. For (1) it is important to recollect that children are only confused by elaborate or complex pictures. Bold, firm treatment of a few objects is appropriate alike to their visual powers and to their understanding. From this point of view line blocks from pen-and-ink drawings are preferable to half-tone blocks from photographs or from wash-drawings. The

pictures should be of a good size, and the printed text should not extend in narrow lines at the side. In the case of (2) diagrams, it is important that the lettering should not be too small to be easily read. (3) For the older scholars it is sometimes necessary to provide illustrations exhibiting details with the precision most readily obtainable by photography. For the sake of obtaining effective illustrations of this kind, use is frequently made of highly glazed paper. Whenever this is done it is important that such paper should be used for illustrations only, and not for the text. By the use of recent methods it is possible to secure half-tone prints with good rendering of detail on matt paper. (See recent British Museum publications, of which some are entirely printed on non-coated and non-shiny papers.)

5. *Ink*.—The ink should be a good black, and it is important to secure a proper, sufficient, and even distribution of it over the whole page. The use of coloured inks is strongly to be deprecated, especially the use of more than one colour on a page.

6. *Mode of Printing*.—Ordinary text should not be printed in double columns. Types should be in true alignment along the base line. Hand-set type is greatly to be preferred to ordinary machine work of the present day; indeed, much of the improvement at which this report aims will be lost if printing of the standard of hand-set type be not insisted upon. The practice of printing from stereotypes produces quite satisfactory results, provided that the stereo is carefully made from unworn type. A slight thickening of all the lines results from stereotyping, but this in no way detracts from legibility. Stereos should not be used when they begin to show signs of wear.”

There are allusions to a Typographical

Table. This is made out to represent not the types which the Committee would like to see used, but the minimum size of letters and the minimum distances between letters which they feel can be at all satisfactory.

In the report they embody twenty-two specimens of type ranging from 30 pt. Caslon Old Face, the use of which is recommended for children under the age of seven, down to ten pt. (or practically long primer), the use of which is recommended for children over the age of twelve. That last type, the 10 pt., “is in agreement with the requirement specified in the Typographical Table.” But most of the other types shown in these appended specimens are stated to be slightly larger than the Table sizes.

There are various useful pointers given by the Committee. As for instance, when they say that legibility depends mainly on height and breadth of short letters, and that a heavy-faced type may overdo its especial effort towards easy readableness, for white inter-space may be too much restricted, illustrated by the space in the upper part of the letter “e” being reduced to a white dot.

HOW THE ENGRAVER WILL BE AFFECTED.

These and various other like considerations are rather for the printer than for the engraver, and we turn therefore from that special contemplation to the expressly pertinent matter of what is likely to be the effect upon the engraving craft should the London County Council and other great authorities—as seems more than likely—adopt the suggestion of the British Association.

Process engravers will not do less, we think, whatever action follows this report, but they may be called upon to work differently. More line may be called for, and better line. Note the very shrewd word in the report regarding that sim-

licity in drawing which alone is fitting for very young children, who are only worried by complexity in a sketch or a design. The Process Year Book illustrates one or two remarkable adaptations of line; including one which is a specimen, as we read, of “an unnamed process.” Perhaps combined-line and half-tone may be more largely employed. Possibly the old gelatine process may come into favour for a kind of line work approximating to half-tone, but not spoilt by the occasional vagueness, not to say washiness, of half-tones from poor originals. That gelatine line work is magnificently illustrated in the book “Alps and Sanctuaries,” a volume of Italian and Swiss travel and observation. The mode went out of practice because the time and money needed could not be obtained.

We can give wood engraving effect if it is called for; we can give better line for better money. This report, which is almost certain to lead to important changes, may give an impetus in this direction of better line. Of course, it looks towards far more original black and white drawing. The stereo comment is curious; the committee have naturally something to learn. If lines are thickened in duplicating or through the overwear of duplicates, there is certain to be in some cases more or less illegibility as the consequence; for what thus thickens line thickens also dots or grains, and reduces the inter-white spaces. No doubt the thickening of the hair lines of letters, which is what the committee seem to have in mind, may lead towards legibility. But that is not the whole story of stereo or electro effect.

THE ROYAL PHOTOGRAPHIC SOCIETY have arranged that on and after Saturday, April 5th, the Society’s house will be closed on Saturdays at 5 o’clock. Members will kindly take note.

✓ *Process Engraving and the Offset Press.*

By HARRY A. MADDOX.

ONE of the most interesting and important aspects of the offset press is its relation to process work. The abolition of coated art paper has been eagerly awaited for many years by the critics who are keenly concerned in the artistic and permanent value of illustrations, whether in monotone or colours. The comparatively recent and rapid development of the offset press in this field has been responsible for the hope that the desideratum is in sight, if not already attained. Although the offset press is but a few years old, it has created quite a distinctive field for the process engraver. New methods and complete processes have come into vogue, and in view of the growing demand for illustrative reproduction by offset on matt paper, it behoves the engraver to keep himself well in touch with these innovations and developments.

Our purpose here is to briefly consider the methods adopted to produce the various styles and effects in line, half-tone, and three or four colour work on the offset press.

The first attempts at printing half-tone plates by the offset press were made in the same manner which lithographers had long adopted for reproduction from stone. An ordinary half-tone block was produced from which, after making ready, etc., a transfer was taken, reversed and laid down to zinc. The only difference from laying to stone was the reversing. Results from such a procedure proved to be somewhat unsatisfactory. A vast improvement was effected by the introduction of intaglio half-tones. A transfer from an ordinary relief plate usually became squashed and exaggerated

in the processes necessary to preparation of the zinc plate. Hence the brilliancy of the original was entirely lost; consequently bearing in mind the fact that make-ready is eliminated on the offset press, in conjunction with the knowledge that art paper helps to impart life and brilliance to letterpress reproduction of half-tones, we cannot afford to include any factors in an offset half-tone process which militate against the ultimate effect. Intaglio half-tones give to the offset pressman something which he has been trained to, a copper plate which may be treated with his copper-plate ink in the long-accustomed manner. To a large extent the original values may now be retained, whilst the lithographer is able to apply his stripping operations if the transfer is too rich, which might otherwise result in squashing on being laid down. We believe, however, the day is not far distant when the intaglio plate will be superseded.

The trouble on the offset press when working half-tones is that the solids become too full, whilst the smaller dots may either be eaten away, or, according to the treatment, thicken and detract greatly from the delicacy of the result. An improvement on the ordinary straight-forward intaglio plate is therefore the introduction of high-light methods. This is the sphere in which the offset press is able to produce work far ahead of that from letterpress or flat-bed machines on coated paper. High-light half-tones from crayon or pencil drawings have been produced on fine cartridge paper, which preserve all the virtues and embody the same atmosphere as the original sketch. High-light half-tone plates eliminate the unnecessary screen dots from the high-lights, whilst

the printing may be executed direct on to sensitised zinc. In this direction the Frey Screenless system has been responsible for some of the finest monotone or colour work ever produced. Recent offset exhibits by this method have often been mistaken for actual watercolours, so delicate and truthful is the rendering. The Frey process is undoubtedly responsible for a most remarkable development in the field of offset illustration printing. The beauty of this process is that it works finely on zinc, the plates of which are sensitized with a film soluble in benzol. The procedure consists in taking a print and skilfully wiping away certain parts. Additional work may be put in according to discretion, with brush, crayon or medium.

A long-standing complaint against half-tone and three-colour work has been the mechanical effect of the reticulated screen pattern. The Frey and Highlight processes have done much to eliminate the tiresome mechanism, whilst in other directions equally useful work has been accomplished. Prominent amongst recent innovations is the Stigmatype process of Dr. Hans Strecker, in which no screen of any sort is used. This new system of preparing half-tone or colour plates is especially interesting on account of its applicability to offset litho by engraving in intaglio, thus offering the pressman his usual style of plate from which to take transfers. As before remarked, screen effect is eliminated, a natural irregular grain being formed on the metal direct by agglomeration and precipitation of gum globules from the bichromated gum gelatine emulsion. Simplicity is the keynote of the process, for only two operations are performed, namely, coating, which combines formation of the grain, and developing, with which the etching is simultaneously com-

pleted. For the second operation a solution of ferric chloride is used, the water developing, whilst the iron salt, diffusing through the film, electrolytically etches to a degree corresponding with the development. Special advantages are claimed for colour work; primarily, the elimination of moiré screen effects, another very important point being that according to requirements the colour proportions may be modified by controlling the character of the grain.

Another special grain process of importance in offset development is the Metzograph. This process, which is exploited by Messrs. Penrose and Co., Ltd., is capable of application for line or tone in monotone or colour. In the latter case it would have to be worked up by a chromo artist. As is the case with “Paynetype” and photo-litho, the Metzograph process works best on coarse-grained half-tones. A soft, continuous tone negative is printed through the special Metzograph-grained screen on to metal sensitized with bichromated albumen.

Such processes as the Metzograph, Acmetint, Paynetype, Stigmatype, etc., must ere long become increasingly popular for reproduction work on large posters. The offset press is already made in sizes capable of printing sheets up to 35 ins. × 45 ins. and 34 ins. × 48 ins., hence there is a distinct possibility of development along the lines indicated. Photo-lithography has already accomplished something of like nature, but the sphere has hitherto been too limited, whilst the mechanical effect of an ordinary cross line screen is at a loss compared with the stipple grain. Direct photography on to zinc plates sensitized with a film of fish glue, ammonium bichromate, ammonia and water, has already been responsible for improved poster work, both in line and tone. The re-

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sultant print on the zinc is treated by the lithographer in the same manner as an ordinary transfer.

Perhaps the most far-reaching of all recent innovations affecting the development of illustration by the offset press are the Huebner-Bleistein and Miller and Motley patents. In effect they are somewhat akin, but at certain points the procedure is wholly different. The aim of each process is to automatically combine, and in an incredibly short space of time perform, the operations of the process engraver and offset transferer. The work of the latter is executed photographically to any given number and arrangement of transfers. In the first-named process exposure is automatically timed and checked. The negative is developed in a mechanical bath with standardized developers. After washing and drying it is fixed in a printing box and the sensitized plate is automatically moved into position for printing. The printing box contains all the necessary mechanism for moving the plate horizontally or vertically at fixed periods, and is controlled by an automatic timekeeper. The sensitized plate moves into a series of positions, taking a row of

prints in each direction until a sufficient number are obtained. Absolute register is guaranteed, and any number of colours are possible on the plate. Once the printing on the metal plates is accomplished, the following treatment is in the usual fashion.

The Miller and Motley process covers any ordinary lithographic subject, ticket work, line, half-tone or colour, producing exact facsimiles, or on the other hand working to pre-arranged size. The negative is prepared in a camera standardized to a certain scale, from which it is afterwards transferred to a step and repeat type of machine. A series of worm screws completely control the positions of the projection from left to right or left, top or bottom, rectangular or diagonal. An exposure is made, then release and step to next position, expose, release, step, and so on, ad lib. The Miller and Motley process differs from the Huebner-Bleistein system in that the image is not projected to metal, but towards the production of a multiple negative, which is afterwards printed to zinc in the usual way.

Joseph Pennell as a Prophet of Doom.

"The Illustrated Magazine and Weekly will Die."

THIS is the alarmist message to the world conveyed by the distinguished artist, Mr. Joseph Pennell: "Illustrated newspapers will kill illustrated magazines." The new journal called the "Imprint," a shilling monthly, brought out by a band of earnest would-be reformers of printing and engraving, is the medium of his vaticination. Mr. Pennell overdoes it. He knows that he overdoes it; in fact, he hastens to put himself right in case he should have it on

his conscience that he has misled us, or that he has needlessly injured anyone. In the very first page of his six or seven-paged article he follows up his Jonah warning by saying that he does not for a moment mean that illustrated magazines like the "Century," "Harper's," or "Scribner's" will be killed or even injured by newspaper competition.

Since he did not mean that, it would hardly seem to have been worth his while to have made our blood run cold.

However, he seeks to justify himself even in the moment of making the admission. These highly fortunate journals are not to be killed or even injured, but things are still going to be dreadful for us process engravers, for there will before long be an end of the cheap monthlies and cheap weeklies with which every bookstall is loaded, which simply live on sensation and imitation, and which, too, are always woefully behind time. The newspaper is up-to-date, is printed more quickly, is going to have the same artists and authors as the magazine; and its full page illustrations will be far more effective than the pages of the magazines.

Mr. Pennell has been doing a great deal of work lately in America. He is quite enamoured of some things he has found there, particularly of the appreciation of good work by the newspaper publishers of the States.

As for the treatment of the illustrator in this country during the last decade he has very little good to say of it. He declares that after about 1900 a new sort of editor was born—the man who knew just what people wanted, or rather just what he wanted. That new editor only wanted cheapness, nastiness, cash and personal notoriety, and illustration sank immediately to his vulgar shopkeeping level. This editor "spawned a crew of hacks"—a sort of horse marines, a crew of hacks would be, we take it—and the crew of hacks increased and multiplied amazingly. A class of illustrators arose whose point of view was photographic. If a writer said his hero's shoes were black or his trousers creased, the illustrator showed it. As to showing something for himself, that was the last thing the present-day illustrator would dare to do, even if he had the brains, which he usually had not.

By way of a little refresher after his sulphurous explosion, we have the really interesting account of an historic illustration campaign by the "Daily Chronicle" in 1895, on the occasion of a London County Council election. Mr. Frank Lloyd, the proprietor, and Mr. H. W. Massingham, who had charge of the literary page of the "Daily Chronicle," and Mr. Bugg, the printer, came to Mr. Pennell and asked if he would undertake to get artists to draw, engravers to process, and printers to print really good work. In a few weeks he had set to work Whistler, Morris, Phil May, Burne-Jones, Beardsley, Walter Crane, E. J. Sullivan, Linley Sambourne, A. S. Hart- rich, Maurice Greiffenhagen, Raven Hill, Bernard Partridge and others. "No such series of illustrations ever appeared before or since in a daily paper," and we, who do not find ourselves ready to dot all his "i's" and cross all his "t's," have no hesitation in saying ditto to him in regard to this "Chronicle" reminiscence. They were really noble works of illustration; we recall them most gratefully. Mr. Pennell declared that they "nearly wrecked the presses, ruined the proprietor (*sic*), made the engraver Henschel work for nights, the printer, Bugg, day and night, and caused nearly a strike in the stereotyping department of the 'Daily Chronicle.'" Twenty-four illustrations, he believes, were printed, and twenty-five seats were lost to the Reform Party—for whom the paper was supposed to be working, and some people blamed it on the art.

We have said that Mr. Pennell has been working in America. He told his hearers in this lecture (for the "Imprint" article is frankly stated to be virtually the report of a lecture by Mr. Pennell) of certain experiments he made when commissioned to do some Panama Canal draw-

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ings. His mode was to prepare lithographic drawings and make line plates from these. The paper by which he was commissioned seems to have given him the utmost and the most heartily interested technical assistance. Its people experimented for three months before they concluded that "line" engraving from these lithos could be quite satisfactorily obtained. At first they suggested adding a tint block, for which Mr. Pennell saw no necessity. At every step he was consulted; in Great Britain he would "in most offices never have been allowed beyond the enquiry box." From that statement we frankly dissent. The Philadelphia "Public Ledger" made halftones of the Panama lithographs. Mr. Pennell says that the American half-tone copper newspaper block is extraordinary—though he thinks some remarkable results may be seen in Great Britain in small blocks in the "Edinburgh Evening Dispatch" and the "Manchester Guardian," and some even more extraordinary failures in the London newspapers "with the largest circulations."

There were in the "New York Times," of September 22nd last, seven of these full-page prints—page illustration backing page illustration—reproduced in line, "printed as never printing was done before in a newspaper."

It was after much use of the advertising columns that this coup came off. The entire country, we read, was covered with Pennell's Panama pictures, for the drawings were syndicated. The new illustration was born.

A beginning having been made, the work will go on and succeed, Mr. Pennell prophesies; and he advises that students should learn, as well as they can, to draw, and how drawings should be made for processes or other methods of engravings—how drawings should be made in order to print. If they can draw, and have studied and mastered the technique of process and printing, they have, in his opinion, the chance of entering one of the most important branches of fine arts, the most living vital form of art to-day.

✓ *Metal Labels for Machinery, etc.*

By W. T. Wilkinson.

THE first step in the manufacture of small brass labels is to set up the subject matter in a suitable type, and print proofs in black ink on white surfaced paper.

If the label is intended to have raised letters on a sunk ground, the proof must have a border, either plain or fancy, but if the letters are to be sunk and ground polished this border is not required.

From the printed proof a negative is made the exact size of finished label, and from this negative a sufficient number of

prints are made upon gas light paper to fill when mounted close together a plate 12×10 ; thus suppose the label has to measure $2\frac{3}{4} \times 1\frac{1}{2}$, then 24 prints of this size mounted together will make up an area 11 inches by 9. The prints are trimmed and mounted on stout card whilst wet, perfect alignment and equal spacing being necessary, to avoid waste of metal and of time in cutting up.

The next operation is to make a negative from the card of labels, either by the wet collodion process, or on a process dry

plate. If the label has to have raised letters on a sunk ground, this negative is made direct, i.e., without a mirror, and if the order is for many hundreds of separate labels, two or more negatives are advisable.

If the label must have the letters sunk and the ground raised, then the negative must be a reversed one, i.e., made with a mirror or prism, and from the negative a transparent positive, or positives, made by contact either in camera or in printing frame, this positive being used from which the print on the metal is made.

The brass plates, cut to size, are polished on a rotary machine, then thoroughly cleaned and dried; when dry place on whirler and coat with Red Coll varnish and whirl till dry, allow to cool, then coat with fish glue solution, as supplied with the Red Coll, expose in printing frame under negative (or positive), wash in water, dry, then develop with methylated spirit, which leaves the image of label on the metal in red varnish. Any defects, such as dust spots, etc., are touched up with a turpentine varnish; the back of plate and edges are varnished *with a plain shellac varnish*.

Etching for ten or twelve minutes in iron perchloride at 35° Beaume follows, after which the plate is well washed and the etched parts cleared with a mixture of Chromic and Sulphuric acids, or Hydrochloric acid and Sodium Chloride, again

well washed, then placed in copper depositing bath connected with a dynamo until a thin coating of copper is deposited, which, after careful washing, is blackened with Ammonium Sulphide, or a mixture of iron perchloride and white arsenic may be used. The plate is next well washed, then immersed in a vessel containing turpentine to clear away turpentine varnish used for spotting, cleaning the turpentine off with fine sawdust; next immerse in methylated spirit, which will clear away the Red Coll image resist and the backing varnish, clearing off again in sawdust. Now wash well, then dry and the plate is ready for the guillotine, to be cut up into the separate labels.

Instead of the Red Coll method the polished plates may be coated with bichromated albumen, exposed to light, inked up with strong transfer ink, developed in water, then dried, dusted with dragon's blood, or asphaltum, either of which must be carefully removed from the lettering or ground; gentle heat will melt the resin, and incorporate it with the greasy ink, after which the plate is ready for etching, etc.; such a resist will require turpentine to remove it.

Aluminium is not etched, labels on that metal being printed in bichromated fish glue exposed to light under negative (or positive), dyed first in strong Methyl Violet, then in Aniline Black, washed, and dried.

✓ *One Way to More Plate Making.*

“SUGGEST” THE BOOKLET AND GIVE SOME POINTERS.

ENGRAVERS can “suggest” a lot of work on to their books. Firms are often as much restrained from ordering publicity matter by the barrenness of their own minds in the matter as

by unwillingness to spend money. Their resource fails more often than their resources.

The booklet business of to-day is a mere nothing to what it might be; large as it may seem. We would then counsel engravers to “suggest” booklets here, there

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and pretty well everywhere. Illustration will be in almost every instance a very large part of the booklet's success if it is to succeed. So they have adequate motive.

In making booklet suggestions they should, we think, be as precise as possible; for being specific and precise is the way to be as helpful as possible. "The Printing Art" gives a few hints re booklets which we think are worth pondering; and some of these or modifications of these the engraver may have the chance to put before his actual or potential customer. All the better if he is in this matter working with or through a printer.

First, it is well to remember that there is no standard of sizes, paper or style in booklet printing. The new user of the booklet can be as unconventional as he likes. The booklet may or may not have a cover of different stock from the contents. The engraver, we repeat, should preferably work with a printer; he may be able to confer with the printer (if the latter is agreeable to such exchange of ideas, and he generally is), as to the size and style, paper and type that will be harmonious and suitable for the proposed book.

The confidence of a customer is of more value than the ability to quote a low price, and a little extra time spent in preparing and showing samples will usually be well worth the effort.

Grasp as accurately as possible the customer's own idea of the kind of job he wants. Let your suggestions and changes that you recommend be along the line of his original idea as far as compatible with your judgment of what is required. By this I mean that it is easier to sell a man what he wants than to sell him something that he may not care for or may even be prejudiced against.

The above suggestions apply particularly to the prospective buyer with whom you may not be on the most intimate business terms or where competition is keen.

Presuming that you secure the order by using the above methods, at a price which you are confident will show a proper profit when the cost records are all in, be careful that you understand every detail of the job so that there may be no occasion for misunderstanding.

It is up to the printer to see that if there are old plates to be provided by the customer these are all carefully examined before putting them into the forme. If any are defective or worn, this should be taken up with the customer at once, preferably by the representative who took the order, for he can best explain why they are not suitable to use. If the matter is presented to the patron in the right way, he will consider it a genuine favour to have the trouble brought to his attention.

It is amazing how technically ignorant many are, even when they move about continually in the printing world. One firm was lately advertising in an English printing trade journal and used a half-tone in the advertisement. Repeatedly it was asked for another; as the block had become practically a bit of smooth metal! At last in despair the advertisement manager of the journal took the dauby thing out of the forme and sent it back, to the advertiser. He promptly sent it to a trade electrotyper, who dutifully made an electro, for his, not to question why, but make without reply, a lectro of the die. The advertiser sent the electro to the journal and said that as he was sending "a new block" (*sic*) he hoped to hear no more complaints as to its not showing up.

All promises as to the showing of proofs, date of delivery, etc., should be carefully kept, and a much better impres-

sion will be made upon the customer by a little extra care in preparing the proofs.

In the press-room the slip-sheeting should not be overlooked if required. Perhaps, half, certainly a large proportion of jobs, are spoiled through the machining being too much rushed or otherwise not properly carried through.

The details of the binding should be thoroughly explained to the bindery foreman so that this finishing work may not

spoil an otherwise good job, and the wrapping and delivery should be in harmony with the character of the work. That is, a dainty, well-illustrated brochure should be daintily wrapped and tied up, while a more ordinary job will not require such attention.

Booklet work is not the easiest to handle, because of its wide variety, but it is profitable work if rightly handled.

Two Years' Work of the L.C.C. Engraving School.

Official Reports.

I.

WE have received the very handsome quarto ($9\frac{3}{4}$ in. x 12 in.) volume embodying the Principal Reports for two years of the London County Council Engraving School, and a fine gallery of work of the students. We regret that our space is not adequate to giving it fuller treatment than that which follows.

Turning the pages of the reports we find that there were about 600 students in all, even during the transmigration period; approximately half entering on the photo-engraving side. The art classes' entries varied from 150 in the 1910-11 period to 122 in the next twelve months; a not unnatural effect of the disturbance of locale. The litho classes remained steady at 42. In addition an average of about forty entered either for both “art and litho,” or “engraving and art,” or for “litho and engraving,” and 83 and 90 entered in the two years for the paper making and stationery lectures. A Saturday afternoon class in connection with technical photography worked at the

British or Victoria and Albert or Horniman Museum, or the South London Art Gallery, or Kew Gardens, or the Victoria Embankment.

A number of important factories were visited. Electrotyping and stereotyping were witnessed at Badoureau and Jones's (Poppins Court), and newspaper printing was seen at Edward Lloyd's, while a demonstration of typesetting and book-binding was witnessed at the Central School of Arts and Crafts. Collotype was watched on the premises of Howard and Jones—the specimen then done is included—and offset printing at the works of Rota-Litho, Ltd. Some students also joined in the visits arranged for the students of St. Bride Printing School. Mr. Newton's happening to serve for a time as Principal of each school facilitated this mutual helpfulness. Every Saturday during March in 1910-11 was devoted by some members of the staff and the Principal to demonstrating the processes of engraving to students from the various printing schools.

Mr. Edward Hunter (Anglo-Engraving

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Co.), Mr. Ellis Jones, and Mr. Welborne Piper joined the Advisory Sub-Committee of the School. Messrs. Leslie Clift, D. P. Wallace, A. E. Dent and W. Rothstein resigned their membership of the Committee during the two years, as also did Mr. Welborne Piper.

A metal screen camera has been loaned to the School by Messrs. Hunters, Ltd. Mr. Emery Walker gave some chromolithographic reproductions of illuminated manuscripts; the Medici Society, the Oxford University Press, and Mr. Walter Griggs, some coloured collotypes; Messrs. Rich and Hart, a photogravure print in colour; Messrs. Bendixon and Co. of Basinghall Street, selling agents for the Rembrandt Intaglio Engraving Co., of Lancaster), some rotary photogravures in monochrome and colour; and Messrs. Hudson and Kearns some three-colour offset prints; the late Mr. Snowden Ward and Messrs. Kast and Ehinger some fine process prints; and the British Museum a portfolio of reproductions of Flemish etchings.

All the typographic illustrations in the report in the volume have been printed at the School, and all but one of the lithographs are the work of the School lithographic printer, Mr. T. Johnson, assisted by Mr. B. Goodyear. The letterpress blocks have been printed by Mr. B. A. Newton, the School letterpress printer. The etching and photogravures were printed by Mr. H. S. Cartwright. The very handsome and finely balanced border on the outside cover is by a student, George Bass.

In the illustrations we particularly note a weird and powerful mezzotint "The Dream Spirit," by R. C. Peter. It grows on you; its "keeping," its suggestiveness are remarkable. There are draughtsman's faults, but the whole effect is most compelling. Meredith's

doorway of the former school is fine negative and photogravure work; nothing of "foggy London" here. Constable's "Haywain" is sympathetically and ably photogravured by H. G. Seaborne, who also gives us Romney's "Perdita" (Mr. Robinson) by the same medium. Another clear, strong photogravure of W. F. Taylor represents the tomb of Alderman Humble, at St. Saviour's Church, Southwark. A wash drawing (half-tone) by the Sketch Club is produced in double-tone work on cheap paper. Other half-tones include Dean Colet's memorial by Harvey A. Key; and various plates by the Screen Negative and Etching and Fine Etching Classes. The students contributing three-colour specimens include W. Matteson, A. Hymans, F. Ziegler, A. C. Chapman, who etches a "Dutch Scene," painted by S. Abbey, of the Students' Sketch Club (an art student who is doing very well as an artist in his work for art publishers, and whose success illustrates usefully the high serviceableness of the School), A. Peploe (who works with negatives by Nicholaissen), and F. W. Sheffield (who works with negatives by the three-colour class). E. J. Hollinghurst contributes a strong study of a head by A. Legros, in seven litho printings; Mr. L. Yuill, a litho of a waterfall in ten printings; Mr. H. H. Preece, a seven-printings litho of a vase; and Miss Enid Ledward, a charming design and litho print in six printings. In the map and plan section we have work in the Map and Plan Class, by C. N. Archibald.

A magnificent book cover reproduction, which gives a strong ending to the collection, is the work of Sukumar Bay. It reproduces the cover of the book presented to King George V. when he laid the foundation stone of the County Hall. The book was bound by the students of the L.C.C. Central School of Arts and Crafts.

Can America Beat England ?

THERE has been a considerable fluttering in the dove-cotes of British printerdom; but the fluttering has hardly been from alarm so much as from a certain blended emotion compounded of resentment and amusement. Amusement and amazement would perhaps be a mnemonic and a correct way of expressing it. The commotion had its origin in a letter which Mr. Edward B. Block, the foreign manager of the National Printing and Engraving Co., of Chicago, wrote to the ‘Standard.’ We might say that Mr. Block had been touring England for poster orders. He sailed for America on the ‘Oceanic’ with orders for posters to be designed and printed in America for 74 different firms in Great Britain. He had been working in England (says ‘Printers’ Ink’) for six months, establishing permanent headquarters for the Chicago Co. In that there is nothing very exceptional. The Knapp Calendar Printing Co., with offices in Avenue Chambers, Southampton Row, W.C., have been here, and presumably have been obtaining English orders, for quite a time.

Mr. Block seems sorry for us. When he was interviewed at Queenstown on the arrival of the ‘Oceanic,’ he said that the bill poster contracts in England represented an annual expenditure of about three million pounds. America was now awake to the fact that it could get a good deal of this turnover. He spoke of the flattering results of the efforts so far made. Whatever else should we expect to hear from him? ‘After six months’ work,’ he said, ‘I have secured contracts from some of the largest bill poster users in the United Kingdom, including well-known stores in London, the production of ‘Everywoman’ at Drury Lane; A. H.

Bull and E. Hill, in Reading; McBirney and Co., in Dublin; Wm. Creek, in Windsor; T. H. Graham, and Churchill and Son, in Bristol; Woolley’s and Allmarks, in Pontypool; Thomas Lewis and Co., in Swansea; the Metropolitan Coal Depot, in Cork; Messrs. Busby’s Bazaar, in Birmingham, and many others.’

Mr. Block said it had not been necessary for him to undercut, and he put it all down to ‘the Free Trade poverty of England,’ which is driving her most skilful workmen out of the country. ‘All our work is four or five colour process, and English firms dare not engage in such ambitious colour combinations because the men to undertake the work are lacking.

. . . There will soon be more American-made posters on English hoardings than are printed in Great Britain. . . . We are not only taking your best men away, but are following this up by finding orders in England for your skilled workers to execute in America. An English bill poster designer receives about £6 a week, except one or two men who secure more. Our designers in the United States are paid £25 a week. You pay your printers about £3 a week. America pays from £6 to £7 a week. . . . I am returning to London in April, and I expect to be able to book a larger number of orders than I have done this year.’

Mr. Griffiths Newton, of the Kingsway Press, writes to ‘Printers’ Ink’ apropos of Mr. Block’s statement: ‘In the several visits I have made to the United States I have yet to learn that Americans can teach us. And my visit this year only confirms my opinion that we are greatly ahead of them both in design and reproduction. Mr. Block can only adduce, firstly, his

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'Everywoman' poster, and, secondly, a few firms amongst whom I do not see one large advertiser. . . . That we in England pay poster designers, with the exception of 'one or two,' £6 per week, is stupidly absurd. Some designers I know get as much as £50 for a single design."

Messrs. David Allen write: "It is nothing but hot air. There are a number of American firms who send stock printing to this country, and this is canvassed from door to door in all the small towns, such as tailors', milliners', grocers', etc., and the sales that Mr. Block has made represent this class of poster. There is no hope whatever of American firms competing with us or any other poster printers in this country. . . . Such statements are published from time to time to arouse interest, and with a view to causing a controversy, and we always make a point of avoiding them."

Messrs. Hill, Siffken and Co. also write. They say that most of the firms in the list given would order stock posters in small quantities. The class of work American printers produce is seldom so original or effective as the English poster, and, moreover, American posters are invariably more expensive.

Messrs. J. Miles and Co., Ltd., write lamenting that "we cannot send a sheet of printed paper to any other country on account of excessive tariff, and yet American theatrical companies can, and do, bring all their printed matter over here free of charge." For the most part specimens of American printing that they have seen on the hoardings represent cheap oleographs, and neither in drawing nor printing do they compare well with the work done by English firms. The writer asks, "What of Norman Wilkinson's "Drake" posters, or the beautiful bills that illustrate many of our holiday

resorts? Is it not rather a confession of weakness, too, to admit that American workshops are recruiting from English-trained artisans? Our work is all right. All we need is better pay. If our customers would agree to pay a generous price for their work they would receive generous treatment. This aspect of the matter is appealing to many of our big advertisers. It is not an unusual thing to find an American who can talk."

Messrs. Chorley and Pickersgill, of the Electric Press, Leeds, write that: "Americans have on numerous occasions collared a large amount of business in other trades for a year or two, but we have invariably gone one better when we have been really hit, and driven the Yankees out again. If this invasion of Mr. Block's results is making us more energetic and more alive to the possibility of poster printing, he will have done us a good turn."

Messrs. James Upton, Ltd., of Birmingham, however, find Mr. Block's letter "most disquieting reading," but they confine their short letter to that statement, beyond adding that we are blind not to protect our trade.

A ARTIST'S GREETING FANCY.—We have seen a certainly very distinctive and pleasing Christmas greeting adopted by that well-known Fleet Street artist, Mr. Clive Sharman, for his personal salutation. He is the justly proud father of a beautiful little girl of somewhere about five years of age, and he had the happy notion to work up a photograph of this child perched upon the top of a grandfather clock, and reaching down and fingering the hands of the time-piece. She has brought them along before their time to midnight. "Hurry up, Father Christmas!" she is saying. Corner ornaments of holly and mistletoe in "line," and the wording at the foot, "From Mr. and Mrs. Clive Sharman and Ena," complete a very charming centre study. It is well mounted upon a card sufficiently large to yield good margins. Serrated edges add the due holiday character.

Recollections of a Process Man.

Some Early Difficulties and how they were surmounted.

WE hear that the latest appliance for the process man is a truck with rubber-tyred wheels to convey the dark slide to and from the camera and dark room. It seems hardly credible that such luxuries are even thought of in these days of “so-much-an-inch” commercialism, and leads one to wonder when we may expect Brussels carpets for studio and dark room. But this is not to the point, yet it is ground work for a comparison with which I wish to deal, and for that comparison we must go back to the year 1896. In that year a firm started in a very small way. It consisted of two persons, the principal and his assistant. The age of the assistant was 12 years, and he was a little curly-headed chap with an artistic temperament. The principal was by apprenticeship a cabinet-maker, but his mind soared far above such work, and wandered into the realms of photography, printing on wood for the engraver, and sundry experiments in screen work. Of course, the “grit” needful for experimenting was with the principal, but the eagerness to “shine” was with the assistant. The premises in which they started were in a top attic, three storeys up, over a green-grocer’s shop, the proprietor of which was the landlord. The “Studio” boasted of neither water tap nor sink, but the firm were possessed of two buckets which the willing assistant filled with water whenever needed. One bucket of water was used to wash developed plates, and another to wash plates after immersion in hypo. At that time the principal was experimenting in process work and one of his first orders was a stop out. The idea of routers and bevellers didn’t enter

his head, as he boldly took the order, but he got as close to the work as possible with a hand file, and glued the block to the wood. “Curly” proudly delivered the block, and collected the money, marching back to the firm with his chest nearly bursting with pride. The next order was a squared-up block with a line round, and, of course, it needed a bevel edge. The line was scratched on with a pocket-knife, and the bevelled edge had to be made with a file—in fact, the file was a most important factor with that firm. Present-day process workers can hardly imagine the work that man must have done to file down a bevel edge.

One day misfortune frowned upon them. There had not been much work about, and “Curly’s” wages (which were 1s. 6d. per week) looked to be in jeopardy when further trouble appeared. The file was lost, and as they couldn’t possibly turn out a block without that precious file, they held a council of war and decided what was to be done. The principal was (as he is to-day) a straight-forward, outspoken man, so he put the case to his customer, who sympathised with him and forwarded him, in advance, the price of the job in hand. With the necessary cash a new file was bought and business proceeded. Soon after this another dark day loomed. The hypo water bucket wanted emptying, and “Curly” was eagerly watching something fresh his boss was doing. He didn’t want to miss anything, and as time was precious the water went out of the window. Unfortunately the green-grocer landlord was underneath, and with much spluttering he mounted the stairs, and informed the principal what had happened. The

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humour of the situation tickled him immensely, and he explained to the offended party that there was plenty of hypo with the water, and asked him if he felt "fixed." That did it. The firm had to find fresh premises. Their next "studio" seemed like a palace by comparison. The first thing to be put to full use was a water tap and sink, from that time rapid strides were made and a partnership was formed, and to-day that principal is the head of one of the largest process houses in England, and is a recognised authority on colour work of every kind. "Curly," later on, emigrated, but is now back in England, and is manager of a large process department in a provincial newspaper office. The remarkable grit and pluck of the principal which led him to commence business in such a manner deserves all the success secured, especially when it is remembered that the foregoing can only slightly illustrate the number of trials and troubles which came to the lot of that "firm." Everyone will agree that he deserves the high position he now holds in the trade.

Another instance which comes to mind illustrating remarkable grit is that of a miner who started a process business with a capital of 35s. An incident of his early business days, that might have daunted almost any man, was when he had to pawn his lens to purchase sufficient metal to proceed with the work in hand. By bargaining for cash on delivery he was able to take the lens out of pawn and proceed with further business. No doubt that man could tell many tales of experiences which must, in these days of etching machines, etc., strike one as being very amusing. Cases of operators who have had to work in cellars and other inconvenient places are too numerous to mention, but I know of one case where

the proprietor of a small process house, who knew just enough of the business to make himself a nuisance, would insist upon his etcher doing all his work in the back yard. It was because of his exaggerated idea of the danger of acid, that he wouldn't dream of having it on the premises. It was most amusing to see that poor etcher undergoing open-air treatment, although he fared rather well on rainy days, when the trough or bath was covered, and the etcher stayed indoors. Our present-day apprentices would certainly open their eyes were they suddenly taken back a score of years to the process shops of that day. It was a time when much more thinking was needed, and the trade was not then supplied with mechanical appliances for almost everything that is needed in a block.

P. S.

THE HARLEY MASON PROPORTIONAL RULE just put upon the market is one of the most handy instruments possible for determining the dimensions of an illustration when enlarged or reduced. The device as shown in the

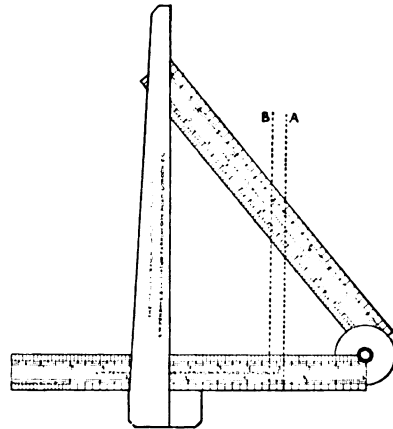


illustration is quite simple yet thoroughly effective, and will, we have no doubt, find a ready market, as it fills a want that has long existed for a simple, cheap and handy method of determining relative sizes.

Hints for Juniors.

Cleaning Plates.

A CLEAN plate is the most important item in the production of a colodion negative, and all the care taken at this stage is amply repaid.

Plates for cleaning should be soaked over night in a pickle composed of—

Potassium Bichromate	...	...	5 ozs.
Sulphuric Acid	...	...	5 ozs.
Water	...	...	40 ozs.

This solution should be kept in a large dish and spoilt negatives put into it before they dry. In making up, add the sulphuric acid slowly to the water in the dish, and stir up well.

Scrub the plates thoroughly on all six sides, and wash under the tap, drain and flow over, with the substratum, drain and put on a rack to dry, when the rack is filled cover plates with clean paper to keep off dust; there being little or nothing to distinguish the clean side from the other make a permanent mark on the rack, and let the coated side face that mark, a general rule being to have the coated side on the left.

For the actual substratum, albumen, or gelatine may be used, there being really little to choose between the two. Albumen is more easily prepared, but requires filtering at least twice, before use, gelatine requires heat to prepare it; this, however, is not always convenient.

Formula for Albumen.

The white of one egg, well beaten up in a clean cup or mug, mixed with twenty ounces of water, and 10 drops of strong liquid ammonia added; filter through paper first, then through cotton wool.

Dried Albumen, 75 grains, mixed with about the same weight of fine pumice powder, will easily dissolve in twenty ounces of water, add 10 drops of

ammonia, and filter as above. The pumice powder accelerates the dissolution of the difficult to dissolve dry albumen.

Formula for Gelatine.

Gelatine	...	...	1 ounce.
Water	...	...	80 ounces.

Liq. Ammonia .880 10 drops.

Soak the gelatine in ten ounces of cold water until soft, then add seventy ounces of hot water (150 deg. F.), stir vigorously, and the gelatine will dissolve, add the ammonia and filter.

Instead of adding ammonia to the gelatine some operators prefer to add half a dram of acetic acid, in which case the solution does not gelatinise on cooling.

Another method of cleaning plates is that of polishing with a clean chamois leather, the plates previously pickled, scrubbed, washed, and dried, are laid upon a soft surface, and polished with a leather until the breath shows a clear film; in polishing glass plates attend to the sides, the middle is sure to be all right. Old plates are not so easily polished, but will require to be first rubbed over with a detergent, such as

Tripoli	...	...	...	2 ozs.
Methylated spirit	...	...	...	20 ozs.
Iodine	...	...	...	1 dram.

Rub a little of this over the whole of the surface with a clean rag, then wipe the edges clean and polish with the leather. Polished plates will require edging with a thin solution of india rubber laid on with a small camel's hair brush attached to a stick to prevent the brush from travelling too far inwards; instead of using the rubber solution, albumen may be used, edging the plate in the same way, viz., by means of a camel's hair brush attached to a stick.

Stereo Stories: Which is correct?

A Courteous Challenge from America.

WE have received the sub-joined communication from Mr. Henry L. Bullen, Librarian of the Typographic Library and Museum established at Jersey City, which is separated by only ferrying distance from New York, though in the State of New Jersey. It will be seen that Mr. Bullen questions, very courteously, the accuracy, or at any rate the completeness of certain representations in our January issue. We think the best course is to set out categorically, following his note, the main points of our information on the subject matter. We will not express any opinion as to who scores in the encounter; for Mr. Bullen, with ourselves, we are sure, cares little about that, but is only concerned for the reaching of the greatest amount of final certainty. It is, perhaps, a personal point permissible to mention that "Ion" was for some years in the service of the firm founded about sixty years ago by Bartholomew Dellagana, who cast the first curved plates for the *Times*, somewhere in the later fifties.

Typographic Library and Museum,
American Type Founders Company,
300 Communipaw Avenue, Jersey City,
New Jersey, U.S.A.
January 20th, 1913.

To "Ion,"

c/o PROCESS ENGRAVER'S MONTHLY.

Dear Sir,—We file the PROCESS MONTHLY, and are interested in your notes on plate making.

In the January issue you refer to papier maché stereotyping and a flong on exhibition in the museum at Lewes. We wish to ascertain the facts in regard to the mention of the papier maché process. It has

hitherto been our opinion, based on what we have read and documents in our possession, that this process was invented by the Dellaganas. Your article seems to imply that Vanoni was the inventor. We hope you will be able to put us right in this matter.

We think you are wrong in fixing the date of Dellagana's introduction of the curved stereotype as 1859. We have letters of Dellagana's to the superintendent of the New York *Tribune*, written in 1856, describing the invention in a general way and quoting prices for the necessary apparatus, and containing a proposition to undertake to stereotype the *Tribune* on a contract similar to that which they had with the *Times*.

The *Times*, in 1856, was using the Hoe type-revolving cylinder presses, in which the types are imposed and locked in curved turtles. The Dellaganas cast each column separately, with a curve corresponding to the radius of the cylinder.

In New York, Charles Craske was the first to cast curved plates in pages. We have in this Museum a matrix of a page of the *New York Tribune* of August 31, 1861, on which date that paper was printed entirely from curved plates on a Hoe type-revolving cylinder press.

The Dellaganas would have had no trouble in casting a curved page, but it perhaps did not occur to anyone to alter the turtle arrangements of the type cylinder of the Hoe press to accommodate a full page.

We also think you are in error in supposing that Johnson's logography, financed by John Walter, was a stereotyping process. It consisted in having types cast in syllables to facilitate rapidity of

("The Process Photogram.") Mar., 1913.

composition; the theory being that logotypes of syllables, such as ing, and, ed, the, etc., would hasten composition. Several other people had the same idea, but it never succeeded in practice. I was reading this morning of a typewriter devised on a similar plan, by which syllables are printed instead of words, and I think it will fail for the same reason that the logotypes failed, viz., the mental delay in finding such a large assortment of keys or characters. There was never any difficulty about casting syllables instead of letters in type moulds, and therefore no reason why Johnson should have gone to the excessive expense of stereotyping, particularly as the result from stereotyping must always be inferior to any cast made in a metal mould under pressure.

From your reference to Aluminotypes we take it that you do not understand that this is simply a reversion to the earlier method of stereotyping from clay moulds. Aluminotypes are stereotypes and nothing else. The method of casting plate, however, is an improvement.

The metal is forced into a steel mould which closes over the clay matrix, and the result is a plate of equal height with bevels on three sides, so that practically all the finishing is at the inlet of the mould, where, of course, a jet or tail is inevitable. The metal used is aluminium with an alloy of copper, exceedingly hard and very light.

Aluminotyping is simply an improved method of stereotyping, and it will never be possible to get a printing surface from any method of stereotyping, using clay or paper as the basis of the matrix, that will be equal to an electrotype.

In this country we use stereotyping very little, for the reason that it is impossible to get a perfect printing surface from a clay or papier maché matrix. Stereotyping is used here for rapid reproduction of

plates on newspapers, but hardly ever for any other purpose. Electrotyping costs so little more than stereotyping that it is not worth while submitting to the handicap of the inferior printing face derived from the stereotyping.

We will be very much obliged to you if you will send us the history of the flong in the museum at Lewes, and tell us something about Vanoni. Under the belief that the Dellaganas invented the papier maché process we have been searching for their portraits to place in our Typographic Hall of Fame, in which we desire to include all inventors who have advanced the typographic art. We have been unsuccessful in this search and perhaps you can help us.

Very truly yours,
HENRY L. BULLEN,
Librarian.

Mr. Bullen's letter is very interesting and more than welcome. We have mentioned before what a large number of PROCESS ENGRAVER'S MONTHLIES find readers overseas in addition to those we have in this country. We hope we may be furnished with other instances of the filing of the journal by its recipients abroad, so that we may be able to cite that best of warrants for our claim—that not simply does our journal reach a large number of subscribers regularly the wide world over, but that those subscribers are interested and careful readers.

First let me clear the ground in regard to one pure misunderstanding. Mr. Bullen reads our words about Logography as conveying our belief that logography as financed by John Walter the First was a stereotyping process, as these words "stereotyping process" are ordinarily understood. This is not so much a question of technical as of terminological exactitude. We never dreamt of convey-

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ing the inference Mr. Bullen has drawn. In fact, we explained briefly what was the process of logography; i.e., that letters were used whose shanks were shorter (and we might have added thinner) than those of ordinary types, that those letters were formed into a word and placed face downwards into a mould so fashioned that when molten metal was poured into the mould the several letters were formed into a solid word which would range with other letters or words of the fount.

We used the term "stereos" regarding these combined letters for the reason that the strict meaning of stereo is "solid." The Greek word "stereo" has that exact significance. Long years ago pages of the Bible were stereotyped, not apparently so much to save the type in press work as to ensure that once the page was passed for press there should be no possibility of alteration being made in the "sacred text." It was made "solid"; and for that reason was called a stereo.

Stereotyping has come to mean duplicating in common parlance; but it strictly means a "solid" printing unit, without any regard to the question of duplicating at all; and for once we used it in that sense alone. We recognise that a note as to how we were using the term would have been in order.

In regard to the introduction of stereotyping we had better set out chronologically what happened according to the best authorities known to us. And because the earlier tale is brief and seems in part not unrelated to the Aluminotype development we will begin at the beginning.

In the opening of the eighteenth century a Dutchman, named Van der Mey, made some stereotype plates. We find the booksellers, Luchtman's, speaking of some such plates Van der Mey had formed which "had been used in their

establishment ever since 1711." They were forms for a quarto Bible. Ordinary types were soldered together at the back, and immunity from accident to the biblical text was thus secured.

1725.—In or about that year, William Ged, of Edinburgh, a goldsmith, invented stereotyping for duplicating purposes, and sought to apply the process for producing Bibles and Prayer Books for Cambridge University. Alarmed or disgruntled compositors, however, introduced such errors into the formes as to bring the stereo pages into discredit. The University abandoned the plant and most of the plates were destroyed. A book printed from Ged plates is in the St. Bride Library in London. Ged's invention died with him.

1780.—Tilloch conceived the idea of "founding" whole pages. He knew nothing of Ged's previous invention. He interested Foulis, the Glasgow printer. They produced several books by stereotyping. For mounts for the stereo plates they tried blocks of brass, having slits, through which small screws might pass to secure the plates, the screws being fastened by nuts on the under side of the brass mounts. A layer of cement was introduced between the plate and the mount. They planed the wood or heated the brass, in the latter case squeezing out the superfluous cement.

1795.—(About) Senefelder, the inventor of lithography, first tried various stereotype experiments. He mixed clay, fine sand, flour and pulverised charcoal with water, but stiffly. He made a type mould of this composition. In fifteen minutes it was hard enough to yield a perfect cast in melted sealing wax, by means of the hand press. A little pulverised plaster of Paris mixed with sealing wax made it harder than "the common types made of lead and antimony."

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1797.—Wilson, of Glasgow, tried glass or enamel stereos.

1802.—In this year, Lord Stanhope, inventor of the iron hand press, produced stereo plates from plaster. But he does not seem to have done much by himself in this particular.

1815.—The engineer Cowper invented a method of curving stereo plates after casting.

1819.—The *Times* (which about this time, if not exactly in 1819, was a four-paged paper of small size, printing on a Koenig at about 1,050 copies per hour) made an arrangement with Max Isambard Brunel for certain improvements in stereotyping. For these Brunel details see below.

1821.—This agreement with Brunel was cancelled.

1822.—A book "Precis sur la Stereotype," published in Paris, by De Paroy, alludes to a process which patriotic Frenchmen will have it was a papier maché flong process. Mr. Thomas Bolas, in his Cantor lectures on stereotyping, agrees with this French view.

1829.—A French patent deals with stereotyping. This was taken out by M. Genoux, of Lyons. He is sometimes spoken of as "having originated in France" the papier maché system of matrix making.

The following was the patent issued to Jean Baptiste Genoux, at Lyons, for ten years, for an improved process in stereotyping. The inventor stated: "The matrix I have the honour to submit to you is made up of seven layers of paper (couches de papier), the last on the face side is oiled and moist (sanguinée). Between the layers I have lightly with a brush put an adhesive composed of fuller earth and of size and with a little oil. Any adhesive may be equally used, but I adopted this as being the most

economical. I apply the whole upon the forme and make this impression by the application of a roller as when pulling a simple proof. This done, I put the whole in a press and allow it to dry. When dry I paste a frame of cardboard (je colle un cadre de carton) upon the whole of the back of the matrix, in order to give more relief to the impression of the type. Afterward I put it between two iron plates to which I have pasted several sheets of paper, and where there is a frame of the thickness that I wish to give to the moulded page (page moulée), and I pour the metal through a big opening, made in one of the plates and the page is perfect. My invention is entirely in the paper, for without its assistance I should not be able to obtain anything perfect."

1840.—A patent for stereotyping "communicated from abroad," is taken out in England by Moses Poole, a well-known patent agent. A flexible mould was composed of alternate layers of tissue paper and glue and paste and potter's earth.

1844.—J. M. Kronhein patented in England a process deriving from Brussels, where it had been in use at MM. Demats's establishment. Apparently this was substantially the flong (Kronhein called it flanc) of to-day; alternate layers of paste and thin paper. He patented the method in England and sold it to a stereo foundry, which afterwards became bankrupt.

1848.—The papier maché system of matrix making was introduced into England by an Italian, named Vanoni.

1849.—A man named d'Ardenne, patented in France a machine for printing from the web, or roll of paper, by cylindrical stereo plates, and also a method of paper stereo, in which is contained practically every part of modern practice.

1850.—A patent agent, Gerard Jno. de

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Witte, took out the English patent, No. 12,998, combining the two French patents just mentioned.

1851.—T. Nelson, founder of the great firm of T. Nelson and Sons, of Edinboro', constructed about 1850-1 a model stereo web printing machine, which was exhibited at the Great Exhibition of 1851. The machine was not patented, and the arrangement of cylinders in a vertical pile was one that was frequently used in later years.

1856. — Bartholomew Dellagana, a Swiss maker of plaster images, made some arrangement, described as a contract, with the *Times* for casting curved stereos of separate columns, as used in the Hoe Type Revolving cylinder presses, their so called Turtle machines. The curves corresponded to the radius of the cylinder. He also about now, i.e., either in 1859, as generally supposed, or at some date between 1855 and 1859, proposed to the *Times* to let him experiment in their press-room with a view to further stereotyping improvements.

The *Times* special Printing Number, of Sept. 10th, 1912, writes:—"There is no doubt also that James Dellagana had a great deal to do with the paper process in its early days if he did not himself introduce it here." "James" is apparently an error for "Bartholomew," the founder of the old firm now established in 11 Shoe Lane, and Manchester, and elsewhere, as B. Dellagana and Co., Ltd. The first stereo plate appears to have been cast in the *Times* Office in 1859.

1859-63.—B. Dellagana continued to experiment, and work in the *Times* Office, or elsewhere; and in 1863 the *Times* adopted the Dellagana method and "used commercially" curved cylinders, prepared from papier maché. After this nearly forty years passed, before any other very great improvement in newspaper stereo-

typing was made.

1861.—The *New York Tribune*, the organ of that greatest of editors in America, Mr. Horace Greeley, and the organ in our own time of the late Ambassador, Mr. Whitelaw Reid, was being printed in August, 1861, entirely from curved plates on the Hoe type revolving cylinder press; the so-called Turtle press.

As to the Aluminotypes, our words "they may surpass stereos," should have been "other stereos." Aluminotypes have made a very good impression in a certain London foundry to which the plate maker in England is disposed to look as being an expert authority. More than this, we are not perhaps entitled to say at the moment; but we believe that serious negotiations are in train which will probably result in Aluminotypes being adopted in British practice at no very distant date. Mr. Bullen's notes upon this matter are very interesting, and perhaps he will in turn be interested to look back upon some of the details we include in this short chronological presentment.

Brunel's patent becomes more interesting reading to us in association with the details of Aluminotype.

We have for years been aware how very largely electrotyping had ousted stereotyping in America. We are inclined to doubt whether it should have made quite so large a supersession. American electrotyping in the main has been better than British electrotyping—in the main. But American stereotyping has not been so good as British stereotyping, at our best. We agree that electrotyping is per se a better method than stereotyping. We held that view before the advent of lead moulding, and naturally we hold it now more strongly than ever.

At the same time it is but due to recog-

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nise the remarkably good results that have been achieved by Dalziel and some other stereotyping processes. There was lately a remarkable proof that Mr. Harvey Dalziel himself was confident that he was getting three-colour half-tone results from his stereos which could not be surpassed by electrotypes. He was interested in the Lambert machine for applying four half-tone impressions, i.e., the three primary pigments and a black or grey, at one travel of the paper. It was very important to him that the machine should show to its very best advantage. His interest in this was so great that, as he said to the writer, no consideration that he himself was making stereotyped plates would have prevented him from using electros upon this machine, if he had believed he could thereby obtain a better result.

I am hoping to tell Mr. Bullen and other readers more about the flong in the Lewes Museum, and more about Vanoni, but I must make some enquiries upon these subjects and hope to revert to the matter. I examined the Lewes flong myself, about ten years ago.

Sir M. I. Brunel's method proposed to form a mould of a composition of pipe-

clay, chalk or burnt clay finely powdered, and starch, mixed up with water into a stiff paste and mixed upon a thin and flexible plate of steel. The paste was then to be covered with several thicknesses of fine calico and a skin of wet parchment and "pressed upon the types to squeeze it into the general form." After this the calico and parchment were to be removed and two sheets of paper placed in their stead; the mould then received another pressure by which it was made more like the face of the types. Finally the papers were to be removed and the impression perfected by pressing the mould immediately upon the surface of the type, which should then be smeared with oil. From this mould a cast was to be taken in metal for printing from. It was thought the plates might be bent on to the surface of the cylinder.

Another plan mentioned in the same patent of Brunel's in 1820 was for forming a plate of shellac spread upon a plate of iron and coated with a thin film of type metal. These plans are described more fully in Hansard's "Typographia."

ION.

Paper: Its Stretching and Hanging.

HOW does paper stretch, after all? Is Mr. Fred Seeley (of Kronheim's) right in the conclusions he first set forth in these pages just about two years ago, and which have been "lifted" into various publications since this Journal first gave them currency?

There can be no question of the accuracy of the particular observations he so plentifully and so carefully made, and recorded in our columns. I'm sure his contribution impressed all readers as one of the most useful pieces of testing work

and result—compilation which had been done in printerdom for many a long day.

And yet—I come back to the question as one not wholly settled to the satisfaction of all. Only to-day I met the head of a large paper warehouse in a business doing both three-colour half-tone, letterpress and litho. He was ruminating upon the latest reproduction of a reproduction of our Seeley article—one which came to him in a northern paper maker's monthly circular.

Said my friend: "What Mr. Seeley

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lays down is very plain, but the odd thing is, it's exactly contrary to our experience. Say, now, the paper maker has a reel 70 inches wide; we want quad crown, 30 inches by 40 inches, for, say, a job in our three-colour letterpress work. I'll talk of a paper of 34 lbs. double crown, to have a precise weight in mind. The makers cut off 30 inches of the 70. Good! All they supply to us, that is, 30 inches wide, 'the long way,' is all right. It won't stretch. But they've got those 40 inch sections. So they make up a lot of paper 40 by 30 from the paper that is 40 inches wide across the long way.

"Now, all that they send us which is made up of that second, that 40 inch front section, *is no good at all*. We've made our paper people understand quite well by now that we simply won't have any of it. It always stretches tremendously. You can quite easily be a pica out on a 20 inch length."

"But," he added, "that exactly counters what Mr. Seeley's article teaches us. So I'm wondering what's the explanation."

"Look here," he went on, "I'll cut out two pieces exactly the same length, $7\frac{1}{2}$ inches by 12 inches, and I'll paste them both on the same stout brown board, and you come along in an hour or two and you'll see that the one I've cut 'the machine way,' as it's called, the one cut, that is, along the 30 inches to the extent of the $7\frac{1}{2}$ inches, will not have stretched, while the other, with 12 inches cut like that 40 inches, and it's $7\frac{1}{2}$ inches along 'the machine way,' will have stretched nearly or quite an eighth of an inch."

He did this at 10 a.m. I happened to come along again at about noon. Sure enough the 12 inches in the case where the length, the 12 inches, was across the web, was quite $\frac{1}{8}$ inch longer

than the other.

When we talk of the fine conditions, the nice exactitudes of three-colour block making, it is surely wise to realise to the full how enormously paper may vary. It is the old story of stopping up the spigot leak and not worrying about the bung hole, if we are careless about the paper, while worrying the poor block maker for exactitude at his end.

Some good paper was stacked in his racks by a friend of mine. It wasn't wanted, as things chanced, for six months. When the paper was to be taken down for a job it was an absolute impossibility to get it out at all without actually bringing the saw and cutting away a piece of the wooden rack division, it had bulked so largely while maturing.

Related to this is the question of the best hanging of paper. Marbles are a bit of a nuisance. You haven't both hands free, for with one hand you must reach up to move back the marble, or you will not free your suspended sheet by tugging at it; you will simply make its hold all the tighter.

A better, because a handier method, is that of using a spring steel clip. My friend, whom I have just cited in the stretching connection, spent some time and trouble in devising a clip of this sort, but he was discouraged by the experiences which often dispirit inventors from completing his idea. He must persevere. We want some easier way of hanging sheets in the actual press room, hanging, perhaps, two or three together in one clip. Even so the benefit to the job, as compared with the sheets merely lying flat in little lots in the press room, would be very great, though separate sheet hanging might no doubt be better.

It is very important to give a little of the actual pressroom air to your paper for three-colour or other half-tone work before you print the job. Q.

My Causerie.

I THINK Mr. Pennell is the man who was once rather terrible as "Artist unknown," a regular contributor to the "Star." He certainly is extremely gifted as an artist, and if he is very opinionated—if he is very strong on one side of a question, and possibly sometimes on both sides—well, so are a good many highly individual men. A little acidity, too, is not amiss; it is that, indeed, in differing degrees which gives to natural products their various flavours. For a man to dislike any form of acidity is to write himself down as one who would prefer a parsnip to a peach.

One simply cannot imagine Pennell as a bland, smooth critic. It would not be Pennell.

Elsewhere in this journal it will be seen how he rather calmly dismisses to limbo our illustrated magazines and journals. They are all to go to perdition; they are to be knocked out by the illustrated newspapers. But that seems rather to be based upon the inadequate facts, first, that the "Chronicle" did a fine piece of illustrative work under Mr. Pennell's guidance 18 years ago, at the time of the London County Council's elections (a piece of work which he also says was not strikingly successful in influencing public opinion), and, secondly, that there has been a very enterprising demand upon his own powers by certain American papers. They have issued and have syndicated, and thus spread broadcast, Pennell illustrations of the wonderful Panama Canal construction.

Mr. Pennell notes how lithographic transfers were adopted and line blocks were satisfactorily made from these, and in that way the newspapers were able to give under newspaper conditions, and by use of line blocks, something of the effect

of ordinary half-tone gradation.

Those who have watched engraving matters closely in England for some time will know that the Norwich film has enabled just the same sort of thing to be done here and in the States. These films are sheets of soluble gelatine bearing a grain. They are transparent—at any rate, very translucent—and may be laid over a sketch or photograph if the artist desires.

The artist draws upon the grain with a lithographic crayon, and his drawing is transferred to zinc, and then etched. In this way, of course, a line block can readily be etched and made to give the effect of tone.

Mr. Oziah Dodge was, I think, the inventor, and was certainly the entrepreneur of these Norwich plates. He had conversations with the writer regarding them several years ago.

When the original drawing can be made of the exact size which is to appear in the newspaper there is no need for any photography at all. The Norwich film, with its drawing, is simply laid down at once and the plate thereafter etched.

Line etching for letterpress machines was first executed by Gilot upon a similar method. I think, indeed, that he worked for Hentschel's, and along this very line. It was not for some time after the litho transfers had been successful that printing on to metal direct from a negative was adopted.

F. COLEBROOK.

THE SET OF LABELS USEFUL TO PROCESS OPERATORS, recently issued by Messrs. Mawson and Swan, is certainly a very useful little booklet. Operators will welcome the assistance it places within their reach, and it will amply repay the small cost in the saving of time it will effect, to say nothing of the assistance in the prevention of mistakes. We heartily recommend it to every operator in the trade.

THE PROCESS MONTHLY.

TWO VALUABLE HELPS FOR THE PHOTO-ENGRAVER.

THE WRATTEN TRICOLOR INK CONTROL.—A three-colour set of blocks, devised to enable engravers and printers to see exactly the effect given by the three-colour inks they are using, and to enable them to re-prove the same blocks a second time, with the assurance that the colour and amount of ink used is exactly the same.

The device consists of three blocks, one for the yellow, one for the red, and one for the blue ink. There are solid patches so that when the three prints are superimposed there is shown a solid patch of yellow, red and blue ink, and also a solid patch of two inks superimposed, giving the complementary colours to the yellow, red and blue ink, viz., a green made up of the superposition of the yellow and blue; blue-violet made up of the superposition of the red and blue, and scarlet made up of the superposition of the red and yellow. Adjoining these patches is a half tone of a graded strip, made up of eight tones, going from almost white to solid black; this is precisely the same on all three blocks, with the exception that the screen angles run at 30 degrees to each other, so that when superposed no more pattern is shown; this strip will therefore receive ink from each colour, as the dots are exactly the same size, if the inks are correct in shade and in amount the result should be a strip of neutral grey; if this departs from neutrality, then either the hue of one or more of the inks is at fault, or else the amount of one or more is incorrect.

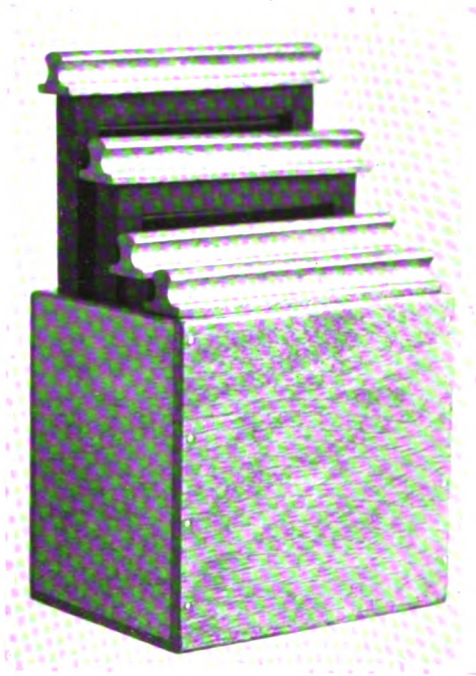
The trial enables the printer to see at once in which direction the inks are faulty.

For the engraver this is particularly useful, as, if it is put on the press at the time of the first proving in colour and then the plates are fine-etched, the second proving in colour can carry exactly the same amount of ink, so that the check strip prints exactly the same. Any difference is then in the subject itself, and is seen to be due to the fine etching. There has hitherto been great uncertainty as to whether differences in the second proving are not largely due to difference in the amount of inks carried; this will enable that uncertainty to be avoided, and if there is no difference it will be obvious at a glance. It also enables a printer, if he uses one of these check strips when printing his first edition, to print a second edition at any subsequent time and get exactly the same result. He has only to see that his check strip blocks

print just like they did on the previous occasion.

The blocks are nickeloid electrotypes, which will not wear out, and they are mounted on metal to exact type height, so that there can be no variation due to warping of wood mounts. They are sold at 12s. 6d. net per set of three.

A NEW FILTER HOLDER.—It has always been a problem for the technical photographer and photo-engraver as to how to conveniently use the filters for three and four-colour



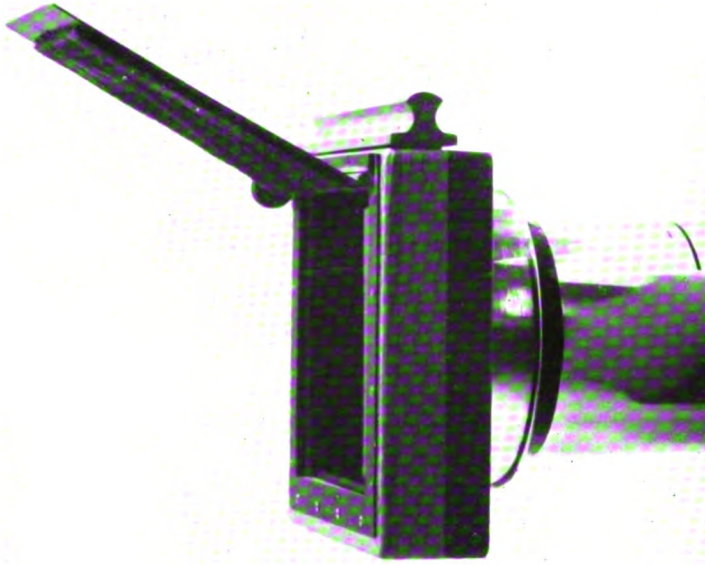
NEW FILTER HOLDER.

work, especially when they are made of expensive plane parallel glass, such as Hilger flats.

Messrs. Wratten and Wainwright are, however, now offering a holder which is most convenient in this respect. It consists of a mahogany box provided with grooves, in which the holder containing the filter slides, which provides a convenient receptacle, keeps them free from handling, light-tight and practically dust-tight. On the lens hood is a frame in which the holder containing the filter slides; this frame

is provided with a cap which is raised or lowered by means of a screw. When one filter is used it is replaced in the box and another filter placed

box. The filter holder on the lens in the illustration shows the filter in a sliding fitting, but more recent patterns have been made with



FRAME FOR FILTERS WHEN IN USE.

in the holder in the lens; they are therefore never laid about, but always in their place, as they will be either in the lens or else in the

bayonet joint. This is a thoroughly practical fitting, and is sold from 35s. upwards, according to size.

✓ SPECIAL EQUIPMENT FOR PHOTO-
ENGRAVING AND REPRODUCTION
PROCESSES.

MESSRS. GRIFFIN'S latest Process Camera for half-tone and three-colour work, fitted with Autofocal screen gear and ratiometer diaphragms to lens, is claimed to be the only camera embodying in its mechanism the correct application of the vital principle underlying the production of half-tone screen negatives, viz.: the preservation under all conditions of corresponding ratio between:—

- (1) *The camera extension.*
 - (2) *The lens aperture,*
- and
- (3) *The screen distance.*
 - (4) *The screen opening.*

They say that whatever the scale of enlargement or reduction may be, and whatever size of lens aperture is used, *the correct screen distance* is automatically and instantly fixed for screens of all rulings.

An automatic screen setting device provides the one thing hitherto lacking in the camera required for half-tone negative production. The facility and ease of working conferred by the ability to fix definitely, accurately and instantly the correct screen distance under all conditions will be appreciated by every operator.

It is unreservedly claimed for this camera that by the means it provides for settling accurately, automatically and instantaneously the theoretically correct and optical correlation between

THE PROCESS MONTHLY.

camera extension, lens aperture, and screen distance, the production of technically perfect half-tone negatives is simplified, and that ease and speed of working are increased in a marked degree. These valuable improvements, it is said, do not hamper the individual judgment of the operator, but provides him with a starting point which he knows to be correct. Practice may demand modification of screen distance, the use of lens diaphragms other than the standard square, or other variation in procedure to suit differing originals or to obtain particular effects, but the means of automatically preserving the necessary optical ratios for the varying scales of reproduction remain always at his command and ensure uniformity under all conditions.

Another of Messrs. Griffin's specialities is the supply of ruled screens for process reproduction, and their Koh-i-Noor Diamond Engraved cross-line screen is recognised as being a standard quality for the work required.

Of equal excellence are the Koh-i-Noor "Ruled" screens, which are ruled only and not actually etched into the glass; the saving in cost of manufacture makes these screens particularly economical where large sizes are required for occasional use.

Koh-i-Noor "Schulze" screens are also cross line screens, but are ruled at special angles in accordance with the inventors' patented formula, and with a variation in the proportions of the width of the lines to the width of the spaces, as compared with the normal 1—1 ruling generally adopted. The results obtained with this screen are full of detail, and as in coarse rulings, particularly, this difference is most noticeable, the screen is pre-eminently valuable for press illustration, in that there is obtained the effect of a finer screen than is actually used, without any corresponding increase whatever in the difficulty of printing.

The renaissance of photogravure exemplified by the number of eminent houses which have solved the problems of both plate and rotary photogravure production, has, we understand, led to the Koh-i-Noor screen rulings for photogravure work becoming quite popular. Koh-i-Noor photogravure screens are produced both in single and cross-line rulings to any specification desired, and as is claimed for all screens of this make are to be relied upon for crisp perfection of ruled line and absolute transparency of space.

An examination of the catalogue recently issued by Messrs. Griffin and Sons will show many more specialities equally interesting to the Process Engraver.

THE AUTOMATIC METAL FURNACE, of the Linotype and Machinery Co., Ltd., is as near perfection as a machine of the kind can be. It is effective, a time and labour saver, and is very compact. In the booklet just issued the Company, as usual, make splendid use of illustrations, in fact the illustrations tell the story of the furnace far better than any letterpress, and beside, the illustrations are well done, a matter of greater moment than some advertisers seem to realise.

Whatever comes from the Linotype and Machinery Co., Ltd., seems to be designed for hard, practical use, and this latest appliance for the foundry is no exception to the rule, and we have no doubt it will soon become very popular with all who have use for it.

They have also recently issued one of the most handy and useful advertisements possible; it takes the form of a cover to the Telephone Directory. Those who use the directory greatly know the difficulty experienced in keeping it in anything like fair condition during the period it is in use. The Linotype and Machinery Co. have solved for them this difficulty and their efforts will be fully appreciated.

ENGLISH-MADE SCREENS FOR PROCESS ENGRAVERS.—In our last month's issue we called attention to the "Diamond" Screens made by Messrs. Brown and Co., of Leicester, who show some very excellent work done by their use.

Since our last issue Messrs. Brown have sent us some of their screens, with the request that we would have them tested and prove whether their claims were well founded or otherwise. We secured the services of a Process House who had not hitherto used any of this firm's screens; they passed them into their studios for use and report. This report has since come to hand and is thoroughly satisfactory in every way. We are told that the results are equally satisfactory as those obtained from the very best screens known.

We are pleased to give this testimony and to recommend these English-made "Diamond" Screens. The makers say that a guarantee is given with every screen sent out.

PHOTOGRAPHIC ARTS AND CRAFTS EXHIBITION.—This Exhibition is announced to be held at the Royal Horticultural Hall, Westminster, April 4th to the 12th, and will be open daily from 12 to 10 p.m. Communications to Mr. A. C. Brookes, Sicilian House, Southampton Row, W.C.

THE
JOHN CRERAR
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REMBRANDT. GRAVURE



A. ZINGONI



FOOD FOR THE BODY & FOOD FOR THE MIND

*Printed by
The Rembrandt Intaglio Printing Co. Ltd.
England.*

Estab. Jan. 1894.

"The Process
Photogram."



Vol. XX. No. 232.
APRIL 1913.

AND ELECTROTYPERS' AND STEREOTYPERS' REVIEW.

"The Best Yet."

*Successful Dinner of the Process Engravers' Association.—
"During the past year. We have doubled Our Membership."*

THERE seemed to be but one opinion at the end of the largely attended dinner of the Process Engravers' Association on March 11th. That opinion was that it was in extraordinary contrast with the dinners of even a year or two gone by; it was far and away "the best yet." The best not simply in numbers; the best overwhelmingly in regard to the spirit animating the company. The note was one of strenuousness and optimism; and all the application was practical. The President, Mr. Arthur Cox, appeared quite to carry the company with him in his declaration that the time had now come for a costing congress to be held in the ensuing year of office.

The venue was the Caledonian Room of the Holborn Restaurant, a comfortable, not too large, chamber, in which all speeches and all items of the quite delightful entertainment could be perfectly heard. Mr. Arthur Cox, in the chair, was supported by Mr. A. Dargavel (John Swain and Son, Ltd.), the Vice-President; Mr. Carl Hentschel, ex-President; Mr. Holt (John Swain and Son, Ltd., Barnet Works); Mr. E. W. Hunter, Treasurer, and by such scores of the leading members of the craft that it seems needless to set names forth in detail. The

visitors were numerous and influential. Mr. W. Gamble again lent his always encouraging presence. Mr. G. W. Jones, who has perhaps done more than any other printer, as a pioneer of the finest half-tone printing, was at the President's table, as also was Mr. H. T. Johnson, Managing Director of the Canadian-American Machinery Co., Ltd.; and Mr. Robert Vincent the head of the large engraving department of the Amalgamated Press was to be seen hard by.

The dinner itself was a great success. When the soup, Andalouse cream or other! the turbot with Hollandaise!! the sweetbreads Melba!!! the mutton with braised celery, the Saxon pudding, the ices and the rest!!! had been finally commended to approval by cups of fragrant Mocha, the President gave the "King"; and tobacco, divine herb, was permitted to induce the due philosophic and impressionable temper of mind.

Mr. Frank Colebrook, who was cordially received, was entrusted with the toast of the "Association." The health, as thus commended, was very heartily honoured.

Mr. Arthur Cox said: It is my privilege to respond to the toast proposed by Mr. Colebrook. I, too, with the pro-

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poser, call to mind those who worked for the Association in the past. This Association was really formed by the efforts of Mr. Carl Hentschel very many years ago. (Applause.) He was its first President. We have not in past years got on quite as well as one could have wished, but I hope now we have a great future, if we all work together and in the right direction. During the past twelve months we have

DOUBLED OUR MEMBERSHIP. (Applause.) It is impossible, however, for the Association to do any very effective work so long as the majority of the trade remain outside. While they wait to see what happens, nothing very great will happen. (Hear, hear.) It comes to this, that in the conduct of any business it is not permanently wise for a man to do anything which he may think promotes his immediate gain, if it be at the costs of the general interests of that trade in the country. Each business is a unit. Each unit should, in its own interest, contribute to the prosperity of the whole trade as well as to its own moment's profits. We must temper the one thing with the other. The two things react. If the business is run on lines conducive to the general good of the trade, it must work round to the good of the individual business; and the converse also holds good, in the course of years. I would urge that a man should join the Association not thinking "What am I going to get out of it"? But that he should say, "I will join and do all I can to help it." If he does that the whole trade including his own fortunes will be assisted enormously. We are practically an army, operating with the material of very highly skilled labour. Those who seek to compel us to sell our labour at the lowest possible prices, stand to us in the light of an enemy; at any rate they represent an opposed interest. How then can we make good our position?

Simply as any army can, by unity, by connected action. What would happen if an army went into an engagement with every man looking upon the next man to him as an enemy? (Laughter and applause.) Of course it would be utter demoralization and defeat. That has been paralleled in the past experience of our craft. A better condition of things is surely manageable. Why if the whole of our businesses were combined, the total would not be a very huge concern. Moreover, we are protected; foreign competition in our case is negligible. Let each engraver join the Association, and I am sure enormous good would soon result. (Applause.)

Regarding selling prices, their regulation is a very difficult matter. We are not producing things by the gross or by the thousand. Practically you may say that each block is a different proposition from another block. Even if it be true that the whole of a series are vignettted or are all routed, the copy, and the work, and the methods of production, must vary continuously. It comes to this, selling prices cannot be properly decided until we are "down to cost," and until we are all costing from similar standpoints. Putting price standardisation before cost standardisation would be attempting to build a house before you had made the foundations secure.

Mr. Cox then mentioned a few trade customs which wanted attention. A great deal of money was being paid out every year for such things as extra proofs. It would be interesting for the engraver to send out some blocks some day to printers to find what they would charge for preparing some satisfactory proofs. It was the printer who observed that extra proofs, half a dozen or so, did not amount to anything—when the engraver pulled them. Why was this work so much cheaper to the engraver than

to the printer? (Laughter.) There are other matters of trade usage—discounts; drawings on “appro,” designs on “appro,” and measurements of blocks on the face instead of on the back. (Hear, hear.) We can save our customers some clerical work by having a uniform system of measuring blocks at the back (Laughter.) This indicates some things for future consideration. We have in the past year brought out

OUR COSTING SYSTEM.

We printed it in the simplest form possible; it could have been made much more elaborate. We wanted to get in the thin end of the wedge. Years ago I had my leg pulled a good deal; I was told that “everyone knows his costs.” Apparently that view is not so confidently held now; anyhow I am flattered that so much attention is paid to the costing matter. During the next year I should like to see a costing Convention for our craft. (Applause.) We are getting the members of the craft together in a similar way to that which has been witnessed in America, where engravers get together on many occasions to talk over costing and the general conduct of their business. (Applause.)

Mr. Dargavel (John Swain's) also replied, and said: I have seen some wonderful changes since the old days in the eighties when wood engraving was practically the only method available. They were semi-stagnant times. No one ever thought Queen Victoria would die; people had no prevision in general of horseless carriages, wireless telegraphy, or aeroplanes. Amid all the great changes, one of the greatest wonders, is the development of the half-tone and the three colour-process. It has been a revolutionary change. Spicing his speech with some humorous and some trade anecdotes, Mr. Dargavel continued: That better relationship seems to be developing among pro-

cess engravers which some of us have been looking for. It can only work out for the benefit of the trade. If we can only come together now as a body, and consider things which concern our interests, I think it might be for the benefit of the trade generally. We have had it excellently discussed by Mr. Colebrook and the President. Mr. Walmisley has entered into the spirit of this Association with the greatest enthusiasm. (Applause.) I think his determination is to bring it to a complete success. We should do our utmost to help. I should like, in conclusion, to compliment Mr. Colebrook upon the excellent speech in which he proposed this toast and to thank him for it.

Mr. Carl Hentschel also replied. He said, I was making process blocks in 1879. I look back with interest to the efforts to form the Association, and although it has flagged to a certain extent, I am very pleased to see that there is some hope that we shall now be able to get the trade together. A great deal of the success has been due to the enthusiasm shown by Mr. Walmisley. Only those in intimate contact with its affairs know the trouble the work has involved. The Association is greatly indebted to Mr. Arthur Cox for the time he has spent in bringing forward his costing system, which, I hope, we shall all decide to adopt in some form or other. It does not follow it is going to earn money right away, but it will lay the foundation for future prosperity, and it may prevent the rule of thumb method. It is somewhat extraordinary that one solitary trade should be run on lines which other trades would repudiate. If we look around upon ourselves to-night we seem a fairly intelligent body of men; certainly a good looking lot; and to think we should be such adjectival idiots—(loud laughter)—I include myself—as to carry

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on our business mainly for the benefit of our customers! We seem to accept as gospel every statement made to us. If we met oftener, if we had monthly meetings of the Association, and could talk as to what is going on in our trade, it would be better. There is plenty of work for all, and if we would only charge a decent price for the work, and the worry, and the trouble, we could get it. I only hope that the Association has taken

A FRESH LEASE OF LIFE.

I think better things are now going to be realised with the assistance of all in different offices, Mr. Cox as President, Mr. Dargavel as Vice-President, and Mr. Hunter, who holds all the money—we did not see him at the last meeting, but I suppose it's all right. (Loud laughter.) With a little more trust in one another we ought to bring about a very much better condition. I shall do my very utmost. I have always been looked upon with a certain amount of suspicion. I don't think any man in the trade has had more abuse levelled at him than I have had. I repeat, the Association seems to have taken a new lease of life, and may we all join in the effort and jointly share the reward. (Loud applause.)

Mr. G. W. Jones was called upon, and his remarks were evidently well appreciated. He said: I have heard something to ponder over. I did not know the process engravers were in such a parlous condition. As a printer I say it is your own fault if you don't get reasonable prices for all decent, creditable work. (Laughter and applause.) The printer puts on a profit, whatever you charge. What difference does it make to him whether you charge a little more in order to obtain adequate remuneration, provided you all charge alike? (Hear, hear.) The greatest asset in a business is the knowledge of a fair price. Whatever is to be said of trade unionism, this at

least can be admitted, that it is only by unions that the employer in some trades can be tolerably sure as to what another employer is paying for his labour. As a printer I say—remembering the evidence of any railway bookstall, as to how wonderfully you have influenced our work—that printers and public are alike indebted to you for all your researches and labour. Mr. Jones enforced what he called the boomerang argument, that what a man did in his individual trade came back to him for good or evil. I am proud of the magnificent old trade of printing to which I belong, the speaker continued. I suggest we all feel proud of our craft and strive to improve its general conditions and position. In conclusion Mr. Jones emphasised the really noble character of the art, by which and by which alone reproductions of the noblest efforts of the great masters of painting could be carried, and were carried, to the homes of the very poorest in the land. (Applause.)

Mr. Walmisley, Secretary of the Association, who was cordially received, proposed "The Visitors." He spoke of his keen pleasure in seeing that large and very representative gathering. We take the presence of the visitors here to-night as implying that they do identify themselves with some of these objects which we have in view, and which we hold very dear indeed. Their presence is a great encouragement. It would be invidious to name certain visitors, but I may say that Mr. G. W. Jones, who has just spoken, is responsible for this work of art in my hand (the exquisitely printed programme). I hope our visitors will be our associate members of to-morrow—(hear, hear)—and that they will help us to make the Association all it should be, a proper and sufficient safeguard of the trade. (Applause.)

Mr. Wm. Gamble, who also was

warmly welcomed, said: I am glad to learn from the Secretary that the visitors are all going to join. (Loud laughter.) Twenty years ago, when I commenced the business of supplying your needs, it was with the firm belief that the engraving business was going to grow. I have watched it growing, and can see still greater things ahead. In America, where blocks are used much more freely than here, they feel that they have not seen the end of their business yet. I say that in this country, too, we shall see great things. I think we should all endeavour to lift up the business and try to make it a great industry. To do this you will have to work together and not perpetuate the distrust of the past. You must show sturdy independence in maintaining good prices for good work. The standard of work has been immensely raised. You have brought your products up to the ranks of fine art. But you have lowered the trade. People look upon you as mean men, because you are always trying to get each other's business by price cutting. You must show that you have some respect for yourselves, and that you mean to insist on fair prices. If you do that, I feel sure your customer will recognise that it is his duty to pay good prices for good work. The loss of one order is a small thing in comparison with the lowering of prices all round. If you want to succeed you must try to live up to men of character in business, and not descend to the meanness sometimes seen in the past. There is plenty of work for all. We don't want to stop competition. But for competition we might have all remained cave dwellers, or even have been hanging by our tails to cocoanut trees. Competition, however, can be exercised in other and better ways than simply by price cutting and selling products below their fair market value. (Applause.)

Mr. Robert Vincent (head of the en-

graving department of the Amalgamated Press) said: I think I might perhaps give Mr. Walmisley a hint as to how he might put the matter of joining the Association before the heads of some of the great concerns with whom the process engraving department is a side line, and who may not attach to it the importance that some of us could wish,—importance, I mean, relatively to their other immense interests. I am afraid in the case of my own firm, with the tremendous interests they have to look after, the advantages of belonging to this Association have been just put on one side for further consideration. That sort of unconcern works out in this way, that although I have been heartily in sympathy with the object of the Association, I have not for a long time been very much in contact with members in these or like gatherings. Yet I think I was almost an original member. I joined somewhere about 1895. Passing from that may I say it was very interesting to me, during a visit I paid to America about four years ago, to see the work that was being done by the International Photo Engravers' Association. What impressed me very much was the personal intimacy of the members. Every member seemed to know every other member by his Christian name. They seemed to speak so freely, too, to one another. I met Mr. Stiles, the President at that time of the Engravers' Association. He gave me a card addressed to “Mr. Photo Engraver, of the United States,” and with that card I found that I was made welcome in any process establishment that I visited in any City. I was free at once to go all over. I visited altogether about forty-five firms. Mr. W. Gamble also gave me some introductions, so I had no difficulty whatever in seeing everything there was to see. The engravers of America

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assured me that they felt quite friendly one towards another. If a business trouble or puzzle arose, a man, as a rule, talked about it with his nearest competitor and made a confidant of him, and they concerted some plan of action for dealing with a customer who had treated or proposed to treat them shabbily. They made it awkward for a customer to get served at all if he did not treat the photo engraver in a fair and honest manner. I have been very glad to be here and I thank you for your reception of the "Visitors" toast.

Mr. Frank Vaus (Vaus and Crampton, Ltd.): As a rule, having to make a speech spoils my dinner; but it has not done so to-night. I have to give you "The President." I might begin with that with which we usually end in such cases and say, "He's a jolly good fellow." If you were on the Council of the Association, you would give him high praise for the way in which he carries on the business. He has made a great success of his own business, and he is going to make a great success of the Association. He deals with a point in a business-like manner, and sets us all a very good example. He travels from Birmingham to undertake his duties. Some of us who are living in London don't attend the Council meetings as we might. He is the right man in the right place. But he wants your support as members of the Association. If you give it him, you will find he is going to sail the ship right slap into the harbour.

The toast having been honoured

The President replied: Thank you, Mr. Vaus, very much, and you, gentlemen, for the way in which you have received what Mr. Vaus has said. It has always been my endeavour throughout my life to act up to the simple maxim that whatever was worth doing was worth doing thoroughly well. I don't for a

moment think that my work for the Association has been done as well as it might have been, but I have done my best. When the offer of the Presidency came to me I was not exactly pleased. It was not an enviable task. But at the same time I felt when Mr. Carl Hentschel resigned, and someone had to take up the burden, while no one seemed anxious for the post, that I might as well have a cut at it. (Applause.) I have done simply what I felt was the right thing to do in the President's position. During the holding of this post I have thought and acted not immediately for my own good, but have done what I hoped was for the good of the whole trade. I don't profess to be a philanthropist, but I feel that when I am doing my best for the trade, I am doing the best thing for myself in my own business. All I can say to you now, in conclusion, is, think not of pence, but of larger sums. Think broadly, not narrowly, of your competitors. Remember your competitors are your own flesh and blood, having the same battles to fight as you are fighting. They are all pulling in one direction. The matter is in our own hands. We can improve the general conditions, and by improving the general conditions we can improve our own individual conditions and be well satisfied with the result.

Mr. A. E. Dent: I think the toast I have to give is not on the programme, but I think you will all agree that we should drink to the health of Mr. Walmisley. He is a man of enthusiasm and quicksilver. He has been an apostle of the process engraving trade over the last year or two. He has brought us all together and stirred us up to do our best. Mr. Gamble recently remarked that competition was one of the best things in the world. There is competition in cutting of prices, and competition in doing good work. That last is the com-

petition we all ought to aim at. Mr. Walmisley has brought us together with that end in view. We may well join very heartily in drinking his good health.

Mr. E. W. Hunter (Anglo Engraving Co., Ltd.): I have great pleasure in commending this toast to your acceptance. Mr. Walmisley is invariably kind and genial, and so long as he remains secretary of the Association it will progress and prosper.

Mr. Walmisley: Gentlemen, this kindness is surprising to me. I had not the slightest notion that you were going to pay me this honour. While thanking you very much indeed, I should like to say it would have been impossible to accomplish anything had I not received the support I have from the members of the Council, and especially from our Pre-

sident. I have been helped, too, a great deal by the fact that I am not in any way connected with your trade. I have tried to do my duty by you. After all, I am your paid secretary, and, of course, it is my duty to do everything I can to further your interests; but, besides being my duty, it is certainly also my pleasure. (Applause.)

It remains to say that the entertainment programme was of the most delightful order. The talent was of the very highest order, and encores were frequent. Those of the Council who were especially responsible for the provision of this talent may be most warmly congratulated. The final incident was the joining of hands and the hearty singing of “Auld Lang Syne.”

Proposed Costing Congress for Process Engravers.

A WRITER in another column of this paper rubs in the tale that “opportunity’s as big as we are.” Are we as a craft big enough to lift the whole business on to a higher plane? Towards that end it is most desirable that there shall be a costing congress for engravers. Mr. Cox, speaking as President, and speaking with the authority which attaches to a hard-working and successful man, urged upon the Association at the annual dinner that such a congress should be held, if possible, during the next twelve months. Mr. Vaus, himself a very practical and very successful engraver, speaking earlier in the evening, impressed how necessary it was for the members to support their President. If members differ from such a recommendation as this it would at least seem to be their business to give some

good reason for that differing. Personally, we are in favour of the congress. One has been held in the printing world, as an article in another part of the paper will show, for we present there its main conclusions.

There are one or two things which must be weighed in considering such a congress for engravers. The first is as to the time at which such a congress should be held. Perhaps it should not be for a year or even for eighteen months. The costing forms issued to members of the Association have not yet been in their hands many months. Those who are operating this system might very well desire to give a somewhat longer testing before they register conclusions upon it. There is, too, the fact to be considered that the great success of the Master Printers’ Federation followed eighteen

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months' specific preparing work. Altogether we would say that the Engravers' Costing Congress idea is so good that it would be a pity for it to be spoiled by undue precipitancy.

It will be held right enough. Mr. Cox is not in the habit of putting things in train and leaving them to take care of themselves. He has too strong a sense of individual responsibility. We trust

that a like sense of responsibility will manifest itself among the other members of our craft. We think it is becoming manifest, and altogether we anticipate the holding of the engravers' cost congress at the due time, after adequate preparation, and that its success will not be less marked than the success which has attended the cost congress just held in Printerdom.

The Rembrandt Intaglio Company.

IT is interesting to note that the Rembrandt Intaglio Printing Co., of Lancaster and London, are beginning to adopt bold advertisement. Being human they cannot be blamed if they have been watching with curious, and for a long time with amused, interest the more or less desperate efforts of many would-be competitors. But apparently they are now paying to these competitors the sincere compliment of taking them seriously; they are beginning to remind the public of our good Lancastrian service. It may not be generally known that it was this wonderful, if then little known, company that carried through the printing of the world's "Hundred Best Pictures" with which Messrs. Charles Letts and Co. made such a remarkable success a few years ago. The claim the Rembrandt Intaglio Co. make is that they are the original printers of the highest class of black and white and colour reproduction process by rapid printing. The company have reproduced the Royal collection of paintings in Buckingham Palace and Windsor Castle, the series of "Great Masters," Whistler's works, a series of etchings by Axel Haig, illustrations in Messrs. Christie's art catalogues, Queen Alexandra's "Christmas Gift Book," and the "Hundred Best Pictures," which we have just mentioned.

We have before us some specimens of the work of this now important and well-known company, and certainly they are genuine works of art, many of the reproductions are exquisitely finished and present every detail so dear to the heart of the connoisseur.

We are at one with the company when they state that "Photogravure is by far the finest black and white reproduction process, but that photogravure of indifferent quality is not worth paying for," but no one can say of the Rembrandt Company's work that it is indifferent, as a matter of fact their Intaglio Photogravure is, for the general public, equal to the best photogravure work done.

The company were the first to introduce this class of work, in 1896, and though they have had many competitors, and, if what we hear is true, there are more to come, yet they still stand unrivalled, the reputation of their work is firmly established, and they are to-day the premier company, and we admire them and their ability to keep their secret, for we believe that to this day the knowledge of "how it is done" is still theirs alone.

From the beginning the Rembrandt Intaglio process secured the highest appreciation of connoisseurs and collectors. Dr. Bode, Director of the Royal Museum, Berlin, describes their photogravures as

the outcome of a perfected, *and the only* process which gives the richness and velvety effect of the old mezzotints.

Speaking of this company in the great Printing Number, the "Times" says: "What the rapid and good printing of books has done for the diffusion of knowledge and the raising of the standard of general intelligence the Rembrandt reproductions of the great pictures have done for the inculcation of a sense of beauty and appreciation of the artistic masterpieces of all time."

The favour with which the work of this company was received by the public was evinced by the enormous demand for some of the earlier fine art plates produced by them for Messrs. Cassell and Co. We understand that the various sets of these plates demanded editions of from 25,000

to 65,000 copies of each set; a wonderful testimony to the value of their work.

It is a pleasure to present our readers with a supplement produced by this company, which shows the quality of the reproductions far better than any description of ours can convey, and we would recommend our readers to make enquiries of the company for work of the kind before placing orders elsewhere.

The output of the company is not confined to the production of famous pictures, etc., but they excel in equal measure in their portraiture, commercial work, catalogue illustrations of furniture, jewellery, statuary, silver plate, etc., etc., in short, this beautiful process seems adapted for every kind of high-class illustration work, and we never tire of seeing it.

Fitting Out.

PENROSE, or Griffins, or Hunters fit out the studio, according to estimates duly submitted and approved, but the contract for fitting out the darkroom usually goes to the devil, and an unholy mess he makes of it; the bath dish is of porcelain, with a geographical bottom about an eighth of an inch larger than the plate used in it, there is no cover, unless the operator can pinch a sheet of strawboard from somewhere. About sufficient silver bath is provided as will keep the operator awake when sensitising the plate, because if he did not keep the dish rocking all the time, the silver solution will not cover the plate, so much of it being wanted to fill up the valleys, the plate, of course, being balanced on the mountain tops.

For development, any old tea cup will do, and if it has a split lip, so much the

better, it will scrape away a bit of the film every now and again.

For copper bromide and iodine solutions, to provide dishes or dipping baths would economise enormously, but it is so much easier to pour away four or five ounces down the sink, and incidently bleach a film more or less evenly, the bottles empty so much quicker, and the boys have more fights as to which of them can mix a fresh lot quickest, and forget the correct formula.

There is also one funnel provided for the silver bath, but it is often pinched by the line operator's boy to filter his lead solution when the half-tone boy is making up some more iodine bleacher. Of course, this is likely to improve the bath, especially if the boy is left to wash the funnel.

MAC W.

The Prices of Offset Intaglio Plates.

WHAT are these prices? Reports differ widely. It should not be difficult to get at the facts. The trade is, as yet, in a few hands, and not all of those few seem to be in love with it. The work is none too easily done at present. If the etching is not exactly of the right depth, a certain amount of squashing of the extracted pigment appears to be inevitable. That means that more than ordinary care and pains are required, which again means liability to heavy wastage, heavy cost for doing the work over again, and perhaps again, before thorough satisfaction is reached. That short statement expresses the conclusion after, we believe, a good deal of work on this line. We hear contrary suggestions that the difficulties are exaggerated. For argument's sake, take it that they are. What then? Surely there is none the less a necessity for getting all one can on this line, in view of the no profit or poor profit on much other work? The costing system and other factors making for improvement in the trade may operate for quite a long time before the balance due to the engraver is made up, and any adventitious benefit in the form of a rather extra good price for a particular line for a year or two would be, after all, but a little balancing justice. Why on earth should not engravers make the best of the new demand, such as it is, even if they think that they can now, or that they will be able (when the special skill needed is more fully developed), to make these plates as cheaply and as easily as they can make ordinary half tone?

We put the matter thus, because we encounter the man who is "sure that there is no particular trouble." He may have

been lucky, or he may only mean that "there isn't going to be any particular trouble *next* time." Wonderful things are always going to happen "next time," and to be sure they sometimes do, and thus keep up the interest and spice of life. But "next time" is a poor thing to gamble on. Why gamble at all? There must be some "gambling in futures" going on if what we hear of the unequal prices charged is true. One-and-twopence seemed at one time to have a chance of establishing itself as a standard price for these plates. It appears to be charged now upon certain occasions, for certain work, by certain firms. A shilling, however, seems to be tending to replace the one-and-twopence, and tenpence to be likely to replace the shilling, even with what we call good firms, and in normal circumstances of working. Then sevenpence has, by report, "got in" now and again in other firms' usage, and report or rumour sees the figures decline even lower—small by degrees and un-beautifully less. We do not like to name the lowest rate of which we have heard a rumour, and, indeed, it would serve no useful end, since we could not affirm the correctness of the report. If it was correct in regard to any one job, it may have been through mere accident; it is repudiated by the firm named, as we are very glad to know. We suggest that the rates for these particular jobs be matter of informal exchange between the makers. Probably each one of them knows who are the other seven or eight or so who are doing this work. The intercommunication should not be difficult, and might eventually lead to closer working arrangements.

Harmony and Discord as applied to Colour Printing.

"As the strains of classic music delight the ear, so artistic colouring, symmetrical shapes, dignity and richness, appeal to the eye and taste of nearly all intelligent men."

IN the successful arrangement of colour effects, in painting or in printing, there is one fundamental principle which is so obvious that it makes a direct appeal, even to the un-instructed mind. Every artist and every craftsman associated with the reproduction of colour effects, knows that harmony of colour must be the dominant consideration in all colour schemes, and even when colour contrasts are introduced into such schemes, their effect to be pleasing to the eye must be in perfect accord with the dominating colours of the subject. Harmony and discord are easily perceived and appreciated by the untrained eye. Yet how often is this rule insisted upon in practice?

"Printers do not give enough attention to the use of colour" is an accusation which was made quite recently, and there is undoubtedly some element of truth in it. Then the writer continues: "They are too prone to think that as long as the type design is correct and in the latest style or vogue that all else is of practically no importance. This, however, is a great mistake. Colour will make an appeal to people who would not be in the least affected by any style of type or design. Hence it is necessary that the printer understand colour."

And there never has been a period in the history of the printing trade with so many opportunities for the application of correct colour principles, and also so great a need for their commercial employment.

First of all it will be necessary to understand the laws which govern the harmony of colour. They are by no means complex, and once they are clearly understood practical application should be easy.

Taking up the argument then, right from its earliest stage, we find that the three primary colours, in varying proportions, will produce the vast range of hues which are now known to the artistic and industrial world.

Any two of these primaries mixed together will give a secondary colour, and in this way violet, green, and orange are obtained. And now we reach the point at which complementary harmonies are evolved. Harmonies of contrast, they are between a primary and secondary colour, for each of the three secondary colours already indicated will harmonise perfectly with that primary which *does not* enter into its composition.

Take for example green, obtained by a mixture of blue and yellow. It harmonises with red, i.e., the colour which *does not* enter into its composition. The rule is very simple and quite easy to remember and apply for work-a-day use.

Following these considerations still further we note that the secondary colours also have their harmonies of contrast, produced in exactly the same way, and even the secondary and tertiary colours can be thus combined. One feature of this last combination is well worth noting, and that is, the production of subdued and softer effects—more delicate hues, which are usually described as broken colours. It may require a trained eye fully to appreciate the beauty and richness of these broken colours, but they

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are infinitely more pleasing than the brighter and more violent combinations. Moreover they are steadily growing in popularity, and consequently there is a distinct tendency towards their more frequent use.

AN IMPORTANT CAUTION.

As opposed to the harmonious contrasts just referred to, which we might reasonably regard as perfect, we have the contrasts produced by a combination of the primary colours. These are at their best only tolerable and frequently discordant. Their juxtaposition invariably affects the brightness of the colours involved, and the results are not pleasing.

Then there is another form of discord, which is perhaps more a distraction than an actual contrast of colours. It is based upon the principle that "too many forces of attraction become confusing to the eye." If, as is frequently done, we break up our job for colours in such a manner that the colours alternate over the entire page, the effect upon the eye is far from satisfactory. *The arrangement of the colour on the page* should be as carefully considered as the arrangement of the type.

Just as a few groups or masses of type tend to simplify the type design, so will

a small number of spots of the brighter colour simplify the colour arrangement. The idea is that the darkest colours of any combination should be arranged in masses, with the bright colour appearing only in spots. We recall one writer speaking of "The proper grading and subordination of a great number of strong and brilliant tones, that will fall upon the optic nerve with one consonant impulse, starting from one principal point in the picture without meeting with any other colour projection equal to that which excited the attention at first. In other words, one point must be selected which should receive the full power of expression in light and shade, together with the maximum force which two colours are capable of expressing. Then all other mixtures can follow, as long as they won't mar, or interfere with, the dominant key of the colour composition presented."

As a journal, we are sometimes reproached with giving too much attention to scientific aspects and too little to artistic aspects. In fact it is said that having reduced the matter of colour to an exact science we have quite lost the art. Well, here, at any rate, we are glad for a moment to be saying a few words on the art side.

Hints for Engravers from the Costing Congress.

THE spectacle of 1,200 printers assembled in the Kingsway Hall, and all in deadly earnest about the better ascertainment of their costs and more equitable payment by their customers, is one which has had no parallel in the history of the Graphic Arts in this country. It has been paralleled in America. We are behind the States in

that respect, though not generally so behind in printing and engraving matters as some Americans like to think; in engraving technique, if it comes to that, we are not behind at all. If we cannot have the honours of being the first in the field of costing reform, we may perhaps do what has to be done in a better way, because of the greater experience gained

by those who have been the pioneers.

In this connection we do not forget that the Engravers' Association has its own system of costing, carefully and elaborately adapted to the special requirement of the particular business, which is what every costing system should be. Adaptation, indeed, is the word which was constantly on the lips of the principal spokesman in the Kingsway Hall Congress. The leaders made it abundantly plain that while they were putting before the 1,200 printers there assembled something they deemed worthy of their honest consideration and their adoption as a uniform method of business calculation, they yet advised that the system should be adapted to this particular business by any particular printer.

We will try to express the essence of what the Costing Committee of the Master Printers' Federation arrived at during its eighteen months hard work upon the matter, and what the Congress unanimously approved. They advised that every printer should first take careful note of all his expenses at the moment, doing this by help of his last profit and last account and balance sheet, or any other data. He should divide his business into departments, and should run each department as a separate business, and seek to make it pay well "on its own." He should adopt this departmentalising, even if the scope of his business were quite small—even if his workshop were but one big room—and he should attach to each of the departments the expenses particularly and naturally attaching to that department. The remaining overhead expenses, the non-departmental costs, he should recover by way of a percentage upon the combined wages—plus—departmental costs. The Committee illustrated with a large diagram how this was arrived at, and in

the case outlined for this final recovery of non-departmentals the percentage was $21\frac{1}{2}$ per cent. It was strongly recommended that there should be at least 10 per cent. put upon all paper or other stock handled in an order. The Committee felt indeed, that it should really be a little more than 10 per cent., but their spokesman said they were afraid of scepticism among printers, and hesitated to embody their full convictions.

In one way it would come to the same thing, if they put too little on to the handling account, they must add a larger percentage in the way of recovery of overhead charges. In another way it is not the same thing. Col. Wright Bemrose, the able Chairman of the Conference, pointed out that the costing system would be of enormous benefit to any printer compelled to prove a claim in the High Court, or before a referee, or in the County Court. If he had nothing but a record of the so-called productive costs, he might find himself compelled to put on 100 per cent. or more in order to recover a reasonable, say, a 10 or 15 per cent. actual profit, and it was always very difficult to persuade a judge that 100 per cent. was a necessary profit rate. The Chairman cited a case, which had just occurred, in which their Secretary had assisted a printer as best he could, but it had been found quite impossible to make plain to the court where cost ended and where profit began.

In the case of the machine room a device of extreme interest is suggested. The capital cost of all machines is represented as so many multiples of £50. Fifty pounds is called the machine unit. Any part of £50 is considered to be a unit—either a £100 machine or one selling at £55 is classed in the two-unit category. A Miehle two revolution machine will be, say, a ten unit machine.

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and if it runs for 35 hours in a week, you multiply 10 by 35 and multiply the resultant 350 by, say, 3d., or whatever may have been found to be the exact sum per unit hour, which will serve to recover all the non-productive charges attaching to the machine-room. The wages of the machine-minders and feeders are then added. It is recommended that reckoning be made that all the machines are attended by journeymen, and then that a sixth be deducted from their wage figure to represent the economy due to use of such apprentice labour as the trade unions will recognise, and, as practical custom shows, is not exceeding the limits of expediency. Mr. Harry Cooke, the well-known Leeds printer, gave the Congress a warning as to not going too far in expectations as to the power of any man to look satisfactorily after several machines at once—the number depending naturally upon their size and character. A point was made incidentally as to the different degrees in which apprentice labour approximates in value to journeyman labour, and it seemed to be agreed that the two were much nearer together in the machine room than in the case room; and that this was so, even if one limited the contemplation to apprentices who had served some considerable part of their term.

The Committee advised that a statement of the cost of production be made out for each week, by way of setting down wages actually paid, plus first the departmental costs, plus next a percentage on total departmental costs (including wages) this percentage being calculated to recover all the overhead costs not specifically attachable to departments. Against that would be set down each week and upon the same sheet a statement of the "value of production" in the department. The firm could then

see whether there was a deficit or a surplus in a particular department in any week. It would be a very good concurrent guide as to how the firm was progressing.

So far printers have a pretty good mode of making sure that all costs are included. How now are they to take care that the jobs done are figured in such a way that the "value of production" shall approximately balance the cost of production, leaving the printer the simple and pleasant task of putting on a profit which shall not seem excessive by whatever fair critic regarded, and yet shall be ample to give a reasonable reward to himself? The answer is that the works are to have their carefully ascertained hourly rate for each class of worker. In this connection it is important to remember that every time the printer pays a penny in wages he has to pay for the looking after the penny, at least a farthing in unproductive wages. Further, it has to be remembered that the so-called productive worker is not producing all his time. With these cautions borne well in mind, the Committee showed how each business was to arrive at its own hourly rates to be applied to all "chargeable hours." In the case room, what was sought was what was called a compositor hour. It would appear that this in London means an expense of about 1s. 10d., of which the actual wage of the compositor is only 9½d. There is no need for us to elaborate further the details of this particular system. Any one interested can learn more at the office of the Master Printers' Federation. We think, however, the fundamental principles are worth noting and comparing with those of the costing system put forward by our own Engravers' Association, and which has met with much favour by those who have adopted it.

Forthcoming Exhibitions for Engravers and the Graphic Arts.

QUITE a series of Exhibitions are now being promoted to which the attention of the craft is earnestly directed. When we reflect upon the almost entire absence of British representation at the recent Exhibition in Italy and the inadequate show of British arts in the Exhibition at Brussels, we are the more anxious that there shall at least be no failure to make reasonable avail of future exhibitions through not having the matter brought up for attention early enough. In the series to which we have to draw attention the first is the Fifth International Printing Exhibition, to be held in the Agricultural Hall in London on May 13th to 30th of next year. The indications are that this will be a very successful display.

Then an International Graphic Arts Exhibition will be held at the Industrial Palace, Amsterdam, opening July 15th, and closing September 15th, 1913, though the period may be extended by a month. No similar exhibition has been held in Holland since 1892. There are to be various groups. Group II. will comprise Engraving and Lithographic Machines, and Stereotyping and Electrotyping Machines. Group III. includes printing of every description, plain and in colour, photography and photo-mechanical processes of all kinds, picture postcards, and bookbinding. Group IV. comprises factory installations for the graphic trades, including exhibits in relation to lighting, heating, safety, hygiene, and "control." Group V. deals with technical education; and Group VI. with books, engravings, daily and weekly papers, and other periodicals. It is expected that railway charges will be re-

duced and import duties remitted on all articles consigned to the Exhibition. The Secretary of the Exhibition may be addressed at 790 Keizersgracht, Amsterdam.

There is to be an "exposition of the graphic arts," with a special reference to bookmaking, in Leipzig next year. It is to be under the patronage of the King of Saxony; and the enterprise has the formal approval of the Kaiser and several European Governments. Saxony and the city of Leipzig have agreed to pay £20,000 towards the expense; the book publishing interests of Germany have also subscribed £30,000. The exhibition is to mark the 150th anniversary of the Royal Academy for the Graphic Arts and Book Industry of Leipzig, the plan having been conceived by the Deutscher Buchgewerbeverein, which is an organisation of all interests allied with printing and bookbinding, and controlling industrial and commercial conditions in the several trades of the business.

The Exhibition opens in May and closes in October. Intending exhibitors are required to notify the Manager by June 30th next. There are to be sixteen groups, and these are to be sub-divided. The Technique of Reproduction Processes is to be one group; Typefounding, Electrotyping, and Stereotyping is to be another. "Protection and Benefit of Operatives" is the title of one of the groups, and sounds strangely, but not so strangely as it would have sounded a few years ago. We are glad to give our readers early information on these matters, and shall be very interested to note the promptings of their enterprising spirit. An exhibit that was prepared for

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the Agricultural Hall might without great difficulty be removed to Leipzig, but we have not heard of the date in May fixed for the Leipzig opening. Perhaps it has not been fixed. Great exhibitions of this kind are in a very unprepared state for two or three weeks after the formal open-

ing, and an English exhibitor who moved his display from the one exhibition in London to the other in Leipzig would probably find that he had not missed so very much, even if it should be the case that there was a fortnight's overlapping.

Don'ts that Matter.

DON'T forget that if you have very thick paper to print upon, packing that has served for a thinner paper must be reduced. It is one of the obvious things which seem to be forgotten too often.

Don't forget that rollers must be kept in contact with the vibrator.

Don't forget that the locking of the forme too tightly with bed clamps will cause a spring.

Don't forget that sheets may buckle if the feed tongues are too high above the tympan.

Don't forget that if the chase is badly sprung you may expect a slur.

Don't forget that slurring may arise from too much paste on overlays; and of

course it may arise from any fault in make-ready.

Don't forget that to have spongy or springy packing is asking for slurs.

Don't forget that a slur is likely to attend the placing of a forme too near the front edge of the bed, thus printing after the bed has commenced to slow down.

Don't forget that faulty make-ready is often the cause of bad register as well of slur.

One journal which has done a useful share in the way of encouraging better presswork, *The American Pressman*, gives a sensible counsel to a machine minder:—When anything is wrong, examine your own work first, then the compositor's; then the machine.

HALF-TONES FOR OFFSET PRESS.—

The following extract from the *Harris Monthly* is interesting to photo engravers, as it tells us how the Editor of the monthly views those engaged in producing process plates. Perhaps with larger experience he will alter his opinion. The process engravers known to us are, we think, alive enough to produce any kind of plates required by their customers. The general run of photo-engravers are so used to making half-tones for type presses that they are not at all likely to make a proper half-tone for an offset press unless emphatically instructed to do so. For the type press the engraver has to reverse, or "strip" his

negative, while the cut for the offset press is made without reversing, and is made, therefore, with less work, which should be an inducement to the engraver, but the force of habit is so strong that unless a special stress is laid on the fact that the cut ordered is to be used on the offset press, and is not to be stripped and reversed, the engraver is quite apt to send a regular reversed half-tone which can only be used by reversing the transfer. Some photo engravers, however, are catering to the offset press operator and advertising half-tones for the rubber blanket press. These cuts are as a general thing much better than the ones made for the type press and there is less work on them.

Hints for Juniors.

Wet Collodion Negatives.

COLLODION is supplied in two bottles, the larger one containing plain collodion, the smaller one the iodising solution. The plain collodion consists of pyroxyline dissolved in a mixture of ether and alcohol, the iodiser of various iodides and bromides in alcohol.

These two solutions are mixed for use in the proportions of one part iodiser to three parts plain collodion, and until that mixture is made the two separate solutions will keep for any reasonable length of time.

After the collodion is iodised, i.e., after the two solutions are mixed together, it commences to ripen, and is ready for use in from a week to ten days.

In cold weather the addition of one ounce of ether .720 to each pint of iodised collodion will make the film set quicker; in warm weather add 1 ounce of strong alcohol which will retard the setting of the film.

When oyster-shell markings are persistent and troublesome, the addition of a few drops of water to the collodion, a good shaking up, and a night's rest will generally get rid of the markings, the cause being the use of a pyroxyline giving too horny a film.

Where collodion is difficult to obtain it can be made by using cellodin instead of pyroxyline, cellodin being a mixture of tested pyroxylines, ready to dissolve in ether and alcohol. A good formula is:—

No. 1.	
Methylated spirits (pure) ...	35 ounces
Ammonium iodide	170 grains
Cadmium iodide	200 „
Ammonium bromide	30 „
Calcium chloride	30 „

In another bottle place:—

No. 2.	
Cellodin	1 ounce (cut up into strips)

Ether .720 ... 45 ounces
Soak over night, then add No. 1 mixture; shake up well, at frequent intervals, until the cellodin is all dissolved, then allow to rest for a week, at least, before using.

Penrose send out a package containing cellodin and the necessary iodising salts, ready for solution. The silver bath is best made up with tap water; don't use distilled, it *may* be quite free from soluble salts, but it has generally something in it that contaminates it for the silver bath. To make up 80 ounces of bath put sixty ounces of clean tap water in a clean winchester, and in a clean measure dissolve 7½ ounces of silver nitrate in twenty ounces of water, add 5 drops of collodion, iodiser, stir up well, then pour into the winchester containing the 60 ounces of water, shake up well, add 5 drops of liquor ammonia, again shake up, put the bottle into daylight for a day or two, or until quite clear, then filter through cotton wool, add 30 drops of nitric acid, and the bath is ready. The question of keeping the silver bath up to working strength of forty grains of silver nitrate per ounce is best solved by a knowledge of the amount of silver nitrate absorbed by each ounce of collodion used. In the formula given above for eighty ounces of collodion, 500 grains of silver will be necessary to convert the haloids, in the collodion, and form the sensitive haloid of silver; each plate sensitised in the bath will take away silver nitrate on the surface of film and on back of plate, so that at the very least 250 grains will be removed in addition to the 500. This means that out of the 3,000 grains of sil-

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ver nitrate used originally to make up eighty ounces of silver bath we have only used 750 grains to sensitise the collodion film formed by eighty ounces of collodion, reducing the bulk of silver solution to about seventy ounces, and the strength per ounce of silver nitrate to 36 grains or so, and if the bath is used carefully and kept free from contamination

a considerable further reduction may be made before the quality of negatives will deteriorate.

W. T. WILKINSON.

Queries from juniors will be replied to in the Magazine, or by post when stamped, addressed envelope is enclosed with query.—Ed.

What the Accountant cannot figure upon.

THERE are many things which might come under this heading. At the moment we are only thinking of one. That one is the greater intimacy of craft relationships between employer and employed in a small plant, as compared with a large plant. A very small shop has, we will say, a slack time. The fact of the slackness is obvious; everyone in the place knows it. The very office cat knows it. It is not a pleasant, but it is not an inconceivable thing for the principal, on such an occasion, to approach one of his few helpers and say that he's sorry, but he would like him to do only half-time next week, since there is not the work in the house to warrant paying for the full week's service, as one can see for himself. Of course, legal rights are not affected by such ups and downs, but it is not always worth while to insist upon the letter of one's bond. There are more weeks than next week to be considered. There is, too, that intangible, inexpressible, but very real thing, a fellow feeling on the part of the worker for the small struggling engraver, who may, very likely, not be taking home for himself so much as he has actually paid the man to whom he is suggesting a half-week's work next week. From whatever cause, such a request, if it is not made too often, is likely to be complied with.

But what of the large house. It may wish at times or the head of some or one of its departments concerned may wish at times, that it could make like suggestion. It can, of course, give the shortest notice determined by the periodicity of wage paying, in any given case, or by the agreement which may have been signed. But it is loth to take this step; for the men discharged may be badly wanted in a week or two. It may be definitely known that they will be so wanted. A consideration like this, which, after all, only touches one matter of business administration, suggests the large amount of truth there may be in the often emphasised dictum, that it is the larger engravers who are peculiarly liable to suffer from the incoming of a bad time. They cannot cut their coat according to their cloth so immediately as the small house.

WHEN THE FILLER PAYS.

What are the circumstances in which it pays to take the filler job? One is disposed to answer "Never." But an immediate answer, and one given without reviewing once more even a familiar matter, is apt to be too one-sided. It is conceivable that the "filler" has at some time been of use. What is that time? It is when there are certain expenses which are not instantly reducible, let will-

power and brain sweat be what they may, which irreducible expenses or some part of them can be absorbed by the “filler” job. You are getting a customer to pay at that juncture certain of your unproductive, certain of your overhead charges, which otherwise must come out of your pocket.

This matter, “When the ‘filler’ pays,” was very well treated a few years ago in a paper entitled “Diagram accounts for engineers.” The argument was thrown into graphic form. “Diagram accounts for printers” followed upon this, the basic idea being frankly credited to the engineering precedent and all the needful modifications being made. “Diagram accounts for engravers” could easily be developed in the same way. It is undoubtedly true that while the particular mode in which a process is presented may add nothing to actual knowledge, it may add something to instant and to continuous realisation. However, our mention of the diagraphic modus is purely incidental; what we are concerned with is to recognise on the one hand, that it is impossible to say that a “filler” job has never under any circumstances been warrantable; and then to attach to that recognition the urgent caution that such emergencies must necessarily be few, and that it must never be forgotten that even in those few cases the expedient is attended with the very greatest dangers.

We say dangers, for the perils are various. They include the danger that one may be bull-dozed into supinely accepting certain overhead charges as inevitable and as necessarily to be met by “fillers” in bad times, when really those overhead charges are not essential, and should be boldly cut off. Another danger is that emergency prices tend to stereotype themselves as standard prices. A third danger is that of gossip. The taker of the

“filler” can only muzzle his own mouth. A fourth danger of which the writer is reminded by actual experience is that the customer who has secured service on terms which he feels sure the plate-maker does not wish to disclose, may have little scruple as to exactly fulfilling the payment conditions on which alone his work was undertaken so cheaply.

Not the smallest danger is the psychological one, the injurious effect upon the morale of the plate-maker who carries the “filler” policy even an inch too far. He begins to regard himself as “the cheap man” that others are beginning to call him. He is not proud of what he is turning out; or, if he is a good craftsman who cannot bear to do less than his best with any work entrusted to him, at whatever price, then he certainly is not proud of his financial conduct of the matter. He perhaps begins, too, to glimpse the horrid truth that a works and a staff which once sinks to doing any sort of work which will be passed, for any sort of price that can be got, may vainly endeavour next month or next quarter to give the very best possible work to some other customer willing to pay the best price. Nothing would appear to be more firmly established in the canons of manufacturing practice than that the same staff cannot be successfully switched, at will, and indifferently, on to fine work and on to slop work. It is true that a body of very expert men operating a very powerful and adaptable plant, whose chief may find himself temporarily compelled to meet an onslaught in prices, may readily prove that if they *must* do it they can alter their style of production, and they, too, can turn out the “good-enough” rubbish, and in a mass and at a speed which shall leave their competitors behind. But they can only do it at a price.

That price is this, that they cannot

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instantly revert to the old methods with quite the old perfection, if they have for any appreciable time been slap-dashing through their tasks. A professional player once declared that if he were prevented by sickness or any cause from touching the piano for three months, he would not attempt to resume his concert career. He may have exaggerated the effect of such three months' withdrawal,

though we feel that he should be a better judge as to that than we. There was undoubtedly some, if not entire, warrant for his avowal; and what we are concerned with is to emphasise that in different degree much the same thing obtains in plate making. Just as we say that the price of liberty is eternal vigilance, so we might say that the price of quality is persistent care and practice.

✓ *Four-Colour Blocks; with a Note on Covers.*

ON the whole we have credited Germany rather than Great Britain or France or America with a predilection for four-colour process plate-making. The March "American Printer" leads off, however, with a pleasant example of four-colour—"An American Beauty." The subject is well selected and the paper has been well grained, which undoubtedly improves the effect. Curiously we are less conscious of a canvas suggestion (from the graining) when we look at the face than when we look at any other part, and probably that is not what was desired. Balancing pros and cons it looks like a decided argument for four-colour.

Another hint from the same issue is that the engravers in the States are not to be allowed to retain their magazine cover field unchallenged. Offset litho is romping in. The "Metropolitan" Magazine has to give anxious thought to its covers, as all magazines must do. The cover must be vivacious; it must suggest that the compilers and the readers of the magazine live in the present hour and live every minute of that hour. It must be unlike and better than any cover previously issued! If it is the face of a pretty girl, it must be a pretty girl, not a fashion plate. That fashion plate

danger seems to be a great worry in many magazine cover "make-ups." Indeed, it is being bluntly said that the usual pretty girl won't do at all; she is not arresting enough.

"You have got to stop people as they are walking past the news stand," the cover artist is told. "They don't come back, as a rule. You have got to attract the eye from a distance of 10 or 15 ft. Your cover, to be a winner, must carry and stand out from the heterogeneous mass on the news stand."

Mr. F. A. Jacobson, art director of the "Metropolitan," supplies the journal with a really extraordinarily fine colour offset litho of a girl's head, used as a "Metropolitan" cover. His magazine is striking out lines of design in various ways. It is very large; its cover is 12 ins. by 9 ins. As it uses the rubber offset it employs a rough paper, as to which he writes: "It is possible to get a faithful reproduction of the artist's drawing" and "it adds tremendously to the distinctiveness of the cover." He exults in the unlimited colour range and the possibility of using from four to ten colours. He has placed the work in the hands of the Brett Litho Company, the only lithographers in the States "who are doing practical magazine work with less

than eight colours." "Previously the number of colours for litho—eight to ten, twelve or even more printings—made the price prohibitive for general magazines and we were fortunate in being the first general magazine to use only five colours for litho work. It is expensive and comparatively slow, as nearly all the work has to be done by hand instead of by mechanical means. The results, however, seem fully to justify the experiment, for it was an experiment when we took it up. There is much satisfaction in the thought that one has taken a chance with much to lose and then has 'put it over.'" Mr. Jacobson concludes: "We are aiming high, and recent altitude records indicate that there is still room overhead. Climbing is really more fun than sliding if you have the muscle."

The girl's face on this offset printed magazine cover is about 5 ins. by $3\frac{1}{2}$ ins. ; there is a mass of very bright auburn hair; and even a dash of blue at the top and back of the head seems quite in place; though it may not be ribbon; it may be a daring light effect. A dress-maker could make nothing of her attire save that she wears a light-blue blouse covering something of yellow, a fairly large tapering piece of which is revealed at the neck. The surround is simply purple unrelieved, save for there being various densities of the purple, and that the word "Metropolitan" is in white at the top of the page. I suppose they were afraid that the bookstalls could not or would not show the name properly if they put it at the bottom of the page instead of at the head, which would, artistically, have been incomparably better. The point for us to note is that rubber offset litho is likely to be a serious challenger of the engraved plate for a magazine cover, and, having noted the fact, to set about to meet the competition.

✓ Foundry.

WE have lost the pronounced personality of Mr. Wesel, but the work he set on foot and made so notable through the world continues to progress.

The Wesel 2,000 ton hydraulic lead-moulding press is the present-day wonder. It is the Super-Dreadnought of the foundry. It applies 2,000 tons, or 4,500,000 lb. pressure upon 540 square inches of platen surface.

The immense press installed in Eyre and Spottiswoode's foundry is a gigantic Wesel. It has cost more than many a well-equipped foundry of ten years ago cost for its whole plant.

Features which the makers contend for as marking this press are a quick, smooth rise and return of the platen, a single lever control of the rise, pressure, dwell and return, and electric automatic pressure limit adjustment.

Perhaps there is hardly any department of newspaper production in which individual men's ideas show more variation than the foundry. One may apply to the different foundry chiefs a classic comment that "where they do agree their unanimity is wonderful." Or even that other saying by a humorous Frenchman, "the more they differ, the more it is the same thing."

Every manager of a stereo branch worth his salt has his own opinion as to the kind of facing which is the best for his flongs. In the Edward Lloyd Foundry, for instance, it became the practice a year or two ago to coat something like 2,000 flongs a week with Stereoline.

If the able head of this department could have his way, he would treat pretty well every flong with this facing. Besides flongs with illustration, there are others with very small type or with some-

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thing of a filigree nature, which makes them peculiarly suitable for such treatment. Floggs thus treated can be used in about two hours. They are, however, better for being left about a fortnight, if possible, to mature.

The "Paris Daily Mail" is another firm believer in the virtues of this Williams' Stereoline enamel.

When insurance is so much in the air the report of action taken by the Royal Electrotype Co., Philadelphia, will be interesting. It has adopted a plan of insurance which provides each employee with a policy at the Company's expense, guaranteeing payment to his heirs, at death, of £200. The arrangement was made with the Equitable Life Insurance Society on what is said to be a new plan of insurance. It is known as "group" insurance, and its details were worked out by Herbert J. Flower, special agent of the Company. In a case such as that of the Royal Company, where there are more than a hundred employees, no physical examinations are made. Employees who become associated with the Company after the adoption of the "group" plan, however, must be subjected to an examination. A history of each employee is given and a policy issued in his name, which ceases to be operative should he leave the employ of the Company.

There are various modifications of the plan which enable its application to plants of all sizes and conditions. Under the one here mentioned the expense will be something more than £20 per month, with a dividend at the end of the year, which past experience indicates will be about 30 per cent.

Business in duplicate plate-making has of late been exceptionally good. There is, indeed, generally plenty of work; it is the payment that is often so wrong. As the familiar business wheeze has it, "the customers leave little to be de-

sired!" That, no doubt, is being altered now to some extent by the working agreement between masters and union men for the maintenance of a minimum price. Unfortunately, what with the market rates for the articles bought by the plate maker, even minimum prices for the plates he sells cannot be considered as really adequate.

This working agreement, by the way, is wonderfully successful, so far. Three important houses that were outstanding having come in, there is now only one trade house holding aloof. I believe that no sort of unfriendliness has been manifested towards that outstanding house; nor probably manifested by it towards the firms acting under the entente cordiale. It is recognised that it has a right to do as it pleases in the matter, and if there is any satisfaction on the part of the combined masters regarding the outstander, it is simply this, that as almost all the labour in the duplicate plate-making world is union labour, it may not be very easy for the non-conforming house to suddenly and greatly extend its turnover. Personally, we wish to see the agreement succeed, and we should therefore be glad if the last outside firm could see its way to co-operate. We like this spectacle of all the employers of a trade combining with all the employed by the trade for at least the raising of profits, which have not been adequate for the upkeep of efficiency, and the raising also of the workers' standard of living, but see that it can be abused. We see that it could be perverted into a sort of syndicalism; but think the risks are not serious, and would accept them.

Don't forget that the rollers are, as French pressmen are fond of saying, "The very life of the press." If they are out of condition, nothing will be satisfactory.

The Leasing Agreement of Printex Co., Ltd.

THE following conveys the substance of the agreement for hiring of the Step-and-Repeat Machine for rapid plate preparing and other apparatus therewith connected, offered to be installed on leasing terms by Printex Company, Ltd., of Central House, Kingsway, London, E.C.

The agreement expresses that the equipment provided is “intended to be similar in all respects to that now in operation as applied to lithography at the office of the company, where the same has been exhibited to and inspected by the licensee or his agent as the licensee hereby acknowledges.” The company are to deliver to the licensee and complete the installation of—

- “One Step-and-Repeat Machine,
- “One Unit Camera,
- “One Half-tone Camera,
- “One Printing Machine,
- “One set of Printex Mercury Lights,
- “One set of Printex Arc Lights,
- “One Plate Drying Machine,”

and all the parts thereto as exhibited at the offices of the company. The licensee is to be free to work “at the said premises,” and in the course of his business during five years from the completion of the said installation, all processes and formulæ now used by the company in connection therewith, and any additional patent device, apparatus, machine’s parts or processes which may be utilised upon or practised in connection with the said equipment.

The licensees shall have no right to repair, replace, change or modify any part of any machine, equipment, mechanism or part installed or supplied under this licence without the previous consent in writing of the company. The company will make all repairs at 10 per cent. upon

actual cost price. No appliances (says the 9th clause) are to be used upon or in connection with the operations of the machines supplied by the company, save such as the company shall furnish direct.

Clause 10 is important. “The licensee shall not, without the previous consent in writing of the company allow any other person, firm or company, or their agents or employees, to use the said machine or equipment or any part thereof, whether for or without a consideration or for any purpose whatsoever; nor transfer nor sub-let this licence, nor all nor any rights hereunder, nor remove the machine and equipment.”

The licensee is not to dispute nor contest the validity of the said patents or the rights or title of the company to or in any of the said patents or the right of the company to bring any suit or action against the licensee for infringement or for enforcement of any of the provisions hereof. The licensee also agrees not to assist in nor take an interest or be interested in any way, or lend any support whatsoever to any actions, suits or other proceedings directed against, or which may, or do, or are intended to call in question the validity of the said patents or the title thereto. Should any action or suit be brought against the licensee for alleged infringement of any letters patent on account of the use of any of the company’s machines or appliances, the licensee is to permit the company to defend such proceedings in the name of the licensee or the joint names of the licensee and the company.

The company shall prosecute at its own expense any and all infringements of the said letters patent, and of any, and all letters patent which may hereafter during the term of this licence be granted.

Lecture Revival at Bolt Court.

An Attractive Syllabus.

ONE of the most interesting of the operations of the L.C.C. Engraving School—its series of special lectures—has necessarily been interfered with a good deal by the events of the last two years. Mr. Bull, Principal, has arranged a course for this spring, and we heartily advise all workers in the trade who can do so, to avail themselves of these facilities.

The lectures take place at the School, and we will cite those still forthcoming. On April 2nd, "Technical Photography" is treated by Mr. F. T. Beeson, F.R.P.S. On April 9th, Mr. Beeson continues the subject, treating then of "Apparatus." "The Photographic Lens" is treated by Mr. Clifton, F.R.P.S., on April 16th. "Catalogue Photography" is Mr. F. Brookman's subject on the 23rd.

On the 30th April, Mr. H. Bennett, F.R.P.S., will speak of "The Selection of

Plates and Exposure." Mr. Bennett also speaks on May 7th, that evening on "Development and After Treatment"; and on May 14th he follows up with "Photographic Printing."

The Principal deals on the 21st with "Orthochromatic Work," and on the 28th with "Museum and Gallery Work." Mr. Bennett returns to the forum on June 4th, and treats of "Architectural Photography." At the moment no lecturer has been secured for June 11th, when "Press Work" will, it is hoped, be treated. Probably the Principal would be glad of a volunteer. The ex-Principal, Mr. A. J. Newton, F.R.P.S., revisits the School lecture platform on June 18th, his subject being "Colour Photography." "Flashlight work and Photography in Difficult Places" is the subject on June 25th, treated by the L.C.C.'s Official Photographer, Mr. A. E. Lane.

Horgan's "Process Work."

IT has just come to our hand from the United States. Mr. S. Horgan has for many years been to the front as the technical guide, philosopher and friend of the process engraver of the United States and perhaps hardly less of the old world. We all know of his writings in the "Inland Printer," that noble and many-sided journal hailing from Chicago and outreaching its helpful and informing influence through the English-speaking world. Besides his prolific contributions to the "Inland Printer," Mr. Horgan has passed on his practical knowledge and his careful theorising in separate publications. But even if he had written more than he has we should still counsel the acquisition of his

new book. Here he sums himself up; he gives us his latest, his fullest, his best.

Mr. Horgan is thoroughly conversant with workshop practice. He must have handled thousands of plates, not to criticise them simply, but to "put them through," to send them out into the world as the best sort of message to the trade as to what plates and plate printing ought to be.

Write to the office of this Journal for Horgan's new book. It sells at 12s. 6d. and the postage is 9d. per copy. Its exact title is "Horgan's Half-Tone and Photomechanical Processes." We shall review this valuable work in our next issue.

Silver Streaks.

OUR little studio high up among the chimney pots had seen many changes, but the greatest change of all perhaps was what we termed the speeding-up process. New appliances had done much to facilitate increased output of work. Lamps, lenses, cameras, and what not had come and gone. Likewise the man. But in spite of improved appliances, rush work, and late hours, the trade was not entirely without its lighter side. Many a day of hard going was made easy owing to the prevailing good comradeship; and during the slack moments what stories were told, what games were played!

Americans with the highest credentials have dropped in. Germans, Frenchmen and other "furiners" had come with mysterious knowledge, and after being received reverentially and regarded with momentary awe had passed away like smoke, having learned more than they ever knew before.

But the last that came commanded our respect. We had been informed that a new operator was expected, and when he arrived his entrance into the studio caused a mild sensation.

He was a dapper young man, his dark-brown suit and dainty shoes fitted him perfectly, but our attention was instantly arrested by the beauty of his top hat, such a polish had never been seen in our midst, even the governor himself had not sported such a jewel, beams of light chased one another round as he moved in the blaze of the lamps. Noticing the direction of our gaze, and evidently misunderstanding the cause, he politely removed the attractive headgear, exhibiting a well-groomed head of dark hair, and giving him the appearance of anything but a common worker.

A large dark-room, the recognised rendezvous for all debates, soon became full of astonished and excited operators.

Who is he! what is he? was the question. A foreign count, a spy, a forger of banknotes were among the conjectures.

Deeming it impolite to let the gentleman stand isolated in a strange room, Bowley went forward and, bowing graciously, asked if he were the new operator. Unable to understand the reply, which, accompanied with many smiles and gesticulations in the direction of the cameras seemed to imply the affirmative, Bowley expressed regret that the foreman was not in evidence, and, endeavouring to explain that he would soon arrive, volunteered to show the gentleman his camera and dark-room. Having thus shown our good fellowship, we went on with our duties. It transpired later that the newcomer could only speak a solitary word of English, and that word was "yes," which he frequently used in the wrong place. We handed him a stool, upon which he sat quietly at his dark-room door reading a foreign journal. On the foreman putting in an appearance and observing the stranger he immediately assumed a foremanlike air—something between importance and fierceness—but which had little effect upon the latest addition to the staff. Then, taking an original he gave it to the stranger, informing him as to the dimensions, etc., the plate was required. The latter received it smilingly, studied it for a moment, then handed it back.

"You will do it?" said the foreman.

"Do it!" repeated the other with an innocent air.

"Yes, make the negative. You—will—make—the—negative."

"Negtif," echoed the operator.

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At this moment in walked the sub-editor of our illustrated weekly newspaper, whose business often brought him to our premises. He greeted the foreigner very affably, and introduced him to the foreman as Mr. Goebel, explaining that he had been instrumental in obtaining the situation for him.

The original given him was a sketch by a well-known artist, who had constantly expressed dissatisfaction with our plates. Nothing pleased him, so it was evident the foreman hoped for something extra special from the newcomer.

After considerable preparation he commenced operations. Naturally the first exposure with a strange camera was a failure.

He quickly started another and followed it by more, but could not meet with success. This continued until well into the afternoon, and at length, having exposed and fixed another plate, he came into the studio and walked deliberately out of the door leaving us in amazement.

On the floor below was the etching room. The operator entered and looked round seemingly in search of someone.

Instantly all eyes were upon him. Then a friendly hand pointed to another door, through which Mr. Goebel went and came upon an astonished group in the mounting room, who in turn mutely directed him to the proofing room.

The proofer held out his hand for the negative with the object of inking up and taking a proof if possible, but the stranger seized the proffered hand and shook it warmly, and after a quick glance round, descended the stairs to the office, still retaining the negative. Here a clerk in charge, hazarding a guess that the operator wanted the sub-editor, motioned to a block of buildings opposite, where was situated the sanctum of the "sub." Nothing could exceed his astonishment on observing the stranger rush quickly

across the road and enter the building, followed by one or two laughing errand boys. Over there he caused quite a stir by sitting patiently in his blouse, negative in hand, waiting to enter the "sub's" room, and wait he did, for a full hour.

Meanwhile we in the studio were quite at a loss to know where our new companion had wandered, and as the time went by and he did not appear we began to feel anxious. The foreman, irritated at what he said was want of respect, went off in search. And the glass-cleaning boy instantly seized upon the silk hat, put it on, looked at himself in the glass, tilted the hat a little, then christening himself "Champagne Charlie," went on with glass cleaning, gaily singing a song.

At length, just after 6 o'clock, the wanderer reappeared, accompanied by the sub-editor, but not in time to see the boy hurriedly remove the hat and attempt to hide it in the shadow of a dripping plate rack, by covering it with a sheet of paper. Unfortunately for him, in his confusion he commenced piling large plates on the top until it failed to support the strain. Suddenly glass and hat fell to the floor with a terrible crash. Everybody turned round alarmed. The hat, wet and battered, rolled at the feet of our centre forward, who deftly placed it in a corner of the room before anyone realised the cause of the disaster. The foreman now returning, the sub-editor explained that our friend had had trouble with a large spot always appearing on the top of the nose of the central figure of the sketch. The foreman, in none too good a humour, invited Goebel and the sub-editor to the back of the camera, and pointed ironically to a dirty mark on the screen.

"Yes," retorted the stranger, through his interpreter. "I know all about that, that mark's been there all the time."

E.J.G.

("The Process Photogram.") April, 1913

My Causerie.

THE Engravers' Association Dinner this year was a tremendous success. The best thing the guests had was the thing they were not charged for—a free and happy interchange of real good fellowship. There was nothing laboured about it, as sometimes there has appeared to be at earlier functions of the Association. Perhaps no one was to blame for that former coolness. Confidence is a plant of slow growth in an engraver's bosom. It is growing now, and the happier, jollier gathering of March 11th was perhaps the best evidence of the growth that has yet been forthcoming.

The company was thoroughly representative. I was particularly pleased to see there one engraver who had lately spoken to me of his pronounced conviction that the Association was of no real use, or very little use, at the moment. I am sure he was sincere; I am sure he was mistaken. I was glad he was there at the dinner to have an opportunity of finding his mistake. The very technique of our trade appears to give us some hints. Plates now used in our studios are much more light sensitive than the best plates we had a very few years ago. It is time that plate makers were also more light sensitive, more open to reasoned conviction; more responsive to the worthiest appeals of human nature. We need to understand each other better, as much as we need to improve each other. Certainly we want both, but it is difficult to say how we are going to do either, if we avoid each other's company.

Mr. Robert Vincent of the Amalgamated Press, testified that in his visit to America four years ago he found that even then the plate makers of each particular city seemed all to know each

other, even by their Christian names, and since four years ago that intimacy has undoubtedly increased.

And why not? We are not angels, but we are not fiends. The average business man means the square deal.

I might apply the plate parallel further. Isocyanine dyes were invented about seven years ago. Since that time what with the Pinachromes and the rest of the Isocyanine group, we have been able to reproduce originals more nearly in their true colours. There were tones and tints missing from our prints, not because they were absent from the original, but because our medium was not sufficiently receptive. It stopped them out.

Similarly I believe that many a time when we have told ourselves and told our friends that we had found out so-and-so in his true colours, we had not got at his true colours at all. We had some of them and missed some others. There were tones and qualities in him worthy of recognition and regard, but of which we were not able to obtain a record. Our imperfect understanding, or our cussedness, "stopped them out"; we were at fault as much as he was.

It is remarkable how very little the business world can do without faith. We trust our lives to the engineers and drivers of the railway company or to the County Council's tramway men, before we get to the office to begin declaiming in correspondence or in speech, how absurd it is to have any confidence in anyone.

In that talk we don't deceive even ourselves; we are conscious that at bottom we are "not built that way." Rather we really agree with the old "Cheshire Cheese" philosopher, who said, "I am ready now to call a man a good man, on easier terms than formerly."

We are ashamed of unworthy things we may have said or done regarding our fellow craftsmen; and that

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shame, of course, is good to have; but, unfortunately, we are often ashamed also at times, or seem ashamed, of some things that have been the most worthy. I hope the coming together of our men will tend to establish a robuster disposition, a little more boldness in giving rein to frank and friendly impulses—those “high instincts, before which our mortal nature doth tremble like a guilty thing, surprised.”

Our trade wants not so much sharp men as broad men sharpened to a point.

And now a little technical point, a counsel deriving from conversation with Mr. D. Greenhill, general manager of Andre and Sleigh, the engravers, Bushey. Mr. Greenhill has noticed sometimes that a large forme, say a 16-page forme, may be all right when it has, say, just two half-tone plates, but let a lot of the pages be half-tones and the machine minder will quite likely find that the pages print light. Simply to add more sheeting to the cylinder in that case is to risk a very serious scraping action. Instead of this, Mr. Greenhill advises that you interlay your plates at all their edges a little over type height. You will find just what is the excess in a given case which will give you a good result.

He is for the interlay all the time, and he gives the caution, certainly useful for all who deal with blocks to remember, that “wood is always alive till it’s dead.”

I thought of that when I visited a very old hostelry in Rye in Sussex. Ships that had been broken up or wrecked were made to yield great timbers to be wrought into the structure of this inn. That was nearly four hundred years ago. The Tudor rose is to be seen in many places in the carving of the inn. Yet in certain conditions of the atmosphere this four hundred year old timber exudes salt even to this day.

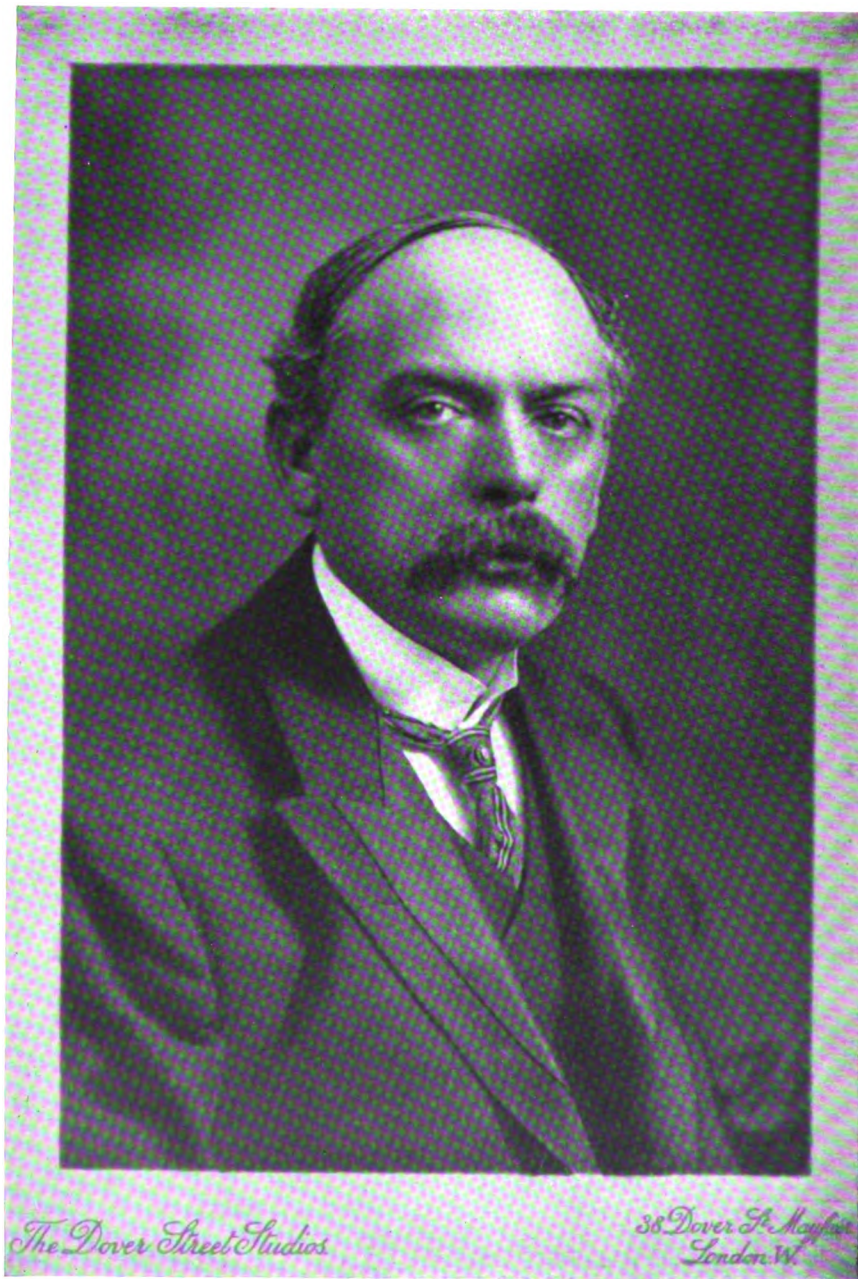
MR. E. L. TURNER has joined the staff of instructors at the L.C.C. Engraving School; in the negative-making department. Mr. Turner has been in the trade all his life. He was apprenticed to Mr. Cattell, who, we think, if not absolutely the doyen of our craft, must surely rank next to the doyen. Mr. Turner was later a colour operator in the Marshall Engraving Co.’s studio. We wish him all success in his new sphere.

MESSRS. TAYLOR, TAYLOR AND HOBSON, the manufacturers of high-class lenses, engraving machines, etc., etc., have removed their City business premises to 62 Oxford Street, W., where now all communications should be addressed, and where they hold a representative stock of the leading sizes and series of their famous Cooke lenses.

THE VANGUARD MANUFACTURING Co. have placed upon the market an article particularly useful to process workers. PHOTO-PAKE for spotting and blocking out negatives, etc. Their ACTINONE effectually blocks out skies, etc., etc., yet is at the same time quite transparent, and enables the retoucher to mask out chimneys, trees, etc., etc., without any fear of chipping, and without having to paint around such obstructions. No doubt these latest products of this progressive company will meet with the success they deserve. Their address is Maidenhead, Berks.

SATURDAY AFTERNOON OUTINGS.—As usual, the Principal of the L.C.C. School of Engraving has arranged for a series of Saturday afternoon photographic and otherwise instructive outings for his students. Full particulars will be cheerfully supplied at the School to contemplating students. We hardly know whether we should suggest that any outsiders can join in the gatherings. Certainly the number of those who could do so would necessarily be few. All the same, we commend the matter to notice. These outings are really very jolly often enough, and very informative.

WHAT has become of the Graphic Arts Association, of Dundee, which could set about an ambitious memorial volume enterprise, with a score of collotypes in for the illustration memorial? We should be interested to hear of like enterprises by any district associations. There ought to be a very considerable body of work for one or other branch of our craft commissioned by local bodies of enthusiasts like this Association.



MR. WILLIAM GAMBLE.

Estab. Jan. 1894.
"The Process
Photogram."



Vol. XX. No. 233.
MAY 1913.

AND ELECTROTYPERS' AND STEREOTYPERS' REVIEW.

Personalities in "Process:"

Mr. William Gamble.

MR. GAMBLE is an optimist. There at once you have his strength, and, if you will, his weakness.

I have very little doubt that I could prove irresistibly that Mr. Gamble never could succeed in life; he is far too impressionable, far too ready to recognise something fine in every new thing brought to his notice. Too much of the child, in short; too curious, too enquiring, too plastic and amenable. The sort of man who might conceivably do very fairly well as the head, or better still, as the neck, something next to the head, but just under it—just the sort of man to succeed in that position in some Government research laboratory where people's money could be spent and no particular questions asked. But the conduct of a competitive business, and a particularly difficult business, for that, I think, I could prove him to be mentally and temperamentally unfitted—unfitted more by his virtues than by his failings.

And, of course, if he never could succeed, it follows that he never has succeeded, either in the conduct of a business or in the maintenance of any one piece of work requiring consistent and persistent effort year after year. That

assurance can be offered with every confidence.

But the awkward thing for a prophet is that Mr. Gamble has been and continues to be a most conspicuous success, and this applies both to his conduct of a business peculiarly difficult to handle (as being one in which there have been no precedents) and also to the manner in which he has compelled the admiration of the printing and engraving and the whole illustrative world for his annual triumph, symbolised by "P.Y.B."

Yes, triumph's the word. "Process" indeed suggests "procession." He's not worrying about a chariot and a laurel wreath and a spear and a banner with S.P.Q.R. But he does veritably conduct his own triumphal procession, none the less. Every December, when that book comes out, he raises his banner with the legend "P.P.A." or "P.Y.B.," and we fall in and follow him as willing captives.

Mr. Gamble, who has accomplished these things, began life simply as a provincial journalist. He was not even at the hub of things. A provincial journalist, a churnalist, if you will—for newspaper work in the country tends very much to

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routine; round and round and round goes the handle. Provincial journalism is not very profitable, moreover, except for the owners of the papers. Witness to that unprofitableness, the very modest fortune lately left by the editor of a large provincial daily paper; scarcely more than ordinary insurance money. The £175 or so, lately left by Mr. Money Penny of the "Times," for all that he was also the gifted author of the "Life of Lord Beaconsfield," carries the same significance of journalism's frequent poor results.

Ah! but Mr. Gamble took up a hobby which took him, which possessed him, which enthused him. He became an amateur photographer, because there had come to him an early realisation of the power which light printing might come to exercise in company with printing of the more familiar kind. He extended his hobby to process work under the difficult conditions which existed over 30 years ago, when it was difficult to obtain information about it even in London, let alone in a remote provincial town. Nevertheless he succeeded in producing blocks for his country newspaper even at that time. Then he gravitated to London in the belief that there would be more scope for his efforts, and became associated with Press agencies for supplying blocks and illustrated matter to country newspapers. Experimental work to quicken the production of process blocks was continued, but the difficulty at that time was to obtain the apparatus and materials.

Just over twenty years have passed since Mr. Gamble became acquainted with the head of the business carried on at Amwell Street, Clerkenwell, under the name of Penrose and Co. It had been a chemist's business for a good many years. Apparently the proprietor had had some slight sense of the im-

portant business that might be done in the supply of photographic materials. He had got a nip though not a grip upon it. To get the grip he needed the influence of the keen young journalistic customer, who was everlastingly buying something or other for his photo-process experiments. The nip became changed to the grip.

The writer well remembers a visit to the old premises in Upper Baker Street, Lloyd Square, which had been taken as an annexe to the Amwell Street premises, in order to accommodate the process business. It was an impossible place for large development. Carboys and the like were all over the floors; one picked one's way with care or endangered one's clothes.

We are familiar with the upshot. Mr. Gamble recognised that the incoming of the process plate made possible a great new business. And that that great new business, if properly conducted, would make more possible, would facilitate anyhow, the incoming of the process plate. Things would interact. Enthusiasms are contagious.

Bernard Shaw said of William Morris, "He simply made us go along with him." Mr. Gamble proved the same compelling power. The Amwell Street chemist was soon his business associate. The new specialist business of A. W. Penrose and Co. was set afire, and out came the "Year Book," quick and aglow. Despite all the difficulties attending its production, it has never failed to appear, and appear promptly, and to appear with steadily increasing attractiveness and effectiveness.

The reason why we are not all so conscious, as might be expected, of the real wonder of this process volume's annual appearance is that we have till late had nothing with which to compare the achievement. We are not conscious of the earth's movement or of the pressure

of the atmosphere exactly for the reason that there has been no cessation or variation of either in our experience. And yet “annual,” such a little word to write, means such a lot. Germany and France show what it means, for they have not yet produced an exact counterpart of Mr. Gamble’s “Year Book”—no, not even for one year. (One is not forgetting, of course, Klimsch’s Year Book; but that is on different lines.) America, too, was not stirred up to provide a parallel for many years. When at last it did make a start it found the task of unbroken annual continuity too great. It compounded two years’ volumes into one; though we hope and believe that the American Graphic Arts Year Book will be annual for the future. When it has by about 1930 produced its volume year by year, without further interruption, it will only then have accomplished the record already to the credit of that quiet unassertive-seeming photographer and chemist and businessman of Farrington Street.

I take it that half the explanation of his success is the fact that Mr. Gamble enjoys his work, and he enjoys it because he consciously or unconsciously realises how large that work is, how deeply strike its roots, and how they interlace the roots of pretty well all human problems. I asked him once what was his pet hobby. “Business philosophy,” he replied. He has produced some quite delightful publications of that character. Various aphorisms and pithy sayings to which he gave currency in “Process Work,” which he long ago started, made such appeal to readers that he was asked to embody them in book form, and he finally complied.

He is then, a business theorist, applying his philosophy in practice. It may seem an odd conjuncture of names, but I am set thinking of Stonewall Jackson. He, too, was a theorist! He was a

lecturer on tactics at a military college, and to accord with common notions his reputation should have petered out badly when his powers came to be tested in actual affairs. In Jackson’s case, however, the theorist proved to be the amazingly successful man of action, dashing over the country like De Wet, and, when attacked, standing like a stone wall. In his different circumstances our subject illustrates the like personal revelation.

Mr. Gamble does not forget his old friends. If he were to face everything he would own up that he is most reluctant to break off from some little arrangement that he may have entered into in years gone by, when it perhaps may have had an importance to him which has long ceased to exist. The last thing he likes to do is to shake hands and part from some old associate, simply because of his own success.

Another indication of his remembrance of the old days is the pleasure with which he renders encouragement to lads, or at any rate, less known men. Witness the prize which his firm offer annually for the student showing the most progress in the “preparation of originals” or other successes in the curriculum of Bolt Court School.

Of late months the direction of the whole of the Penrose business has devolved upon him, owing to the ill health of his partner.

He has maintained, too, the monthly “Process Work” and the Penrose Employment Bureau, which is one of the features of that issue, making the little journal a sort of clearing house—a personal exchange and a suggestion exchange. He found time as well to throw himself into social life, particularly into Church life at Finsbury Park, in North London. He has been a people’s churchwarden for five years. We heard of him

recently discussing labour problems along with Sir Geo. Askwith and Mr. Sydney Webb at a dinner of the Production Managers' Association, of which he is a vice-president. I wonder what else he is doing, that for the moment he is saying nothing about! Has he any skeletons in his cupboard—skeletons, I mean, of works not yet bodied forth? Will he break out in a new place? To be sure the great work he has done, and the great position he fills, might satisfy any

reasonable ambition; but I fancy he dreads being satisfied; he dreads the danger of stagnation. A state of being satisfied might be very nice, but it hardly agrees with business philosophy, and he is the business philosopher first, last, and all the time. If he thinks he recognises the oncoming of inertia, or undue complacency, I daresay he'll take another trip to America. Shouldn't I like to go with him!

The Printers' Institute Souvenir. An Artistic Triumph.

OVER fifty remarkable specimens of what our art is capable of are portfoliod as the 1913 Souvenir of the Printers' Institute. The collection has some very strong features, and of these one may properly speak first. We find ourselves lingering pleasantly over the Index, which is upon a half a dozen of these Royal quarto sheets. It is grey tinted, with appropriate borders introducing presses and other printing implements and arms and scroll and book components—an admirable piece of tint and white work.

The "Seven Ages" is a setting of the familiar passage, contributed by A. Chris. Fowler, of Moorfields and Shoreditch, who does so much for the credit of British print, and for the craft reputation of the Printers' Institute in particular. This is on a soft-faced grained paper, and thankful indeed one is to escape from the shine and sheen. A dozen years ago the Institute loved shine and sheen, printing its journal with a satiny ink upon a paper in front of which you could comb your hair. This portfolio marks its artistic advance. "St. Michael's Mount"

is an oilette on a thin art board, contributed by Raphael Tuck's. Messrs. Badoureau and Jones are very successful with a child's face and abundant soft hair, printed from one of their direct deposited nickel steel electros. The large light area of the actual face, an area which might easily get "filled," in part, manifests a triumph of good plate and good print. John Swain and Sons are represented by an extremely good map of Africa. As a specimen of printing from blocks that which we have been accustomed for years to see printed by litho, it is most suggestive and interesting. It would seem that along this educational line vastly greater work than has yet been hoped for may be gained by the engraver. Arthur Cox took a rather thankless subject in reproducing "The Cock of the Walk." The bird is certainly handsome enough with its red comb, its bright yellow beak, red wattle, white patch, and dark green neck plumage. This green strikes us as a great success in the process, since in greens there is commonly such a failure. Morris and Bolton's ink and W. S.

Cowell's printing are strikingly shown in “Tranquillity,” a daring offset-printed seascape with picturesque figures of Dutch women boldly outlined against the blue water and the yellow sky ! It is said offset is commonly too quiet, but here we have brilliant blue, red, green, yellow, purple, maroon, white, and brown all in daring juxtaposition. Cheret, we believe, has made daring use of a yellow sky in his posters, well knowing that yellow is pre-eminently the colour for arresting the eye at the greatest distance. The Half Tone Engraving Company are very successful with “Butterflies” — in blue, orange, black, and grey; their antennae fine and clear; with a soft shadow, well fitting the subjects and expressing great success in the vignette. Tiger lilies form the design of a soft tint around these butterflies. A three-colour fashion plate, by the Johnston Engraving Company, is contributed by Lake, Sison and Brown, Ltd., of Upper Thames Street. The vignetting is clean, and a difficult subject is well carried through. The lighter violets and light greens are notoriously the chief troubles in three colour. This is quite successful. We feel we might fall in love with the dainty damsel of whom Messrs. Sessions and Co. have made a colour plate (Messrs. Blades, East and Blades doing the printing). We see, however, but the tip of her dear little nose, over which we can hardly enthuse, but we are compensated by being able to fall in love with her hat, whose colours are very successful. This is offset and coloured tint printing. The Anglo-Engraving Co. contribute one of their rotary photogravures. The extreme brilliance of their commercial photogravure we have seen variously evidenced. Here they show us how entirely successful they can be with soft, clinging drapery, and with flesh texture.

Those who made the plates for

Messrs. Henderson and Spalding included a good operator and a good fine etcher, with the result of a pair of eyes in this Henderson and Spalding specimen which we shall not soon forget—soft and liquid eyes they are, and very bright withal, more successful than we can ever remember to have seen before accomplished by half-tone. Messrs. Soldan's Radiotint is illustrated by a picture of a gateway at San Remo. This is a flat bed photogravure and is certainly an acceptable picture. Although there is a grain in this work it is not nearly so noticeable as in ordinary half-tone. The Anglo-Engraving Co. supplied four colour blocks wherewith H. J. Goss and Co. have produced a striking study of a “Daughter of Pharaoh.” The abundant pearls, emeralds, and gold ornaments are depicted strongly, and yet not too strongly. A great dog is being fondled and the printing of that mass of black and brown and of the tiny pearls certainly made a printing problem. This print was specially produced for this souvenir.

Manders commend their ink by a very welcome “Mother and child” study. Messrs. Thos. Forman and Sons, of Nottingham, print by three colour with tint a very realistic picture of an “old gaffer” or grandfather, peering with wonder and misgiving at the face of a maiden clad in violet patterned print, and with the mob cap and bright ribbon of other days. There is a great deal of expression in this picture. It is very good three-colour.

What two workings will do is well shown in the Carbogravure contributed by the Arthur Cox Co., of Birmingham.

A Baxter print is reproduced in four workings by Messrs. Raithby, Lawrence and Co., Ltd. This is the “Then and Now” of colour, for there were probably a dozen or more tints in the Baxter, but

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it must have been very beautiful to have been more satisfactory than this.

Imitation photogravure is represented by a subject of great human as of much technical interest. The scene is the "Signing of the Marriage Register," and Messrs. Winstone, whose inks are employed, may certainly feel that they have produced very strong contrasts; in that way markedly differing from much half-tone practice. This picture is unequally successful, the full tone is really too strong. One cannot say that "the work is all there," because the great strength and density of the ink results in absolute opacity in places. This, however, may seem hypercriticism, and the picture is a strong and pleasant contrast to much of the flat half-tone we see.

Messrs. H. J. Goss and Co., Ltd., are very successful with a bunch of roses reproduced in four printings on the Miehle. It is commended by a bluish-grey tint surround. The greens of the leaves and the petals of the four or five varieties of roses are excellently produced.

The roses were photographed direct by the polychromide process, the blocks were made direct from negatives by the Anglo-Engraving Co., and have had no retouching or handwork whatever. In view of this method, the work is wonderful.

The Arthur Cox (Birmingham) carbo-gravure half-tone of boots represents a struggle between the salesman insisting on brilliant high lights and contrasting blacks—these two outstanding from the rest of the shoes—and the artistic feeling of the illustrator who would like to keep them down in a more even plane. The boots are made to sell, and so, apparently the illustrator is obliged to make the glazed parts almost jump out at you. Even so it is quite brilliant work.

A. E. Dent and Co. give us an interior decoration that really has angles and

depths and recesses, a thing which it is generally easier for the litho. printer to procure than for the process man. This subject particularly would be greatly helped if it were mounted upon a rich brown, or at any rate, a dark surround. These broad white margins rob half the subjects of half their effect. You have only to cut out some brown paper framings to prove this. This comment regarding margins applies particularly to the next subject, "A Winter's Scene," printed by the Campfield Works, St. Alban's, from coloured blocks of the Photocrom Co., of Old Bailey. This is a warm, strong piece of work; intensely realistic. Strange how white this snow seems, which yet is not white at all.

Some fruit cake shows Forman's litho. work. We always expect something good from them. This looks best a yard away from you, where ordinarily it would be seen.

More grained paper. This time a specimen of three-colour printing contributed by and printed with inks manufactured by Messrs. Chas. Lorilleux. This is quite an amazing subject in its technical, artistic and human interest. A Roro chief is shown decorated for a ceremonial dance, with headgear before which the widest, most startling hat creation of Hyde Park shrinks to the merest toque. Grasses of pleasant colours, stems entwined with various coloured bands, wide-sweeping feathers and gorgeous tropical blooms, the whole rising some 2½ ft. high and spreading 2½ ft. wide. Keep it from your wife, as you value your peace of mind.

Messrs. Langley and Sons, Ltd., of the Euston Press, are old-time and most effective supporters of the souvenir with their delicate and withal masterful work. Their lithograph in tint and monochrome is a pleasant variant with its quiet grey

(“The Process Photogram.”) May, 1913

values as one lights upon it after turning colour-page after colour-page. It is presented as a specimen of a catalogue cover.

There is a lithographic offset specimen printed and contributed by the honours students of St. Bride Foundation Lithographic Classes and very chaste and acceptable to sight and to feeling is this page, particularly the letterpress part of it.

The Typographic Students similarly show a specimen of their work. Its great feature is a very beautiful bordered design of graceful line work; the block was made by the L.C.C. School of Photo-engraving.

Messrs. Garratt and Atkinson of Warwick Works, Ealing, are represented by a four-colour print, “The Etcher.” There is little need to commend anything coming from their studios.

An orchid blossom is another very fine

contribution by A. Chris. Fowler. Strong purple tints shading to delicate mauve, greens and yellows graduating away, make a wonderful flower effect—make it a triumph of half-tone.

Messrs. H. A. Caslon and Co. present an extraordinarily handsome “Design for Masonic banquet programme.” Here we have borders composed of Masonic emblems with appropriate inner borders and square corner pieces. We have perfect rule and tint work and silver printing enriching the whole. If the dinner was distantly worthy of the programme we can but envy the diners, as they chew the cud of its recollection. The programme is enfolded in a rich brown stock linen-faced, that brown cover itself folded to make eight pages — two-page cover either side, after the modern manner in good covering.

✓ *Some Excerpts from Horgan's New “Process Work.”*

WE strongly counsel every one of our readers to obtain a copy of the new book, “Horgan's Process Photo Engraving,” which has just been issued. It sells on this side at 12s. 6d., and can be obtained at the office of this Journal, 12-14 Farringdon Avenue, E.C.

We shall refer to this work later. For the moment our argument that it should be bought may be best enforced by a few samples of its great mass of serviceable contents.

* * * *

“The term ‘half-tone’ is a misnomer as applied to the photomechanical method of making relief blocks for the printing Press, for the reason that the word ‘half-tone’ refers only to the intermediate

colour between the extreme lights and the shades of a picture, while the half-tone process of engraving reproduces all the tones of a picture, including the high lights and the shadows. The term ‘similigravure’ in French expresses the idea better, but the word ‘half-tone’ has come into the language and will remain.

“One explanation of the way the word came into use is that in the early days of the process it was usual to say of it that it ‘reproduced all the half-tones of the photograph,’ and this was eventually shortened to the ‘half-tone process,’ and as it was used practically first in the United States, the word adopted for it here impressed itself on other languages, until now ‘der halbtoneprozess’ is applied to it in Germany, and ‘Demi-

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teinte proces' is known in France."

* * * *

"What would happen if half-tone engraving should stop suddenly? Think of the number of monthly periodicals and weekly publications that would collapse immediately, the thousands of engravers, electrotypers, printers, pressmen, ink makers, paper makers, and the like tradesmen that would be out of employment, and the millions of dollars in presses that would go into the scrap heap."

* * * *

Mr. Horgan writes in regard to the ground glass focussing:—

"The ground glass on which the focussing is done is supposed to be of the very finest grain; still it is well to paint two streaks of glycerine or oil across the ground glass from corner to corner, so that even finer focussing may be done. Parallelism between the ground glass and the copy-board is absolutely essential, particularly when several negatives must be made from different sections of large copy, to be joined together later. Measurement on the ground glass of a large square on the copy-board is one way of determining this perfect parallelism, though other methods will suggest themselves to the intelligent operator. With most lenses it is best to focus sharp with a large diaphragm midway between the centre and the corner of the copy, and then trust to the smaller diaphragm used when exposing the plate to bring all of the copy sharp on the plate. It is while focussing that stray reflections of light should be looked out for. When illuminating large drawings, particularly on tracing cloth, where the India ink is glossy, there is a danger of reflected light from the glossy ink at the edges of the drawing."

* * * *

"It has been found in practice that

grain screens do not give in the highest lights and deepest shadows the delicate definitions or gradations of the cross line screen. Cannot screens be made with a less mechanical pattern than cross bars? As the mechanical pattern of the screen is governed largely by the shape of the aperture in the diaphragm, with the ordinary half-tone screen the pattern can be varied at will, and has been so changed, but there is no great demand for the change.

Gen. Frederick U. Von. Egloffstein's half-tone screens used in New York in 1868 were made with a wavy line, and the results were not so objectionable as the straight lines. Mr. A. Dargavel, of London, has in use a waved line screen." A specimen of the Dargavel screen is shown; it is remarkably successful.

* * * *

"The quicker a collodion works the less contrasting it is; while a contrasting collodion means one that will not give detail in the shadows, so that an adequate half-tone collodion must be one of compromise.

In compounding a half-tone collodion it should be remembered that iodides give contrast, while the bromides decrease contrast, at the same time giving greater detail in the shadows.

The ammonium salts supply a collodion that can be used soon after making, but will not keep. A collodion made with the cadmium salts will require weeks to "ripen," as it is called when a collodion is in the best condition to use, and a cadmium collodion will keep in a workable condition for months. The quality of the gun-cotton (pyroxylin) used has a considerable influence on the density and coarseness of grain of the negative, so that care must be taken in its selection, though even the best brand will vary in quality at different times.

The first thing necessary is that the

ingredients in a half-tone collodion be pure. Once a reliable maker of chemicals is found he should be patronised, and not forsaken for the first one that offers a cheaper article ‘just as good.’ The alcohol must be guaranteed to be 95 per cent. grain alcohol, the ether should be sulphuric, U.S.P., with a specific gravity of about .725. The ammonium iodide must be U.S.P. in crystals, about the colour of light brown sugar, for the reason that collodion made with it ripens quicker, that is, it can be used a day or so after being mixed. The white iodide of ammonium can be used, though it is generally necessary to add a few drops of tincture of iodine to the collodion to ripen it. The cadmium bromide should be in white crystals.

The proportion of a simple and most satisfactory half-tone collodion is the following :—

Ether, sulphuric, U.S.P., .725...	10 ozs.
Alcohol, 95 per cent. grain ...	10 ozs.
Gun-cotton (pyroxylin) ...	180 grs.
Ammonium iodide brown ...	100 grs.
Cadmium iodide ...	40 grs.

The better way to use the formula is to remember that for every ounce of the mixture of ether and alcohol six grains of cotton is used with five grains of ammonium iodide and two grains of cadmium bromide.

Some operators use a little chloride of calcium in the collodion. The writer can not see any advantage in its introduction, while it adds to the complication when purifying the silver bath. A 45-grain-to-the-ounce silver bath is recommended with this collodion.”

* * * *

“Here is the simplest formula for collodion ever published. It is the result of years of practical experiment, and, when tried, will be found to give superior results, with the further advantage that

it does not contaminate with the silver bath as quickly as the complicated formulæ for collodion that are in common use. This collodion is ready for use almost immediately after compounding.

Alcohol and ether, equal parts.

Gun-cotton, 7 grains to the ounce of combined alcohol and ether.

Iodide of Ammonium, 5 grains to the ounce of above.

Bromide of Cadmium, 1 grain to the ounce of above.

The amount of gun-cotton can be varied to suit the character of the cotton, and the size of the glass to be flowed with the collodion. It will be understood that small sized pieces of glass can be covered with collodion quickly, and consequently a thicker solution can be used, while with large sheets of glass the coating of the surface with collodion takes so much longer that the greater evaporation of the ether and alcohol produces a thicker film from a thin solution than when small sheets of glass are coated. Where the average sized sheets of glass to be coated are 14 in. by 17 in., then five grains of gun-cotton to the ounce might be sufficient.”

* * * *

“Photolithography or the application of photography to lithographic printing, was the first of the photomechanical reproductive processes to be commercially profitable. It was the basis of a big business in New York, when in the eighties, it was crowded out by the photo relief processes that came into use at that time. Had the offset press then been perfected, photolithography would have been applied to the offset press, and would have continued to be the most practical method for reproducing maps, diagrams, charts, catalogues, and much of the illustrative matter of to-day in which the high lights are desired to be

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clear, as in lithography. For it must be remembered that the principle of the offset press is that of lithography."

"The offset press has revived a demand for photolithography, or for a method of securing illustrations by photography on the grained zinc plates used on the offset press. Photolithography in the old days was practised in secret, and the few who are best acquainted with the methods have passed away, and their secret processes have been buried with them."

"The advantage of a 'Graphic' process—i.e., one used in the now defunct 'Daily Graphic' of New York, not to be confounded with the 'Daily Graphic'

of London—as it was called, was its simplicity, the great speed with which pen drawings and pencil sketches could be got to Press. No reversed negatives or routing were required; no overlaying or underlaying on the press, and still the daintiest vignettes were printed, with the softest of edges. Any number of duplicate transfers could be made for the many presses required, and the additional feature was the inexpensiveness of the process. From cost records of a year on the 'Daily Graphic' it was found that photolithographic transfers, ready for transference to stone, did not cost a quarter of a cent, a square inch."

The Rebuilt Camera.

IN our professional journeyings, says one who has ready access to the "plant" of the Process Engraver, we frequently find stowed away in odd corners of studios of houses that have been in the trade for any length of time, cameras that at one time were considered really first-class instruments for the work they were intended to do. The advance of the art, and the constantly improved methods of production, together with the inventions that are put upon the market from time to time in the shape of more perfect appliances that tend to make the cameras more accurate, yet at the same time more easy of manipulation, have superseded these one-time highly prized and costly instruments.

The question has been asked again and again, are these out-of-date cameras of any practical value, or must they be discarded and written off as useless? Certainly no one can be found to purchase them, and as they lie stowed away in the studios they

are seemingly valueless and must, therefore, from the valuer's standpoint, be considered as dead stock, or worse, as they occupy room that might be better employed; this, we believe, is the opinion entertained by most of the houses where such superseded cameras are on hand.

Every process engraver knows the heavy cost of a first-class camera; he also knows that he cannot afford to have unprofitable plant in his works, to-day he must have nothing but the best. An engraver who had one of these out-of-date machines gave the matter consideration with a view to see if any way could be devised by which it could be turned to practical use and made to yield a profit. His thoughts, therefore, went out in the direction of bringing the camera up to date, but when the makers were approached they discouraged the idea, preferring perhaps to dispose of a new and modern instrument rather than have the trouble of turning the old ones into new.

While considering the subject he came

across the patentee of the Perfecta camera, which was hailed with so much applause nearly two years ago, and at once put to him the question, is it worth while to have an old camera re-built? He promptly replied, “YES, for I have just re-built a large one for a City process house. They had by them what at one time was considered a first-class instrument, but which had been superseded by more modern inventions, so that the old camera was rarely, if ever, used, and was written off as dead stock. The camera I took away, re-built, and brought up to date with all the most modern improvements, and incorporated in it the valuable improvements included in the ‘Perfecta’ camera, and when it went back to the owners it was to all intents and purposes a perfectly new, up-to-date camera, with all the newest and most valuable points, suitable for three-colour as well as black and white work; it has been at work now for some months and has given complete satisfaction, and what is more, the owners have a really first-class instrument for less than half the cost of a new camera by one of the leading houses.”

The writer has had the opportunity of inspecting this re-built camera, and certainly the claim of Mr. Tilley is in no way exaggerated, for it is in constant everyday use and is turning out the best class of work and giving every satisfaction to both the operator and the owner.

Here we have the solution of the question, what to do with out-of-date cameras, for we are assured by the inventor that the mechanism of the “Perfecta” process cameras can be adjusted and fitted to any other make of camera and make it as quick to operate, and so secure all the advantages and be quite equal to a new camera for a consideration small in comparison to the value of the perfect instrument placed in the hands of the operator.

The process engraver, whether he be in a large or small way of business, need not scrap his old cameras, but have them converted, and what has been looked upon as a heavy loss turned into a means of securing further profit, and if any of our readers would care for further information an enquiry to the offices of this journal will be forwarded to the proper quarters.

Making enquiries of the inventor as to the progress of his Perfecta process camera, he expressed regret that the trade as a whole had not yet taken it up, but that the outlook was exceedingly good, for it must be remembered that process cameras are not articles of daily consumption, and a house when once fitted up can hardly be expected to purchase every new camera that comes along. There are, however, several of these cameras in use in various parts of the country, and the L.C.C. Schools at Bolt Court have one in constant use, and he told us that the War Office has now decided to adopt this camera. The inventor, moreover, incidentally remarked that he was extremely busy completing orders for some of the principal process houses.

The claims made for the Perfecta process camera are very great. The inventor says that it is vastly superior in every way to any previous style of camera; that owing to its simplicity, perfect construction, and its absolute rigidity and accuracy and easy manipulation, unattainable in any other make, it is a great saver of light, time, and worry; that it is a camera that will do perfect work without any waste. Here is a boon to all process engravers who adopt it.

Whether other makers would endorse these claims we are not able to say, but it is quite evident that the Perfecta will win its way and will, we think, become a popular camera.

✓ *The Decline (and Fall) of the Line-Engraving.*

The following article, dealing so graphically with the decadence in the work of the Line Engraver, which is equally as apparent on this side of the Atlantic as it is in America, treats of a question of such importance that we make no excuse for reprinting it just as it appears in "The Graphic Arts," leaving it to our readers to supply from their own knowledge the English equivalents for artists' names and money values.

Can nothing be done to save line Process from the further degradation that seems to await it?

News of most ridiculous prices comes to us from time to time. The most recent reported was about One Shilling and One Penny net for the reproduction of a page of type, the finished block containing 13 square inches. Comment is needless.—Ed.

WHERE are the line-engravings of yester-year? Those clean, sharp, faithful-to-the-original plates which adequately reproduced the drawings of Charles Dana Gibson, Joe Pennell, and Edwin A. Abbey? Gone as a class and now to be found, more and more rarely, in the pages of a few high-class publications that know how and where to get them. They may still be obtained by certain methods and at a price, but both method and price have become difficult and remote. Long-suffering ones who spend many dollars for what engravers are pleased to call line-cuts, and who are not within the fold, must content themselves with the unworthy substitute which answers to the name.

Time was, and within memory, when the line-plate was a work of art,—when the line-photographer on Saturday saw as much money as the half-tone operator, and considered himself more of a craftsman, when the line terminated in a point instead of a paddle, and the limner who labored lovingly (apt alliteration) was sure that his drawing would not only ably reproduce, but would not be permitted to fall into the etching-bath. The days of Jake Bryan, Tom Winton, and a few others gone but not forgotten. Artists, artisans, and gentleman-adventurers, all of them. Jake was a character in a profession given to characters. He used to affect a Windsor tie and a long black silk eye-glass cord which, with the assistance of an ever-flowing stream of tobacco-juice from the opposite corner of his mouth, sharply divided the lower part of his face, like all Gaul, into three parts. His other diversion, when he was not working from Tom Winton's negatives, was reading Schopenhauer. He was conceded to be some etcher and he refused to concern himself with any wet-plates but Tom's. They made a great team, and I doubt if their double efficiency has ever been equaled. But enough of reminiscence. All this is written in Boston, and the old-timers will recognize the pair and drop a silent tear; the newcomers in the business don't count, and besides they can't read English.

Now anybody who can read Schopenhauer can etch from a wet-plate negative, and possibly the popularity of the six best sellers may have something to do with the absence of any heavy thinking in the modern etching-room; but certain

it is that the precepts and example of poor Jake Bryan have few disciples in these decadent days. The reason? There are many, and they are all poor. In the proud lexicon of the photo-engraver you will find "price" on every page and next to it "cut-throat competition." If you should ask the average engraving-shop runner why your line-plates looked like something the cat brought in, his face would take on an agonized expression and he would refer feelingly to the business methods of his competitors and the condition of things entirely beyond his control. If he is a "live one," he will look upon you with the pity you deserve, and inform you that in his shop they regard line-engraving as a by-product, and if you want to see some real stuff, they have it in four-color half-tone. If you are a live one yourself, you will tell him that in the future you will expect your line-plates to measure up to the original in quality, that it is not to go through with the "routine" work, and that you are willing to pay twelve cents an inch for the extra service. This will insure you respect in a place where you had none, and may help a little toward getting better plates.

But if you are unsophisticated and entertain the delusion that all men are entitled to life and liberty, your first line-engraving experience will be something like this. We will assume that you have a fine pen drawing you want to have reproduced,—a beautiful thing, possibly a Franklin Booth subject, full of delicate lines and masses of color. To you will come a shambling individual having a loud voice and an assured manner, who announces himself as envoy-extraordinary for the Sandblast Engraving Company. He produces a dingy card which looks as though it might have had birth in a stock-cut catalogue, and unburdens his soul of a wheedling formula. "Sure

we can handle it. We do all the engraving for the Bonehead Billposters." Having thus established his responsibility, the deal is consummated and the Sandblast Engraving Company walks out with the drawing at his mercy. Being a routine line job it is turned over to a twelve-dollar-a-week photographer (Tom Winton used to get his forty) who makes a wet-plate negative of sorts. This negative is stripped and placed with others, in the same lot but not the same class, on a large piece of plate glass. This is for economy and to help out the cost system. Next to your Franklin Booth may be a series of ornaments swiped from "Bradley His Book," and if by any chance Mr. Booth has left an openwork sky, it is occupied by one of them. Don't worry. It will be removed before you get your plate. It is merely another boost in the cost system. Follows the usual course of sprouts involving the hot gridiron, dragon's blood, a-phaltum, and acid, the routing and blocking room do their bit, and the plate is delivered to you neatly wrapped in a piece of paper torn from the coloured Sunday Supplement.

An inspection of your catch, and the first fine careless rapture of the unsophisticated is a trifle chilled. You may be even frankly disappointed. You sent forth a Franklin Booth original and after many days returns a grotesque caricature. Any number of things may ail it. The fine hair lines may be lost or magnified to coarseness, and delicate traceries filled in solid black. Vital parts venturing too near the edge have mysteriously disappeared (the router did this), the horizon may dive drunkenly toward perihelion (it was squared up by the wrong line), and you begin to think that something must have happened to Ole.

Over the telephone a small, weak voice answers with a series of vague excuses. "The original was no good; you didn't

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give enough time on the job; the last lot of zinc from the supply house was punk, everybody is kicking," until at last, cornered, "what in hell did you expect for six cents. a.1 inch, anyway,—photogravure?"

Fifteen years ago saw the last of really good finishing in general line-engraving. The men engaged in this work of re-etching and cleaning the "flat" plate were for the most part old wood-engravers, who brought to this new field the skill and artistry which distinguished their work on the wood. Every job on the "flat" was carefully gone over, with the original stuck up in front of the engraver for reference, and intelligent attention was paid to its possibilities and requirements. The work commanded and was worth fifteen

and eighteen cents an inch. Nowadays "finishing" a line-plate means nothing more than soldering up the slips made by the router.

If you want a good job of line-engraving you will have to say so, for if you simply hand it out and say "line-cut" you receive a plate which will be characterized by deficiencies naturally resulting from cheap, unintelligent and inefficient labor. You may be reasonably certain of this, that all the good line-engravings you see to-day are especially ordered at a price, by one who knows what he wants and where he can get it, and that it is manufactured under different conditions than the other ninety-nine per cent.

Testing Camera for Process Work.

THE Annual Report of the L.C.C. School of Engraving and Litho includes a short illustrated statement regarding the new testing camera for process work, upon which Mr. A. J. Newton and Mr. A. J. Bull have collaborated. Illustrations are given forming plate eleven, in order of compilation of the plates in the Report.

The letterpress matter accompanying the illustration is brief, and for perfect comprehension needs the assistance of reference to the illustrations on the page opposite. We are told that the instrument has been designed to examine rapidly, and by a photographic test, the suitability of a lens for wet collodion work or three colour. It consists of a camera with a collimated test object.

Collimation, we may parenthesize, is the art of levelling or directing the sight to a fixed object; an optical aim; a point of sight; a focus. Error of collimation in terms of optical instruments is the

amount by which an object viewed through an optical instrument is distant from the spot which it might be expected to occupy; the distance or amount by which it deflects from the line of collimation, *i.e.*, the line joining the centre of the object glass and the intersection of fine wires or spiderwebs in its focus.

This testing camera rotates about a vertical axis, in order that successive exposures may be made on the test object at varying angles with the axis. The lens under test is held by two iris clamps on the lens carriage. We note the removable bellows in the illustration in the portfolio, and the dark slide, taking a plate 24 in. by 20 in. The focussing screen, the collimator, the test object, and the electrical arc, the light from which is reflected through the test object from a white surface—these are all shown perfectly clearly in the illustration.

The test object at first consisted of a row of small holes in a line, coloured

respectively red, green, blue, red and white, but the latter, a slit similarly coloured, was placed parallel to these. We see by the coloured illustration in the portfolio just what appearance the test object then presented. We are shown the result of a test at fifteen degrees from the axis on a process anastigmat. Next we have illustration of a test with the reversing prism added, and indicating that the prism does not impair the definition. Then come two tests on a

single anastigmat, made on the axis, and at fifteen degrees from it respectively. The distortion of the row of dots in the figure shown indicates a chromatic error. Other illustrations show a series of tests at 0, 10, 20 and 30 degrees from the axis and the progressive displacements of the coloured portions of the slit show an error of chromatic magnification which renders the lens unfit for three-colour reproduction.

Herbert Spencer and the Plate Maker.

READERS of Herbert Spencer's "Autobiography" will remember how that great philosopher, who for eight years was a railway engineer, bent his practical, inventive mind upon some printing improvements. He was for years a very intimate friend of the learned Dr. William Spottiswoode, the President of the Royal Society, and a Governor of Eyre and Spottiswoode. That, and his journalistic and authorship work, may well have contributed to turn his thoughts to the practical side of publishing. Anyhow they were so turned. He studied types, and concluded that lines that were all in capitals were not nearly so legible as lines of lower-case letters. This is because the "caps." have no projections above or below the line, "and in this respect present greater homogeneity than do low case or small letters." Good old homogeneity! A fine imposed on Herbert every time he used it would have made the penalising powers very rich. He saw evolution in everything, and evolution was always along the line of change from the homogeneous to the heterogeneous, and from the indefinite to the definite.

When he was twenty-four he tried his

hand at an improved form of printing press, but wrote later: "Unless it was in simplicity, I do not see what advantage the proposed arrangement had over the then-existing arrangements."

To make type by compression instead of by casting, was another Spencer idea. "A machine was devised (by him), if not in detail, still in its general arrangements, which was to do the work rapidly and automatically. . . . Elaboration of plans went even to the extent of detailed arrangements of an establishment for carrying on the manufacture." "From Mr. Joseph Sturge, too, I find," he writes, "a note of April, 1844, showing that I had intimated to him that I was in search of either a typesetter who would adopt my plan, or of some enterprising man who would advance sufficient money to give it a start." Mr. Lawrence Heyworth, of Liverpool, responded to letters in a manner "that raised my hopes. . . . It appeared soon he had entertained the proposal in the belief that the business might be one suitable for one of his sons. . . . But after sundry enquiries on his part and calculations on mine, he came to the conclusion that the undertaking was not

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likely to prove extensive enough. . . . Probably scepticism about success may have been a more influential motive."

There are also some allusions to illustration in the Spencer "Autobiography." A contributor, who tells us of these, and who has supplied the foregoing notes about the printing machine and the compressed-type ideas, now, we must confess, begins to excite our suspicion. Has he been opening up with some undoubted and provable statements about Herbert Spencer in order to obtain credence for what now follows? Our readers must judge. Perhaps they may think that what he now writes, if it is not true, is well invented—*si non vero ben trovato*.

He will have it that he chatted with Spencer a few months before that philosopher's death in 1903. The author of "First Principles" enquired as to trends in engraving, and exclaimed: "Whenever are you platemakers going to learn the 'First Principles' of the business of plate-making? And when are you going to make a study of men—you whose success depends upon the correctness or incorrectness of your estimate of what other men, that is, of what your customers, will do? You'd better look up my 'Principles of Sociology,' for don't make any mistake, there is a science of men, and of men's actions and reactions, just as truly as there is any other kind of science.

"Of course there are certain things that are Unknowable. But there is one thing

we can be sure about—there is a persistent force (which we may call customers' pressure in this case) always operating upon you poor platemakers. This force never diminishes; it knows no change. It began to operate upon a comparatively homogeneous element, a homogeneous price custom."

I was glad it was out; for I knew he would feel better after having once more uttered that blessed word.

"Your pricing was homogeneous enough at first; it had an element of sameness and uniformity; there was not, however, any stableness in this homogeneous price element. And you know how I have defined evolution—which is manifest in every department of life—as meaning a change from the homogeneous to the heterogeneous, and from the indefinite to the definite; a change brought about by a force persistently acting on something that is not equal or stable, and which, therefore, gives way differently at different points."

(For all the world like the force of acid working through the unequally thick carbon resist of a rotary intaglio, I thought to myself; thirty-five different depths in one cylinder! But I didn't interrupt.)

"Hence your present heterogeneous prices. Hence, too, their present and, for you, terrible definiteness. If you don't know definitely what you mean to charge, your customer does definitely know what he means to pay."

Progress in Process.

THERE are few better criterions of the progress of engraving businesses than what we may call the bricks and mortar test. And judged by that test some houses at least must be having an

encouraging experience. Messrs. Hood and Co., Ltd., of Middlesbrough, have moved into new premises. This important sign of development will be particularly welcome to a large circle in the

trade; for Mr. Harold Hood has always been a man who has taken the large view in business matters. He has rendered great service to the trade by way of his work for the Cleveland Guild (which comprehends printing and engraving employers and employees of all grades and all ages), and by way also of various lectures and contributions to the trade journals; besides, we are very sure, a great many other craft services of which only himself has knowledge; if even he has not forgotten them. The Vaus and Crampton move to Kirby Street, E.C., is comparatively ancient history; we may, however, note it in this connection, and what

a sense of space and dignity impresses one at the moment of entering the front office. Lascelles, Ltd., are shortly to be installed with fine new engraving plant in or near Floral Street, W.C. Intaglio Patents, Ltd., took a large disused chapel in Stamford Street, S.E., as, for them, a chapel-of-ease, and erected there a notable studio and rotary photogravure plant; altogether a quite unique installation. One could, no doubt, extend the list of such removals or additions. This just by way of passing reflection upon some changes of this or recent times, and of their happy significance.

Photographic Arts and Crafts Exhibition.

THIS year's Exhibition at the Horticultural Hall was an undoubted success from every point of view. Materials and apparatus in every variety were there for inspection, and the large number of visitors every day must have been very gratifying to the promoters, who are to be congratulated on organizing such an interesting exhibition.

Although primarily a photographic exhibition, there was much to interest the process engraver, and a short notice of some of the exhibits will be of interest.

Messrs. Wratten and Wainwright, who have done so much to advance colour photography, had a full range of all their manufactures. This firm is so well known to most process engravers that it is hardly necessary to call attention to the excellence of the colour rendering of their Panchromatic plates and the suitability of their process plates to half-tone negative making. A useful piece of apparatus they have recently placed on the market is a cabinet for holding colour filters. Each filter has a separate holder, which

slides before or behind the lens and considerably reduces the risk of breakage. When not in use the series of filters with their respective holders are slipped into a small cabinet, specially kept for the purpose. The price is quite reasonable. They also showed their ink testing device, which when used is an aid in checking the work as it passes through all the stages of three colour block making. It should also be of great use to the printer.

Messrs. Sanger Sheppard had a very interesting collection of colour work by their own process, which particularly lends itself to three colour reproduction, as the negatives and the final coloured result are free from the grain or screen effect employed in other processes. This firm also have a method of duplicating coloured positives, autochromes, etc., and the results shown were good. They also have placed on the market a filter, which graduates from clear glass to a yellow tint of suitable depth, which should be useful for a certain class of work.

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Messrs. Balfour-Hitchins have perfected a process for duplicating coloured transparencies and making coloured prints therefrom. The results inspected were prints from autochromes, and a very close reproduction of the original was obtained. When this process is put on the market it should afford a new field for the process engraver. If the process does all the inventors claim for it, we have no doubt that it will prove very useful both to the professional and the amateur.

The Paget Co. showed a colour process which possesses certain differences and advantages over other methods, and may prove useful in connection with reproduction by the three-colour process. The screen that gives the coloured effect is separate from the positive, but a slight adjustment of the monochrome transparency with the coloured screen gives a brilliant image in natural colours.

The Raydex Photographic Co. showed a process of duplicating colour transparencies, and the examples shown were remarkably good. We understand that Mr. S. Manners is the inventor, and the results we have seen are among the best of the colour duplicating methods. This process should also afford a new opening to the process engraver.

Mr. Butler exhibited some prints made from negatives taken with his one-exposure camera. This camera possesses many advantages over other methods where three exposures are necessary. The specimens we have seen show it is

possible to make the three negatives with their proper colour rendering by a single snapshot exposure. Messrs. Penrose and Co. have the selling rights of this camera.

Messrs. Marion and Co. had on view some good apparatus, and their North-light arc lamp should be very useful in commercial studios. It gives a particularly brilliant white light, and throws very little shadow. Coloured objects do not appear to lose their colours or be degraded. This firm also sell a process dry plate, and the screen negatives we have seen are almost equal to wet plate in appearance, and yield results in every way as good.

Messrs. Dallmeyer were showing their various lenses, and in particular the telephoto lens deserves attention by commercial photographers. The superior results obtained would soon pay for the cost of this addition to the photographer's outfit.

There were many varieties of photographic papers, different kinds of dry plates, and useful apparatus to be inspected that well repaid a visit, and, as most of the leading firms were there, the Exhibition was interesting throughout, but we are unable to enter into full details in a short notice of this kind. Those who could not visit the Exhibition would perhaps find it useful to write to the promoters for a catalogue, which will prove useful in many ways. Mr. Brookes, Sicilian House, Southampton Row, W.C., will be pleased to supply them.

MR. GREENHILL, of André and Sleight's, has set a good many thinking by his expert and very interesting statements upon three-colour working.

Here is one of his *obiter dicta* :—"I prefer to think of an overlay as a method of lightening the impression on the lighter tones of the block,

rather than as a method of forcing up the impression on the darker tones." He points out particularly that if you have too soft a mount you drive in your overlay more or less into that mount, and you thus to a large extent neutralise the effect of having an overlay at all.

“*The Idiots!*” *Who are they?*

“**G**IVE me a spark o’ nature’s fire, that’s all the learning I desire.” Thus Rabbie Burns invoking his muse. There certainly was a spark of nature’s fire when Mr. Carl Hentschel, in middle course of his speech at the Engravers’ annual dinner, burst out with a hot word of wonderment as to why the engravers of the Kingdom were at times such adjectival “idiots.” It caught the temper of the company, which was ready for a jovial orgy of reproach and mutual confession. It liked to have the picture of its past wrong-doing presented “twopence coloured” and not “penny plain”; as it had so often been presented, and so unimpressively; so the accusation was received with a roar of laughter. Mr. Hentschel was not posing as one whose firm has always in every order done everything that it could wish to have done, in every item of every invoice. He has been conditioned by the general folly.

Standing up there and bursting out with his protest, he had—upon the whole review of twenty years—a clear task unembarrassed by past happenings. He sought to rouse the too long lethargic craft to look at itself for a moment, if it could, with the eyes of an intelligent outside observer. He had to ask it to “stand aside and see itself go by.” He may well have thought that the only way in which he could do this was to use some striking phrase; and that he most certainly did not omit doing.

One recalls the yarn of the good country vicar who opened his heart to his bishop, and told him of his troubles and anxieties. “I will come down to you and we will have ‘A quiet day’ in your parish,” said his lordship, meaning very

kindly, but rousing the poor vicar to something like fury. “My lord,” he exclaimed, “what the people of my parish want is not a quiet day, but an earthquake!”

That is exactly what the Engravers’ Association has wanted. Some resounding call—such as a violent denunciation of the sheer idiocy of oneself’s knocking over one’s own trade; and a trade which it is peculiarly impossible for anyone else to knock over. Foreign competition, for instance, hardly counts in plate making. Some Vienna firms did make a bid for the British market some years ago; and Dutch printing from engraved surfaces or by collotype has at times seemed to threaten to be a serious factor. But speaking of the present, and solely of our craft, we are really protected by the ocean and by distance. We have no enemies unless we are our own.

Of course, if we are content to be nearly or quite “honorary engravers,” there is no more to be said. But we are not. We ought not to be. We ought not to miss the end of life in pursuing the means of life. If we do, the loss is not ours alone. We cannot bear our share in the world’s counsels and its general tasks, if our noses are all the time close to our own business grindstone; and if we do not bear that share how can we escape a certain reproach of meanness; our own conscience whispering that word, even if there is no other whisper of it. It is our business to invoice our work not for that figure which we absolutely must charge to carry on at all, but to invoice it for all that we can fairly obtain, so that we may win some real, some complete success, and live a full, a many-sided life, and be and do all the worthy things it is in us to be and to do.

Hints on Temperature.

By W. T. Wilkinson.

THAT dark room and studio should be kept at an equable temperature night and day is frequently ignored, as it sometime happens, and when a really cold snap comes along, half the day is wasted before work can be started, and the operator has a bad time generally, and is blamed for the delay in getting out his negatives. Here is a case in point.

During the cold snap in October the operator showed the boss two negatives, one developed in cold solutions, flat and useless, the other developed in solutions warmed to 65°, good in every way. The comment of the boss is worth recording: "Bah! Another photographic fad; next week the excuse will be the place is too hot!"

In a recent number of the "B.J.P." there was a paragraph to the effect "that a keen business man" intended to build a studio on the top floor, and to have a glass roof. Fancy such a place in summer and in winter!

Temperature plays a great part in col-

lotype, and, in fact, in any process with gelatine as the vehicle. No gelatine for any photographic process should be subjected to a greater heat than 10° F. above its melting point.

Again, glue prints on metal are often covered with scum, which is almost impervious to the mordant, and can only be got to etch with great difficulty. The cause of this is too great a temperature in drying the glue coating. The metal should never be heated over 90° F., and if the coating is dried at that temperature, the image will be stronger and perfectly free from scum.

When making tri-colour negatives, a great deal of trouble will be avoided if the temperature of studio and dark room be kept constantly at 65° instead of about 30° all night, and then raised to 90° during the day. This is the cause of negatives being brought back by the etcher as not fitting. The change in temperature has caused cameras to change sufficient to alter size of one of the three components.

✓ *Newspaper Illustration.*

THE increasing developments of newspaper illustration seem to make it advisable for us to devote some of our space particularly to this comprehensive subject.

One wonders if enough thought is given, when newspaper illustration of the present and of the future is under consideration, to the simple and enormously important fact that many newspapers of large circulation make a very large number of duplicates of their pages for

simultaneous printing. This is just one of those things which we are apt to know without fully realising.

The etching of cylinders required for the Mertens and similar processes, which in itself is a very expensive thing, may take too much time for it to be possible to prepare eighteen or twenty printing formes for use in the printing of one issue of a newspaper. And the most important papers tend to require that a large number of duplicate cylinders (or semi-

cylinders rather) shall be prepared. These, of course, in the ordinary way, are curved stereos. With intaglio they must be curved copper. So that, apart from the question of cost the question of time would seem to rule out the application of machine photogravure to newspapers in the ordinary course of operations as things are at present. What may be done on special occasions is another matter. Special occasions call for special expenditure. It is presumed that that will be met by special receipts.

Mr. Leo Hagdoorn points this out in the "Process Year Book." He notes, too, the so-called Faber method—the method of the printing of illustration in blank spaces left open in the forme, direct from the block with a different ink and one of better quality than that used for the type. "This process," Mr. Faber says, "appears to be suitable only for blocks that are not pressed for time; that is, Sunday editions and the like."

Upon that one he is disposed to make the comment that the producers of Sunday editions will not admit that they are not pressed for time. The urgency in their

case arises from the tremendous number to be printed, and from the fact that the Sunday reader expects to have a fair proportion of matter up-to-date.

Moreover, the tendency is to keep stopping the press and inserting small additions, and we fancy we might add, the tendency is also to keep on trying to give a local character to a few thousand copies here and a few thousand there. Not much can be done in this way, perhaps, but all that can be done seems to be attempted. It is a decided feature of the time that newspapers are differentiating as far as possible for the different districts they are to reach. And that means rush.

In the office of "Excelsior," in Paris, the blocks are etched on a thinner zinc than usual, and are pressed after underlaying by means of an automatic apparatus in a hydraulic press. The result is that the half-tone dots in lighter tones come lower than the ones in the dark tones. While the flongs are being made, as much overlaying is done as possible. The lighter shades consequently receive less pressure than the darker shades.

✓ *The Advertising of Advertising.* *Where does the Engraver come in?*

A VERY large sum—£200,000 is the first figure named—is apparently to be spent in some form of "advertising advertising." Presumably a few posters will be attempted; such posters as might fix in the mind even of him who runs that So-and-so spent £100 in advertising his business, and made £300 a year extra straightaway. This will be attempted, we believe; but will it be found very practicable to do much good in this especial connection by way of posters?

We doubt it. Posters cannot argue. They can remind; they can re-impress an admitted truth. They can startle; they can arouse a smile; but the gentle art of persuasion is ordinarily denied to them by the very nature of things.

The book, or booklet, or circular, or handsome folder card, or the newspaper column, or journal column, any one of these is the more natural medium for a quiet argument with the individual man, as to the wisdom of more thorough adver-

tising. For he needs to be argued with and convinced—probably he knows cases in which some advertising expenditure has seemed to be unremunerative.

Now if the appeals are to be successful, they must issue forth commended by illustration. An abundant use must be made of the engraver in this connection, and of the engraver's studio. It is important for us to get the volume of plate-making which this effort should mean, but it is even more important to the promoters of the campaign to have our service than it is to us to have their money. We can drag on without them. Their campaign can hardly by any possibility arrest the attention of the million without our graphic aid. It is for us to see they they recognise this fact. A subcommittee of the Association might very well be appointed to watch this effort, as

barristers act with a watching brief, and to advise as to how best we may interpose with good effect. In this connection it may be noted that a great deal is to be made of the evil of substitution by retailers of unadvertised "just-as-good," possibly rubbishy articles. One may be forgiven for wondering if substitution is not to be made a jumping-off ground from which the campaigners may gain a good vantage whereon to stand well with the public, and wherefrom the whole doctrine of advertising may be preached. If that is the idea, it is probably a mistake. The public will prefer, we believe, to have a direct appeal. "Substitution" talk, however, is all right for the engraver; he should be needed to reproduce some of the imitations and show just how they make pretence to be what they are not.

When the "Boss" insists.

MANY process workers who have sampled different firms and managers, must at times feel goaded almost to desperation when their "boss" gets a new idea and insists upon it being put into practice. In the various shops in which I have worked, experiences of the above have been plentiful, but in justice to practical managers I must add that the experiences have only come about through the head of the process branch being a victim to "theoryitis." By this I mean that the one who inflicts these penalties on the worker is not a worker himself, but merely a looker-on, but with the position. In most cases it will be found that the head process man, as mentioned, has simply blown into the business, knows just enough theory to make himself a nuisance, and has done little or none of the practical work in a

process house. And yet there are heaps of "heads" like this. They get a little theory madness which is of the wrong sort, because correct theory is very practical. These are a few instances of the "new" ideas, I have tried at times, to satisfy the whims of a "theoryitis" victim. Everything was working nicely and smoothly, and the "looker-on" bethought him of depth in the plate. This was what he ordered. All negatives were to be made with the high-light a good cross line and the shadow dot the size of half-a-crown. Of course, if an operator puts himself to get such a negative he can easily do it, but imagine the feelings of the etcher when he gets such a plate to start on. Stopping after stopping had to be worked before the desired result was obtained. And when an operator does his own etching, as in my case,

of course he knows what he's aiming for in the negative is to save work on the metal, therefore the reader, I'm sure, would excuse any profanity which was the outcome of the "new" idea. The time taken nearly broke the heart of the head "boss," who only thought of his so-much-an-inch. Another instance of another "head" who always had his eye on the enamel. The notion suddenly struck him that the enamel was intended more as a sensitive medium than as a combined solution, also that to burn a plate in until the enamel turned dark chocolate needed heat that destroyed the nature of the metal. So he ordered that prints on the metal were to be burned up until they turned just pale yellow. This was done, but the plates were hardly in the acid when the cry went up that the enamel was coming off. He pooh-poohed the fuss and ordered rolling up. This was also done, but the idea was ridiculous, as previously the plates would etch to a finish and still the enamel be intact. After surveying the quantity of spoils he decided not to worry so much over the nature of the metal and things were reverted to the original procedure. A third instance, but

not so bad as the others, occurred in a large process department of an illustrated Colonial weekly. This paper turns out some splendid work, and don't mind how much time is taken so long as the work is good. But the great mistake with them is that the wrong man is in charge. He likes to see a bright negative, and to get such a one he insists upon the operators partly exposing with a square stop and then finish the exposure with the extended corners of the next larger size stop. The result is a circle-shaped high-light and the whole effect is very bleached. Any delicate tones have to be put in by the etcher. Hours and hours are taken by the etcher to get the desired effect and to get a decent depth all plates have to be rolled-up. I have seen some glowing accounts of work done by this firm, and while the ultimate results deserve them, the work takes two or three times as long as is necessary. Theory and practice work hand in hand, which makes it very trying to practical men when they have to carry out the instructions of an unpractical man with a distorted knowledge of theory, simply because he happens to have the superior position. P.S.

Ruling Indicator for Half-tones.

EVERYONE who having a fairly large acquaintance with half-tone work has frequently felt the desirability of possessing some instrument by which he can easily and accurately decide the ruling of the screen, by means of which the block has been produced. This long felt want has now been filled by Mr. Max Levy, who has perfected an indicator for rapidly and accurately determining the number of lines in a half tone print.

The indicator consists of a series of rulings about one inch square, corres-

ponding to all the screen rulings supplied by his house from 50 to 200 lines per inch. These rulings are made in two rows, as shown in the illustration, which is about quarter the size of the indicator; the rulings are etched into the glass, to which a cover glass is sealed, and then framed with an aluminium frame.

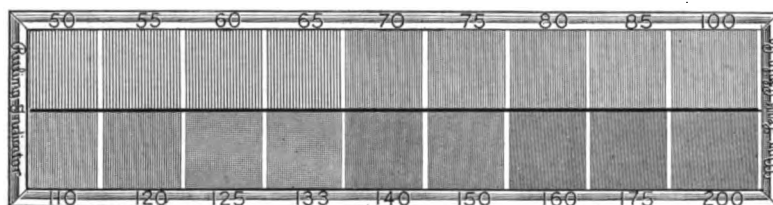
Figures representing the number of lines shown in each square are engraved on the aluminium frame opposite the particular ruling, so as to ensure ease of reference. The indicator is about 9½

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inches long by about $2\frac{3}{8}$ inches wide.

The use of the indicator is extremely simple. It is simply laid over the print to be tested, so that the lines of the indicator are parallel with the lines of the print, and coincidence will be im-

mediately disclosed by one of the rulings covering the lines of the print, and the ruling of the print can be immediately decided by reference to the figures against that particular ruling.



mediately disclosed by one of the rulings covering the lines of the print, and the ruling of the print can be immediately decided by reference to the figures against that particular ruling.

The adjacent rulings will show a varying pattern corresponding to the degree

of difference between the ruling on the scale and the ruling on the print. Prints with rulings other than those contained on the scale can be readily determined by ascertaining whether they are finer or coarser, and counting the number of

light and dark bands formed by optical interference, and either adding or subtracting this number from the number indicated on the scale.

The appliance is sold by Messrs. A. W. Penrose and Co., Ltd., 109 Farringdon Road, E.C., and the price is £2 2s.

✓ *Some Offset Disillusions.*

MR. HARRY MADDOX, who writes so many valuable technical articles upon subjects connected with paper, has furnished, through the "Imprint," some serviceable observations regarding ideal qualities for papers to be used in printing by offset. Evidently it is not the case in his experience that one sort of paper is as good as another for offset printing; and it should be understood that Mr. Maddox is a responsible controller of a Manchester printing works. He writes on the subjects of paper, particularly, with all the authority that comes from practical conduct of printing affairs.

What, then, is ideal paper for offset, in his judgment? Will "just any old stock," to fall into colloquialism, serve its turn? Not a bit of it. So far indeed from this, Mr. Maddox, when specifying the ideal for offset, pronounces for a

paper of a very close grain wove, with well felted fibres and an entire absence of wire marks from the under side. He demands hardness in his paper and a crisp rattle; they are requisite, and their presence is not to be anticipated unless it is secured by precise means adopted to that end. Which means include the correct choice of raw material; correct beating treatment, and tubsizing. The surface must be a slight matt and the paper must be quite opaque.

Mr. Maddox is pretty plain spoken. He notes that the worker directly concerned with the offset press has no say in the choice of the paper, while the paper-maker does not at present exert himself to find out by research exactly the points which make or mar the stock to be used. In this particular he thinks we have something to learn from America, for there

"every manufacturer"—"every" is a big word, Mr. Maddox — "every manufacturer is making an endeavour to meet the demands of the offset lithographer for a paper which will eliminate trouble in the running, and add beauty to the impression." Until the makers on this side

find out that the offset press really does require an embodiment of particular character in the stock it behoves the printer to acquaint himself with the various factors affecting the paper and the press.

"Pictorial News."

A RECENT article in "The British Journal of Photography" on "Press Photography and what the Editors Want," reminded us of a discussion we took part in some time ago, when dealing with the value of the camera for business purposes.

The argument was very effectively expressed by E. A. Southwick when he stated that the camera as an adjunct to the equipment of the small newspaper office can be made to assist materially in creating business and in making the paper more interesting and attractive. As now made the small cameras or kodaks are easy to operate, are reasonable in price and the cost of securing photographs is small. Pictures which could not otherwise be obtained without considerable cost may be secured cheaply if the publisher has his own camera.

It is hardly worth while to go to the trouble and time required in developing the negatives and printing from them, however, unless it is desired to do so, for it only costs a small sum to have the developing done by a professional photographer. The publisher can use his time to better advantage in other work.

There is a wide variety of pictures to be secured in every town which could be put to profitable use, including business houses, farm and orchard scenes, holiday and other gatherings, resorts, oddities and points of interest generally.

Pictures of business houses are among

the most profitable usually, as they frequently are the direct means of creating business which could never be secured otherwise. They may be used on blotters, post cards, stationery, in the advertising columns, with local news and in many other ways which will readily suggest themselves, according to the nature of the business concerned and local conditions.

Here is the history of a picture taken by a certain publisher of a weekly newspaper, which illustrates the value of cuts and the helpfulness of a camera. While out in the country near 's town this publisher noticed a field of particularly fine wheat and took a picture of it, from which he had a cut made. In the next issue of the paper there appeared a write-up of the wheat field and the grower, which was illustrated with the picture. Afterwards the cut was used in printing some stationery for the farmer, it was used as a folder issued by the town's commercial club, was printed on post cards and placed on sale with other views, appeared in a special edition of the paper and is still in condition for other work.

This is not an unusual case; in fact, any country newspaper publisher knows where he could secure photographs in his vicinity that could be put to a variety of uses, and if he had a camera he would be very likely to get many such pictures.

As everyone knows, half-tones are mighty handy things to have in the office.

Correspondence.

The Editor, PROCESS ENGRAVER'S MONTHLY.

Dear Sir,—Reading the November issue of your magazine, I came across an article by Mr. Robert Vincent, "A Real Medium of Theory and Practice both for Men and Master," and I should like to follow out his suggestion, I hope to my benefit, and ask to know through the medium of your magazine "What is off-set printing?" The machine—a description of it, and so on. Just a simple explanation would be of help to me.

Thanking you for this opportunity,

I am, yours faithfully,

A WORKER.

The following is from the pen of one of the most experienced offset demonstrators in this country, and will be found useful by many of our readers:—

✓ OFFSET PRINTING.

The principle underlying the offset method of printing is not by any means new, and has been in use for the last 30 years in the production of prints upon tin plates. The simplest illustration of it is to take a clean rubber pad and press it upon some newly printed ink, and thereby obtain an impression of the work on the rubber, then with suitable pressure on the pad give a print upon paper. This is what the offset machines do. In the ordinary flat bed lithographic machines the printing cylinder can be covered with a fine blanket of rubber, so that in printing the work is transferred to the cylinder, then retransferred to the paper by feeding a sheet through. This apparently round-about way of getting the result is overcome in machines constructed with a second cylinder running in contact with the rubber-covered cylinder, and carrying the paper, so that at one revolution the impression is taken from the rubber and is immediately printed on the paper. This is called either transferring or offsetting. In machines of the rotary type there is the second cylinder for the same purpose, and these machines are sometimes called three-cylinder machines.

The great advantages of the process are that any kind of paper can be printed upon, and at a speed hitherto not by any means common. Thus a good piece of colour work can be printed by hand feeding at a rate of at least 1,500 per hour. The second advantage is that the paper, being printed dry, the difficulty of register is very much less than on the flat bed machine, where the paper comes in contact with the damp stone at every impression. The earlier use of the offset method was very largely for the production of very fine

letterheads upon the hard Bond and Loan papers, which had always given much trouble to the lithographic printer. It was customary to etch the stone into relief, and in not a few cases to damp the printing paper. By the offset method the products of these headings have an appearance which has created a new taste in printing.

The offset method does not stop at the printing of headings, it has gone much further, so that now all kinds of colour work are being produced in the best style.

The later adaptation is to printing any kind of photographically prepared subject, whether it be the ordinary half-tone block or the finest photogravure. It is a peculiar feature of the process that the rubber is capable of picking up from the plate the whole of the work which was put on it, and in that respect it is superior to the lithographic method. The effects obtained closely resembling photogravure or collotype products.

There is little doubt that as the value of the method becomes more widely known it will find more and more work for the process engravers.

REVIEWS.

The articles, illustrations and typography of THE THEOSOPHICAL PATH all bear out what was recently said and published by the Editor of "The American Freemason," viz., that it is "one of the most perfect magazines published."

"Reincarnation in the Bible," a reprint of one of William Q. Judge's valuable articles; "The Death Penalty"; "A Tribute to John Ruskin"; "In the White Mountains," a charmingly written sketch; "Health by Movements"; "The Red Men"; are all articles of interest.

The April number of this magazine is just to hand and fully maintains the high standard of perfection to which its predecessors have attained. It is one of the best illustrated magazines that comes to us.

LINOTYPE FOR BOOK WORK" is the title of an excellently produced booklet just to hand from Linotype and Machinery, Ltd.

The booklet contains specimens of twenty-eight beautiful type faces eminently suitable for book work; some of the founts are really beautiful in their symmetry, and have the charm of being exceedingly clean and well cut and easily read.

The Company are to be congratulated upon the excellence of this their latest help for the printer and publisher.

Estab. Jan. 1894.
"The Process
Photogram."



Vol. XX. No. 234.
JUNE 1913.

AND ELECTROTYPYER'S AND STEREOTYPYER'S REVIEW.

A Bird's-Eye View of Process.

By Mr. Carl Hentschel.

A MEZZO-TINT CLASS—LITHO—HIS EARLY PHOTOS ON WOOD—NIEPCE'S PURIFIED BITUMEN—PIONEERING FRENCH LINE ETCHER SERVES HENTSCHEL'S 20 YEARS—HALATION AT CROSSING OF LINES—THREE COLOUR SIMPLY STATED.

MEMBERS of the Technical Journals Section of the Institute of Journalists asked Mr. Carl Hentschel to talk to them about modern illustration method. The busy man is generally the one who can find time for something else, and he complied with their desire.

After the opening amenities he proceeded:—As one who has watched the growth of reproduction and use of illustrations, and observed the various processes which have been perfected during the past 35 years, I cannot fail to realise what an enormous revolution process work has created, not only in the newspaper and journalistic world, but also in commercial circles as well. Naturally, I cannot help feeling proud that to a certain extent the name of Hentschel will always be associated as pioneering in the advance of Process Work, both in Black and White, and Colour, and as having brought these processes to practical and commercial success.

Photo-Engraving is the term applied to

the art or process of producing printing plates, having images formed in relief on a metal surface obtained by a series of photographic or chemical operations.

The process contains three distinct classes of etching, line, half-tone and colour half-tone or Hentschel-Colortype.

Explaining the terms, line etchings, half-tone etchings, and colour half-tones, Mr. Hentschel continued:—These three classes of work pass through three general stages before a finished plate is obtained, as follows:—(1) Negative making, (2) Etching in, (3) Finishing and Mounting.

I will try briefly to mention the various methods used in connection with or for reproducing illustrations, and the various processes may be described as follows:—

Steel Engraving, Mezzotint, Copper-plate engraving, Lithography, Wood engraving, Collotype, Helio-type, Autotype, Photogravure, Zincography, Meisenbach or Half Tone Engraving, Three Colour Process or Hentschel-Colortype, Rotary Photogravure and Offset Printing.

Now, the first three methods are methods adopted for a special class of work, i.e., plates or engravings where the editions are limited and cost is no object. Steel engraving and mezzotint have

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practically died out, and from an artistic standpoint one must regret that this should have to be said of a process requiring such personal attention as mezzotint. There are now very few men capable of doing it. The L.C.C. at their School of Engraving, I am glad to see, under the advice of Lord Cheylesmore (lately chairman of the L.C.C.)

HAVE STARTED MEZZO-TINT CLASSES as a special branch. For commercial purposes I am afraid mezzo-tint is entirely out of the question. Regarding Lithography, you are all familiar with its method, which is drawing with a fatty pencil or chalk on a peculiarly porous stone, which is afterwards treated in a special manner. The stone, after being damped, is inked up, the ink adhering only to the parts drawn upon, the dampness of the stone on the white parts preventing the ink from adhering there. This method is extensively used specially for commercial purposes, as in show cards, etc. The inventor, Senefelder, in 1796, by the way, discovered the process quite by accident. His mother asking him to make out the laundry bill, he, having no paper by him, made a list of the customary garments on a slab of stone handy. He afterwards noticed that the greasy pencil marks he had made had sunk into the stone. The idea led him to make further experiments, which culminated in his giving lithography to the world.

Lithography had its limitations, as he left it, inasmuch as every original to be reproduced had to be redrawn on stone, and unless the lithographer or artist was very clever the reproduction suffered. In regard to artistic work, lithography has had a peculiar fascination for many artists, and Whistler, Pennell, and others have done some very fine work, making their own drawings direct on to the stone. Recently Pennell showed some fine examples of the Panama Canal at his Ex-

hibition. For catalogues, it is still extensively used, but since the advent of Process it has dropped somewhat into disuse. For posters, however, it

STILL REIGNS SUPREME.

At one time, of course, nearly all our coloured illustrations were reproduced by chromo-lithography, but three colour, or Hentschel-Colortype, entirely revolutionised the trade. One of the disadvantages of lithography was that it could not be used in connection with letterpress printing, i.e., not in one and the same mechanical operation in printing.

We next come to Wood engraving. Here again the invention of Process has killed an art which in the hands of a skilful man could be very beautiful. The earliest woodcut goes back to 1423, the first and best known being the celebrated woodcut of St. Christopher. Thomas Bewick and Robert Branston were pioneers of wood engraving in England. Branston was a copper and steel plate engraver. The earliest wood blocks were

CUT WITH KNIVES,

not gravers. It was to Thompson, a pupil of Branston, that the art of wood engraving was indebted for its early progress. He improved the tools, and his practical study and ability successfully achieved the task of increasing the demands of wood engraving.

Cheapness, which worked so much evil to steel and copper engraving, was soon active in lowering the artistic quality of wood engraving. At the present day the same thing is happening, so I suppose it will always go on, the insidious influences of undue rapidity, cheapness, and, what I will comprehensively call up-to-dateism, undermining artistic work.

Wood engraving hardly needs describing. The design is first made on a piece of boxwood, a specially hard wood which allows the engraver to cut clear and sharp. In the case of a large cut, these boxwood

blocks are made of several small pieces, which are afterwards screwed together, so that sometimes ten or more engravers can work on the same design at the same time. Before the advent of Process, when “The Graphic” and “Illustrated London News” were both engraved on wood, you will find (if you carefully examine the early numbers) white lines or cracks running right across some of the blocks. These were caused by the joins in the block. The design was generally drawn in pencil and body colour, the blocks being first coated with a white solution.

These methods were employed until about 1876, when instead of the drawings being made by artists on the wood, they began to be drawn on paper, and then photographed on to the block. This was a great improvement, because the artist could make his designs any size he wished, and have them photographed down to the required size, and the drawing had no longer to be reversed.

My first experience in producing illustrations was in assisting my father in photographing drawings on wood. I remember working for some of the best and leading wood engravers of that period.

Process engraving is older than photography on paper. Letters written by Isidore Niepce at that period tend to show that from Niepce working in France we obtained the germ and idea of process engraving. In 1814 he commenced experiments and in 1824 (if not earlier) actually produced proofs from photo-etched plates. His process was

JUST TO PURIFY BITUMEN AND

then to coat a silver or pewter plate with it, exposing to light under an engraving or in the camera. The bitumen, where it became soluble under the action of the light, resisted the solvent action of oil of lavender, which was afterwards applied, so that a resist was produced and the plate was afterwards etched. The only records

of Niepce's early experiments are furnished by some correspondence between Niepce and Daguerre.

Eventually Niepce entered into partnership with Daguerre and endeavoured to form a company to work their new invention, but without success—capitalists looked upon it as much too risky a venture. Niepce's desire and object when the first glimpse of photography appeared was to find a substitute for ordinary engraving.

Mr. Henschel then dealt with Daguerre's work, and said:—The first published results of the Daguerrotype process proved that nitric acid attacked the silver forming the dark part of the image, whilst it had no action on the mercury in the light part. After a few minutes' biting, the plate was washed, inked up, and proof pulled, but the results were very imperfect, and the plates did not stand printing, owing to the softness of the silver.

The earliest attempts in the direction of automatic engraving were based on the biting away of the metal with acids. The great difficulty encountered was to ensure that the action of the acids should be exercised only where required. Nitric acid had a habit of etching away the delicate parts, and even at the present day it is not unusual for this to occur. Many experiments were made, but for a long time the results were failures. It was left

TO A FRENCHMAN, M. GILLOT, TO PERFECT the etching of the line block. Gillot encountered, as is usual with pioneers, an amount of professional opposition. The French wood engravers were averse from helping the new method by any encouragement, dreading that the new process would supersede their own art. It was “Le Journal Amusant” that came first to his assistance, and foreseeing the value of the process, gave up all wood engraving

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and used Gillot blocks instead, in other words Line Process blocks on zinc.

My father had for many years been experimenting with photography on zinc, but it was not until after many years of labour that he succeeded in perfecting his process sufficiently to practically work it, and then only by adopting the Gillot method of etching. It may be interesting to mention that the first etcher who came from Gillot of Paris to introduce the method into England

WORKED FOR ME FOR

some twenty years. It must not be forgotten that all the early plates were either drawn on zinc or on transfer paper or lithographic stones, and then transferred to zinc and etched.

Leaving Line blocks, we come next to various reproductive processes, such as Collotype, Helio-type, Autotype, Woodburytype, etc. These were all known as gelatine, or carbon process. The results were photographic in effect; there was no screen as in half-tone plates commonly used to-day. The necessary grain was obtained by means of reticulation of the gelatine. The results gave the appearance of photography and were generally printed in greys, brown or Bartolozzi red, according to the customer's liking. Collotype specially was largely used; mostly in Germany. The process has

NEVER BEEN WORKED SUCCESSFULLY HERE :

largely owing to climatic conditions, and to the limited run one could obtain from each gelatine relief. In Germany it is still used most extensively for catalogue work. In connection with chromo lithography, some excellent results can be obtained when the key is in collotype, and the added colours are litho. The result is more artistic and natural, and more clearly representative of the original, because it is a photographic copy and not a redrawing on to stone.

For catalogue and commercial purposes wood engraving is still used to a fair extent, but recently the clever special manipulating and working up of photographs for reproduction by half-tone has lessened the demand for wood engraving. In many respects wood engraving was preferred for catalogue work because the engraver was able to put in more detail and emphasise the points the customer desired emphasised. In other words, wood engraving was not so mechanical a process. In the case of machinery when details were not, or could not, be shown in the photograph the wood engraver could put in what was lacking. But, after all, a good woodcut cannot compare with a finely-worked-up process block, and apart from that, the cost of really good wood engraving is a serious matter, while cheap wood blocks look too old-fashioned.

When Klic was last in England, about the year 1880, I assisted him in experimenting in the reproduction of half-tone engraving. Meisenbach was just then coming to the front, and Klic had some scheme of making cross-lined screens. His idea was to make these screens photographically by photographing a single-lined negative both ways, and reflecting the light through the lined negative in such a manner as to secure a sort of halation or softness between the points where the lines cross.

Although a lot of experiments were made, nothing came of them. I am afraid I had not much faith in the process, and was not really enthusiastic over it. My father and myself experimented on making different screens. We had one idea of making a sort of chessboard screen consisting of black and white squares, and for this purpose we got an artist to make the board, and for six months he worked on this wretched in-artistic mechanical work, nearly blinding

himself, as the board had to be reduced so very much; the results were too small to be practically useful.

At the same time wire gauze was used, also lace and silk. Some fine results were obtainable through the wire gauze, but the scientific principle and method of breaking up the dots had not been discovered.

It was Meisenbach in 1882 who came along, and by his method of using glass screens, lined one way, and moving them diagonally during exposure, obtained the result now known as half-tone. Meisenbach was the only process then worked, and it may not be generally known that the Meisenbach Co., at Norwood, was worked by me for many years unknown. Although the Meisenbach was a limited company, all the shares with the exception of one were held by myself. In latter years the Meisenbach Co. and my own company amalgamated.

After allusions to Levy Screens Mr. Hentschel added: The idea of obtaining all the effects of a coloured subject by the aid of three primary colours is quite old, but it was the invention of photography, and specially the improvement in process engraving, that enabled its results to be brought to such perfection. The process is a most fascinating one, and to this day there are people

WHO ARE SCEPTICAL AS TO only three colours being used. For commercial and manufacturers' catalogues the process is invaluable. It is the process which has killed chromo-lithography, for small work at any rate, and it has been the means of wresting from the Germans a claim which they made for many years, that the best colour work was only done in Germany.

The finest colour work is now done in England, and my firm was the first to send its colour blocks abroad. The advantage to the manufacturer when he can

get his goods reproduced in their natural state is incalculable. The theory of the process is very simple. The aid of the primary colours is brought into use, red, yellow and blue; and by obtaining three half-tone negatives which contain the proper relative proportionate values of each colour we obtain the results you are familiar with.

We place in front of the lens certain colour filters which respectively enable the sensitive plates only to record the particular colour desired. To put the matter a little technically, in ordinary three-colour plate making it is usual to inset a green, a red, and a blue-violet filter in turn in the camera. Each passes on any rays like its own which are present in the subject copied, whether those rays are separately visible to the eye or are blended in combination with others. The tone of each of these glass filters is presumed to present the true primary tone of the spectrum, i.e., the true spectrum blue-violet, true spectrum red, or true spectrum green. Why we print our three-colour plates with inks which are magenta, and a sort of lemon yellow and a sort of cyan blue will be seen at once if we follow this process. The green filter allowed green rays to pass through; it stopped out reds and violets. Its negative recorded greens; its positive recorded everything but green; and the resultant metal plate is, therefore, printed with a magenta because that is the embodiment of all that was not green, i.e., of the violet and the red.

The blue filter stops out red and green; its negative records blue; its positive records everything but blue, i.e., it records red and green parts; so for printing the resultant metal plate we blend the red and green, which make yellow, and use yellow ink for those parts, for that plate. The red filter stopped out blue-violet and green; its negative recorded

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red; its positive recorded all the colours but red; so we print it with an ink which blends those non-red colours, or blue-violet-cum-green, and these make a sort of cyan blue.

Now a word as to the preparation of illustration for technical papers. In America they are ahead of us because in the first place they are more thorough and do not mind paying higher prices for a really good thing. They use skill in preparing their photographs, and, secondly, they employ the best talent to work those photos up in a manner which will bring out all the selling values of the goods. No matter how clever your photographs may be, it is absolutely necessary if you are to bring out all the details of your goods that

THE PHOTO MUST BE PERFECTLY WORKED UP;

the imperfections and reflections of such articles as, for instance, silver and shining goods, are hopelessly difficult to manage unless worked upon by a competent man.

Unfortunately the poor process engraver is shown an elaborately worked

up production, is handed an inferior photo and is told a similar block is wanted; and practically for nothing. When you suggest the sum the American paid for his he considers you want to "do" him. Now why should we not, here in England, devote the same care and attention to getting up something really good and artistic, although it may only be a catalogue? Luckily trades are realising that a well got up catalogue brings in business. A dressmaker, for instance, who gets up her draperies in a really elegant and artistic form must undoubtedly benefit, for the lady who receives such a dainty booklet, displaying the designs in an elegant manner, is likely to peruse it. A common, cheaply printed catalogue inevitably goes into the waste paper basket.

If a trader is to issue a catalogue to display goods, let him either get out something good or not issue one at all; at any rate, if it is to be illustrated. Do it thoroughly; and if it is in colour go in for the best thing you can get.

Mr. Hentschel also had something to say touching rotary photogravure and off-set litho.

Making Negatives.

By Mr. W. T. Wilkinson.

FOR line negatives the silver bath should not contain more than 35 grains of silver nitrate per ounce of water, and should be decidedly acid; the collodion is best a month after iodising.

The developer is made up of—

Sulphate of iron 300 grains

Glacial Acetic Acid ... 1 ounce

Water 20 ounces

Methylated Spirit from $\frac{1}{4}$ ounce to 2 ounces according to age of bath.

Methylated spirits of wine is added as

required, its action being quite mechanical. When the silver bath is quite new, no alcohol is requisite, but when the bath has been in use a little while the developer shows a reluctance to stay on the film, the addition of alcohol overcomes this reluctance, $\frac{1}{4}$ of an ounce will be sufficient at first, but as the bath is used two ounces will be none too much.

The plate must be well washed after development, then fixed or cleared in potass cyanide, 1 ounce, water 20 ounces. This solution should be kept in a dipping

bath and not poured on to the plate, both for the sake of health and economy.

Again wash well, then place in a dish containing :—

Ferricyanide of potash	...	...	...	1
Water	...	...	...	40
Acetate of lead	...	...	...	1
Acetic Acid...	...	...	...	$\frac{1}{2}$

until bleached right through the film, wash until film is uniformly white, drain and flood with sufficient to cover it of :—

Nitric acid	...	...	...	1
Water	...	...	...	80

rinse, and pour on sufficient to cover film of :—

Sodum sulphide	...	...	...	1
Water	...	...	...	20

When the film is blackened all over and through, wash well, flood with the nitric acid solution, rinse and the negative is finished.

It is not many negatives that can be taken through in this fashion, some of lines in original may be somewhat grey instead of black, or some may be more or less shiny, and reflect light from the lamps, in these cases, before proceeding to bleach in the lead bath, it will be necessary to clear the defective lines by flooding the film with a mixture of the following :—

No. 1.

Iodine	...	...	...	30 grains
Iodide potass	...	...	...	15 grains
Water	...	...	...	20 ounces

No. 2. ozs.

Potass Cyanide	...	...	...	1
Water	...	...	...	20

The clearing mixture is made by pouring into a glass measure sufficient of No.

1 to well cover the plate in hand, then adding just sufficient of No. 2 to discharge the red colour of the iodine; flood the film with this mixture and watch its action very closely and directly the veiled lines are clear wash off, flood with the nitric acid solution, then immerse in the lead bath and proceed as above.

When the originals are black lines upon white card, the above methods will always give suitable negatives, but if the negatives are to be made from originals on yellowish paper, then density is difficult to obtain.

In this case, after the image is developed, washed, and fixed, immerse the plate in a solution of copper bromide.

Copper sulphate	...	...	...	1
Water	...	...	...	20
Potassium bromide	...	...	...	1

This solution should be made at least a day before use.

The film is bleached in this right through then washed slightly and evenly, too much washing must be avoided, now flood with just sufficient to cover the film of :—

Silver nitrate	...	...	...	1 ounce
Water	...	...	...	20 ounces
Nitric acid...	...	...	...	$\frac{1}{2}$ dram

Wash, and bleach in the iodine solution wash, then flood with :—

Potass cyanide	...	...	...	20 grains
Water	...	...	...	20 ounces

Watch the action of this very carefully, wash copiously, flood with the nitric acid mixture, rinse, blacken with the sulphide, wash, flood with nitric acid mixture, and finally wash.

THERE is something about the ownership of a business that makes some men conceited. So conceited are they that it actually offends them to be offered a suggestion of improvement by their employees.

TOM: “Say, did you ever kiss a girl in a quiet spot?”

Jack: “Yes; but the spot was only quiet while I was kissing it!” — “Exchange.”

Some Hints on Catalogue Photography by Mr. Brookman.

SUITABLE SIZES—AND FOCUSES—A SIMPLE
CONE—ON BACKGROUNDS.

MR. BROOKMAN, so well and reputedly known as Photographic Instructor in the London County Council School of Photo-engraving, delivered a lecture at the School last month upon catalogue photography. He had been at great pains to provide his hearers not simply with the many results of his rare personal experience, but with specimens, and any other things which might help them to grasp what he had to impart. Mr. Brookman dealt first with the camera. The camera for technical photography, he said, should be a triple extension one, with square bellows, sliding front and swinging back. He spoke of the ridiculously small and inadequate support of one stand upon the market. The camera should be as firm as a rock. Mr. Brookman invented an apparatus embodying brass slides, whereby he kept the three legs of his tripod accurately extended and absolutely immovable once the apparatus was fixed, which was an affair of a second or two. The camera for technical work should be a size or two sizes larger than the plate you are going to expose.

A lot of rays passing through the lens cause trouble, he said. All other rays of light than those one absolutely wants are cast against the side of the bellows and are reflected upon the plate, causing fogs.

For a whole plate camera he recommended a lens of about 18 inches focus. One would see the advisability of using a triple extension camera, because, if you are copying things rather large, your

camera will be extended to a great length unless you anticipate and provide for this.

For studio work the lecturer used cones of various length attached to the front. He showed a slide illustrating the manner of fixing. If he was doing work away from home he liked to have a piece of board or piece of black material made up into conical shape, like a grocer's sugar bag. You could adapt it so that on viewing the subject you could see that you were only including the actual picture you wanted. The rest of the plate had all the extraneous rays cut away from it. He had seen far more elaborate lens shades, but nothing that served better than this very primitive arrangement. When one was copying small pictures it very often proved quite sufficient in itself. Mr. Brookman showed some extraordinary photographs of tortoise-shell combs and other like objects. Every variety of tone was indicated, despite that the print was a monochrome. He was a strong advocate for the panchromatic plate. These tortoise-shell articles were taken with panchromatic plate and the red filter.

Here is the group of small objects, said Mr. Brookman. These were fixed on a white sheet of paper, yet you notice there are no troublesome shadows. You have a suitable reflector in front; at the top the shadow is almost gone. There is just enough to give a little relief.

If one did not take precaution, Mr. Brookman pointed out, when using shining white paper, there was apt to be a mirage of the outline near the shadow part, with an actual shadow; and there-

fore there was great difficulty in obtaining anything like definition. It was even well to have the background a good distance away otherwise a shadow cast by the object might be confused with the work itself.

I don't care much for flash powder, he said, because you are working more or less by guess when using flash powders. If you use magnesium ribands you can judge what you are about with the exposure.

One lantern view represented a statuary group from the building known as the Bethlehem hospital. It was taken under very difficult lighting. Some scaffolding was erected. Mr. Brookman described how he had to rack up for this task. The figures were quite black and sooty. He produced this print simply to show how some specific difficulties could be overcome. He pointed out that the definition of some of those pictures equalled the very best prints taken by daylight.

Mr. Brookman was extraordinarily successful with a collection of bone rings and coin. They all seemed to be absolutely out-standing, so strong was the relief, and the detail was most minute. They were all photographed out of doors. Some white sheets were laid on the floor so as to have a certain amount of reflected light. When you do away with all troublesome reflections, said the lecturer, you give the retoucher a far better chance of making a good job of it. Mr. Brookman showed some furniture specimens. All his photographs were extraordinarily successful, but it must have been a special revelation to his audience to see how much photography could be made to tell of the different grains of wood. Mr. Brookman dealt with continuous backgrounds. If continuous backgrounds were hung up perfectly square at the top and pulled well down and forward there was very little tendency

to creases.

A great many subjects, he would show, were done with continuous background. There had been no difficulty in connection with retouching.

Try to treat each subject in an artistic manner, the lecturer urged. At least, *try* to make a picture, no matter what price you are going to get for it. Arrange a thing as artistically as possible, consistently with showing all its points; and next consider its accessories. Here is a view of a piano. You see that the background is formed by a big piece of tapestry and a large picture. I had to go back to the wall as far as possible, in order to get free from any distortion of the instrument. I made a half plate, using a fairly long focus lens. From that I made a 12 by 10 transparency, and from that a finished plate. The customer supposed the final print was taken from the original negative. I had been particularly careful to get extreme sharpness all over the subject.

Mr. Brookman thought mistakes were often made in using a 12 in. focal length when photographing small objects. That method, he noted, seemed a favourite with most of them. As a general counsel it might be recommended to try to get as far as might be from the subject, so as to avoid distortion. In many cases one could make a bromide print from a negative, or, if one was to make a lot of prints, one could make a positive and a negative, and then make a lot of prints from that. "Get the object very sharp and use a fairly slow plate. Don't attempt to cover the plate to its full capacity. Take rather a small picture, relying on making an enlargement through the camera afterwards. I recommend making an enlargement through the camera, or even making a negative or print the same size, instead of from contact. A negative made through the camera will give you a cer-

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tain absence of grain which you cannot successfully get in making contact positives through negatives, or vice versa. If you are working from transmitted light the light seems to get all through and around the silver grain in a way it does not get a chance of doing when you are making a contact positive. This may account for the absence of grain in some of my large work. I attribute it entirely to the fact that the prints are from negatives made in the camera from the originals."

Some amazingly realistic reproductions of silver goods were shown. In all our experience we never saw prints of silver articles which so instantly and unmistakably showed themselves to be silver. These, and the group of small objects (bones, rings and the other curios) were the things which chiefly impressed us; they were wonderful. Mr. Brookman was himself fain to say of the group of silver goods, "It looks like silver; there is absolutely no retouching of any description. Nor has any putty or powder been used. It is absolutely suicidal to attempt to render silver like something else. If you are photographing silver, show that it is silver; if you cannot do it in these conditions, refuse the job. In this case I had certainly all top light. I arranged that my surroundings should be fairly dark and grey. There were no other subjects introduced, because, if there were, they would be casting shadows and possibly upsetting things. I spent two or three hours in making the arrangements. These remarks about silver also apply to glass; almost more, indeed, than to silver. With glass you always more or less compromise whatever you do, and invariably use a panchromatic plate and a fairly deep filter."

The facsim print, made strangely enough from the negative itself, was the next thing Mr. Brookman showed and

enlarged upon. This again was a silver subject, worked upon under very unfavourable conditions. He got such a lot of disturbing light—or should he say he got too much light?—so he thought he would get the maximum shade upon it; the shades seemed to fall more agreeably. He used the negative as a positive. In the final picture they saw actually the negative itself. He did this as an experiment. He often repeated it on similar occasions. He had never heard of anything like it being done.

Mr. Brookman dealt with the experience one had when one was photographing groups of any description which gave a horizontal line. There was a tendency towards correspondence with the curvature of the lens, unless one was using a long focal lens. When one was photographing groups of objects one must insist in getting as far as possible away from them.

Mr. Brookman told of the case in which he gave a nine-hour exposure; he had to keep capping the lens, as people were coming and going all the time. He told of covering up windows and various expedients for correcting light troubles. He really obtained mirror lighting effects in some of his work. An interior entirely lit from the top was again a difficult subject. Sometimes he actually used the source of light for taking his picture. He sometimes burnt a little magnesia ribbon in the foreground, to give sufficient detail. In dealing with interiors, don't strain to get the widest possible angle, make a picture every time. "Of course," he observed drily, "if you have a customer whose 25 ft. square is to look a fine factory—(laughter)—you must use an extremely wide angle. I often use a 6½ Zeiss. If I get the chance, I commonly cut out some part of the subject and discard it. 'Make a picture' whenever you can. If you are using, say, two-

thirds of the negative, when you have enlarged the portion you will find the place will look very much bigger than if you have enlarged the whole view.”

It was commonly better to photograph from the diagonal point of view than from the middle. In this room (lecture room) for instance, he should work from the left hand back corner, and he would then take in the bookcase. He would use his Zeiss wide angle lens (12 by 10).

Chinese white, Mr. Brookman said, was very useful when combined with other tones. Albanine, or blanc d'argent, might be too white. Artists were often disappointed when they saw so much life gone out of their pictures through use of unsuitable whiting agents. If Chinese white were invariably used, or the new process white, a correct colour rendering might be got. If you were photographing a lot of objects that required pretty short exposure, you got help from Chinese white, which absorbed inordinate ultra violet rays, but reflected very little when used by itself. When it was combined with other tones to form half tones, one had to be careful to give it enough exposure. It was foolish to use Chinese white for high lights; and also foolish to use Albanine or blanc d'argent; really the best medium was this process white. Process artists should not go on persisting in the use of the wrong pigment to their own detriment, and to the hindrance of the graphic art.

In all gallery work it was important to have a broad enough top to support the camera without any see-sawing. There must be an effective arrangement to prevent slipping. If one was allowed to take any sort of liberty with a picture one should not be too timid; one should turn the picture upside down, or any way that seemed to get rid of glare. If one could take a picture away to a room where the surroundings were pretty dark, one would

generally find one had got rid of pretty nearly all difficulty of glare without using any screen; and what difficulty remained could be got rid of with the minimum of drapery.

It was of the first importance in copying a painting to have a very bright light—as much light as you could possibly get. Say one was photographing a picture in an obscure light; one stopped down and gave the correct exposure, and all that; and then one afterwards photographed the same thing in a bright light—one got totally different renderings. Length of exposure did not compensate for lack of light, no matter what the exposure meter might suggest to the contrary. That indicated one of the main reasons why exposure meters failed at times. You should photograph the painting by quite as good a light as that by which the artist painted it; and by as nearly the same kind of light as possible.

For copying pictures one must have a lens of the anastigmat type. It often happened that in dark galleries exposure might run into two or three hours. Before he had an anastigmat he had been all day long at work in the National Gallery and not been able to complete one exposure when copying some of its dark pictures. The important thing was to get every part of the picture as sharp as possible; from margin to centre it must be in perfect definition everywhere. There was this difference between a picture of a photographic type and one painted by an artist: the photographic artist, in composing a picture, lowered his tones as he required by introducing a certain amount of fuzziness, by getting something out of focus. The painter lowered his tones by lowering the strength of the paints employed. He maintained identical sharpness all over his canvas but he had lowered his tone by use of darker pigments, and that

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is the thing the photographer should aim to achieve. Now if the lens with which you sought to copy a dark painting were an anastigmat, it would give you a certain amount of pencilings of light round the edges. With an anastigmat one could, with a fairly large field, get a fair image all over.

One should use a fairly long focal lens in one's picture copying. Say one had to copy a large picture, and could not take it down; if one worked with a 12 in. and was too near, one would get a great many more oblique rays than if one worked with an 18 in., and same size aperture. The further away you were from the object the less would oblique rays trouble you. You could do with less drop. Being only three or four feet nearer than you should be may involve all the trouble in the world.

Examine the picture in the ground glass and see if you have glare. Open up your iris in the position that corresponds to the ground glass and look through; by that means you can see if you have entirely stopped up all reflections. You are sometimes assured that all is right, and, when you develop, reflections you have not observed give you trouble. Windows which were not the real source of illumination could often be cut out of a view of an interior on a judiciously oblique exposure being made. If the foreground was dark, or in some cases where one had to photograph a room facing the only source of light, magnesium ribbon must be used. Mr. Brookman strongly advocated this rather than explosive or flash powder, because you could watch your picture and see what was happening all the time. Say, twenty pieces of ribbon, eighteen inches long, might be required on one piece of work. For a very dark room, mount the ribbon double; arrange the ribbons to be as high as you can get them to correspond to the

windows. (The lecturer made his meaning plainer here with illustrations he had provided.) Spread them well out; get an assistant to help in lighting them; start from the extreme ends, working towards the centre. By the time you have met in the middle about two-thirds may have been used; but you will still have sufficient to get a good result. The lecturer used copper wire about one-sixteenth of an inch thick. He had known the magnesium ribbon absolutely burn through the copper, incredible as this seemed. He kept a good supply of these things for emergencies. Regarding portraiture he did not hold himself specially qualified to speak, but he would say he had seen no day-light picture that could beat some ribbon-light portraits it had been his fortune to take. Many recommended flash powder. He had two objections: The source of light was too confined—too much of a pin point—and, at the critical moment, the sitter is apt to blink. The great thing was to avoid self-consciousness in a sitter. The ribbon operation admitted of some little adjustment being made. Mr. Brookman advised his hearers, in conclusion, not to be unwilling to take hints, even from those who knew less than themselves. Taking such a hint, even a hint perhaps not particularly valuable, or not wanted, might make a friend for life. (Laughter and applause.) Mr. Brookman afterwards answered a number of questions. Particularly he explained a good device of marking the floor with chalked strings, to enable the operator to know that he was "right in the middle" of a picture he had to copy.

He who cannot obey will never command.
Before crowding to the front get fit to lead.
Don't wait for opportunity; run to meet it.
The man who forgets will soon be forgotten.
Knowing it all does not excuse telling it all.
Before idling, consider whose time you will be wasting.

The Minimum Block as a Business Proposition.

ONE of the questions that has been discussed from time to time and, seemingly, will continue to be discussed, is that of the Minimum Block. From what we hear, it seems to have been long felt that the minimum charge is an evil that needs a remedy, but how that remedy is to be applied is not quite clear to anybody.

This question has not only confronted the English engraving houses, but has been perhaps more keenly felt and more thoroughly discussed by the American houses, who are at a greater disadvantage compared with the Mother Country, as the minimum there seems to be 10 inches, while the larger number of English houses, we believe, stick to the 12 in. minimum.

Process engraving houses who have a costing system in operation tell us that the present price for minimum blocks shows a loss upon nearly every transaction, and that it is only by the profit made upon the larger blocks that they are enabled to make even the smallest amount of profit.

The question naturally arises, Why do process engravers sell their product at less than cost, if a 12 in. block costs more than the price charged for it, what induces the engraver to not only work for nothing, but actually make his customer a present of part of his capital?

We can understand that where a customer sends in a large quantity of work of assorted sizes, it may be that a few minimums will work in with the others and be charged out at the usual minimum rate, but surely where single blocks are sent in by occasional customers there can be no sense in the engraver supplying

them at a loss to himself.

If there is a real truth in the statement that minimums do not pay, is it not time that the Process Engravers' Association took the matter up and tried to do something toward solving the difficulty?

Of course, customers need some intimation as to what they are to be charged for their minimum blocks, but it seems one of the most difficult questions to decide, as no two minimums will cost exactly the same sum to produce; perhaps it is this difficulty that has led to the neglect of the question.

Our American friends have been making exhaustive enquiries with a view to the solution of the problem. They induced 12 separate process engraving houses in nine different cities to keep an exact account of the cost of the minimums that went through their houses during a given period; when the records came to be tabulated it was found that there were accurate records of no less than 600 half-tone blocks and 600 line blocks. The highest cost of the half-tone minimum was 22s. 11d., and the lowest 4s. 5d., the highest cost of line minimums was 12s. 9d., and the lowest 2s. 1½d.; showing an average cost, spread over 600 blocks of each kind, of 8s. 7½d. for half-tone, and 5s. 6d. for line.

To those engravers who do not indulge in a costing system these prices will no doubt come as a surprise, and even those who have some sort of system installed will hardly be prepared for the extreme variations between the highest and the lowest, and it may be that some English engraving houses will doubt the accuracy of the statement made.

As we were deeply interested in the

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subject we have asked one English house who has kept records for many years to give us the benefit of their experience, and we find that the same enormous difference is shown in English work, for the records of the house in question conclusively show that the 12 in. minimum half-tone blocks vary in cost from 3s. to 14s., so that if the selling price is taken at 5s. each it is quite evident that many of them are sold at a loss; but as many houses charge as low as 4s. and even 3s. 6d. for a 12 in. minimum, it must be apparent that they are selling at a very heavy loss indeed, unless they are operating their plants at a much lower rate than the average house, a supposition that is very much open to question.

As this is a question of the greatest importance to every process house, we shall be pleased to open our columns to any house having records, and that will place their experience at the disposal of their fellow engravers.

Is it possible for our Association to take up the matter and collect data upon which to formulate some scheme that will have the effect of hardening prices, at any rate, of the minimum block?

We must confess that it seems strange that the engraver seems so powerless to meet his customer on equal terms. Why should the purchaser dictate the price at which the maker shall sell? It is very evident that were it not for the want of co-operation among the process engravers such a state of business could not exist.

The printer, the advertising contractor, the merchant, etc., are in business to make profits; why then should they wish to cut down the engraver's prices till they show little or no profit at all? Whatever they pay they pass on to the customer, who in the long run pays, hence we fail to appreciate the line of conduct that denies to one tradesman the benefits of his business ability while it seeks in its own

sphere to secure the full meed of profit for its own labour.

If the process engravers of this country could be persuaded to give the costing of their products the attention—the close attention we would say—that it deserves, we fully believe they would soon realise the necessity for, and find, a means of putting this matter upon a different basis.

It may be that the old-time rivalries and petty distrusts between one house and another have a great deal to do with the present chaotic condition of the trade. Reports have been circulated of want of faith between house and house, and some engravers have either rightly or wrongly been suspected of unfair competition, and in all probability when there has been, and is, so much smoke there is some reason for it; but should that fact stand in the way of any improvement to-day, whatever the past, let it suffice and let all join hands and work together for the uplift of the trade as a whole.

The Process Engravers' Association is growing in strength, it has doubled its membership during the past year or so; there are, however, far too many houses outside its numbers. Why do process houses stand aloof from the Association? It is a mystery to us: self-interest which is the greatest incentive to most of us, seems to say join up and let us all make an effort to better our position. If all join success is assured, but while 50 per cent., or even 15 per cent., stand outside the Association they make it difficult for the others to act as effectively as they otherwise would, and yet at the same time the outsiders are not doing themselves any good.

We say to one and all, join up and help make the Association strong and powerful to right the many abuses that have crept in through past jealousies and distrust.

The President of the International Association of Manufacturing Process Engravers on the Outlook in America.

We reproduce this message, just as written by President Houser, it might have been written for the English Process Engraver, it so exactly applies.

SOMEHOW or other, when the task of organizing the Manufacturing Photo-Engravers of America into one close-knit organization approaches the point where it seems almost impossible, I am compelled to look the facts straight in the face, and when I do, it appears a ridiculously easy piece of work. This is all we need to do: There are about five hundred engraving establishments in the United States and Canada, none of them producing such immense profits as to place the proprietors thereof in the “idle rich” class. If you could get all the photo-engravers together in one room, everyone would agree with you that he was not making as much money as he should make, and as he would like to make. In the next breath they would probably all agree that the only way to improve conditions is through an organization, and that *the organization* is the I. A. M. P. E. With that much in our favour to start with, it doesn't look like an impossible task to bring at least two hundred and fifty Manufacturing Photo-Engravers into the fold, does it?

.
If the Manufacturing Photo-Engravers care anything about the future development of the photo-engraving industry, and if they care to protect their interests as a class, there is only one way in which they can accomplish their purpose; viz., they must organize.

The most important work yet accomplished by the International Association is the proposed selling schedule submitted to the members and others by the International Cost Committee. You have all received the report and the schedule and have been given ample time to study the subject and make known your wishes in the matter, together with such suggestions and changes as you may have to offer. After April first the votes and corrections were counted and tabulated, and the International Cost Committee, guided by the data thus obtained, will make the changes necessary to meet with the approval of the majority, and the amended Cost Committee's report will be presented to the Convention for final adoption.

We hear so much about, and so much is said on, co-operation that the issue is oftentimes confused. The following quotation seems to me to be the best explanation of co-operation that has ever been brought to my notice. It seems particularly adaptable to our trade—our art, if you please.

“The gist of co-operation,” says Elizabeth Towne, “is this: To have a common cause, and then to work the other fellow's way when he won't work yours. The best co-operator is the man who can get the most pleasure out of doing things in the other fellow's way. The won't-play fellow is no co-operator. He is an untutored savage.”

With the vast improvement in the manufacture of printing plates, with the adaptation of fine art subjects for commercial purposes, it seems to me that we

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are developing into a class of business men, artists whose ideas so differ on business and its principles, that co-operation, in a sane and simple manner, in a business manner, in a money manner, becomes a complicated issue with the photo-engraver.

To a body of men engaged in work such as the work of the officers of the International Association of Engravers, it succeeds or fails only by the extent of co-operation extended one to the other. Where there is a body of men whose interests are wholly voluntary and where there is no penalty provided for the breaking of simple business rules so for the upsetting of a moral and ethical side of affairs in business, there must be CO-OPERATION, and thought must be given to what co-operation means to everyone in the business. It means that we must not only give our time personally—we must give our money cheerfully—give our advice guardedly.

Much has been said in the past year on cost of education, upon co-operation, and examples have been shown where it was to the advantage of every engraver to be-

come a member of the International and to affiliate with his friends and competitors in his own locality. We have talked about this by word of mouth, as well as by the use of our publication.

It has been said many times in the past eighteen months by people who are not associated or affiliated with the International Association that they could not afford to belong to it. It has always been a surprise to me how they can afford not to belong. Through education you will find :

First.—That cost finding leads to efficiency, which means more money.

Second.—That employees must have an incentive by co-operation placed before them, same as the proprietor has a right to expect his profits.

Third.—By paying better attention to your premises you will get better journeymen.

Fourth.—Don't try to remember. Think ahead. Engravers who think ahead, get ahead. The engravers or body of men in your locality who work together, who think together, get ahead.

✓ *A Review of Horgan's "Half-Tone."*

Some features of a most serviceable work.

COLLODIONS MUST COMPROMISE — COLLODION 7A INGREDIENTS — SYSTEM IN NEGATIVE WORK—TRIAL EXPOSURES—HOW TO TREAT ABNORMAL COPY—UNDER EXPOSURE NOT CORRECTED BY INTENSIFICATION — DEFECTIVE COLOUR VISION — A GLOSSARY.

WE have already given some excerpts from the valuable work which Mr. Stephen H. Horgan has written, and the Inland Printer Co. of Chicago has published under the title of Horgan's "Half Tone." It is our

business now to review the work, as well as the exigencies of time and circumstances will permit.

Let us tell our readers shortly what they will find dealt with in these pages. Confining attention first to things of immediate practical concern, we find that Mr. Horgan presents many facts and formulæ and the product of experience and observation under such Americanesque headings as "Half-tone Engravers Should Know," "Facts for every Process Photographer," "Three Colour and Four

Colour Blockmaking." To these and to portions directly connected up with these, we turn with special interest. It seems that from 1877 to 1880 Mr. Horgan was making screens of perforated cardboard! The half-tone screen used to-day, he says, is simply an opaque plane surface through which square apertures are pierced. These are uniform in size, are mathematically equidistant, and are one-third the area of the opaque plane surface. We owe the present half-tone screen to Mr. F. E. Ives, who in the winter of 1885-6 sealed two single-line screens together, and to Mr. Max Levy who, in 1893, perfected the manufacture.

Mr. Horgan urges that the screen support should be part of the camera box. It is risky and needless drudgery to be carrying valuable screens in the plate-holder from dark room to camera.

One needs micrometric adjustment for screen distance. The prism, if used, must be at absolute right angles with the copyboard. The camera stand must absorb all vibration. Grain screens, he says, do not give in the highest lights and deepest shadows the delicate definitions or gradations of the cross line screens.

A SCREEN SUGGESTION.

Cannot screens, he asks, be made with a less mechanical pattern than cross bars? As the mechanical pattern of the screen is governed largely by the shape of the aperture in the diaphragm, with the ordinary half-tone screen the pattern can be varied at will and has been so changed, but there is no great demand for change.

"Gen. Frederick W. Von Egloffstein's half-tone screens used in New York in 1868 were made with a wavy line, and the results were not so objectionable as the straight lines. Mr. A. Dargarvel, of London, has in use a waved-line screen. A pleasing example of work engraved with it is shown elsewhere." (Certainly the

specimen shows the screen of this well-known manager of "Swain's" to very great advantage.)

Mr. Horgan discusses the rationale of lighting. "The half-tone screen with its transparent openings forming but one-third of the opaque area offers so much obstruction to the light in negative-making that a strong flood of light is desirable to illuminate the copy. In cases where the subject is to be enlarged, sunlight, if available, is to be preferred. When the copy is large and in colors, such as a painting, drawing, decoration, rug, carpet, wall-paper, or a large surface of any kind requiring even illumination, then there is no light to compare with daylight reflected from a northern sky. So also when making the half-tone negative direct from natural objects. But when the copy is largely the reproduction of photographs, wash drawings and plane surfaces of small dimension, then electric-light illumination is preferred, chiefly on account of its steadiness. . . .

For newspapers, where negatives must be made at night, electric illumination is, of course, depended on, and it makes little difference whether the engraving plant is located in cellar or garret, providing the ventilation and temperature are right.

The half-tone collodion must be quick-working. It should give detail in the shadows and still supply strong contrasts. A collodion containing all these properties would be ideal, though it is thus far impossible of attainment for several reasons: The quicker a collodion works, the less contrasty it is; while a contrasty collodion means one that will not give detail in the shadows, so that an adequate half-tone collodion must be one of compromises.

In compounding a half-tone collodion it should be remembered that iodids give contrast while the bromids decrease contrast, at the same time giving greater de-

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tail in the shadows. The ammonium salts supply a collodion that can be used soon after making, but will not keep. A collodion made with the cadmium salts will require weeks to 'ripen,' as it is called when a collodion is in the best condition to use, and a cadmium collodion will keep in a workable condition for months."

"The ingredients in a half-tone collodion must be pure. Once a reliable maker of chemicals is found he should not be forsaken. The alcohol must be guaranteed to be a ninety-five-per-cent. grain alcohol, the ether should be sulphuric, U. S. P., with a specific gravity of about .725. The ammonium iodid must be U. S. P. in crystals about the color of light-brown sugar, for the reason that collodion made with it ripens quicker—that is, it can be used a day or so after being mixed. The white iodid of ammonium can be used, though it is generally necessary to add a few drops of tincture of iodine to the collodion to ripen it. The cadmium bromid should be in white crystals." He appends a table of collodion proportions.

There we have a sample of Mr. Horgan's effort to make his book useful at once to the tyro and comparative expert.

Keep a record, Mr. Horgan advises, "of each negative with all the factors that entered into the making of it. . . . First the negative is numbered, then are recorded the title and kind of copy, the strength and kind of light and its distance from the copy, the reduction or enlargement, screen pitch, distance from the sensitive plate, number and kinds of diaphragms used and the various periods of exposure, together with the features of the intensification and the reduction or 'cutting' of the negative. When it is possible to secure proofs of the engravings before finishing, they can be kept in a scrap-book numbered, as are the negatives, so that at any time there is a repeat the

method employed in making the first negative may be consulted and suggestions for improvement studied out.

Another way suggested to secure several trial exposures on a single plate is this: The same procedure may be observed as described for the previous trial negative, as far as use of the diaphragms and the three different exposures except that when putting the sensitive plate in the holder, if it is one that also carries the half-tone screen, rest the lower edge of the sensitized plate in its proper place but allow the upper edge of the plate to rest against the half-tone screen, the latter being pushed away from the sensitized plate as far as possible. If the sensitive plate is a wet plate it is necessary to have a strip or blotter between the upper edge of the plate and the screen to keep them from touching. The wet plate has, of course, been properly drained and its upper edge wiped dry before putting in the holder. This will give a wedge-shaped screen distance, beginning with less than one-sixteenth of an inch at the top of the negative, and, say, six-sixteenths of an inch at the bottom. On developing this plate and fixing in cyanid of potassium there will be found a line somewhere between the top and bottom where the screen distance is correct. To find this proper distance it will be necessary only to indicate the line of correct distance, put the negative back in its original position in the plate-holder and measure the space between the correct line of distance and the half-tone screen to find the correct screen distance."

A few of the principles governing the treatment of abnormal copy are set out:

"To obtain a contrasty half-tone from flat copy, increase the screen distance or enlarge the high-light stop. Be careful not to overtime the negative, but carry the development as far as possible and in-

tensify several times if necessary.

From overcontrasty copy a negative with less contrast may be had by reducing the screen distance or the size of the high-light stop; overexpose, but be careful not to overdevelop. After intensification, local cutting of the high lights will reduce the contrast still further if found necessary.

For light copy overexposure must be avoided, while with dark copy plenty of time should be allowed in the exposure.

Red-toned photographs on glossy printing-out paper make the best copy but require long exposure.

Glossy black prints of the Velox order make the next best copy, though they also require long exposure.

Flashing is a practice resorted to in the case of copy with extremely dark shadows that would not reflect much light. It is done by covering up the copy with a sheet of white paper and exposing the sensitive plate to it while a very small diaphragm is inserted in the lens. The exposure is for about one-twenty-fifth the total exposure with the other diaphragms. This gives a small dot in the deep shadows, produced artificially, and the practice is to be discouraged except in the case of newspaper half-tones when the small dots in the shadows of the plate assist in the stereotyping and printing.

Gray matt bromide or platinotype prints require less exposure, and are most frequently to be treated as flat copy.”

An illustration of Mr. Horgan’s pointers may be attached: “Exposure is the most important factor of all in making half-tone negatives. Underexposure can rarely be corrected by intensification.” It may be noted how London expert photographers emphasise the same truth. “Overexposure can most often be overcome by use of the cutting solution. As the camera bellows is extended the screen distance should increase. Long-focus lenses

require much screen distance. Short-focus lenses require short-screen distance, for the nearer the lens is to the sensitive plate the shorter must be the screen distance. A fixed screen distance can be kept with each screen used for all reductions and enlargements, the only change being made in the size of the stops, these being increased in size with enlargements and reduced with reductions.”

The coarser the screen used, the larger the diaphragms; the finer the screen, the smaller the diaphragms.

The screen opening is in the same proportion to the screen distance as the aperture in the diaphragm is to the distance between the diaphragm and the sensitive plate, so that having any three of the factors it is easy to calculate the fourth.

The farther away the screen can be kept from the sensitive plate and the smaller the normal stop used, the more detail will be retained in the half-tone reproduction.

The closer the screen to the sensitive plate, the more “screeny” the result; while if the screen is removed too far from the sensitive plate there is danger of the high-light dots being closed up.”

Mr. Horgan does not dogmatise. He impresses that the proper exposure on the enamel-coated copper “can only be found by trial.” So when talking of keeping records of exposures, he urges its importance because “experience is, after all, the best teacher.” He counsels confident action in certain cases—for instance, we find him writing, “copper etching is a much simpler operation than three bite zinc etching after one has confidence. Most failures occur from timidity; for the reason that with a vigorous quick etching with chloride of iron there is little danger of the acid resisting enamel protection being injured, while the use of a weak etching solution and much washing with water will soften the enamel.

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It is for this reason that the quick action of an etching machine gives a more satisfactory result than can usually be had in the slowly rocked etching tub.

Another instance of the absence of dogmatism occurs where we find him writing that so many local conditions enter into the colour of the electric light—it being influenced by the action of the lamp itself, the quantity of current and the quality of the carbons—that it is impossible to advise in the matter of search-lights to illuminate the copy in colours.

Among the useful cautions we have the word that examination of students' eyes in one of the largest art schools in the United States showed that over sixty per cent.

LACKED NORMAL COLOUR VISION.

More recent statistics prove that women have far better colour discrimination than men. Again, we are told that the colour of light from a clear sky is bluer than from a clouded sky. So also is the light from the sun yellower as it sinks in the west. The practical three-colour worker is warned against attempting to make his own three-colour filters.

Another subject for a warning is halation in three-colour record negatives.

"Halation, or reflections from the back surface of the glass on which the color-record negative is made, must be guarded against, particularly in the negative made through the red screen. The makers of color-sensitive plates furnish them possessing nonhalation properties if so ordered. There are many nonhalation backings on the market which should be used as directed. They are not as effective, however, as a double-coated plate or one having a substratum to prevent halation. A paste to use on the back of the glass that will absorb the light and prevent it being reflected back into the sensitive film is the following:—Any mucilage, 1 ounce; caramel, 1 ounce; burnt sienna,

2 ounces; alcohol, 2 ounces. Grind the burnt sienna in water, add the mucilage, stir in the caramel, and lastly add the alcohol. After exposure this paste should be wiped from the back of the plate with a damp sponge. It will not injure the developer, though it discolours it."

We are naturally not surprised to find Mr. Horgan writing that "a most superior sensitizer for red is pinacyanol, as it has no tendency to fog the plates. One grain of this dye in two ounces of absolute alcohol makes a stock solution. For a sensitizing bath take one ounce of this stock solution with thirty ounces of alcohol and sixty ounces of distilled water. The plates should be left in this bath for five minutes and then washed for three minutes in running water; the bathing, drying and all operations being carried on in absolute darkness.

Without the use of water in this sensitizing bath, the gelatine will absorb the alcohol and act as a filter, leaving the pinacyanol on the surface. Water carries the dye into the film. Plates treated with cyanin lose their sensitiveness in about thirty hours, while plates dyed with pinacyanol will keep sensitive for weeks, and even then they can be resensitized without injuring them. For collodion emulsion sensitive to red, one grain of pinacyanol is dissolved in two ounces of absolute alcohol and this added to two hundred ounces of collodion. After the collodion is flowed on a glass plate and set, the excess dye must be washed from the surface of the plate as with gelatin plates.

A most successful sensitizer for green is pinachrome, used in the same manner as pinacyanol, the bath being of the same strength, the bathing of the plate for the same length of time as well as the washing and drying. The only change is that the operations are performed in a weak red light, as described by Mr. Horgan

under “Safe Light for Development.”

The making of “the fourth plate” is an interesting subject. As to that we read: “Some use the red filter and get an overexposed blue-record negative, which is developed up and intensified rather hard, and possibly ‘cut’ a little in the half-tone negative. Others make a negative on an ordinary dry plate with a piece of optically worked glass, the same thickness as the color screens, and in place of them; or, a yellow filter to cut out the actinic violet rays. Still another method is to bind the three-color-record negatives together in exact register and copy them with an extremely long-focus lens, thus getting a composite positive of the shadows in all three negatives. From this positive the half-tone for the gray or black printing plate is made.

No matter in what manner the negative for the black printing-plate is obtained, the print on the metal is etched up bright, leaving only the darkest places. The re-etcher or finisher can by his skill supply any kind of a fourth plate demanded by the copy, and what these requirements are depends on the subject and whether the fourth plate is to be printed in a grey or a warm or cold black. When a fourth plate is used, the red plate must also be reduced in importance.”

The rotary gravure pages are interesting. Mr. Horgan notes the “essential” that the deepest shadows on the cylinder must have continuous bearings for the metal wiper or doctor, or in other words, that the ink holding cavities on the cylinder be in the form of cells surrounded by thin walls of the metal cylinder. Another method is to etch on the cylinder a half-tone intaglio instead of in relief, taking care that at least single lines of the metal cylinder remain even in the deepest shadows to act as bearers for the metal wiper or doctor. By exam-

ining with a microscope the screen lines in a photogravure print the two methods may be distinguished.

There are some surprises in the book in the way, for instance, of a “Process Worker’s Glossary,” an “endeavour to standardise most of the terms commonly used in a new and constantly changing business.” We have 22 pages of this, with 300 to 400 terms explained. We have tables of solubilities, tables of symbols, and a very useful list of chemicals used in process work, with English, Latin, German, and French names. That alone represents quite a lot of work, and is a strong title to gratitude in many lands. As many of the chemicals used in process work are poisonous Mr. Horgan guides us as to symptoms of poisoning and antidotes. There are other unexpected and acceptable utilities, specific to our trade.

We may remind our readers that some excerpts from the book were furnished in our last issue.

We most warmly congratulate Mr. Horgan upon the production of this valuable work. We not simply congratulate, we thank him, and thank him again. By its laborious preparation he has placed us all heavily in his debt. Any success which the book may have, any money it may put into his pocket (and we hope it will do much in this way) cannot diminish or alter the obligation to him which this work establishes. It is a very notable and splendid public service. The book sells at 12s. 6d., and can be obtained from the office of this Journal, 12 to 14 Farringdon Avenue, London, E.C.

GINGERISMS.

The arrogant employer gets the servile employees.

The cobwebby office bespeaks the cobwebby brain.

The good old ways are generally the expensive ways.

THE PROCESS MONTHLY.

The 17th Annual Convention of the International Association of Manufacturing Photo-Engravers



That's the CHICAGO CLUB landing at the
Claypool Hotel, Indianapolis
where the Convention will be held

There is no need of
looking over railroad
maps or time-tables
—because

**June
23, 24, 25,
1913**

All Roads Lead to Indianapolis

We expect even a larger attendance
than we had at Boston, so be sure
and attend, for we want

A Business Convention for Business Men

Jump on any old train and simply say "IN-DI-NAP"

Yours fraternally,

PHOTO-ENGRAVERS' CLUB OF CHICAGO

GEO. H. BENEDICT, Chairman

H. A. MUELLER, Secretary

The Annual Convention of the American Process Engravers.

THE Process Engravers of America and Canada are arranging for what is expected to be a record Congress on the 23rd, 24th and 25th of the present month, and with their characteristic push and ability are making it known to every process engraver in the countries named.

The Association is divided up into several clubs or districts, something akin to the scheme propounded in these pages last year for sectional clubs for the British Isles. Each section or club seems to be vying with the others as to which shall make the most effective announcement and secure the greatest percentage of their members at the Congress.

On the opposite page we give a reduced reproduction of that of the Chicago Club. Whether such an announcement would be of much use in this country we must leave our readers to judge, but it is evident that our cousins do not intend to allow anything to mar the success of the Convention if they can possibly help it.

The New York photo engravers have sent out to all the Engravers in their district a most dignified and beautifully prepared brochure, got up in just the style we should expect to see come from a really first-class process engraving house, which makes a speciality of high-class engraving and printing. The whole appearance of the booklet impresses one with a sense of the importance of the event to which it invites the recipient. It is seldom we see anything so good, and we cannot but congratulate the New York Club upon the simple beauty of their invitation booklet.

The Pittsburgh section threatens to be at the Convention 100 per cent. strong. We like this; it looks like business. When will the English process engravers threaten to come to a convention in London 100 per cent. strong? This is the spirit that helps make success. And why not?

Boston appeals to those in their section to come and do their best to help put the trade upon a proper basis. "Don't depend upon the other fellow to do it for you; do it yourself!" is a motto we admire; it's the kind of talk that makes folk think, and when the process engraver really thinks, he will commence to act.

The New Orleans card is to the point. "We'll be there" is their motto; and so it goes on; all seem intent upon success.

The great feature of the Convention this year is the attempt to adopt a selling schedule for the products of the process engraver. The International Cost Committee have spent a great deal of time considering the schedule, and have drawn up a document which they feel is at once sound, business-like and fair, alike to the engraver and his customer.

For the past two years the officers of the International Association have devoted themselves to the work, and it has been a very strenuous two years indeed. They are looking for their reward in the shape of a record attendance at Indianapolis. They are making preparation for five hundred at the Convention Town, and we very earnestly hope they will have all the success they so richly deserve.

We hope to report the Convention in the August issue.

The Printer's System of Cost Finding.

THE foremost question in the printing trade to-day, as also in the process engraving and other trades, is that of costs.

From internal evidence the fact seems to be borne in upon the minds of the proprietors, at any rate those who are given to studying their annual balance sheets, that the amount of profit resulting from the work done is in no way proportionate to the amount of attention and care that has to be given to the detail of the business, and the amount of labour involved in organizing and carrying on such businesses.

From a personal acquaintance with many of the process houses and a large circle of printing firms, we have been enabled to glean the knowledge that from various causes it is quite evident that it is impossible to make a reasonable profit upon the work done at the prices ruling to-day, not that there is a loss upon every job turned out, but because prices in various lines are forced down so low that a loss ensues which has to be made good by the more profitable lines.

Now it seems somewhat ridiculous that any one customer should reap advantage at the expense of another, or at the expense of the proprietor, consequently it is the purpose of these costing systems to help the proprietors to dissect their business, and so find out which are the paying lines and which involve a loss. No one desires to lay down any hard and fast rules as to selling prices, etc., but it is the earnest desire of those who have prepared these systems that their competitors should be in a position to know on which lines they gain and on which they lose.

Turning to the printer's cost-finding

system, we do not feel that we can give it unstinted praise. It may be that the attempt to make it elastic has tended to weaken it in many places; then, the Costing Committee are all members of large firms having little or no experience of the firm with but two or three moderate-sized machines; the Committee consequently necessarily viewed the question from their own standpoint, of course, with the earnest endeavour to descend to the level of the small man, which is very much like the landed aristocrat giving advice to the clerk, earning his £150 or £200 a year, as to how he should spend his money.

The forms are based upon the working of a business that has a total annual turnover of £3,000, and in this the Committee have shown wisdom, for if our experience is at all general, it is the firms doing from £3,000 to £10,000 per annum that need a costing system most.

We very heartily recommend the system to the printer, for it is an honest attempt to grapple with a question that demands consideration.

In our judgment the Printers' Association have shown greater wisdom than the Process Engravers' Association, in that they have published their system at the popular price of two shillings and sixpence, so that it may be purchased by any and every printer in the Kingdom, not only those in the Association.

It now remains to be seen what use the printers will make of it. Our advice is to get it, get it by all means, study it, get to understand it, and whether you adopt it in its entirety or not, we are sure you will be the better for having mastered the business details set forth therein.

Helping the Printer.

IT may not have been the smallest shop in the trade, yet the amount of work turned out was depressing to the older hands, and though the foreman, who was getting old, hoped that the governor would not shut down, grave doubts were expressed.

“What’s the good of sitting moping here?” said Sam. “We’re wasting our time. Etching one plate a day’s not keeping me at a ’igh standard. Why, if I got a place at the ‘Daily Rusher’ they’d chuck me out by the neck.”

“They’d dirty their ’ands if they did,” piped the voice of the boy from the other end of the room.

Sam ignored the remark of the precocious youngster, and went on speaking for himself and for everybody.

“We’d look small if we got a job where we ’ad to buzz. I’ve ’alf a mind to clear out before it gets any worse. Besides, it looks mean to take your money out of the governor’s own ’ands when you know you ain’t earned it, and it ain’t altogether to his credit keepin’ us when ’e knows he is only spoilin’ good men.”

“Shut up,” interposed Brooks, who, owing to his studious habit had been dubbed the Wise Man, and who at this moment was deep in the study of a work of reference.

“Look here, Brooksie,” replied Sam.

“Not so much chatter, Sammy, I’m reading,” said the other.

“Readin’ be blowed,” cried the irascible Sam. “Mustn’t work cos there ain’t none to do, and mustn’t talk cos Mr. Babbling Brooks is readin’.”

“But I ain’t going to stand it much longer. Ill——”

“You are always grumbling,” said Brooks, irritably. “Chuck your job, man.

Go and join the army, then you will learn what work is.”

“Work!” exclaimed Sam, disdainfully, “I’d sooner work than sit here doin’ nothing.”

“Well, that’s easily arranged. Clean your room down; there’s enough dirt to disgrace a pigsty,” said Brooks, emphatically.

“That’s not my work,” retorted Sam.

“It’s your work to throw the dirty acid out of your bath,” said Brooks, “and you haven’t done that for a week.”

“There you are, Sam,” said the foreman, making an appearance, “I have just printed this little job. Take your time and do it nicely.”

With a growl about “bloomin’ miniums,” the etcher rose lazily and, taking the original and the plate, got to work.

“I suppose I shall have to do the printing for a few more weeks,” remarked the foreman to Brooks, “the poor old printer seems in a bad way.”

“Worse?” asked Brooks.

“Rather, but the chief trouble is the state of the exchequer. Of course, the governor’s paying him half-wages all the time. But there’s the rent to be paid, wife and children to be fed, nourishments to be bought, and there’ll be a decent doctor’s bill at the end.”

The Wise Man, without another word, took down a sheet of white naper from the shelf over the press, and went round to every member for a subscription on behalf of the sick man.

“Say, Brooksie,” said Sam, “if anything happens to old Bill, my brother’s a printer——”

“We don’t want anything to happen to Bill,” was the curt rejoinder. “The

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idea of this list is to help him back to health. What are you giving, shilling, like the others, eh?"

"Sixpence," said Sam, "but don't send the money, Brooks, send noo laid eggs an all that."

Though it was known that Sam had inherited a sum exceeding three figures at the death of his father, his best friend would not dream of accusing him of being unduly generous. But it was on record that he had at one time been a subscriber to the Hospital Saturday Fund. Being troubled with his teeth he had sought and obtained a dental letter from the collector, and a sudden outburst of generosity had caused him to subscribe to the fund—for three weeks.

To some extent Brooks acted upon Sam's suggestion, and the boy was despatched to buy some eggs and fruit and to deliver them, together with the remainder of the money, into the hands of the printer's wife.

"Don't you get making a hole in the eggs and eating the yolk like they do in the printing room," said Sam, "or don't you get skylarking about and smashing 'em."

"I ain't like you," replied the boy.

"But I was like you when I was your age," said Sam, "an egg's an egg, you know. Why," he continued, "you've got no buttons on your coat, you had better pin it or you'll catch cold."

Though the boy scoffed at this advice the scheming Sam would not let him go without at least one pin. And then speeding him, finished up by saying that he had been a boy once, and he could quite understand how anxious the youngster was to open the shells.

"If he had said something about eatin' the apples," muttered the boy as he descended the stairs, "he would have been on the trail."

The subscription lists became a weekly

affair, and, to the credit of the men, they responded famously, with the exception of Sam.

Each Saturday the indefatigable Brooks had to resort to some device or other to win a sixpence, compelled to listen the while to a tale of woe and the reiterated hope of Sam to get his brother into the firm. The best means were: "He's very ill now, Sam; no hope whatever. Your brother will soon be with us."

But as the weeks went by this method almost failed. "Why don't he try Christian Science?" asked Sam, one Saturday, as his gaze wandered from the sporting column of a newspaper to other matter, by accident.

"That's good for the toothache," retorted Brooks. "We want eggs and beef tea. How much this week, Sam?"

"You think he's worse?" asked Sam. "In that case I'll speak to the boss."

"It's the last list," said Brooks dolefully. "How much? Make it substantial. You see all the men have given more."

"He's really dyin', then?" enquired Sam. "Well, I don't mind giving a shilling."

"Make it two," said Brooks, encouragingly, "and," he added, slowly, "you might tell your brother to come up and see the governor on Monday."

Sam handed the money over, and, finding the hour of departure near at hand, rapidly finished his toilet and went home to impart the joyful news to his brother.

On bidding the others good-day he noticed that there was a muster of suspicious-looking bottles, sponge cakes and other refreshments on the bench.

"What's up?" he demanded, as he stood with his hand on the half-opened door.

"Going to drink your health, Sammy," said Brooks, laconically.

"Waste of money," gruffly replied

Sam, going out.

“Only two bob,” shouted the boy after him, “not much waste about that. We’ll swallow it all and more if you pay for it.”

The two brothers arrived early on the Monday morning, and while one went into the office the other made his usual way to the etching-room, which was arranged for a feast. No sooner had he entered than he felt a big plump hand thrust into his

own, whilst the owner tried to express his gratitude.

“Not dea—” gasped Sam, falling back from the sunburnt and burly convalescent; “eh, eh—better now, Bill?”

“Quite restored, Sam; and, thanks for your generosity and ——”

“Sponge cakes,” said the boy.

E. J. G.

How to Calculate Profits.

Three men out of four do it incorrectly. Is the process man included?

AN interesting experiment has recently been carried out by the manufacturers of a certain well-known article of commercial equipment among retailers with a view to testing the percentage of traders who correctly figure their profit, and it is astonishing to find that no less than 75 per cent. of those concerned in the experiment were found to be doing it wrongly.

The wholesale cost of a certain article was given, and the retailers were asked to state that would be the selling price, allowing for 22 per cent. cost of doing business, and 10 per cent. profit. The majority simply added 32 per cent. to the wholesale cost, which gave no actual profit at all, whereas what should have been calculated was 32 per cent. of the selling price, since the wholesale cost is not something to be added to, but a portion of the selling price—in this case 68 per cent. One reply received put the matter very plainly as under:—

Let the selling price equal	100%
Deduct cost of doing business ...	22%
„ for profit	10%
	—

Assuming the cost price to be 4s. the sum would work out as follows:—

Percentage of cost to selling price	68%
68% is	4s. od.
10% is	7.06d.
100% is	70.6d.
or 5s. 10½d.	

SOME EXAMPLES.

An article costs £5, and sells for £6. What is the percentage of profit? Not 20 per cent. as many wrongly imagine, but 16⅔, or one-sixth of the *selling* price. Six pounds, the selling price, minus £5, the cost, leaves £1, the profit. One pound, divided decimally by £6, gives the result, 16⅔ per cent.

An article costs £3 15s. What must it sell for to show a profit of 25 per cent.? The answer is £5.

Process—Deduct 25 from 100, which represents the selling price. This will give you a remainder of 75, which represents the percentage of the cost. If £3 15s. is 75 per cent., 1 per cent. would be £3 15s. divided by 75, or 1 shilling, and 100 per cent. would be £5. Now, if you marked your goods, as too many do, by adding 25 per cent. to the cost, you would obtain a selling price of about £4 13s. 9d., or 6s. 3d. less than by the former method.

When you take 25 per cent. off the

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selling price, figured according to the first rule, you will still have your cost intact. Take 25 per cent. from the second sum and see if the cost remains? You will only have left £3 10s. 4d., or 4s. 8d. less than what you know to be the actual cost.

A HANDY REFERENCE TABLE.

The following table shows the percentage which must be added to cost to effect a given percentage of profit on the selling price:—

Add to cost, per cent.	To make on selling price, per cent.	Add to cost, per cent.	To make on selling price, per cent.
5	4 $\frac{3}{4}$	31·58	24
7 $\frac{1}{2}$	7	33 $\frac{1}{3}$	25
10	9	35	26
11·11	10	37 $\frac{1}{2}$	27 $\frac{1}{4}$
12·36	11	40	28 $\frac{1}{2}$
12 $\frac{1}{2}$	11 $\frac{1}{4}$	42·86	30
13·63	12	45	31
14·94	13	47	32
16·28	14	50	33 $\frac{1}{2}$
16 $\frac{2}{3}$	14 $\frac{1}{4}$	53·85	35
17·65	15	55	35 $\frac{1}{2}$
19·05	16	60	37 $\frac{1}{2}$
20·00	16 $\frac{2}{3}$	65	39 $\frac{1}{2}$
21·49	17	66 $\frac{2}{3}$	40
21·96	18	70	41
23·46	19	75	42 $\frac{3}{4}$
25	20	80	44 $\frac{1}{2}$
26·58	21	85	46
28·21	22	90	47 $\frac{1}{2}$
29·88	23	100	50

The item of "cost" is understood, of course, as being the original cost of the article, plus the cost of handling.

—"Stationery World."

A HINT.—The art of aquatint is credited to the French painter and engraver, Jean Le Prince, who was born in 1733 and died in 1781, and who deserved doubly well of us since he showed the way both to devise a new art and to cash it to good advantage. Perhaps it is that last part which is really the lost art of engraving! Although Le Prince disclosed his art to the Académie de Peinture, he only did it in consideration of receiving "a useful pension." And, we understand that he got it. The hint will not be lost upon any reader who may some day invent something besides excuses.

Borders: Use and Misuse.

THERE are times when the right kind of border is—no border. One of these times is when the subject is so large that the whole area of the page, or the whole of whatever else may be the closely restricted space, is none too large to give it justice. There is a good instance of this in the subject, "The Blackberry Boy" (page 26 of the pictures following the letterpress in the current "Process Year Book.") Trepanning has been tried; the top of the poor boy's head has been chopped off by the border. The subject is pretty, it would have been a very pleasing picture without the border. Not that the border is unpleasing, its only, but sufficient, failure is that it is altogether too large for that subject under those space conditions. Even at this time of day it is not sufficiently comprehended that the effect of a picture may be almost as much a matter of placing as of its own composition. In this matter we are in a transition stage. We first made our half-tones too small. We wanted to crowd in too many details. Being small it was not difficult in many cases to enhance their effect by a suitable border. Gradually it was recognised that it would in many cases be better to have fewer figures in a half-tone and instead to have one or more figures of good size. That was quite in the right direction. It gave everyone room to turn round; artist, negative maker, etcher and printer. It carried with it, however, its own peculiar disability. The large subject cannot stand the same sort of framing margin which suits the small subject; that is to say it cannot stand it on the same sized page or sheet. Its introduction where it is not wanted may well mean the absolute spoiling of what would show to great advantage in its own unaided presentation.

Estab. Jan. 1894.
"The Process
Photogram."



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AND ELECTROTYPERS' AND STEREOTYPERS' REVIEW.

The Degradation of Illustration.

THE influence of photography, and therefore process engraving on the degradation of pictorial art, was discussed with considerable spirit by an American critic, in whose opinion photography was responsible "for the decadence of the artistic phase of illustration, for the same reason that it has been accused of the ruin of pictorial art. The wood engraver required first a drawing made on the block which he translated; into tint, if a wash drawing, or if in pencil he did his best to render it as such. So when it became possible to print a photograph on to the wood surface, the engraver proceeded to transcribe the effect of the photo, and his success was gauged by the exactness of the imitation.

Now a photograph is not art, and therefore the work of the engraver deteriorated.

Then purely mechanical, or rather chemical reproductive processes came into use, which soon cut down the cost, so that the wood engraver could no longer make a living, and men forsook the occupation.

The first of these processes dealt only with line drawings, and afterwards the modern half-tone was brought into use, when it was hoped that this would leave the artist free to use any medium he wished. But then it became possible to reproduce the photograph directly, and this eliminated entirely artistic and in-

dividual qualities. The limitations of photography are now freely admitted because of its inability to subordinate objectionable features and to accentuate admirable ones. This being admitted, it at once becomes plain that there is a limit to the possibilities of any mechanical process.

In three-colour work we find the same tendency to reduce the art of colour to a mechanical science, just because scientists have discovered that a combination of three primary colours will produce any colour in the spectrum. It is too readily imagined that by the same mechanical combination a Turner may be produced.

In the wild scramble to get ahead we have lost the trail and must now stop and look round to discover the true basis for art. Above all things we must remember that individuality is the foundation of artistic expression; without it, whatever is undertaken artistically, becomes dry bones without form or beauty.

That the process man will ultimately be able to rise to the requirements of the artist is unquestioned, but it will only occur when he studies the artistic requirements of his subject as well as its mechanical perfection."

It is good, sometimes, for us process workers to see ourselves as others see us.

✓ *Colour Influence.*

The Influence that Colour exercises upon the Eye and Mind.

By Gustav W. Klau, President Klau-Van Pietersom Company.

WHEN this universe was created, it was endowed and surrounded by ever-changing colours and hues, ranging from the most vivid to the more delicate and subdued shades.

The skies are a kaleidoscope of atmospheric colours changing from one colour to another as the day wears on. What is more fascinating than to watch the break of day ushering in the most beautiful pale rose, pale yellow, violet and cold greys and all these vanishing into a rich blue at mid-day and then at the close of day when we see the carmine, orange and pale green tinted trail that follows the setting sun. And when we look around us we find that nature has not shirked to gladden our hearts with plenty of colour. Everywhere we see trees and foliage ranging from delicate light greens to more subdued greens, studded here and there with a galaxy of varied coloured flowers graduating from contrasting to harmonious shades. All these, as their seasons terminate, change to browns, reds and golden yellows, and when winter appears become lustreless and black. And then we are aware that the bleak grey days are before us, and when spring breaks amongst us again, we realise the coming of the beautiful transformation which will soon enlighten our eyes, hearts and minds.

In giving you this little prologue, which I believe is very fitting for this subject, I am simply trying to convey to you the importance that colour plays upon the human mind, and that nature has provided us with an abundance of it so as to enlighten our hearts and spirits. When nature endowed this universe with these

wonderful colours it also provided us with the power to conceive and admire its beautiful colour creations.

Scientists tell us that the eye contains three distinct colour nerves. One of these nerves is very sensitive to yellow, one to red and the other to blue. When the eye looks upon red, then the nerve designated for that colour becomes active and conveys to the mind what it has seen. The same method is repeated with the other two colours, or, to be more explicit there is a nerve for each one of the primary colours.

When the eye sees two of these colours mixed the result will be a secondary colour. For instance, if we mix yellow and blue, we produce a green. When this occurs the two nerves that control the yellow and blue, pick up these respective colours and transmit them to the brain and we see green.

Is it not reasonable therefore, that whatever we produce to attract the eye we should not fail to use colour whenever the opportunity presents itself? When an infant becomes peevish, or is in a crying mood, what is there that will quiet it more readily than a brightly coloured picture or object. This simply proves that nature has provided us with that instinct at birth, which develops more strongly as we mature, and remains with us to the end.

The effect produced by colour upon the mind and temperament is beyond comprehension. Every human being, whether savage or civilised, is attracted by colour and governed more or less by its power. Colour is just as essential to the evolution of mankind as sunshine, music and

literature. Sunshine enlightens our life, music sweetens it, literature develops it, and colour fascinates it.

It is also conceded that some colours act as a tonic upon the nerves, while others have a tendency to excite them. A large number of present-day publishers and advertisers have seen the possibilities in colour, and are using it to a marked degree as attractive features. Study the magazines and printed matter of to-day and then reflect back fifteen or twenty years when they were issued devoid of all colour. It merely proves that both publisher and advertiser have been convinced that colour is the one great agent that has the power to attract the eye, and that it is a factor to be reckoned with in successful advertising and publishing.

In using colours, we are very often misled. For instance, if we should use a very bright green and red alone, the sensation when the eye is suddenly turned upon them, will be of a vibrating or flickering one, but by adding a black, this sensation will disappear immediately. The reason is that red and green are extremely contrasting and, to use the right expression, are fighting each other as to which is the more prominent. By applying black, we subdue this, because the black, being a sombre colour, has a tendency to quiet down the two lively colours. I am using as an illustration red and green, because they are more inclined to produce vibration to the sight when associated than any of the other colours, with the exception of red and blue, in which the vibration is not quite so marked. When two extremely contrasting colours are used, one should be used sparingly and the effect will not be marred by vibration, but will become pleasing to the eye. When several colours are to be used they should by all means be employed with discretion. The laws that govern them should be closely adhered to. For

this reason I have defined them in classes as follows:—

LUMINOUS AND SOMBRE COLOURS.

Colours are classed as warm or cold, according as they are luminous or sombre.

The luminous or warm colours are—Yellow, orange, red and light green.

The sombre or cold colours are—Blue, violet and deep green.

When yellow predominates in green, we have warm green. When blue predominates, the greens are cold. This is also true with every other colour in which these two colours predominate.

The primary or simple colours are—Red, yellow, blue.

And those which result from their binary compounds (secondaries) orange, green, violet and their hues.

Colour experts admit that the mixture of three primary colours in certain proportions produces black. Colours that are complimentary to each other are classed as:—

COMPLIMENTARY COLOURS.

Red and green on white.

Yellow and violet on white.

Blue and orange on white.

Colours that are non-complimentary to each other are classed as:—

NON-COMPLIMENTARY COLOURS.

Red and orange on white (very bad).

Red and yellow on white (not so bad).

Red and blue on white (are passable).

Red and violet on white (are passable).

Orange and yellow on white (bad).

Orange and green on white (not so bad).

Yellow and green on white (not so bad).

Yellow and blue on white (not so bad).

Green and blue on white (not so bad) if colours are deep.

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Green and violet on white (not so bad) if colours are light.

Blue and violet on white (very bad).

Black never produces a bad effect when used with two luminous colours, but when luminous colours are used in conjunction with sombre colours black will not associate as well as it does with luminous colours only.

Luminous colours become more effective when printed on a sombre coloured stock and sombre colours will show up to better advantage on stock of lighter shades.

When two colours are used in masses arranged so that one colour forms a centre, while the other is used as a surrounding colour, we find that their shades change according to the colours used. For this reason it is always preferable that a dummy or sketch be first prepared for printed matter which is to appear in colours.

A printer may take special pains to mix the colours which he intends to use on a piece of matter as nearly exact as is possible, only to find that when he associates the colours, they undergo a change due to the action that one colour has upon another.

For instance, if a given quantity of red and orange are associated the orange changes from a reddish to a more yellowish shade while the red takes on a bluish cast. When violet and red are thus used the violet loses its redness and appears bluer and the yellow takes on a reddish cast. When violet and blue are thus used the orange appears redder and the yellow takes on a bluish cast. When green and yellow are thus used the

green appears bluer, while the red becomes yellowish. When orange and yellow are thus associated, the violet appears redder and the blue takes on a yellowish cast.

When red and yellow are thus associated the red appears yellowish and the yellow takes on a bluish cast.

When red and blue are thus used the red inclines to orange and the blue to green. When yellow and blue are thus associated the yellow inclines to orange and the blue to violet.

This colour phenomena is due to the fact, that by their reciprocal influence they lose more or less of the colour which is common to both, and, therefore, differ from each other in proportion to this loss.

On account of these changing conditions, it is necessary that preliminary colour proofs be pulled from the colour blocks when colours are thus associated on a piece of printing. This will enable the printer to change the shades before making the edition run so as not to have the phenomena appear too marked. This is especially so in cases when the colours designated on the job must be absolutely exact in shade in the finished product.

A piece of printing produced in colours becomes attractive and in a sense dignified when the colours are used according to the laws which Nature has created and surrounded us with. When we ignore these laws we produce something which is unnatural and repulsive to the eye. Therefore, it is well to remember when working with colours that we must follow Nature or fail.

WE congratulate the Westminster Engineering Co., Ltd., upon their success at the recent International Kinematograph Exhibition at Olympia, where they were awarded a Diploma of Honour for their exhibit of pro-

jection and photographic arc lamps.

These lamps were made at their works at Willesden Junction, N.W., from which we have come to expect nothing but what is of the best for the process worker.

A Chiel takes Plate-making Notes in the "Scotsman" Office.

THE first thing the chiel noted was the process engraving plant. This was not large. The camera is a 15×12; the machine etcher is a Mark Smith; with two ordinary rocked etchers to eke out; the router is one of the good old large radial arm machines; the printing was by an enclosed arc. One noted nothing very exceptional in this department of the journal, except the scientific and exact care with which everything seemed to be adapted to the work to be done, which, please remember, is for the journals only. No plates are made for outsiders, except those which are done for advertisers—and they are not exactly outsiders. Mr. Finlay and Mr. Law seem to be satisfied with their wonderful newspaper property, and its solitary position, as the sole morning newspaper in Edinburgh, where erstwhile a "Scottish Leader" and an "Edinburgh Courant" were plaintively and vainly speering at the Scots public for "the right to live."

I say the plant does not at the moment strike one as large; but here at once I have to make qualifications or, at any rate, additions. The mechanical superintendent of the establishment is at this moment getting out plans to double the size of the half-tone department, which is found to be at present far too small for the great amount of work turned out. A great deal of block making is done for the journal's advertisers, quite apart from that wanted for the news columns.

I say "the journals," and I should make clear what these journals are. The "Scotsman" is not the chief from this point of view. "The Scotsman" itself

does not make use of any illustrations, with the exception of an occasional map or diagram. All the half-tones used in the journals are made for the "Evening Dispatch" and the "Weekly Scotsman." Probably the "Evening Dispatch" devotes more space to illustration than any other evening paper in the country.

Very deep etching is resorted to in this office. But as to that, enough to say that whatever the mode the result is extraordinarily fine. I think, on the whole, the "Dispatch" takes the palm among all papers I have studied in this connection. Letters come into its studio from other great dailies and from all parts of the world. The writers pay to the "Scotsman's"—or should I say the "Dispatch's"—process chief the sincere compliment of enquiring "how it is done." As to that I may state just one thing that the paste enamel facing used on the flongs is one prepared in the office.

There is a pointer re the dark-rooms and fume ventilation. The dark-room walls are hollow. They are wood surfaced; the joining, of course, being such as to give absolute light-tightness; at the same time there is room for the fumes of the adjacent machine etcher to be drawn along by a fan through this within-the-wall space, and to be sent out to diffuse soft pungency in the outer air of Auld Reekie. "We never get a whiff of the machine etcher in the room in which it is working, never the slightest," the chiel is told.

Besides the auto-plate casters, there is an automatic borer and dryer. A plate is dropped into position and pushed right up against a stop. In a moment that stop

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sinks; the now unobstructed plate passes on into a sort of short tunnel about its own length. There it is bored, and, what is more, knives at the openings of the tunnel cut off any roughness.

On goes the plate, slipping over a tapering and very irregularly sectioned but smooth surfaced cone. The moment it is securely held on the cone, up bubble spurts of water, and it is straightway cooled. A pretty, indeed a wonderful, machine. The diameter of the plate is a trifle shorter than the cylinder, so that it must perforce open out a very little and so clamp on very tightly. You need to drop the plates on smartly; the sharpish impact suffices to broaden the curve just enough for tightness.

Dry flongs are not used. "We can get a plate in seven minutes. We *might* with dry flongs get a plate in six. Is that good enough for us to consider paying five or six times as much for our flongs?" I should say it might be quite enough in many cases, but they would be cases where another paper was about to rush out competing copies into the streets. The "Scotsman" stands alone. There is no competing Edinboro' morning paper. It has not quite the same compulsion as most journals experience.

Let no one suppose, however, that it presumes upon this. Test the matter any way you like. It does not presume in the matter of deliveries. It sets a notable example to great dailies everywhere in its pioneering, re its special train enterprise. It has not been content with any serviceable sort of an office or works, simply because of the lack of important opposition. So far from this, it has built itself a perfect palace of a place. Again, it has not been content merely to adopt some physical practice approved by other firms. For instance, we constantly find that the heating arrangement consists of merely warming the stagnant air of rooms

and shops. That is not good enough for the "Scotsman." It is constantly circulating through the building air drawn in from the outside — air from Arthur's lofty Seat hard by, or any point of the compass—and this air is purified and then warmed before it is passed round the building. The cleaning is by passing it through a vast circle of extraordinarily fine sprays. This deals with the dust in the air. Then the moistened air is led through a series of thin vertical sheets of metal, perhaps eight feet high by recollection, perhaps two-thirds of an inch apart. The depth of the sheets I did not see; it seemed considerable.

The "Scotsman" does not at present incline very seriously towards rotary photogravure for newspaper work; it considers that there is not likely to be time allowed for the due preparation of the plates. It may suit German newspapers with their more restricted circulations. I pass this on as simply reflecting what I concluded to be the ruling view in this great office at the moment.

A few things impressed me greatly. One was as to the interest, the proud interest, which the owners obviously feel in their journals. Nothing in the way of site and habitat or accessories is too good for the "Scotsman." Marble busts of its former editors adorn one of its lordly spaces. The advertisement office is a ducal splendour of architecture and fit ornament. Another thing that impressed me was the way in which that bounty of provision and enrichment is accepted as a true index of the owners' mind, with the result of a wonderful feeling of mutual understanding, mutual confidence and mutual desire to render helpfulness—all these pervading the whole staff, large though it is. "We don't seem to be so much a large staff as a large family," said my informant.

THE CHIEF.

Bromoil Transfers. *W. T. WILKINSON.*

WHEN incandescent gas is used as the illuminant in making enlargements in line or from screen negatives for conversion into photo-litho transfers for posters, bromide paper (glossy surface) is best, but if one of the small enclosed arc lamps sold by the Westminster Co. is used then gaslight glossy must be used, because the bromide paper requires too short an exposure to be manageable.

Whether using bromide or gaslight paper the exposure must be full, and the development carried on for at least a minute after the image is dark enough. Gaslight paper behaves differently to bromide paper, as it fogs over if the exposure has been too short. With bromide paper under-exposure is manifest in a light image. With gaslight paper, therefore, to obtain a bright image the exposure must be full.

Pyro ammonia well restrained gives the most relief and the sharpest transfers. Hydrokinone and caustic potash also well restrained the next best, others coming away below either of these two.

A good formula for the first-named is

No. 1.

Pyrogallol	...	...	...	45 gr.
Metabisulphite potash	...	...	...	30 gr.
Ammonium bromide	...	...	...	30 gr.
Water	...	...	...	10 oz.

No. 2.

Liquor ammonia	...	...	...	2 dr.
Water	...	...	...	10 oz.

the developer being made by mixing Nos. 1 and 2 in equal proportions.

The formula for hydrokinone is:—

No. 1.

Hydrokinone	...	...	...	$\frac{1}{2}$ oz.
Potass metabisulphite	...	...	...	$\frac{1}{2}$ oz.
Potass bromide	...	...	...	$\frac{1}{4}$ oz.
Water	...	...	...	20 oz.

No. 2.

Caustic potash	...	...	...	1 oz.
Water	...	...	...	20 oz.

Equal parts of Nos. 1 and 2 are mixed together for the developing solution.

The paper upon which the enlargement is to be made should be soaked in clean, cold water for three or four minutes, then laid face down upon a sheet of clean glass and well squeegeed. The object of this is two-fold, first, to get the paper in such a condition that the proportions of image are not liable to alteration, as would be the case if paper is exposed dry; secondly, to have the paper perfectly flat during exposure. When the enlargement is exposed and developed wash well and fix in

Hyposulphite soda	...	...	...	2 oz.
Metabisulphite potash	...	...	...	2 oz.
Water	...	...	...	20 oz.

then wash thoroughly and bleach in

Potass bromide	...	...	...	1 oz.
Potass ferricyanide	...	...	...	1 oz.
Potass bichromate	...	...	...	3 oz.
Water	...	...	...	20 oz.

Hydrochloric acid sufficient to clear the solution, then add 2 ounces of potass alum.

When the image is washed until water is clear of all traces of yellow colour, then again immerse in hypo for two or three minutes. Wash well, and hang up to dry.

When the print is dry it is inked up in the same way that an ordinary bichromated gelatine print would be, i.e., by rolling over stone to stone transfer ink thinned with spirit of turpentine. Soak in cold water for twenty minutes, then in water at 65-70 degrees Fahr. for ten minutes and develop by means of wet cotton-wool.

✓ *The Minimum Block Again.*

In our June issue we called attention to the Minimum Block as a business proposition, a question that calls for careful attention and thorough enquiry, for we feel the time has come when the Trade should unite to find some more equitable basis for the charging of small blocks.

In the article referred to we said that the American Process Engraver had given the matter more careful attention than we on this side of the Atlantic; this is borne out by a table that has come to hand which includes a list showing the individual cost of 756 Square Half-Tone Minimum Blocks and 724 Line Minimums; these show a remarkable disparity in the cost of production, and prove an object lesson that should be very carefully considered by every Process Engraver.

It is quite true that wages and material are higher in America than in this country, but that fact in no wise touches the question. Our argument is based upon the fact that the Minimum Block is practically sold by each Engraver at one particular price, somewhere about 3s. to 4s. each, yet as we showed by the records of one English house the actual cost varies from 3s. to 14s. each; why then should the customer whose Block has cost anything from 5s. to 14s. get it for 4s. or 5s. and so secure a free gift? Surely a system that admits of such an anomaly needs the very careful attention of those using it, especially as the trend of Blocks has set so completely towards the Minimum size.

To show the great variation in the cost of different Blocks, we give a tabular view of those from which the American figures are taken; it must be remembered that these are not picked figures, but actual *consecutive* Blocks produced in a given time by several different houses.

Here are the figures:—

	Half-Tone.	s. d.	s. d.
6 cost between	...	4 2	and 4 7
12 " "	...	4 7	" 5 0
27 " "	...	5 0	" 5 5
34 " "	...	5 5	" 5 10
30 " "	...	5 10	" 6 3
54 " "	...	6 3	" 6 8
36 " "	...	6 8	" 7 1
49 " "	...	7 1	" 7 6
82 " "	...	7 6	" 7 11
76 " "	...	7 11	" 8 4
71 " "	...	8 4	" 8 9
47 " "	...	8 9	" 9 2
43 " "	...	9 2	" 9 7
25 " "	...	9 7	" 10 0
26 " "	...	10 0	" 10 5
23 " "	...	10 5	" 10 10
23 " "	...	10 10	" 11 3
21 " "	...	11 3	" 11 8
16 " "	...	11 8	" 12 1
11 " "	...	12 1	" 12 6
44 " over	...	12 6	

	Line.	s. d.	s. d.
756			
14 cost under	...	—	2 6
14 " between	...	2 6	and 2 11
20 " "	...	2 11	" 3 4
39 " "	...	3 4	" 3 9
70 " "	...	3 9	" 4 2
95 " "	...	4 2	" 4 7
95 " "	...	4 7	" 5 0
91 " "	...	5 0	" 5 5
59 " "	...	5 5	" 5 10
44 " "	...	5 10	" 6 3
28 " "	...	6 3	" 6 8
25 " "	...	6 8	" 7 1
26 " "	...	7 1	" 7 6
16 " "	...	7 6	" 7 11
15 " "	...	7 11	" 8 4
64 " "	...	8 4	" 12 6
6 " over	...	12 6	

724

The figures here quoted will probably be doubted by many Process Engravers who have never given the question of costing careful thought, the fact that at the year end they find they have managed to struggle through, and just pay their way, making little more than journeyman's wages for themselves, leads them to think that they cannot be paying such heavy costs and getting so little return. If they will, however, take the trouble to work out the cost of a few of the more troublesome blocks they will find that the difficult blocks are eating up profit made on those of a more simple character, in other words if it were not for the easier made blocks they would soon be bankrupt. So it follows that if the difficult work was eliminated or charged at higher prices they would save that loss, consequently at the year's end have a far better balance sheet. What induces the process engraver to continue to do difficult work at ordinary prices, and so make his customer a present of part of his profit, is a puzzle.

Another set of figures that has just come into our hands from America demonstrate the remarkable similarity there is in the division of the costs of production between the two countries. We have obtained identical figures from a well-known English house for the purpose of comparison.

Average Cost of Production.

	America		England.
Chargeable time ...	40%	...	37%
Non-chargeable time	11%	...	10%
Material ...	11%	...	14%
Shop Expenses ...	12%	...	12½%
Office Expenses and Depreciation ...	26%	...	26½%
	-----		-----
	100%	...	100%

It will be seen that chargeable time and materials are only half the cost of the expense of production, a very import-

ant point to remember, as if it is desired to make a profit at all these must be MORE THAN DOUBLED, for doubling them would just meet the net cost without interest on capital or profit on trading.

Another very material fact to be kept in mind is that WASTE AND MAKE-OVERS USE UP AT LEAST 30% OF THE MATERIAL BOUGHT, in our opinion this is an under estimate.

Now Mr. Process Engraver, have you an idea that you can produce plates at a lower price than your competitor? Do you, when you see the figures given by those who work costing systems, shake your head and pity them? If so, just stop and think a moment. You cannot purchase your materials at a lower cost than he, neither can you procure workmen at a perceptibly lower cost, or even if you do find workmen who are willing to work at smaller wages it is because they ask for all they are worth, good men who command good wages will turn out more and better work than the low-price man. Rents, rates, taxes, travellers, etc., average out in a wonderful fashion so that it costs the big man no higher percentage to procure work than it does the smaller man, while by organization he can turn out more per head of employees per year than can the man of smaller staff and smaller plant, and who is more affected by the fluctuation of trade.

After careful consideration and enquiry we are compelled to the opinion that the small house has no advantage over the large house in the way of smaller costs, consequently they cannot possibly afford to work at lower prices.

Our desire is to help improve the position of the Process Engraver, and if our readers will help us in this matter by sending us authentic figures for comparison, we shall be most happy to publish them or so much of them as we may be permitted.

The Chinese Method for Engravers.

GATCHEL AND MANNING, the well-known American Process Engravers, have contributed to "The American Printer" an essay that hits at a vulnerable point in the dealing of customers with engravers. It is as follows:—

It is said that the Chinese deal with their physicians on a diametrically opposite plan from that of their Occidental brethren. They pay their doctors during the continuance of good health. When sickness or disability comes the physician's pay ceases until the patient is restored again to good health.

Which is much more logical than our method. The earnings of the doctor depend, with us, on the length of our illness. The quicker he performs his plain ethical duty of curing us the less money he makes.

And sometimes he needs the money. But the point is that the Chinese have the right idea of service. They pay for results, viz., good health. They refuse to pay for sickness.

It would be a good "stunt" if some of the buyers of printing and engraving would inwardly digest this Chinese idea and apply it to their purchases on these lines. These should insist on service that would keep their output from looking "sick." The engraver is in a position from his knowledge and experience to know whether or not the work ordered is going to give the best results under the indicated printing conditions. If he knows that the work ordered is not the best for the purpose or will probably not give the effects counted on by the buyer, then he is in the same class, ethically, with the doctor who prolongs a patient's illness to get more money out of him.

Because the engraver knows that it will be necessary to re-make the work, and as he followed instructions in the first place, he can charge for both and make money by it.

The reader will probably think at this point that there is a radical difference between the two cases. The buyer goes to the engraver or printer and orders certain things, and he gets them; that "lets the seller out," whereas the patient goes to the doctor and says, "Something's wrong with me—cure me." Most true, Horatio! and therein lies the moral of this little tale.

You wouldn't go to a doctor and say, "I need a little medicine. Give me some strychnine or cyanide of potassium." Oh, no! You admit that the doctor knows what will produce the result you want much better than you do.

Why not deal with your engraver the same way? Go to him and say, "I want some pictures of my machines to run in trade journals; which is the best method to use?" or "I am going to publish a little booklet. I make such and such wares. What's the best way to illustrate them for such a booklet?" or "I want a classy poster. Expense is secondary," and so on *ad infinitum*.

That's the way to get results. The engraver knows what kind of engravings will best illustrate any given line and what designs are most appropriate for any specified purpose. Why not get the benefit of his knowledge?

"ADVERTISE your business; I owe all my success to printers' ink." — P. T. Barnum.

The Manager.

WE never knew his name, to us he was simply Dan'l. He was the boy, and had come to do odd work—cutting metal, cleaning glass and running errands.

But for a boy not coming straight from school he was inordinately slow—in manner, in speech, in gait—and his deafness handicapped him. Yet he had his good qualities. He was very willing. He brought our dinners in hot; not stopping to play with the other boys, and he made our tea nicely. He was, moreover, very polite. He rarely interested himself in our work; never pushed against the cameras while an exposure was taking place and never asked tiresome questions.

He made up the chemicals and mastered the names of the various materials with the exception of collodion, which was too much for him. He called it “gro-gide,” and we, taking a fancy to this new name, adopted it.

Dan'l was the victim of many a practical joke, in which frequently the elder members of the room were not entirely blameless, but the poor lad bore it all with a sad smile.

One day a change came over him, he actually asked to be allowed the honour of coating the plates with “gro-gide.” We looked at him in surprise and expressed our admiration.

“Perhaps you would like to make a negative?” suggested the chief joker.

Dan'l smiled approvingly. He was a youth of few words.

“You ought to have asked before,” continued the joker, “but you may as well start at once, before the rush of work comes in.”

Dan'l was ushered into the dark room; a plate, on which the rubber edging had been purposely omitted, was given him and an operator poured out the collodion, taking care that a liberal quantity fell off the plate and ran down the arm of the débutant.

The plate being ready for the bath, a bottle of dirty intensifying silver was handed to the boy with minute instructions as to the correct method of pouring the liquid on to the coated surface. Repulsed by the collodion, the silver solution ran in all directions, the arm again coming in for goodly share. The joker, catching some of the falling drops on his fingers carefully, wiped them across the serious face of the boy, at the same time breathing some congratulatory remarks as to the youngster's ability and progress.

The plate was now considered ready and the usual operations followed; the exposure was short, being made with open aperture; and the boy, watch in hand, unconscious of the stifled laughter at his back, stood counting the seconds.

The exposure complete, everybody entered the dark room, and the young operator was told to pour the developer over the plate, after which the water was turned on in full force, and, to the consternation of the anxious youngster, the film washed off the plate and disappeared down the sink.

“What have you done?” we cried.

“I don't know; it's not my fault,” replied the boy in dismay.

“You young rascal, you did it purposely,” said the joker. “Here, take a pail and run down into the street; if you don't catch that film as it comes down the drain pipe, look out.”

THE PROCESS MONTHLY.

As the embryo photographer dashed at full speed downstairs, we gave vent to our feelings in a terrific roar. The fact that he was so very serious tickled us immensely, and we were still laughing when he returned to announce that he was unable to find the other end of the pipe.

A few days later, an advertisement appeared in a newspaper for an operator. Dan'l, in answer to our enquiry, admitted that he thought he was capable of taking on the job, and under the direction of the wise heads, he wrote a letter applying for the situation, explaining that he was a capable operator, if somewhat young, in proof of which he ran the details through thus: after development, he puts the negative in the blue, then in the black, then the red, finishing with the black. The letter was despatched and soon forgotten.

Dan'l continued to be a good boy, ever willing and obliging. But one Monday morning he failed to put in an appearance and then we learned that he had given a week's notice, and had left without saying a word to us. "Ungrateful child," said the joker; "I'll never teach another boy the trade." We regretted the loss of our young friend, but remembrance of him soon faded and eventually even the word "grogide" was relegated to the limbo of the past.

Events move rapidly; years pass and changes take place. The joker himself, the plague of the boys' lives, had received the bullet and was busy popping in and out of process shops, seeking a situation.

In one office the clerk, inviting him to take a chair and wait until the manager returned from lunch, entered into conversation with him. After some generalities the talk veered round to the subject of the firm.

"He's a clever fellow, our manager,"

said the scribe.

"Indeed!"

"Yes, he's an adept at discovering new methods, and the way in which he gets the work out would astonish not a few firms, though he claims it to be quite simple. His maxim is, 'Treat your men as men, and watch the result.' And there's no doubt about it, the men would do anything for him. It's a treat to see them at work when something is wanted extra quickly, consequently the governor does not underestimate his worth."

The joker was interested.

"Quite a youngster too," continued the scribe, sharpening a pencil; "shouldn't think he's as old as you."

"Old head on young shoulders," suggested the joker.

"Exactly," said the scribe, and then confidentially, "Funny thing, too, how we found him."

"Oh! How was that?" asked the joker.

"We once advertised for an experienced operator and among the replies was one from a boy. It was such a grotesque letter that the governor thought someone was playing a joke, and he sent for the boy. He took such a fancy to the youngster at the interview that he decided to teach him the trade, and he's turned out the best we've ever had, and as I say, is now manager. Hush, here he is," added the clerk in a lower tone. Then aloud: "Mr. Wilson—Mr. Wilson! Here's an operator seeking a job. I detained him, as you were in want of a man."

"Yes, that's right," said a voice that confirmed the joker's suspicions.

The door opened wider, and into the room, wearing the same sad smile of old yet changed almost beyond recognition, came the erstwhile Dan'l!

E. J. G.

The American I.A.M.P.E. Congress.

IT may be asked what these initials stand for. Well, they stand for the International Association of Manufacturing Process Engravers, for in America there are two Associations, one of the Masters, the other of the Men.

As we are writing the Masters' Association is in Congress at Indianapolis, strenuous efforts have been made to get all the process firms in the U.S.A. and Canada to send representatives, and it is fully expected that a record attendance will be secured.

In our last issue we gave an illustration of the Chicago Club's invitation to its members to be present, here we give one or two more of the more striking invitations issued by the various clubs. Certainly the Americans believe in illustration and they do it thoroughly and go for effective announcement as will be seen, and we shall be surprised if they do not succeed in their efforts.

The first is part of the invitation issued by the Association's headquarters.



FOREWARNED IS FOREARMED.
COME TO THE SEVENTEETH ANNUAL CONVENTION
OF THE
INTERNATIONAL
ASSOCIATION OF MANUFACTURING PROCESS ENGRAVERS.

BECAUSE—

Self-preservation is the first law of nature.

HERE IS WHERE WE STAND.

There are five hundred Commercial

Photo Engraving Plants in the United States and Canada. These five hundred plants employ over Six Thousand Workmen in the Photo Engraving Departments. These six thousand workmen

THE PROCESS MONTHLY.

turn out a product amounting to over Fifteen Million Dollars a Year. More than one-half of that product—Seven and One-half Million Dollars' worth—is sold at cost or below cost.

THINK WHAT IT MEANS—

To conduct your business upon such a basis. While this has been going on for years, conditions will be much worse in the near future

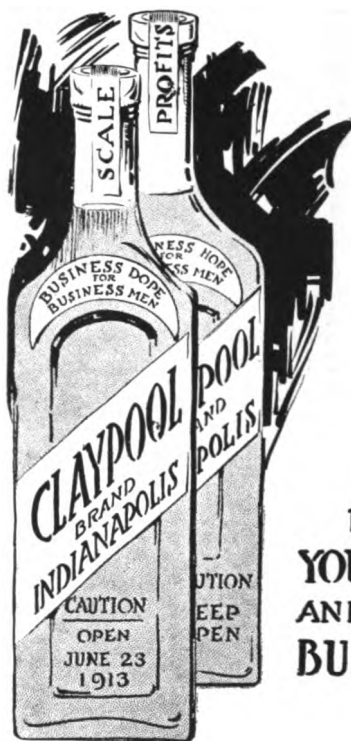
UNLESS

You come to the Indianapolis Convention and make them better.

THIS IS WHAT WE ARE UP AGAINST.

The price of Labour, Rent, Materials, Power, etc., is steadily going upwards. These commodities will never be cheaper; on the contrary, they will rise from year to year.

Here is what the Twin City Club have to say to their members.



NOTHING

FOR
YOURSELF
AND YOUR
BUSINESS

THE ABOVE IS ISSUED BY THE CLAYPOOL CLUB.

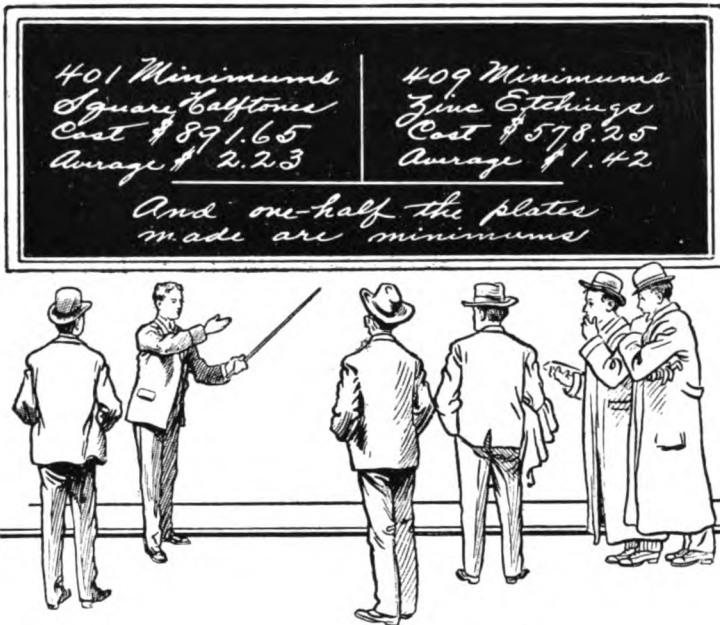
MEET US THERE. WE'LL ALL LEARN WHY

-
- ¶ Volume don't always mean profits
 - ¶ Why it is suicidal to maintain a big shop for busy seasons and cut prices to try to make dull seasons busy
 - ¶ Why we will live longer or better and enjoy life with a smaller volume of profitable business than a larger volume half of which is loss
 - ¶ How a cost system will show you what business is profitable and what is good stuff to let the other fellow have
 - ¶ Why "leaks" occur and how to stop them
-

TWIN CITY PHOTO-ENGRAVERS' ASSOCIATION.

As promised we hope to give a summary report of the Convention in our August number, in the meantime we recommend some of the methods of our enterprising

what slow, though stately. We think the time has now come when more enthusiasm should be put into the work and a more determined effort made to make the As-



American friends to the English Process Engravers' Association. There is plenty of work for it to do if it will but set about it, hitherto its progress has been some-

sociation a real power in the trade.

When shall we have a Convention of the English Process Engravers?!!!

Our "Peripatetic" looks in at the Leeds Technical School Printing Department.

JOB-NIVOROUS PRINTERS — A USEFUL PLANT—DOTS CENTRING A RED EXPANSE—THE "BABY" OFFSET—A "BROADWAY" PRESS AND PAPER STRETCH—SAVING A WORKING; THE HALF TONE PORTRAITS WITH THE BLACK—A NEW REVERSING METHOD.

I THINK I really must call myself peripatetic. It "sounds fine." It is sanctioned by a lot of journalistic tradition; particularly of the later Vic-

torian era, when we had all of us just begun to understand what big words meant, and to regard them with a certain awe. Besides, I really am a wanderer on good "copy" bent; as may appear more plainly, perhaps, hereafter. Just now I won't delay for that, but plunge in medias Leeds.

I got to Leeds at eight o'clock to-night; booked my bed, and then—

THE PROCESS MONTHLY.

what? Theatre? No, not exciting enough. May meetings, if any? No; hardly time to find out what and where they are. Stroll round? No; Shops Hours Act's at work to-day. Got it, by Jove! A surprise visit to the Technical School Printing and Process Department.

Away, then, I go, from the May-scented, honeysuckle-sweetened hedge rows of the Briggate and Boar Lane. (Anyone knowing Leeds will please miss that sentence.) On through Park Row and the circle of exquisitely cast bronze ladies holding lamps, whom Bernard Shaw's American police censor will hope one day to see covered with some decorous costume, on up Cookridge Street, right among a whole zoo of job-nivorous printing lions, and so to the Leeds Institute. There it stands, square, smoke-dulled, solid, businesslike, severely practical, a "no nonsense" sort of a place.

I say shiveringly to myself, "P.E.M."; and that magic talisman gives me courage to enter. "The Engraving Classes? Oh, they'll no doubt be in the Art School round the corner." Round the corner then I go. "The Engraving Classes? Oh, they'll be at the Printing School in Upper North Street." To Upper North Street I go and find there the temporary premises of the School. It is explained that the Department of Printing and Process has developed so rapidly that accommodation could not be found for the large number of students wishing to take advantage of the courses. A large building was taken four years ago and in it has been housed under one roof the splendid equipment that the school possesses. The building, though old, has been rearranged and is now admirably adapted for the work of the various departments of the school. It is a three-storey building. On the top floor is the process and photographic department, consisting of studio, dark rooms, printing

and etching rooms. On the first floor are the Linotype Room, Case Room (for 18 students), Litho Artists' Room and Chemical Store Room. On the ground floor are the Letterpress Machine Room, Litho Machine Room, Motor House, and Process Block Mounting Room.

I am unfortunate enough to miss Mr. Bottomley, but I am happy in seeing Mr. Walton and Mr. Littlewood. The latter is busy superintending fine printing of half-tone and three colour; and Mr. Walton has deeply interesting things to tell me, which concern our readers. To deal first with the letterpress work. Three colour is being regularly printed on a demy Babcock Standard, on a Linotype's Broadheath Miehle (a double demy); and on a demy Art Caxton, by Haddon. A Golding Jobber (Hunter) and a Swift (Haddon), both small beds, and a large Haddon cutter (screw clamp), complete the more important appliances.

Fifteen students were in attendance at the class which was held on the evening of my visit. This, however, is only one of a number of special summer courses—the ordinary classes having terminated for the session before Easter.

The applications for admission were so numerous in all sections for the session 1912-1913 that many classes had to be duplicated—in some cases triplicated, and even then many had to be refused admission.

Monday and Friday are given to elementary work; Tuesday and Wednesday are the three-colour nights.

All the blocks used by the young three-colour printers are made on the premises. A very ticklish and strong colour carpet three-colour subject is brought to my notice. There are very fine dots of white in the centre of a solid mass of red. There's a register test for you. The students were given the job to do on their own; the teacher being in the back-

ground, like Blucher at Waterloo, and coming up like him to find himself welcomed, to be sure, but not indispensable. Those critical dots stand out sharp and clean in their own proper whiteness. The teacher, clearly one of those who make great demands on themselves, tells me how dissatisfied he is with certain work in the centre. Not dissatisfied with the students: "We"—not "they," please note—"We" don't seem to get it just right. To be sure, the register isn't exact. If the students could always do everything just O.K., why be at a technical school at all? For myself, I am too pleased by the qualities and success I do find, to be over critical about what I don't find. In any case, I've not got the original before me.

Some plums are—plummy; but so, too, is a rural scene. The sky is a bit on the mauve side. But there, again, what is a school for but to put the right tones into the pictures, and that by first putting the right tone into the picture printers?

Strong and also very various greens are most successfully presented on the same sheet on which the blackest mass of carpet red is printed. Altogether it is good work. In my judgment, these students are going to maintain the name and fame of Leeds as a printing centre, and to increase it.

Eight half-tones, about $4\frac{1}{2}$ in. by $5\frac{1}{4}$ in., have just been printed on a double demy sheet on the Miehle. They include subjects so dissimilar as a cat, which of itself fills the block areas so that there is plenty of fur detail, and a machine with four-speed pulley and geared wheels, and many things "trying" to the engraver, all in evidence together. More could undoubtedly be made of the machine subject if it were worth while to spend two guineas' worth of time upon it in the artists' room. But taking it as a come-day go-day job, which can only have

ordinary attention, because only ordinary time and ordinary money can be spared, it is quite successful. So, too, is the display of the advertisements; but that I don't know anything about just here and now.

The Photographic and Process Department occupies the second storey of the building. It is equipped for every branch of photographic instruction—whether pure or process. Among the equipment is a 15×12 Hunter Arc Gear Camera with Circular Screen Gear for Colour Work, a Lindley 15×12 for Line Work, and a 12×10 Hunter's Arc Gear Camera for Half Tone Work. The Optical Equipment is mostly by Voightlander, and the excellence of this part of the equipment is a special feature of the department. A very fine Photomicrographic Equipment with a Von Henich Microscope, etc., has recently been added. A large amount of experimental work is undertaken by the students of the pure photographic department and some interesting and useful things have been done.

A capital plate-drying cupboard has been contrived. In the washing-off operation it is amusing to note the cute arrangement of four taps served by one pipe; five students can stand all round a tank and flow their plates simultaneously.

"We've got a Mann's 'Baby' here, 10 by 12, offset press," my cicerone informs me; "please come and look at that."

I see its plate-bearing cylinder at the far end from the feed board, the rubber cylinder in the centre and higher, the impression cylinder nearest the feeder. There is an automatic damping apparatus worked by a ratchet. The "Baby" has all modern appliances adapted to litho machines; it has three inking rollers, two oscillating rollers, one rider, four distributors, an oscillating ink drum, and duct roller. The feeder sits on a stool,

THE PROCESS MONTHLY.

and by a foot trip checks the impression. He feeds at the extreme end of the machine, and the sheet is instantly returned to him; for that is what it amounts to. It comes back on to a little platform just above the actual feeding board. So he has the printed work in sight all the time. My guide puts a sheet or two through. "It's going at about 2,600 an hour," he says.

I am taken to Mann's Broadway Press — so named to express the idea that it is well to let the drag of the press come the narrow way of the sheet. That means getting the minimum of stretch.

I want to speak in terms of the simplest, sincerest admiration of one sheet of offset half-tone work transferred on to aluminium on this Broadway press.

I begged this sheet; it is here before me. It has four subjects, about 6 in. by 4½ in.; one a mass of maidenhair fern, thousands of tiny fronds, and the work "all there," in every pin-head portion. Lilac blossom in a wicker basket is just as successful. So, too, great sprays of white carnations in a basket, and a mass of tiny white blossom around an upstanding narcissi cluster. The table top, on which the white carnation basket stands, has been toned up to give it depth and contrast.

Mr. John Geddes happens to come in. I thought I was the most zealous man in the craft, looking up this school instead of smoking by the hotel fire; and here is John Geddes, stranded like me for an hour or two, and nothing will do but he must see how the young printer and engraver idea is being taught to shoot. I try to look pleased at seeing him, and manage it successfully—because I really am pleased, despite that my zeal loses its uniqueness.

Mr. Geddes, speaking as one who is constantly encountering the finest work

from his customers' presses, is naturally disposed to close criticism; but he has encouraging words to say. He feels that in attempting things so difficult, the school is playing its proper part, and increasing its value to the students and to the whole craft.

I've left the best wine to the last, the mention of a remarkable instance of offset saving a working and also giving a result which a few years ago could not have been got at all under the given conditions. Mr. Walton, in the ordinary course of his duties at Messrs. Petty's, had recently to print a calendar subject, 8 up on 4 crown; two greens, red and black. Two portraits are brought into the composition. They are worked offset with the rest of the black, with the figures of the actual calendars, that is to say, and any other black there may have been. One of the men portrayed has a long, grey beard. There was abundance of half tone, and the whole was as perfect as I ever saw a job of that character. And it was on common poster paper. Altogether, I really feel that these students are very much to be congratulated.

Mr. Walton seems to have brought his powers of adaptation to work for the good of the school and the craft in the matter of a reverse process. The reliance is on the different strengths of greasiness in different inks. I understand that ordinarily, to produce a white or black, one spends a great deal of time in etching into relief and filling in solid, and then polishing the top away. Mr. Walton's method is quite different, and, as I can now testify, is quite successful.

He transfers the work—say, an ordinary piece of display composition, or of line work—on to stone. He rolls up and gives a slight etch with nitric acid. He sensitises the stone and fills in solid with

a strong, greasy ink. He allows it to dry, and then gums up and dries the gum. He washes out with a mixture of acetic acid, or vinegar and turpentine.

grease than the liquid ink that one puts on is attacked by the solution with which he washes out; and when rolled up, the design appears in relief.

PERIPATETIC.

The original transfer being of a weaker



Ten Reasons why I need a Cost System.

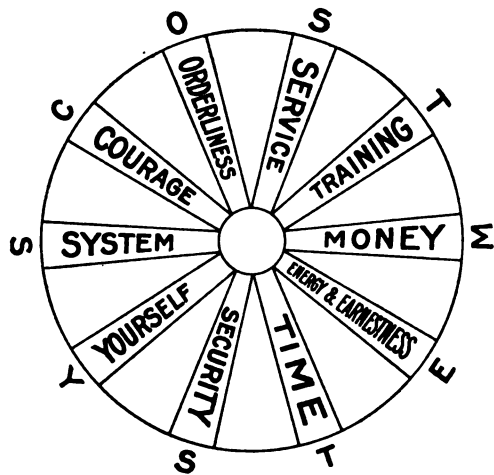
At the Indiana Congress on costing Mr. Earl R. Britt was asked to give an address upon reasons for the need of costing. He made several points worth recording—points that will pay for consideration at the hands of the process engraver, as well as the printer.

S—stands for the *security* which every cost system printer feels not only in his prices and chances of success, but in the growth of his bank account as well.

He illustrated his points by drawing a large chart, reproduction of which we give below, and proceeded as follows :

T—represents the element of *time*, which is the most exacting connected with the printing business.

“The words cost system contain ten letters, one for each finger and thumb on your two hands. Each represents a spoke in the wheel of success, and I have selected ten reasons why you and I need the cost system, and why we cannot reach the full measure of success without its aid and assistance.



C—Stands for that *courage* to search out the defects and makes you the master of your own business in that you may have every detail at command whenever you may need it.

E—means *energy and earnestness* which we can devote to the real essentials of the business when we don't have to worry about the one thousand and one troubles that vex the lack-of-system printer.

O—represents *orderliness* that is so essential in the conduct of your business.

M—the last represents that which we are all striving for, *money*—what a powerful effect even the sound of the word has for those that have not the substance — follow up what *cost system* calls for and you will have the real cash.”

S—makes for *service*, without which you cannot hope to build up your business.

T—is *training* which fits you to meet the emergencies that come in every business.

S—stands for *system*, which is now recognised as the force that drives the business of the earth.

Y—is *yourself*—the man working at your desk is entitled to some consideration—look after his interests.

*Free Illustration for Free Critics.
With Three Guineas to Boot.*

FROM more than one photo engraver we have received a copy of a naïve and refreshing letter which has evidently been sent by one of the rather numerous editors of "The Imprint" to a goodly number in our craft. We welcome the letter; its arrival is of the order of happenings which add to the gaiety of the community. We welcome it, too, for what it implies even more than for what it expresses. For it is a letter from the editor of a journal which (dare it be whispered?) has mingled with its many excellencies this one defect, that it has reincarnated something of the spirit of the late Mr. Podsnap. That Dickens creation, it will be remembered, invariably put behind him, and thought he put out of existence anything he did not quite approve. Turn up "Our Mutual Friend" and there you read how "there was a dignified conclusiveness—not to add a grand convenience"—in his manner of conversation "which had done much towards establishing Mr. Podsnap in his lofty place in Mr. Podsnap's satisfaction."

"I don't want to know about it; I don't choose to discuss it; I don't admit it." Mr. Podsnap had even acquired "a peculiar flourish of his right arm" in sweeping problems "behind him, and consequently sheer away. . . . For they affronted him."

"The Imprint" waved us aside with Podsnappic magnificence. We, with all our wretched daubs, ought not to exist; for "The Imprint" therefore we simply did not exist. Argument was not in order; "The Imprint" did not

argue; it knew; it told us things. In short, not to put too fine a point upon it, it went out of its way to belittle and decry Photo-Engraving without distinction that we can recall; it did this under the high constraint of devotion to art.

The whirligig of time produces changes, and produces them quickly. Our work is suddenly recognised not only as existing, but as possibly having a utility and even an attractiveness worthy of being allowed into "The Imprint" pages on a three-guinea payment. The self-appointed critics, forgetting for the moment their dislike of the engravers' work, and wishing to illustrate their journal, issue forth, apparently to various engraving firms, the following letter. It is handed to us by one of these firms:

11 Henrietta Street,
Covent Garden,
London, W.C.

Dear Sirs,

The prize has now been awarded in the competition for a Letter Heading for Messrs. Selfridge and Co., and we propose printing a selection of the designs in a coming issue. We are inviting some of the leading block makers to make the blocks for us on the following terms:

Line or Wood blocks to be made from the design we supply. Charge to you £3/3/0 for each block you make, for which we print your name and address at the foot of each heading on which the block made by you

appears. Four thousand copies will be printed of each heading.

We are sure this will prove a first rate advertisement as apart from the interest taken by Mr. Selfridge in the matter, the Magazine will go to several thousand persons interested in good blocks and headings.

Our advertisement Manager, Mr. Douglas Constable, will be very pleased to give you every information.

The letter is signed by the "Business Editor."

Is it any wonder that one photo engraver who received this letter has written us as follows :

RE "THE IMPRINT."

7 Broadway,
Ludgate Hill, E.C.

To the Editor of the PROCESS ENGRAVER'S MONTHLY.

Sir,

Some months back we were honoured with a free copy of a new journal purporting to represent an Enlightened Section of the printing craft.

The enlightenment appeared to consist of the scorn of illustration, and scathing condemnation of Process Engravers.

These Superior Movements, however, are always left behind in the march of progress, and our contemporary is perhaps by this time feeling a little out of the running, as it proffers through to-day's mail bag an olive branch to the Process Trade, whereby the said Trade, by paying a fee, may be graciously permitted to make blocks free of charge for the Journal's advertisers.

Such condescension overwhelms us, and we are sure, if the idea catches on, that the President of the Royal Academy will offer the Journal £1,000 for the privilege of supplying its readers with

free portraits. — Yours faithfully, A. E. DENT.

In our judgment most, if not all, the engravers who have received a like communication will heartily agree with our correspondent. We shall await the further adventures of our contemporary in its search for free illustration, plus three guineas.

SPACES IN BLOCK FORMES.—In printing from formes containing blocks a very frequent source of trouble is the tendency for spaces, leads, etc., to rise. The average compositor has various methods of dealing with this trouble, from the insertion of pieces of thin card here and there, to calling in the aid of the bookbinders' glue pot.

These devices seldom put an end to the trouble, and the machine has to be stopped constantly as spaces begin to print, which, of course, means much loss of valuable time in both composing and machine departments, besides detracting from the standard of the work through spaces showing. Although warped wood furniture is sometimes the cause of the trouble, in ninety-nine cases out of a hundred the root of the trouble may be found in faulty blocks, and a little time spent in their inspection before justification is amply repaid. The trouble arises through block-makers not cutting the mounts square. A block may be slightly wider at the bottom than at the top, or vice versa. The result is, when the cylinder passes over the surface, the block "rocks" and consequently soon "lifts" the surrounding matter. The trouble is sometimes caused by careless underlay, which gives the block an uneven bed.

A good method, and one which diminishes to a very large extent the possibility of rising formes, is to insert quotations of even height to occupy the space of the block and to tack the plate to the quotations. This makes a very solid mount and, at the same time, simplifies the make-up, as the quotations have a definite relationship with the type. It will be found that ordinary tacks used in mounting blocks, cut in half with a pair of pliers, can be driven into the metal quite easily and with no harmful effects to the quotations with a view to their future use. A block mounted like this can be made ready with perfect ease.

W. W.

Hints for Juniors : Stripping Negative Films.

OUT of, say, twenty originals from which negatives have to be made, perhaps only ten or twelve can be copied together, the rest, on account of the reduction, etc., must be made singly, so it is advisable to strip the films, trim them, and remount upon a large sheet of glass, so saving time in printing, and etching, and economy of metal.

One method of stripping a collodion film is to coat it (after thoroughly drying) with india rubber solution; let this dry, then coat with stripping collodion, and when this has set, fire it, and when the flame dies out, allow to cool, then cut all round the edges of image, immerse in a mixture of acetic acid one ounce, water ten ounces, and as soon as the film commences to lift, remove from the dish, and place a piece of stout paper (previously well soaked in water) over the film, smooth down with the fingers, and lift the film from the glass plate, trim the negative to the exact size required, then lay it down upon the fresh glass plate, run a roller squeegee lightly over the back, lift the paper away, and the film will be on the glass plate.

The glass plate upon which it is intended to transfer a set of negatives should be cleaned, then coated with gelatine 1 ounce, water twenty ounces, and dried on a rack. If it is necessary to reverse the film before transferring, after trimming the negative lay it face up on a piece of glass and place another piece of wet paper over the film, run the roller squeegee lightly over, lift the negative up (now between two sheets of paper). lay down on the plate with the first piece of paper uppermost, strip this paper away, lay the film in position on the wet gelatinised plate, lightly squeegee, then strip away the remaining paper.

A quicker method is to make up a solution of gelatine four ounces, water 80 ounces; put this into a dish that can be kept at a temperature of 75°F., in this immerse sheets of bank post paper, allow to soak for three or four minutes, then hang up to dry for future use.

To strip a negative, soak a piece of the above gelatinised paper until quite limp, place it upon the negative wet as it is from washing after fixing and immersion in the above mixture of acetic acid and water, squeegee very lightly, then lift the film adhering to the paper, trim to size, and lay down upon the glass plate (gelatinised), lightly squeegee, then remove the paper.

Keep the gelatinised plate and the negative covered with water until squeegeeing, which will obviate difficulty.

On an emergency the stripped films may be laid upon a plate which has been covered with a film of Higgins' mountant, care being taken to keep the film thin and free from lumps.

Another method of stripping is to make a solution of

Gelatine	2 ounces.
Water	16 ounces.
Sugar (white) ...	60 grains.

Filter this through muslin, coat the negative with this, using more or less according to thickness of film required (10 minims per square inch will give, with good gelatine, a thickness equal to Kodak roll film), place upon a level slab of glass till gelatine has set, then soak for ten minutes in

Methylated spirit...	20 ounces.
Formalin	2 ounces.

Drain and put in a convenient place.

When dry, cut round the edges of plate, lift up the edge of film and strip.

W. T. WILKINSON.

An American Humorist. Portraits Preserved and sometimes Pickled.

WHEN Mr. Howard L. Renn comes over here we shall want a speech from him. We shall get it. He obviously can't keep one back: suppressed humour is an irritant; and he's not irritating himself. We shall have him up at some trade gathering and a rich and rare time it is likely to be.

We are judging by his recent after-dinner speech at a plate maker's dinner at Chicago. In giving some account of his chaff we must, of course, do a hop, skip, and jump, if only because some of the allusions were probably only intelligible to that audience. That is quite all right. Even speech should be unfit for publication—except just then and there; being so absolutely suited to that occasion as to be unfit, in a way, for any other.

Mr. Renn is a country printer from Iowa; and let them know it.

He said: “Some of these dishes were disguised in the French language, but they all had a familiar four-dollar-a-plate taste, and could hardly be told from real food. Out where I live, in the great State of Iowa, we are simple people. There is no French equivalent with us for that delicacy known as the fresh egg, or for corn on the cob, or for the fervent and ineradicable young onion.

Gentlemen, let us talk a little while about business. Electrotyping is an ancient art, but it was never very profitable until the single column half-tone sprang into existence at 75 cents per spring. This invention has made it possible for many a man to run his photograph in his home paper, in close proximity to some well-known liver cure, who otherwise would die unwept, un-

honored and unsung. The single column half-tone has preserved more eloquent sideburns, string mustaches and criminal profiles than all the photograph galleries in the country. It has taken the place of the enlarged crayon portrait of Brother Henry in a new set of false teeth, which hung over the wax floral wreath in the front parlour and looked sternly out of a cocked eye. Think of the winners of piano contests who have had their features preserved,

AND SOMETIMES PICKLED, by the single column halftone. Just as soon as a man finishes a new house, with the aid of the building and loan association, he poses on the front porch in a celluloid collar and a pleased look, and then has a coarse screen half-tone run on the front page, next to pure reading. The newspaper offices of this country are loaded up with the mute and speechless remains of half-tone cuts of office seekers. A man can't run away with somebody else's wife without being pursued from coast to coast by a relentless half-tone, printed in six-cent news ink without any make-ready. Take the half-tone away from the mail order houses and they would be as helpless as a bow-legged man at a lap supper. Consider the automobile literature. The half-tone has made it possible for many a man who wouldn't know a self-starter from a stomach pump to hit the vital spot in a bucking carburettor with a monkey wrench the first time anything goes wrong. Thanks to the automobile half-tone, thousands of people who couldn't distinguish a spark plug from any other vegetable are now running over innocent

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brood hens in red touring cars. The poultry half-tone, again, shows not only the mechanism of the incubator, but also the rapt look on the face of the patentee. Then, if it were not for the half-tone, who would know what his Florida orange grove would look like after he had the first four feet of surplus moisture drained off? I tell you, gentlemen, it is the half-tone which makes it possible for you to come here, at heavy expense to the ultimate consumer, rent rooms with bath and individual tooth brush, and attend this banquet in raiment which would make the Queen of Sheba look like a dress parade in darkest Africa.

There were several objections to the wood-cut which impaired its usefulness and have made it merely a haunting memory. One of these was that it was liable to swell up just when you wanted to run off some auction bills, and then refuse to lie down without being hammered on the head by a profane foreman. We had a foreman in our office when I was a boy who never got through with the make-ready on a wood-cut without—— well, he was ordinarily a kind man, a good husband and father, but whenever he went up against a decayed wood-cut, which was bent out of shape like a small boy with the colic, he would let loose some of the most rugged and ornate profanity it has ever been my pleasure to listen to.

One of the most offensive forms of electrotyping is the manufacture of the rubber stamp. This device enables the country merchant to defraud the home printer at the rate of 400 revolutions per minute. Some men have the rubber stamp habit so bad that they use one to make out a wedding invitation.

Another important adjunct to the business is the production of boiler plate (evidently Americanese for the stereo plate). By the use of boiler plate many

an unterrified politician is able to tell an inquisitive and prying constituency exactly where he stands on everything except Taft or Roosevelt. Boiler plate is the greatest boon the common people have. It brings to their door tried and true recipes for making the hobble skirt, the road drag, the gooseberry pie, the form-fitting kimono, and the self-dumping silo. It gives the news of week before last, and sometimes catches up with the current events. Many a woman has learned home dressmaking by reading boiler plate which told everything except how to secure a fit.

The electrotyper is a higher order of mammal than the printer. If it were not for the printer, however, the electrotyper would have to wear reversible cuffs and have his clothes pressed at home. The printer buys what the electrotyper has to sell, and then sets the customer back for a narrow margin of profit, similar to that encountered in the jewellery business. The average electrotyper lives a luxurious life. All he has to do is to get the business away from somebody else who is tickled to death to grab it at 8 cents a square inch, and then collect his accounts with the aid of a justice of the peace. Look at him. Study his advantages. See how much better off he is than the mere newspaper man. He smokes long, costly Havanas, while the editor subsists on Wisconsin leaf tobacco. He doesn't have to defend the contested delegates for fear of losing the post office. He isn't obliged to lie until his back teeth wobble about the virtues of some prominent citizen who is so crooked that he has to pull on his pajamas with a corkscrew. I am not envious, but I have seen sights here to-day, particularly in the vicinity of the bar, which convince me that the wealth of this country is in the hands of a few men."

My Causerie.

I RECENTLY went over Hulton's great works in Manchester, or at any rate over a large part of them. The foundry was very impressive. The auto-plate work was very swift and sure, and the whole disposition of the plate-duplicating plant was very orderly. I don't remember seeing the process studio; getting through at all was a difficult affair, not because the heads were unwilling, quite the reverse; but because the call was unpremeditated, and there was no one in supreme authority who could be rung up for some time, and therefore I had to cut the inspection short. Perhaps, however, I may keep other notes about it till I go over the new “Sketch” building in Shoe Lane. It seems to be just about complete. Fleetway House, Harmsworth's great place in Farringdon Street, has not long been completed, and here are the Hultons hard on their track.

We know the type of man who scowls at the competitor; who feels himself a sort of little god, and views a rival effort as a kind of sacrilege; much as we used to hear of some cleric saying, “Wherever God has His Church the Devil has his chapel.” Northcliffe is not like this. He or his helpers put up a fight, no doubt—witness some strange negotiations with newsagents what time it seemed possible that the “Sketch,” Hulton's $\frac{1}{2}$ d. morning paper, could be restricted to its sphere outside London—but I am sure he is philosophically accepting the “Sketch” as a London competitor now that its competition is an established fact.

Let me tell you a short yarn which will illustrate the Northcliffe habit of mind; its personal interest and pride in its successive achievements; its solicitude for its fulfilment of a promise; its

hearty acknowledgment of help at a pinch. When Northcliffe bought the “Observer” he announced that he would publish with the first issue of the “Observer” under his ownership a facsimile of the first copy of the “Observer,” dating, I think, over a hundred years back.

The half-tones, however, proved very unsatisfactory. There was no possibility of anyone reading the matter, even for those with the best sight or the most helpful spectacles. I'm not satisfied that they need have been so bad as this. Some special filters might have helped matters. However, things were as stated. Apart from no one being able to decipher anything, the whole alleged facsimile would have shown up as a horrid daub.

Lord Northcliffe was terribly upset; he would rather pour out money if need were than that he should fail his public to whom he had promised this reprint.

He did not fail them. He did not, first, because of his own decision that he would not; the sort of decision that tends to fulfil itself. He did not, because, secondly, he had the valuable co-operation of George Eaton Hart, then printing, and still printing, the “Observer” week by week at the St. Clement's Press in London. Two strong, resourceful men, Northcliffe and Hart, conferred. The result was the abandonment altogether of the idea of the reproduction being by half-tone. Instead, Mr. Hart made process blocks of all the initials and ornaments in the old copy; of everything indeed that could best be treated in that way. Then he set up the whole old “Observer” in an old-face type of, I presume, nearly the body size of the original. He had stereos made of this, and he rubbed the stereos with sandpaper. That was the finishing touch. That put a new “face” on things. Eureka; it was great! The position was saved. Northcliffe was delighted; he had so hated the idea

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of any sort of failure.

Thank Heaven for those men of grit; sandpaper variety and other.

And men of this sort do appreciate each other. I note that Northcliffe's portrait, autographed and framed, is on the wall of Mr. Hart's town room. "To one of the biggest and best of printers," he has written. It is true; and the discrimination does honour to the North-cliffian sense of judgment.

I've often criticised Northcliffe, and probably often shall, as his general viewpoint is very different from mine. But his pluck, his energy, his being such "a glorious chap to work with," as I think Eaton Hart puts it—all these things appeal to me. In fact, in these he censures by the dignity of his excelling, as Archbishop Benson used to say.

In a Liverpool hotel in which I chance to be staying I see a special Canadian edition of the "Daily Sketch" (the Harmsworth "Mirror's" $\frac{1}{2}$ d. morning competitor). It sells at 4d. Post free, three months, 1 dollar 25 cents, or 5s. 3d.; six months, 2 dollars 50 cents; twelve months, 5 dollars. It has a wrapper, of tone between buff and salmon. I note the statement at right hand top of the cover: "Registered for transmission to Canada by the Canadian Magazine Post." The back page of the wrapper is wholly given up to advertisements of the other publications by the proprietors of "The Sketch" — their "Sunday Chronicle"; their "Athletic News"; their "Countryside" (a 6d.

monthly magazine "devoted to nature"; 96 pages, together with a beautiful coloured plate and coloured cover); their "Daily Sketch Piano Album" (printed on good paper, 1s.; post free to Canada, 1s. 2d.); and their "Handy Reference Books."

Inside, the London address figures first: Shoe Lane, London, and Withy Grove, Manchester. Six halfpenny "Sketches" are bound up; 96 pages between them. I note that the binding is unsatisfactory in my copy. I cannot open out some of the two-page sketches. The "legend," as we say, the reading matter beneath the double page subjects, is bunched up in the middle by this binding. The next improvement in these publications will be the use of elastic glue, such as the "Strand Magazine" uses with such satisfaction to its readers.

I see this illustrated journal is offering £1,000 to provide scholarships for children attending elementary schools, with "hundreds of money prizes as well." It publishes twenty examination papers, and the competitors must work the whole twenty, and each on the same day as the examination paper appears in the "Sketch." It is open to criticism; one wonders, for instance, how the teachers are to "certify" work done in the children's homes; and their certifying the work is a feature of the scheme; but it is better than the idiotic Limerick time-wasting, and therefore, anti-social expedients for raising circulation.

F. COLEBROOK.

Roving Hood and Little Johns.

Wits at Whitby.

WHETHER or not Whitby jet is as black as it's painted, printers' ink certainly is not. Neither is dragon's blood, which, to be sure, ought to be a fluid and ought to be black.

The latest reassurance in these matters comes from the firm of Hood and Co., Ltd., photo-engravers, art printers and designers, who have just removed to their new premises, St. Bride's

Works, Middlesbrough. To celebrate the event Mr. Harold Hood, F.R.P.S., the head of the firm, invited his staff to a pleasant outing at Whitby, that town of red roofs and time-broken abbey and wonderful old stairway, and old whale fishery exploits. Saturday, June 7th, proved a fine day, and the company of 40 or more had a delightful time, this being the better assured through the very careful arrangements and the precise detailing in the programme. This programme is a very original production. In place of a lot of toasts the honouring of the King was followed by something new in speeches. Mr. Hood led off on “Things in General,” followed by Mr. J. W. Splevins who, as the oldest member, was down to discourse on the sins of “Professional Fault-finders.” Mr. J. M. Roseweir, the newest director, was charged with the duty of showing “How to be Happy though Harried,” in a business like Hood’s. Mr. F. Layfield was “impressed to say a very few words about blocks and blockheads or head blockers,” and Mr. A. Powell, architect of the photo-engraving department, was responsible for “suggesting new fields for Hood enterprise,” and was adjured to treat the subject lightly as befitted a company “frankly on the loose.”

The happiest programme announcement was that about Mr. J. Stewart, who “has our congratulations on his appointment as Master of the Cleveland Guild, and with his year of experience of the art of saying nothing in an attractive way may be trusted to wind up for the workers.”

There really were a few things well worth passing on in Mr. Hood’s talk on things in general, as when he emphasised the doing of really good work as more important even than carrying a good cash balance at the bank. He thought people worried too much on that score. His own position was necessarily that of a professional fault-finder, but it had to be remembered in connection with that that every member of the staff was important. Clearly, there is a compliment after all implied in fault-finding; the one complained of is worth the trouble of the complaining; he is capable of something better. That by way of our own development of Mr. Hood’s phrase.

Mr. Hood thanked the staff for being patient with him when he had been impatient with them. He was able to make comparison between days when the engraving staff consisted of two men and a boy, and they worked through for three days and nights, himself finally sleeping

mightily uncomfortably between the shelves of the paper rack, and the present day, when they had just received confirmation of a big order from New Zealand, and also got work from China, the African Colonies, Canada and other remote places. Emerson had well said that men might set up works in the middle of a wood, and if they did good work they would get customers, even if a way had to be carved through the wood.

Of the other speeches it should be noted that Mr. Splevins, as devil’s advocate, had to accuse Mr. Hood of inconsistency in departing from “professional fault-finding,” not to say of demoralising the staff by affording that complimentary outing. He so far forgot himself as to thank Mr. Hood for that day’s wrong doing.

Mr. Layfield spoke in terms of high appreciation of the new works situated in Borough Road, E., which were certainly a great improvement on the Linthorpe premises.

Mr. Stewart proved that it was both true and untrue that he could say “nothing in an attractive way. Mrs. Harold Hood, also a new director of the firm, was listed in the programme as the power behind the throne might very properly be. It was a golden opportunity, and the merely silver speech of those earlier on the programme was eclipsed by Mrs. Hood in the proverbial golden manner. Mr. Roseweir lived up to his responsibility of giving guidance in the pursuit of happiness.

The menus on these occasions are generally saucy. Lemonade for instance, was named as an etching fluid, or as citric acid dilute, aerated. The spacing-out material accompanying the roast beef was 18 point peas of double toned green; the truffles in aspic jelly were marked as “densely negative.” Tri-chromatic tarts figured under ornaments, and it was true that “the cherries have no imposing stones.” Under dessert the diners read, “Deserters before the speeches are to have their forms locked up.” A very good hint or two for other outing parties is furnished by the first of the four pages of the programme card. It had been contrived that as many places as might be should be seen (with, of course, the option of missing them), and times and details and suggestions for walks were set down with even little details like, “A visit to the Abbey on the cliff (entrance 6d.; it’s worth it)”. Amid these arrangements came the counsel, “It is earnestly desired that all the members shall keep together as much as possible until Whitby is reached.”

An Extraordinary Soup Catalogue.

THE most extraordinary piece of colour publicity we have seen in the way of advertising of ordinary commodities comes from the American Lithographic Co., New York. It is called "Franco-American Soups, and other Specialities." In the thirty pages there are fifty-five colour illustrations, which combine half-tone and chromo-litho. The customers, "The Franco-American Food Co.," for whom this book was got up, certainly did not grudge expenditure. Some of these pictures had about enough component articles to rival some of the well-known "burgher's feast," and similar "studies." For instance, here in one subject are clams, salt pork, potatoes, onions, parsley, thyme and bay leaves, all just to illustrate the clam chowder page, each item seeming absolute facsim. Another collection on a kitchen board shows green turtle, with a surround of rectangular sections and various suitable accompaniments. The brief letter press, by the way, tells us why we don't ordinarily enjoy turtle soup. It seems that out of 150 lb. weight in a good sized turtle, only 30 lbs. are useable. One turns the pages and sees, chicken, tomatoes, various "stocks" or soups, okra, cucumber like vegetables, biscuits, cubes of beef, carrots, turnips, with barley or other cereals, celery, leeks, all most appetisingly outspread. Steam is rising from the variegated, bright-coloured soups or consommés in the handsome soup plates. There is a liberal blue vignetting around these subjects. We never saw representations of flesh or vegetables which more really brought those things before us. It is distinctly a message and a hint. But we can do it. We can beat it. Apparently, however, we have not done so yet.

MESSRS. WRATTEN & WAINWRIGHT, LIMITED, advise us that they have reduced the prices of their process plates to the standard prices, so that they now sell as follows:—

Size.	Price.
$\frac{1}{2}$ plate	2/9 per doz.
$\frac{1}{4}$ "	5/3 "
10 x 8 "	9/- "
12 x 10 "	13/- "

subject to the usual discounts. As Messrs. Wratten's prices for backing, namely 4d. per doz. for $\frac{1}{2}$ plate, 6d. per doz. for $\frac{1}{4}$ plate, 9d. per doz. for 10 x 8, and 1s. per doz. for 12 x 10, are lower than those of other makers, if these plates are used backed, they are positively the cheapest process plates now to be obtained, and for black and white work they will be found unequalled. They develop rapidly, are perfectly clean in working, and give sufficient density, so that they may be printed on to metal without any intensification, although, of course, they may be intensified and reduced as well as any other dry plates. They give an exceptionally good dot, free from fuzziness and, in fact, are probably nearer to wet plates than any other dry plates yet produced.

The prices of Messrs. Wratten's Process Panchromatic and Panchromatic plates have not been increased. Not only are these the original Panchromatic, and as the makers claim the best, but they are now actually the cheapest.

Messrs. Wratten's point out that all their plates are conveniently packed in twos, not fours, in roomy boxes. This makes for their convenient handling and so prevents waste in use. Wratten plates may be obtained from all the dealers, or direct from Messrs. Wratten and Wainwright, Limited, Croydon.

Estab. Jan. 1894.
"The Process
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AND ELECTROTYPYER'S AND STEREOTYPYER'S REVIEW.

Mr. Bennett upon Architectural Photography.

THE last of the valuable series of practical talks which Mr. Bennett has this season given at the L.C.C. Engraving School at Bolt Court drew a company of earnest students and older workers. The subject was "Architectural Photography," and, as will be seen, it embodied hints regarding such things as the observance of the sun's position, and of the shadows determined by that position; regarding, too, the different characters of light, according to the quarter wherefrom it issued, and particularly regarding the effect of good foreground in photographic studies, a thing too little attended to, the lecturer considered.

As a detail we may note that Mr. Bennett's habit, differing from that of most lecturers, is to encourage the asking of questions during his lecture, and while some view which may prompt a question is in evidence on the screen.

"This very day," said Mr. Bennett, "I had to do some architectural photography, and, because one of the figures on the west side of an ecclesiastical building could not possibly receive justice in the light then prevailing, I am making another twenty-mile journey simply to get that other negative. If you want your work to be successful, you must be

prepared to spend sufficient time upon it."

Apropos Mr. Bennett impressed that it was impossible for a satisfactory negative to be secured if the light which fell upon the lens was stronger than the light that was illuminating the subject; the result could only be fuzziness and vagueness. Yet quite recently he saw a practical man struggling hopelessly with that adverse condition. The other day an architect was very wishful that Mr. Bennett should photograph a certain noble-looking building with many "returns," from the left, as they faced it; but he photographed it from the right for the reason that a negative from the left would have recorded shadows such as would have spoiled the subject. Further, two wall faces at right angles, i.e., a wall and its return, would have been about equally lighted, and would have seemed to be in the same plane; indeed nothing would have been in relief.

You must study the direction of the sun relatively to the position of the camera. A camera looking in the same direction as the sun would give no relief. If you photograph a very white and rough cast building or a red-tiled building, it is desirable to weaken the developer, to prevent the detail in the high lights

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being clogged. You can develop about half as long again as the normal time; this depending on the temperature. You might expect that even the deepest shadows would then be transparent and full of detail. In outdoor work, as in everything else, one must act according to the studied conditions at the moment. Three hours after mid-day the sun would be at 45 deg. from the south; it varied a little according to the time of the year, perhaps to a quarter of an hour. One hour deflected the light by one-sixth of a right angle; the three hours meant a deflection by half a right angle, or 45 deg.

It had to be remembered that when the sun was shining obliquely along the line of a building's frontage, a very slight projection cast a very long shadow. In dull days one might have to use a rapid plate and strong developer with full development, or where the subject was of a very dull character, and the weather was dull, then one might use a very slow plate, such as an Imperial fine grain ordinary, and, if possible, give a very long exposure, five or six times what one would give with a special rapid plate. It would not be easy to get contrasts, but one would get full details in the shadows.

This obtaining of details in the shadows was peculiarly difficult in the smoky atmosphere of London. Where it was particularly important to get details in the shadows it was better to use a very slow plate, as the steps of gradation were more marked on such a plate for that class of subject. He had used a new Ilford screened chromatic plate satisfactorily under these conditions; it was rather quicker than an Imperial Non-filter plate.

Answering some questions by Mr. Lane (the L.C.C. official photographer) at this point, Mr. Bennett said a panchromatic plate had a very serviceable effect except in this particular, that the steps of gradation were very slight from shadow detail

down to fog. With a very rapid plate you gave a certain exposure, you developed some detail, but the shadows were too much alike. In a very slow plate resistance to fog was very much greater.

A Questioner: I think you have advised flashlight? I have found a small curtain of fog when using flashlight.—Mr. Bennett, however, said he considered flashlight did help one. Mr. Bennett then dealt with some details of apparatus; they could easily make with a tripod, screw and three strips of thin printers' furniture, say, 3ft. 6in. long, a kind of capital letter Y; that is, when it was spread out fully, with indents half through the wood at the ends. The points of the tripod legs would rest in these little hollow indents, and there would be no fear of the tripod slipping. The article was not on the market, but they could make it for themselves. It could be laid upon some rich carpet when doing some interior work; the client might not care for tripod points piercing his carpet. Next it was a very good plan, where the size of the lens flange permitted, to let the panel piercing be out of the centre. That would give an additional amount of rise on the front of the camera.

He would give a few hints re working in very confined spaces. He had worked where there was not room behind the camera even to lift up the focussing screen. Sometimes the camera could be put outside the door of a room you were photographing. There should be at least six or eight inches between your eye and the camera for focussing. To take off eighteen inches to twenty-four inches from the dimensions of a very small room might be more than the circumstances permitted. The other day he photographed a series of very small rooms in a flat on which, he was told, £15,000 had been spent on the furniture and equipment, and he was rather inclined to believe it. One

room he had to take was only about 10 ft. square. He was obliged to use a very wide-angled lens. He took careful measurements of the position of the camera, then turned it round for the withdrawal of his slides, and replaced it in its previous position for the exposure. In another case some fine glass was put on a table in a small room. He could not focus the glass to see the focus effect, but he focussed something at a given distance in front of it, then moved his camera back that given distance; what he was actually focussing he never saw. He couldn't get at it to see it. Once he had to climb out of a little window in order to make room for his camera.

Mr. Bennett put through a number of beautiful architectural slides, and it was remarkable how true was the colour suggestion of his ancient pillars, arches and roofs. He showed two pillar subjects, scenes in Chester Cathedral, to illustrate how entirely the character of the subject was altered when the foreground was not properly shown. Be liberal with your foreground. A wide-angled lens judiciously used will sometimes give you effects you cannot get in any other ways; particularly it will convey an impression of height in a building. In French churches, the bodies of which were generally taller than those of English churches, he used very wide-angled lenses. Windows at the side were sometimes among the photographer's troubles; light was coming obliquely into the lens. He, however, had managed to avoid trouble by placing a large card vertically on the base board of his camera, and intercepting this side light. Having placed his card, he had walked up to the subject and thence looked at the camera to notice if he could see the front glass of the lens. He ascertained thus just what his card on the base board of the camera was cutting out of the picture. When

windows were not included in a picture and the sun shone on them, you could sometimes use them to great advantage. You were working, say, from the sunny side of the room, and the sun was pouring through the windows and perhaps making patches of light on the floor. To prevent harsh lighting, pull down white blinds, if there were white blinds. This diffused the light, and got rid of the harsh floor light patches.

Mr. Bennett spoke of photographing a railway signaller's cabin. The man was constantly at work and the sun was shining on a window (indicated) nearly all day. There was a patch of light on the floor. He bought a few sheets of tissue paper and stuck them with stamp edging over the window. That sent a beautifully diffused light all over the cabin. In a drawing-room where there were white blinds, one got much finer lighting by means of the blinds and the light was diffused up to the ceiling in a much better way than happened under other conditions of lighting. As a rule, when the light was streaming downwards the floor was much better lit than the ceiling.

When windows where he was photographing were in front of the camera, his usual plan was to cover the windows during a great part of the exposure. He had a good many yards of black material; as a matter of fact, he sometimes carried to a place twenty-five or thirty yards. He hung that up over the windows and, wherever possible, from the outside of the window.

Another point touched upon was the expedient of lowering the camera in certain exigencies. Contrariwise, when one was working with a long focus lens and one was looking along the ground, and things were foreshortened abnormally, it was a very good plan to raise the camera. Yet another topic was focussing by means of a swing back; there were

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plenty of instances in which one might have to focus very near the camera, and at the same time might want some objects sharply defined at great distances. He had had to do that very frequently. He had to give some pieces of foreground only ten feet away, and some pieces 200 feet away. Mr. Bennett illustrated with his diagram the use of the swing back, and the calculation he could make therewith. "When using a swing back," he said, "in the way I am illustrating, I can get a greater sharpness with $f/16$ than I can otherwise with $f/64$ in the ordinary position." He showed one piece of work with two windows deeply recessed in a crypt of Wells Cathedral. The crypt, for all its dimness, was relatively light when it was compared with the room in which the camera was placed. The trouble was that he had very bright light in the immediate foreground, then a dark space, and then a good light beyond. He set to work to cut off from the floor all the first-mentioned light. He managed to do this by a light wood screen and stretching some newspapers over it.

Mr. Bennett was asked about photographing stained-glass windows. In general, he advised a full exposure, being careful not to develop too long. Sometimes a short development plus intensification accomplished great things. A developer might be used diluted to one-half, or even one quarter ordinary

strength. He dealt with a very light stained glass in Ely Cathedral. In that case one hour's exposure at $f/32$ served the purpose. All the time the image was impressing itself on the plate it was quite clear and sharp.

Answering another enquirer, Mr. Bennett made plain that while the swing back was vertical it did not matter what position the lens was in. There was an amusing little interchange between Mr. Bennett and Mr. Lane with regard to the photographing of a very old church whose walls had come to be distinctly on the slope. Mr. Bennett detailed some steps he had taken to prevent the sloping wall carrying the suggestion to one who looked on the picture that the photographer was giving an out of focus print. Mr. Lane suggested that the old building, however it might have departed from the right angle and from the perpendicular, should be photographed just as it really was; and one enquirer asked how the leaning Tower of Pisa would be photographed. Mr. Bennett seemed to agree with Mr. Lane that, apart from the possibility of the photographer being deemed not to know his business, he should photograph a leaning church as a leaning church. In the laughter at this interchange, Mr. Bennett said that the leaning character of the Tower of Pisa was that for which it was most remarkable, and the camera must make its deflection from the perpendicular perfectly plain.

WE are pleased to congratulate Mr. Walter Eldridge, who has been for upwards of twenty years in the service of Badoureau and Jones—the well-known electrotypers—upon his election to a seat on the Board of Directors.

Mr. Eldridge became Secretary on the incorporation of the business under the Companies Acts—now some ten years ago—and this position he retains under the new arrangement.

MR. W. T. WILKINSON, the well-known instructor in process, etc., is open to private engagements and will be pleased to correspond with any house or individual desiring personal attention.

Mr. Wilkinson is a specialist in Photography, Photo-Mechanical methods, Photo-gravure, etc., etc., and from long experience is in a position to impart very useful instruction.

✓ *Methods of Selling Photo-Engraving.*

Too often Photo-Engravings are Bought, not Sold.

(From an Address by H. A. Gatchel, delivered at the Philadelphia Conference of Employing Photo-Engravers.)

WHEN we consider and analyse “methods of selling,” practically we are considering “methods of business”—for, after all, what is business but the buying and selling of something; and primarily, there must be the seller, hence the importance of considering methods of selling, which is the fundamental factor for the making of a profit or a loss—in fact, it is itself the very business—for what value has a plant, equipment or organisation except through the success resulting from business obtained from proper methods of selling?

In considering what should be the proper method of selling, let us start aright with a realisation that results are calculated on the volume of business and not on the volume of the number of orders or sales, and that whilst cheap or cut prices might increase the latter, they seldom, if ever, increase the volume of business without increasing the amount of handling expense, which, of course, reduces or entirely wipes out the profits; in other words, it destroys or makes impossible the very thing that was sought for.

Before going further into this matter we might ascertain what are the proper selling prices; and it requires no argument in stating that this can only be accomplished by a familiarity with costs, which again emphasises the importance of having some such method of calculating cost, as has already been advocated.

Now, after costs are found, the next question to be decided is as to what would be a reasonable profit to be added in es-

tablishing a selling price and also whether this should be left to the judgment of each individual concern, or, if being for the best interests of the craft, it would be better to adopt a standard or uniform selling price based on average cost conditions—arrived at locally, or from the various sections of the country and based on the variable conditions of trade for one or more years.

After deciding upon this question of selling price, we are then ready for further consideration of our subject: “Methods of Selling,” but always keeping in mind the fact that our business is one of variable fundamental conditions of cost depending upon the sort or condition of copy furnished; the requirements of grade or finish and style of work; the length of time allowed for handling; the size and quantity of finished plates, and the service rendered. And all these are important factors of “labour-time” expense or cost, which in our line of business can never be figured out on any equitable basis of a scale or average square inch rate; and we must realise that any fixed rate or selling price only represents a fixed condition of these specific factors, hence if our product is sold on any such fixed basis, the buyer must be educated up to the fact that by such limitation he only obtains what he pays for. He should also know that, working under such conditions, it is impractical to honestly or profitably always guarantee the “best of service” and the “best grade and finish of work” from any and all copy

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furnished and at a fixed average price or scale rate.

We are pleased to state that from our observation and experience we have found that of late years, with the extended demand for the product of our craft, an increasing tendency by many intelligent buyers possessing the knowledge that our product is mostly labour-time expense and for which the cost is based on "time" plus the value of experience and intelligent handling of that labour-time—to understand that the lowest price or quotation probably represents the "poorest service" and the "poorest grade and finish of work," and that as has been stated by a well-known authority on printing press conditions, "it would be better to pay a higher price for engravings, and insist upon the most perfect that skill could turn out and it would save five dollars for every extra dollar paid, as frequently a pressman spends more than the entire cost of cheap plates before he gets them to print well.

Now suppose we go a little further and deeper into the question of the value or selling price of our product, considering a few factors or conditions that apparently many employing photo-engravers overlook, and that is, the intelligent consideration of the buyer's requirements and the supplying him with that style, treatment and finish of work that can be produced to the most economical advantage and at the same time will be best adapted to the requirements of the paper stock to be used and the printing press conditions.

If you have carefully studied and thought out the problems of the buyer, and then with your knowledge and experience, with the co-operation of your workmen, developed special methods of producing your work on a more economical and effective basis, has this know-

ledge also no value and are you going to give it to the customer?

I would emphasise the fact that to obtain improved "methods of selling," the buyer must be educated and the engraver must be the teacher to demonstrate that the cost of the photo-engraver's product is on a "time expense" basis, regulated by the copy for obtaining a specific style of treatment of work in desired finish and grade and service to be rendered, and that whilst general quotations can be made, they are only approximate, being based on the conditions noted, and when our product is bought on this basis, the buyer will consider it, not as a matter of expense, but, as it should be, a question of an investment, which it truly represents, being an expenditure made with the idea in view that from its use profitable results are to be obtained.

Another important feature that must not be overlooked in selling, and which is apt to occur when no accurate cost system is maintained, is practically the giving away by making no charge for numerous items or special service, simply because the buyer "asks for them," the cost thereof appearing to him trifling. If you understand and realise the "per cent. value" which these gifts proportionately bear to the total value of many orders, and that you are selling your product on a very close "percentage basis," it will be shown that such gifts make the job unprofitable. Among such items we might mention sketches, small amounts of artistic work, special blocking, mortising, extra proofs, proofs on special paper, proofing plates to obtain copy, time for inserting or double printing and extra negatives. What an ideal condition it would be in our craft if we could sell our product on the basis of cost shown by our cost sheets, plus a fair per cent. of profit added.

✓ *That “Perfect Mount” for Half-tone Blocks again.*

Is the news that it has at last been found too good to be true? For the search for the perfect method of mounting process blocks, or, rather, the perfect kind of material upon which to mount them, has continued ever since their introduction some 25 years ago.

Mr. Harold Hood, who combines the businesses of printer and process block maker, treated us in the latest issue of “Penrose Annual” to an article, “£1,000 os. od. Reward” for the inventor who should put out a mount that would be practically perfect under all the conditions under which process blocks are usually in use.

Without having seen this announcement, and therefore without the stimulus of this £1,000 Reward, the head of an important department in a printing house, being so constantly tormented by the twisting and warping of wood mounts, set himself to work to find something that would give him a greatly improved result, and after experimenting with varying measures of success, at last came upon what is considered to be the best mount ever produced, and which will give practically perfect results under all normal conditions. Having achieved what he believed to be success, the next step was to prove that his mount would give the results desired under actual working conditions, consequently it was introduced into the every-day work of a first-class printer in the City of London, where it was used as a base for the ordinary half-tone three-colour and black and white blocks, and for a period of six months was used under the normal conditions when it proved so completely suc-

cessful that it was felt it could be safely placed upon the market.

The patent having been secured by the Marshall Engraving Company, of 12-14 Farringdon Avenue, E.C., they are offering it to their customers, believing that here is the only mount that has yet been produced that will meet the requirements of the trade.

Every other patent has been examined and duly weighed, and has shown that nothing equal to this mount has ever yet been devised.

The points of greatest importance which had to be kept before the mind of the inventor, were as follows:—

I. As blocks are so often surrounded by type, there should be metal coming in contact with the metal type when in the forme, so as to overcome the rising of the block during machining.

II. The base must be made of material that will neither shrink, warp or twist out of shape.

III. It must be capable of being turned out dead level, square and true, and type high, and keep so under all working conditions.

IV. It must be cheap and light, and the plate simply and easily attached or detached.

V. It must be easily and quickly made to fit any size block, and measured either to picas or inches or any other standard method of measurement.

The Marshall Patent Mount, which is the name by which the new mount will be known in the trade, claims to meet all these requirements, it will be supplied by the patentees, who will be pleased to answer all enquiries.

✓ *A Simple Cost-finding Method.*

[The following costing system has been devised by the American Costing Committee for the benefit of those houses who do not see their way to adopt a more elaborate one. It is so simple and yet so useful that we reprint it for the benefit of English firms :—Ed.]

THIS is an earnest effort to tell the photo-engraver who knows no cost system about a simple cost-finding method. The desire is to convince him that it is so simple that it is GREAT, and to so thoroughly satisfy him of its simplicity, as well as its merit, that he will resolve to put it in operation without delay.

The idea that the square-inch rate is the *one bad guess* that has brought the photo-engraving business to a condition that calls for alteration is not yet fully appreciated, but the fact that a square-inch selling price cannot possibly have any relation to the cost of production is well understood by every photo-engraver who has made any effort to find the cost of individual jobs.

The only way a selling price based on cost can be made *standard* is by educating photo-engravers to the fact that a Scale is a scientific possibility as compared to the inherited incubus (the inch rate) they have grown to believe is the only possible way of valuing their product.

The difficulty will be to convince the photo-engraver who does not know the cost of *any* plate he has ever made, that it will be ridiculously easy to know the cost of *every* plate he will ever make—that the method is fairly accurate—that it involves neither expense nor trouble—that any boy or girl who cannot follow

the instructions and become a cost clerk without special training is not bright enough to send out with a C. O. D. package.

To begin, the fundamental facts to get fixed in mind are :—

First.—A photo-engraver is a manufacturer, making things to order only, and as such has but two commodities to sell—labour and material.

Second.—A considerable portion of the photo-engraver's pay-roll is wages paid for work that has nothing directly to do with the actual production of the things he manufactures.

Third.—There are many other direct expenses that he knows about, and there may be some indirect expenses he has not thought about—interest and depreciation, for instance.

The simple fact is that the skill of the employees and the material they use are what you sell, and the charge for the article delivered must be sufficient to cover those and every other expense, *and make the profit*. Therefore, the proportion of the labour cost *that is chargeable* and the material cost, to the total cost of operating the business, must be the basis of your cost charges, or of charges shown by any cost system.

It will be surprisingly easy to satisfy yourself that the chargeable labour and material you pay for are more than one-half your total expense. The non-chargeable labour and all other expenses must be included in the hour cost of the chargeable labour. There is no other way of getting those expenses into the cost of the work. The idle or unsold hours must also be considered in arriving at the hour cost.

You pay your men for forty-eight working hours per week. How many hours of actual work do they deliver?

The cost of material is another problem: metal, wood, chemicals and supplies, with a considerable proportion of waste—a little in some, and *all* in other instances. Only metal, wood and a proof are delivered. One-third the metal and wood, and all the chemicals disappear.

What is the cost of the material you sell?

Now to consider our Simple Cost-Finding Method.

[The table is calculated in cents and dollars. The English equivalent will be to take the figures as representing halfpence, but, as explained in the next Editorial note, the

amount should be reduced by 1-5th so as to rectify the disparity between the wages paid in the two countries. The figures in columns at each end marked “wages” represent the number of dollars paid the employees per week.—Ed.]

We will start by saying that the average experience of a number of plants for a period of one year gives the hour cost of the chargeable labour at two and one-half times the wages paid for a forty-eight hour week, but only double the wage when the non-chargeable and idle time is considered.

[The concluding sentence of this paragraph seems to us to be a misprint and should read, “but only double the wage when the non-chargeable and idle time is omitted.”

LABOR COST CALCULATOR

WAGE	MINUTES											HOURS					WAGE
	5	10	15	20	25	30	35	40	45	50	55	1	2	3	4	5	
10	5	9	13	17	21	25	30	34	38	42	46	50	100	150	200	250	10
12	5	10	15	20	25	30	35	40	45	50	55	60	120	180	240	300	12
14	6	12	18	24	30	35	41	47	53	58	65	70	140	210	280	350	14
16	7	14	20	27	34	40	47	54	60	67	74	80	160	240	320	400	16
18	8	15	23	30	38	45	53	60	68	75	83	90	180	270	360	450	18
20	9	17	25	34	42	50	59	67	75	84	92	100	200	300	400	500	20
21	9	18	27	35	44	53	62	71	80	89	97	105	210	315	420	525	21
22	10	19	28	37	46	55	65	74	83	92	101	110	220	330	440	550	22
23	10	20	29	39	49	58	68	78	87	97	106	115	230	345	460	575	23
24	10	20	30	40	50	60	70	80	90	100	110	120	240	360	480	600	24
25	11	21	32	42	53	63	74	84	95	105	114	125	250	375	500	625	25
26	11	22	33	44	55	65	76	87	98	109	120	130	260	390	520	650	26
27	12	23	34	45	57	68	80	91	102	113	124	135	270	405	540	675	27
28	12	24	35	47	59	70	82	94	105	117	129	140	280	420	560	700	28
29	13	25	37	49	61	73	86	98	110	122	133	145	290	435	580	725	29
30	13	25	38	50	63	75	88	100	113	125	138	150	300	450	600	750	30
32	14	26	40	54	67	80	94	107	120	134	147	160	320	480	640	800	32
34	15	29	43	57	72	85	100	114	128	142	156	170	340	510	680	850	34
36	15	30	45	60	75	90	105	120	135	150	165	180	360	540	720	900	36
38	16	32	48	64	80	95	111	127	143	159	175	190	380	570	760	950	38
40	17	34	50	67	84	100	117	134	150	167	184	200	400	600	800	1000	40
45	19	38	57	75	94	113	132	151	166	188	207	225	450	675	900	1125	45
50	21	42	63	84	105	125	146	167	188	209	229	250	500	750	1000	1250	50
WAGE	5	10	15	20	25	30	35	40	45	50	55	1	2	3	4	5	WAGE
	2 x 40 MINUTES											HOURS					

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The experience of English firms will differ slightly from the American owing to the disparity of wage in the two countries. So far as we have been able to gather from firms that keep such records the English chargeable labour hour should be just about double the actual wages hour payment.—Ed.]

THE COST CALCULATOR is based on this experience.

The material for copper half-tones costs about three cents per square inch—and for zinc line etchings nearly two cents per square inch.

[English firms will be quite safe in calculating one penny per square inch for material.]

These figures will be accepted by every photo-engraver operating a cost system, but will be questioned by everyone who has not tried to find the cost.

Using the Cost Calculator for the labour cost and three cents per square inch for the material copper half-tones, and two cents per square inch for the

material in zinc line etchings, furnishes you with a system so simple and so easy to instal that you will put it in operation just to prove that you can make money selling at cost as shown by this method.

The Cost Calculator is ready for use and gives the cost of the time put in on every operation that takes from five minutes to five hours, at wages from ten dollars to fifty dollars per week.

The Cost Ticket may be large if you like, or small enough to attach to the back of the copy. The chargeable labour is the time of every man who works on the job.

Have each workman put down the exact time he puts in on each job. When the plates are brought to the office, use the Calculator to fill in the cost of each operation. Make a charge for each operation. Nothing can be done in less than five minutes—that means ninety-six operations in eight hours. Charge the material by the square inch and add it up. *Some surprise*, the total will be.

Don't stop with knowing the cost of

COST RECORD

ORDER NO. _____				SUBJECT _____									
COM'L PHOTO	Hrs.	Mins.	s	d	ENGRAVING DEPT.	Hrs.	Mins.	s	d	SUMMARY	s	d	
Negatives					Half-tone Negatives					Commercial Photo			
Prints					Line Negatives					Art Department			
ART DEPARTMENT					Stripper					Engraving Department			
Retouching					Printer					Sq. In. Copper @			
Sketch					Etcher					Sq. In. Zinc @			
Wash Drawing					Finisher					Electros			
Line Drawing					Router					Express or Carfare			
Painting					Blocker					Other Charges			
Tint Laying					Proofer								
TOTAL					TOTAL					TOTAL			

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is very much stronger in the provinces than in London. In parts of the Metropolis it would seem to be almost a spent institution; at any rate, it is markedly tending in that direction. Enter, therefore, the new Trade School.

Now, the Trade School has a two-fold classification. There is the Trade School which is not specifically intended for equipping lads for any one special industry. There is the Trade School, also, which is associated with some monotechnic, and which specifically is directed to equipping lads for entering on one particular industry, and on that alone. Our photo-engraving school is, of course, of the latter class. An example of the former class, a Junior Technical or Trade School, whose training is calculated to qualify lads for any one of half a dozen industrial callings, is the Beaufoy Institute in Lambeth. A similar school appears to be in active operation in Hull. There are probably a good many up and down the country.

The London County Council appears to be intent upon establishing a number of schools which shall come under the trade school category in either the general or the particular class. Its appropriate pupil in either case is one who has just left the elementary school. If he puts in two years in such a trade school attached to a monotechnic, it is apparently to be accounted to him as equivalent to one year of ordinary apprenticeship. A teacher under the Council visits a number of institutions similar to the one in Bolt Court—so far as there can be said to be any quite similar—and there imparts to the lads an ordinary education, so far as six hours so devoted in the week, can deserve that term. Calling at Bolt Court, for instance, he teaches English and mathematics to the twelve lads (six scholarship boys and six paying boys) who are at the moment

there receiving the benefit of the trade school teaching. Twenty-four is the maximum number allotted by the Council to Bolt Court, and will probably be the number receiving this instruction next spring.

The Council is concerned to ensure that the education in these trade schools shall be of an all-round character. It might be consciously actuated by that sentence in Herbert Spencer's writings, "The function which education has to perform is to prepare us for complete living." It is an interesting by-the-way requirement that the Principal of a trade school shall in some way promote the organised recreation of the lads who are attending his school; at any rate, that there shall be a valid assurance that the lads are somehow, there or in their private life, obtaining sufficient recreation to be likely to keep "fit and well." The lads, by the way, are periodically seen by a medical officer. Special recreation is, to be sure, not quite easy in the case of our London photo-engraving school. It may do something by association with the St. Bride swimming bath just across the road, but beyond that its opportunities are obviously limited, as it has no playground.

The whole experiment will be watched with considerable interest, particularly by those to whom the decline of apprenticeship has presented itself as a thing of sinister import. Whatever may not yet be quite clear this at least may be grasped, that the L.C.C. is not content to bring along a lot of lads till they are just qualified to be moderately good clerks. It wants to see industries well recruited, with, indeed, constantly keener intelligences; it wants to equip lads early for particular careers. This is one of its efforts so far as our craft is concerned.

More Stamp Triumphs for Printex Co., Limited.

W^E have not made very much mention of late of Printex Co., Ltd. This has been partly because of special and unforeseen circumstances which called for a visit to America by the Managing Director, Mr. A. H. Motley, at once the best known and the most practical member of the late firm of Miller and Motley, to whose patents and processes Printex Co., Ltd., has succeeded. Mr. Motley found himself detained in the States by one engrossment after another till many weeks had passed beyond the date of his first intended return. However, he has come back now, and although his return coincides with the oncoming of the quiet season it may be anticipated that interest in the matter of rapid plate preparing by Printex methods will become greater than ever.

An International Philatelic Exhibition was recently held in Paris. Printex Co., Ltd., was requested by the Committee of the Exhibition to design the official stamp commemorative of the International Philatelic Congress, and to make the plates from which these official stamps, these so-called "Congress" stamps (which were to be on sale during the Exhibition), were to be printed. It was in the fitness of things that this compliment should be paid to them; for it will be remembered that when an International Stamp Exhibition was held in London last October at the Horticultural Hall, a stamp was specially designed for that occasion by this firm, who also made the plates. This was called the "Ideal Stamp."

It may be said that Great Britain and France have themselves, both of them, set their stamp of recognition and of high encomium upon the process and the artist power of the Printex firm.

There is a technical interest in connection with this French Congress stamp production. Whether through some faulty instruction, or through some alteration of intent, we cannot say, but the plates were prepared in the first instance for letterpress printing. Within twenty-four hours of the opening of the Exhibition an urgent telegram came to the headquarters of the company, at Central House, Kingsway, conveying that what was desired were plates for printing the stamps intaglio; for the wish was that the stamps should be thus printed throughout the course of the Exhibition.

This meant that the whole thing had, in technical phrasing, to be "stepped up again" on the "Step and Repeat machine," which is the remarkable speciality of the Company, and which they are prepared upon leasing terms to put into British and Irish houses. An intaglio plate was rapidly prepared, twenty stamps being ranged up upon it. The plate and proofs were in Paris next morning in time for the opening of the Exhibition. Madame Poincaré, the wife of the President of the Republic, was complimented by a special pull of twenty of these stamps. We presume that printing from the plate went forward while the Exhibition ran its course. A gold medal was presented to Printex Co. in consideration of the excellence of the design of this Congress stamp and of the craftsmanship

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involved in the preparation. We reproduce this Congress Stamp, and for the interest of comparison we show also the so-called "Ideal" stamp which was prepared for the recent British International Stamp Exhibition, also by Printex Co., Ltd., and for which they secured the Gold Medal.

Visitors to the Stand in the Paris Exhibition noted with interest a set of fifteen sheets of the new Insurance Stamps required by the British Government. These plates were specially made for the British Government by the Printex Co. The fifteen sheets represented various value-denominations. French printers, and men of affairs in France in general, can hardly have had any better indication of the alertness of the company and of its position in the very forefront of technical efficiency than was conveyed by this large range of stamps, representing as they did the latest achievement in social experiment in the neighbouring kingdom and the latest requirements of the national administration related thereto.

The Congress stamp includes a good deal in its design. There is, of course, the Suffragette head, shall we call it, the idealised woman who is "La Belle Republique." The French Chanticleer has a place at the top of the stamp, and its detail invites and will bear the testing of the magnifying glass. There is a ship in the Arms of Paris, and that ship is included at the foot of the stamp.

Perhaps one other matter might be just alluded to. American and British ideas of legal practice and legal usage seem to differ a good deal. It may be recalled that there were questions in difference between the United States Lithographic Co. and Messrs. Miller and Motley. The position was that Messrs. Miller and Motley were bringing a suit against the U.S. Litho. Co. for fulfilment of contract.

While that was pending a singular action was taken by the United States Co. On or about the day previous to the falling due of another payment by them they applied for an extradition from England of these two gentlemen on the ground of alleged fraud; which so far as we could learn meant, on the ground of having sold them for valuable consideration a process from which they were not extracting all that they had expected. This effort failed. Evidence of the standing and repute of the firm was promptly before the British magistrate; he accepted bail pending arrival of papers; and in the end the application for extradition was dropped. Messrs. Miller and Motley, however, having advanced their British business to a sufficient stage, went to the States to meet any and every suggestion against themselves, and to handle the matter of the lawsuit which they were themselves bringing.

It was thus open to any who considered themselves to have anything against the firm to raise an action without any extradition difficulty. Pro forma this was done. American practice we have said differs from ours, and the difference applies to the mode of conducting suits as well as to the readiness to institute them. A public official was brought upon the scene, whose business it was to take charge of at any rate one stage of the lawsuit against Messrs. Miller and Motley, if such a suit was to be persisted in. In discharge of his duty he attended a very exacting demonstration of what the process in question was capable of doing. Presumably it was his business to raise every imaginable difficulty. The upshot, however, of the whole thing was that he was perfectly satisfied that the process which had been the subject of the sale was all that it had been represented to be. He accordingly intimated to the

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Court that all suggestions or allegations to the contrary were finally withdrawn. The case against the Motley vendors was accordingly struck out. So ends the whole long story so far as concerns any litigation directed against Messrs. Miller and Motley, the story that began with an application for extradition just before a substantial payment was due from those

who made this application.

It seems due to the late firm as vendors to Printex Co., Ltd., and to that company itself upon whose board of four directors Mr. Motley has a place, that the English trade should know how utterly the allegation so dramatically made has been blown into thin air.

Stop That Stop.

To be sure this short and sharp phrase may be going rather too far. There is always a danger of over-doing one particular counsel. And especially is this the case in technical matters. But we are not writing for children and need not be afraid of very much mischief even if a head line may seem to do a little shouting. What we want to suggest rather than to affirm dogmatically, is this, that there does appear to be over much use of fancy stops. The man who prides himself on getting as good results as other people, though

"using one stop only," may be going too far in the other direction. The middle course may be the wise course as so often happens. But upon the whole, errors from over-much simplicity are apt to be less serious than errors from over-much complexity. Elsewhere we speak of operators lingering too long over the highlight stop. Here and now we are making a more general application. To any who are prone to over-elaborating the stop variation we respectfully whisper, if it is too rude to shout, "*Stop that stop.*"

The Electrotypers again Raise their Prices.

ALITTLE more than a year ago the Electrotyping and Stereotyping Houses of London formed themselves into a trade union and came to certain agreements with the men's union by which they were enabled to increase the price of their productions to the public.

The arrangement seems to have worked fairly smoothly and easily, but it has been found that the increased price has not given results equal to the expectations, as a consequence the Houses in question have given notice that from

September 1st they will still further increase their prices, not because they intend to secure for themselves an undue share of profit, but because present rates do not give a fair return for the capital invested.

We wish them every success, for nothing is more patent than that the capital invested in any business should yield a return consistent with the risks run.

When will the Process Engravers take a lesson from the Electrotypers and secure for themselves a fair price for their work?

✓ *Hints for Juniors : Printing on Zinc for Line.*

THE zinc plate on which it is intended to print the resist image is first scrubbed well with a soft brush dipped in pumice powder, then well washed, and grained in a mixture of nitric acid 1 ounce, water 80 ounces, alum 60 grains; this graining is done in a large dish, arranged so that it can be rocked; the graining is complete so soon as the surface is uniformly matt all over, after being washed and the scum removed by rubbing surface with a pad of cotton wool.

Place the zinc plate on the whirler, revolve rapidly to get rid of water on surface, then coat with just sufficient to cover of—

White of one egg ;

Saturated solution ammonium bichromate 2 ounces ;

Water 18 ounces ;

again whirl; then remove plate from whirler, and dry face up over a gas stove.

The film may be dried by whirling over the gas flame, but this method is liable to the mistake of heating the plate too much, rendering the film brittle, and causing scum; the zinc plate should never be made warmer than can be comfortably borne by the fingers.

For large plates a barrel about thirty inches high should be provided, a gas stove placed at the bottom, a tile, or an iron slab, being placed over the flame; this barrel is useful in preventing the albumen from spreading all over the place, and the gas stove being at least a foot away from the zinc plate, there is not much danger of over-heating.

The above formula for sensitising the

zinc is the oldest, is always reliable, and keeps well; some printers add $\frac{1}{4}$ ounce of fish glue to the above, claiming that the prints develop a little easier. The saturated solution of ammonium bichromate should be made in quantity, and kept in a saturated condition, i.e., the water must dissolve as much of the salt as is possible; tables of solubilities of various chemicals—say, that 20 parts of ammonium bichromate will dissolve in 100 parts of water, therefore, if 1 lb. of the bichromate be put into a Winchester, the bottle filled up with water, and shaken up at intervals, a good stock of the solution can be kept handy for use, perfect saturation being recognised by the fact of undissolved crystals being at the bottom of bottle, after being well shaken up at frequent intervals.

After the plate has been exposed under the negative, it is inked over with a roller charged with thin transfer ink, the rolling being continued until the ink coating is dry; this coating must not be too thick, or the lines will be smeary instead of sharp after development; this ink is not prepared so as to give a very black coating, only sufficient pigment being added to the fatty matter to give a good indication of its consistency.

The transfer ink should be thinned down to working consistency with good turpentine, any mixture of paraffin spoiling it.

After rolling up, allow the plate to stand a short time for the turpentine to quite evaporate; then put into cold water and develop by rubbing over with cotton wool.

Engravings—A Suggestion.

By James F. Tobin.

THE tendency to centralise responsibility for finished results is leading some buyers of printing to place orders for catalogues, booklets, etc., with houses that handle the entire proposition, including whatever may be needed in the way of designs and engravings.

Some printers “sidestep” the handling of engravings wherever possible, on the ground that they are more trouble than they are worth. In so doing they throw away opportunities to cater to a very desirable class of trade.

In every city of size there are many printers turning out good printing. Types and paper are judiciously adapted to the subject-matter and given careful presswork. In the face of the consequent keen competition the almost inevitable result is suicidal price-cutting.

Let any printer so situated take a number of pieces of printed matter turned out by his competitors and himself and compare them. All are good, but have the same commonplace monotony. Where illustrations appear they are straight half-tones, some slight variation in effect being produced by the finish—vignettes, square finish with line, etc.

Doesn't this indicate that they have all succumbed to the almost universal human trait of getting in a rut and staying there? If engravings are a potential factor in beautifying printed matter, wouldn't it seem the part of wisdom for the printer, whose success depends on results produced, to keep in touch with every advance made in engravings and be posted on every new method or process, so as to make them all contribu-

tory factors in his success?

Even at this day, incredible though it may seem, such orders are received at engraving houses as “Make us a three-inch electrotpe from the enclosed photograph.” Assuming that this request indicates the measure of the printer's knowledge of engraving methods, is it to be wondered at that he derives no benefit from them?

It is not enough that the printer should know the primary methods—the limitations of half-tones, the adaptability of certain “screens” to given papers, etc. He should know the newer processes that are constantly being developed. It might possibly be worth our while to briefly review some of them.

Where the printer is limited to the use of one colour, the “high light” can be used very effectively. This is a half-tone made in such a way as to give delicate gray tones from a solid black copy. All subjects cannot be so reproduced. But where the subject is suitable, the high light can be printed with type or other illustrations and give in one impression a two-toned effect otherwise only possible with two printings. As one illustration of its utility—a heavy black border could be set up by the compositor, reproduced in high light and printed with the type. The gray tone would add to the beauty of the page and not overweight it as would be the case if the original black border were used.

Another simple expedient for obtaining an unusual result would be to have the type-page, title-page or advertisement set up and a line-negative made, double-printed on the copper with a print from

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a half-tone screen. This gives a gray background for the type, at the same time allowing the type-faces to remain solid black, and not cut up by the screen as in an ordinary half-tone reproduction.

For work warranting the expense it is possible to combine linework, half-tones, Ben Day work, etc., in one plate in an endless variety. There is practically no limit to what can be done in producing unique effects if intelligent effort is made by the printer to co-operate with the engraver.

Where the use of more than one colour is possible there is no limit except that of cost. Where price is secondary to results, it goes without saying that the four-colour process is the last word in producing exquisite colourwork. It may be news to some to learn that copy in colour is no longer necessary for this work, that the ingenious and indefatigable engravers are now making sets of plates to print in full colour from copy in one colour—photographs, prints, etc.

Other methods are at hand, however, where the cost of four-colour half-tones would be prohibitive. A half-tone or line key-plate may be used with Ben Day tint-blocks to produce very pleasing and

artistic results. If used with line key-plate, coated paper is not necessary, which makes these tint-blocks very suitable for covers.

Outline pen-drawings, with tint-blocks for flat tones, can be used to give the effect of an outline filled in by hand with water-colours. These are dainty, delicate and beautiful, and very suitable for booklets appealing to the gentler sex.

There is also a renaissance of linework, both pen-drawings and woodcuts. Many of these can be produced at little expense, and, as they print equally well on all kinds of paper, can, when used with judgment, be made very effective aids in producing "classy" work at very moderate prices.

So it is apparent that there is no lack of processes and methods to limit the printer who is ambitious to do work out of the ordinary. There is no combination of paper or printing requirements for which an engraving is not available to give entirely satisfactory results. It is up to the printer to win out by utilising engravings intelligently rather than to go after orders on the basis of supplying commonplace work at competitive prices.

Open or Enclosed Arcs.

WE have at different times called attention to the opposing views of certain engravers regarding open and enclosed arcs. Particularly we have emphasised a tendency in certain studios to revert to open arcs after all, despite that our old friend the Westminster enclosed or other forms of enclosed arcs have had so long an innings, and are in general so effective. It has been found possible to run three "open" lamps so as to give a long arc—

an arc maintained with a long distance between the carbon points. The advantage is a much more diffused light. The enclosed arc requires a higher voltage. The lower the voltage the easier it is to put two, three or four pairs of arcs in series, giving the advantage of several arcs without additional consumption of current. Further, when special carbons are used a much whiter light can be obtained, better approximating to sunlight.

We see that a correspondent exceptionally well informed on these matters has been presenting these arguments in favour of the open arc, and adds that the fragile nature of the tubes in the case of the mercury vapour lamp has prevented the mercury vapour becoming popular. That recalls to us that in a very well known and large provincial engrav-

ing house, thoroughly up-to-date in its methods, the mercury lamp is the main reliance—or certainly was at the time of our last visit. Perhaps that studio may use—as to which we do not remember—the fluorescent reflector for the purpose of preventing any false values in colour work with mercury lighting.

Metal Labels.

THE method of preparing the brass plates for etching by printing each plate separately is slow and tedious when it comes to long numbers; then it is necessary to adopt the offset method, and print the lettered resist on the plate in the same way that tin plates, etc., are printed and prepared for lacquering or firing.

The subject matter, the negatives or positives, are prepared as for the Red Coll. method (see March number, 1913), then a direct photo litho plate is printed, and this is used as the printing plate on the offset press, cleaned and polished brass plates being fed to the machine to take the impressions.

As these impressions come from the press they are dusted over with fine powdered asphaltum, this being well incorporated with the ink; the surplus powder is removed and the plate heated; the plate is now ready for touching up, backing, etching, and finishing, as described in the March number.

The photo litho printing plate is prepared by coating with bichromated albumen, drying, exposing to light under the negative, inking up, and development as for ordinary offset lithography; the rest of the process is also ordinary offset or tinplate printing with ink that is

greasy and with more wax in than used for printing on paper.

The printing plate can also be prepared by transferring to it the subject matter, pulled from type or stone, such transfer being of the usual kind used for transfer to metal for offset printing.

Offset printing is also useful for making labels in quantity upon celluloid, the brightest results being obtained upon celluloid which has had a thin coating of gelatine (insolubilised) previous to being printed upon, the ink taking better, and not sinking in so much as it does on the unprepared celluloid.

For small quantities the method given in the March number, viz., printing on the brass plates by the Red Coll. or bichromated albumen methods, for large quantities the offset method will be better.

Messrs. Mann and Co. supply an offset proving press that will be found very useful for this class of work (and incidentally for collotype), and the printing plate may be made by the simplified collotype method described by me earlier in the year; with this press the printing plate is inked with a hand roller, and the desired quantity of ink to make a good resist can easily be obtained.

W. T. WILKINSON.

The Fable of the Process Engraver who Succeeded so Well that he Failed

With Apologies to Everett R. Roeder.

MACDOODLE opened a Process-shop. MacDoodle landed the jobs. How work did fly into that new shop of MacDoodle's! That fellow MacDoodle simply landed the business wherever he went after it. The tough buyers, whose hides had long withstood the attacks of the old-timers, easily fell to this newcomer. Mac filled his shop so full of orders that he had the whole works going overtime.

Now be it known that Mac was just to the buyer. He was generous. He was generous unto a fault.

But Mac was green. He was as verdant as the grass that comes in the springtime. He knew not the hardships of the Process Engraver. His only god was that elusive siren, "Orders." Mac's shibboleth was "Land the job." He whistled it. He hummed it. He sang it. With it he lulled himself into believing he was making money.

His bank balance dwindled. This, so Mac said, was because it took capital to launch a new business; and that verily

the money would come back to him even as bread cast upon the waters. So saying, he went merrily on landing the jobs.

Verily, Mac was innocent. He was like unto the guileless lamb.

So there cometh a day when MacDoodle, the Process Engraver, had to his credit in the strong-box of the bank, naught.

Then he turneth to a mass of documents, each one like unto the other, and each one bearing that mystical inscription, "To bill rendered."

And then and there those of the inhabitants known as creditors gathered in front of his shop. The assemblage was vast unto the size of a mob, and from this mob a doleful wail arose—"MacDoodle, we want the dough."

But Mac answered not. So the mighty hand of the law, verily the sheriff himself, entered and drove Mac from his shop.

Moral.—The Process Engraver who taketh not into consideration costs, holdeth open the door for the sheriff.

A Strong "Line."

WE are accustomed to speak of the interrelation and interpenetration of factors in the graphic arts. A rather interesting illustration of this happens to come up before us. When Phil May went to Australia, in days before his name had become firmly established, the "Sydney Bulletin" of those days was a mine of cleverness both of writing and drawing. The printing of the "Bulletin" was not of the same

order as its artistic contributions, and it became necessary above all things to work with a very strong, open line which would reproduce easily. Consequently Mr. May's work, which at first had taken some hints from the strong, decided line of Mr. Linley Sambourne, developed a character which was not less firm and decided than that of the "Punch" cartoonist, and became even more free and less encumbered with unnecessary detail.

Continental Law.

THE delay of the law is proverbial, but the average Britisher who essayed to make himself acquainted with the legal methods of the Continent would experience something of a shock.

Even the most trivial cases are subjected to a long drawn-out procedure such as would not be tolerated in long-suffering England. When a person has recourse to the law to recover an amount due he places the matter in the hands of his solicitor in much the same way as in England, but thereafter endeavours to forget it, knowing that somewhere in the distant future he will be made cognisant of the fact that the wheels of the legal machinery have commenced to revolve. In July, 1912, a process firm in Geneva in obedience to a customer's orders photographed a motor car. The photograph was successful, but the proof stood in need of retouching, certain reflected parts standing out too prominently.

These defects were pointed out to the customer with suggestions that the photograph should be retouched before making the block. The customer, however, on the plea of lack of time ordered the block to be executed immediately without the necessary retouching.

The block was promptly made and despatched, but the finished proof showed to the customer the necessity of his having accepted the block-maker's advice. Consequently he refused the block.

Action for payment was taken against him, and in view of the length of time required to arrange preliminary matters the case was practically forgotten by everybody except the solicitors.

Months rolled by and eventually news came to hand that the matter had been looked into by the judicial authorities,

but by some inexplicable means the issue on which the cause was to be fought was—that the block was not good in relation to art. The question of making a block from an unsuitable original had been superseded. The directors of the process firm were by no means surprised or averse to this volte-face. The block had been executed skilfully; they considered themselves safe.

The names of all employés who were with the firm when the block was made were demanded, and of these only one—an Englishman—answered the call. His name was submitted, and in due course he received a summons from the huissier judiciaire, ordering him to appear before the Tribunal, as witness, "to take oath, and speak the truth without fear, hatred or favour for either of the parties," under penalty of a heavy fine.

The witness, imagining a repetition of English procedure, looked up proofs and tried to recall the block that had received but a fleeting glance in the long ago, meditating the while on how he would baffle the opposing counsel on the inner significance of process matters.

Alas! for dreaming. The court was filled—with empty benches. A case was in progress. The witnesses had been called and were locked in an ante-chamber. One by one they were liberated like pigeons to be shot at, and appeared before the judges, of whom there were three, but wearing no distinguishing garb.

The judge in the centre questioned the witnesses and made notes whilst his companions, two owl-like gentlemen, looked wonderfully wise, but appeared to take little interest in the proceedings.

There was an advocate on the right and another on the left, but they had very

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little to say; the judge did all the interrogating. When the last witness had been heard there was a sudden outburst of violent shouting and gesticulating between the two advocates and the judge as to when the cause should come on again, but the judge as usual had his way.

The process case was then announced and the witness, in answer to his name being called, strode boldly up the centre of the court. He was then ordered by the judge to hold his right hand aloft and so take oath.

The advocates, the same as in the previous cause, were behind him, they might have been out of the court, they asked no searching questions and received no crushing replies.

"Do you consider this block as being made to the requirements of art?" asked the judge.

The witness had no doubt about it.

"Do you consider it worth 16 shillings?"

"Most assuredly."

"What was the nature of the subject?"

These three questions were all that were asked. The judge noted down the replies, and on this simple scene the case would be decided, but not yet. The judges will confer together and will give their decision at some uncertain date.

Once more the excited forensic en-

AS a general thing, (writes one expert in the illustration world) the drawings of men's fashions are "rather dreadful." Why "rather?" "As a general thing," the same authority shrewdly suggests, it is advisable to give an artist as much freedom as possible. The presence of over many restrictions is more than likely to cramp any imagination he may have, whereas, if he is given a reasonably free hand, he is apt to produce something better than the customer

could have conceived himself. Artists are not more difficult to handle than anybody else. The dreary, long-haired Bohemian has no place outside of the funny paper, and we have not yet seen any artist who affected Windsor ties and red fezzes in their studios, at least, not since their most callow student days. The execution of successful art calls for more *good, hard common sense* than anything else." Italics ours. And, craft reader, we think they are yours too.

Disputes between master and man are settled before the prud'homme, a gentleman versed in trade matters. He is assisted by a council of experts, an equal number of masters and workmen. Recently a boy apprenticed to learn process printing, having some trumpery cause for complaint, sought redress at the hands of the above council. He was advised to quit his employment and then the employer was ordered to state his case. He did, and won, the indentures being cancelled. One feature of the lad's complaint was that he wished to learn three colour negative printing and as the firm were only doing black and white they ignored his ambition in the colour direction. The reader will readily appreciate the titter that followed the explanation of the employer.

In the event of the case going against the employer he can be ordered to take the boy back or to pay a sum of money as compensation.

E. J. G.

My Causerie.

THE Miehle litigation has ended in a way which I fancy very few foresaw. Lord Justice Swinfen Eady (or "Mr. Justice" as he then was, for he was raised to the Appeal Court between the end of the case and his announcement of his judgment), has dismissed both the claim by Linotype and Machinery, Ltd., and the counter-claim against that Corporation.

It is "As you were," except that some morey has changed hands, some research has been made into the history of printers' engineering, some very pretty models of Miehle and other bed movements have excited the interest, perhaps the admiration of Bench and Bar, and the operation of these models and the explanation of the movements they illustrated, have put legal ingenuity—as Miehle press beds themselves are put—"upon the rack."

It's not quite easy to condense the story, though it should be attempted, seeing that some process engravers have been obliged for their own protection to put in Miehle and like machines to show that their plates *will* print. And, quite apart from that, they are naturally interested to note what are the prospects of the best rendering of their plates by printers everywhere; and whether litigation is likely to interrupt two-revolution developments.

A good many years ago the Printing Machinery Co. secured rights to sell the Miehle two-revolution machine in this kingdom. The makers were a company which was founded in Chicago to exploit the inventions of Robert Miehle, a printer's engineer, at any rate a worker in our craft. The Printing Machinery Co.'s rights eventually became vested in Linotype and Machinery, Ltd. It was argued

for the L. and M. in the recent case, that those rights included being sole vendors in the United Kingdom of the original Miehle or of any makers' improvements in it; or of "any similar single-cylinder machine."

Through a dozen years or more trading on those lines in this Kingdom went on, with to be sure one or two incidents which caused correspondence, as when a particular sheet delivery which was put out by the Chicago Co. was found to be fitted to a certain "L. and M." machine on the Continent, though the Continent was outside the L. and M. field so far as Miehles—actually called by that name—were concerned. The use of this particular delivery was promptly abandoned by L. and M. They explained that its output had been in error. They considered, however, that they were quite entitled to sell L. and M. machines without this particular delivery on the Continent, though these were in material respects identical with the Miehle machine which they sold in the United Kingdom.

Changes came into the Chicago Co.'s personnel a few years ago, and about the same time Mr. Washington Wood having resigned his position as sales manager of L. and M., Ltd., in Fleet Street, E.C., was in communication with the Chicago Co., with the result that in England a Miehle Press Manufacturing Co. was established at 85 Fleet Street, and that Company began buying in America machines manufactured by the Chicago makers and selling them in the United Kingdom. It offered extensively for sale a Miehle two-colour and a Miehle Perfector.

The recent action aimed specifically to restrain that English Company from selling in the United Kingdom, and the American Company from supplying, these

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machines for such sale. To this the American Company replied with a counter-claim and asked a declaration that certain action of the plaintiffs precluded their right to enforce against defendants the agreements I have mentioned. They also asked that the word "Miehle" should not be used by L. and Machinery, Ltd., in regard to the newest type of presses if they were not made by the American Company in Chicago; at any rate, that it should not be used in relation to presses that did not come within the agreements.

There was a curious discussion as to whether a two-colour or a perfector was a single-cylinder machine, the argument being on the plaintiffs' side that such a press *could* be used as a single-cylinder; and that only one cylinder impinged upon paper at one time, as distinct from what happened in the case of a rotary newspaper machine. The Judge decided that perfectors and two-colours were not single-cylinder machines, and were not within the agreement. He said that the new type of Miehle was a "similar single-cylinder machine" and was within the agreement.

His Lordship concluded that the sales within the prohibited territory of the United Kingdom made by the English Company, joined as defendants, were not in law a breach of contract by the American Company. The Chicago firm was therefore victorious on that issue. Similarly the young English firm, the Miehle Press Manufacturing Co., were successful. His Lordship decided he would give no injunction against them.

As I understand the judgment the Judge did not attach very much to the fact that L. and M. presses, called by that name, while being virtually Miehle presses, had been sold on the Continent; there was nothing to restrain this, he

said. Whether they could have been sold as Miehle presses was another matter.

He seemed to think more of the sale of the sheet delivery mechanism, and as to that he noted this position of things, that under the agreement L. and M., Ltd., made with the Printing Machinery Co. (their predecessors in part of their business) the Printing Machinery Co. now received half profits accruing from a breach of a contract (relating to delivery mechanism) by L. and M., Ltd.

The Printing Machinery Co. never itself sold this particular mechanism on the Continent (considering itself barred). Its successors in title did sell it. The Printing Machinery Co. broke no contract, and incurred therefore no liability; but got half profits accruing from breach of a contract by its successors.

It was under these circumstances, said his Lordship, that the English Company came to be formed, so that the advantage of sales being made in breach of contract by a non-contracting party, might not be limited to the plaintiffs. In the Judge's opinion that conduct of the plaintiffs debarred them in that action from obtaining any injunction to restrain the American Company from acting in breach of the agreement; even if they were otherwise entitled to obtain an injunction.

The Judge said it was clear the defendant English Company had never offered or claimed to offer any single-cylinder two-revolution machine as a Miehle press. The plaintiffs had failed to prove that there had been "passing off" by those defendants. He also held that the plaintiffs were entitled to apply the term Miehle to presses of the new type, even though they were not of the manufacture of the American Company. That came under the agreement for which £20,000

(“The Process Photogram.”) Aug., 1913.

cash and shares was paid to the American defendants, and his Lordship observed that the American Company did not offer to return the £20,000! This new type Miehle with its omission of intermediate gear was a “similar single cylinder machine.” So the American Company’s counter-claim failed.

Although the plaintiffs were not entitled to relief from that action it did not follow, his lordship said, that the agreements were not binding between the parties and might not be enforced in future transactions. Plaintiffs had shown no intention of repudiating agreements so as to release the American Company from agreements, in turn.

What had happened had been that they had acted for a time under a mistaken view of their rights, and of their legal position. The American Company also, in his opinion, were acting under a mistaken view of their rights in insisting that the plaintiffs were not entitled to sell the L. and M. machine on the Continent without the special delivery mechanism. He dismissed all the actions without costs.

After so much litigation it is to be hoped in the interests of the craft that henceforth there may be the freest sale of the best and newest Miehles of whatever type, in this country. It would have been a very strange thing had it eventuated that the L. and M. could have prevented the sale of two-colour and Perfector Miehles and that Chicago could have prevented the sale in the United Kingdom of Miehles of the new type.

The hearing occupied about ten days. Mr. Taylor, of L. and M., Ltd., whose likeness to the late Lord Chief Justice Russell seems to grow with every year, was a fine witness, and undoubtedly made a good impression upon the Judge by the blunt candour and businesslike

directness of his answers. Mr. Fisher, of the defendant English Company, who had mainly prepared the technical references in the case for his side, also bore himself remarkably well in the witness-box, sustaining a very prolonged and searching cross-examination.

Mr. Astbury, the well-known patent counsel, who was leader for L. and M., Ltd., was made a judge in the same interval between the ending of the case and the issue of judgment. I met Mr. Taylor in Manchester at the Printers’ Federation meetings, and gave him the good advice which he neglected to take, that he should intimate the willingness of the L. and M. to let his counsel, now become judge, relieve the new Lord of Appeal and himself deliver judgment.

It was “grateful and comforting” to realise as the case dragged on what very good basic ideas for fine printing had marked the progress of British printing engineering. The Napier was alluded to as an early type of machine upon which the modern two-revolution had been developed. One or two other British machines, also perhaps a little in advance of their time, have given to the technical world basic notions for perfect motions which American ingenuity has managed to effect.

And really the whole lot, Miehle, Century, Cotterell, Huber, Colt’s Armoury, Falcon, Victoria, the whole galaxy of nearly perfect presses, seem to owe their existence to our noble but forgotten selves.

They all have come into being under the compulsion of the half-tone block.

Not one of them was thought of in its present perfection, thirty years ago. But with dry paper and hard packing and two-hundred-line blocks, and three and four-colour half-tone, and greatly improved electros, these new machines became necessary.

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Modern Business!

THE Customer kicks the Process Engraver.

The Process Engraver kicks the Foreman.

The Foreman kicks the Employee.

The Employee kicks the Boy.

The Boy kicks the Cat.

And because the Cat cannot kick in turn they commence the performance over again.

QUERY: How long does the Process Engraver intend to allow the Customer to commence the performance, or, if he cannot prevent him doing so, would it not be more honourable to kick back rather than pass it on to those he employs?



Filament Lamps for Copying.

FALSE values for colour work seem to be the great drawback attending the use of filament lamps for photographic copying. As regards power, they can be obtained up to 1,000 c.p. They seem to serve well for plain black and white on dry plates.

It is reported that a French scientist has discovered a way of making a lamp

of 2,000 candle-power which can be worked with a tiny battery, or with a small dynamo run by a water motor driven by turning on the ordinary house tap. The new light is said to offer great advantages for photography, as its power is four times that of magnesium flash light. It is absolutely without danger, as no heat is given off.

NEW COMMANDMENT FOR PRINTERS.— J. Clyde Oswald, of the "American Printer," New York, recently gave an address in which he recited that on visiting the Mecca of all good printers—Metz, Germany—he discovered that the only records obtainable of the early printers are records of suits at law to recover money that had been lost in the pursuit of printing. He said the fact interested him immensely, until it occurred to him that there were about thirty-thou-

sand followers of Gutenberg in America, who are doing business in the same old way, probably from the false notion that poverty is among the beatitudes. Mr. Oswald advised his hearers to go to some public library where they keep rare books and get a copy of the Bible, then turn to the twentieth chapter of Exodus, read the Ten Commandments and add another one—"Follow thy printing or blockmaking (Ed.) as a business, that the days of thy credit may be long in the bank."

Leeds Technical School.

Department of Photography and the Printing Crafts.

DURING the past winter the total number of students in this Department has been 215, which compares very favourably with 136, the total for 1911-12.

The volume of work done showed a still greater increase, the larger proportion of students took more than one class per week; in fact, the average was nearly $2\frac{1}{2}$ classes per student.

These figures constitute a record for the Department, and the attendance was excellent throughout the session. The interest in the work was well maintained, so much so that two classes asked for an extension after Easter, which is the usual time for closing.

Two points are especially noticeable:—

- (1) The increase in the proportion of students willing to attend two or more evenings, and thus to follow the group course, giving them facilities for extending their knowledge beyond their own particular section of the craft.
- (2) The large number of older workers occupying responsible positions,

particularly among those joining the Offset and Letterpress Machine section.

Among other noteworthy features of the session have been:

The progress made in co-ordinating the work of the various sections, especially between Process and the senior students of Litho. Machine work.

The introduction of the Aerograph, Ben Day Shading Mediums, and several other improvements in equipment.

The organisation, in co-operation with the University of Leeds and the City Art Gallery Committee, of the Exhibition of Posters and Colour-Printing held in the spring at the Leeds Art Gallery. Widespread interest was aroused by this display, and many visitors came from other centres in the North of England. A large number of the exhibits will be transferred to the permanent collection used in the School for purposes of study.

ONE hopes the "experience of illustrated journalism" was not the cause of temporary penuriousness of this refreshing advertiser. "Author and free-lance journalist (age 36), brought to state of perury by indulging vicious propensity to write plays (none yet produced—'hinc illae lachrymae'), urgently needs work (of any kind, though literary preferred). Play-writing sole vice, and case not incurable. Will sign pledge to future employer not to write a single line of dialogue even in spare time. Public school education and of good social standing. Special knowledge of illustrated journalism, dramatic criticism, and French language.—Apply, etc."

A COST SYSTEM IS VALUABLE BECAUSE

It provides a sound basis for price-making.

Makes printing a business, not a questionable undertaking.

Detects and stops leaks in your methods and workrooms.

Gives you confidence through knowledge of your business.

Gives your creditors confidence in you.

Eliminates guesswork and makes a profit possible on every job.—*Ben Franklin Messenger.*

You can tell a salesman by the way he sells his own services.—*David Gibson.*

Towards Better British Lens Manufacture.

A New Home for Technical Optics.

"**A** LI a specialist half a quack," said the great doctor, Sir Benjamin Brodie. We cannot really master the optical aspects of our craft without an occasional side glance at various optical developments. With that feeling we make no apology for inserting this letter, which has appeared in the *London Star*, and which may be noted now that Professor Silvanus Thompson's talk to the Spectacle Makers' Company's meeting, upon lenses, brings the whole optical study into the limelight, or the arc light.

Sir.—Referring to the important meeting of opticians which was held at Anderton's Hotel, at which I had the honour of presiding, to support the scheme of the Education Committee of the London County Council for the establishment of an up-to-date Opto-Technical Institute so strongly advocated by Prof. Silvanus Thompson, Dr. R. T. Glazebrook, the Director of the National Physical Laboratory, and others, will you permit me to quote the following extract from the report of H.M. Inspectors of the Board of Education for the session 1909-1910, showing the urgency of the matter.

8.—Technical Optics: Need for New Building.

The urgent need for a new building for the locally very important department of Technical Optics is strongly emphasised. The present accommodation in the Horological Institute (Clerkenwell), opposite the Polytechnic, is quite inadequate and unsuitable. Every room is fully occupied, and many of the rooms are so

small that there is insufficient space in which to carry out the experiments and workshop tasks effectively. Surprisingly good work has been done, however, under the hampered conditions, and the department is well worthy of the effective aid of a new suitable building. This is the most urgent matter calling for attention, and it is understood that the Governors are fully alive to the fact.

The optical trade is a peculiar one, for whilst being strictly in the region of manufacture and trade, it is the one of all which needs most assistance from science.

* * *

Through the whole range of telescope and microscope work and research, projection apparatus, as exemplified in searchlight, lighthouse, kinematograph, and general illumination, and range-finders, there is no trade which needs such an amount of skilled labour and assistance under direct expert mathematical direction as the work of the optician.

It cannot be too strongly impressed upon all interested that money spent upon improved theoretical and practical optical training will be an investment in the interests of the people which will give a better return to the country at large than any other, for the cost of material in every optical instrument is smaller compared with the amount spent upon labour than in any other manufactured article I know of.—Yours etc.,

JAMES AITCHISON.

ALCOHOL LAMPS FOR COLOUR MATCHING:—In Germany very considerable use is made of alcohol lamps, and so far as they have been used in this country they seem to be successful for colour matching. Mr. Wm. Henry, M.I.C.E., when giving evidence regarding such a lamp, a German make, before an Industrial Alcohol Committee, said he paid 2s. a gallon for his spirit, buying a gallon at a time; in Germany the spirit cost much less. A 30 c.p. lamp thus supplied costs about 3/5ths of a penny per hour. In Germany petroleum was dearer than here, while

spirit was cheaper. The lamp was commended by Mr. Henry, not as available "for the masses"—it was too dear for that—but as very good for a large number of people living in the country who had not electric light or gas. People could not match colours properly by ordinary electric light, but they could and did by this alcohol lamp. Silks of every shade could be sampled by the light perfectly well. Capt. Coleridge was quoted as one who painted very satisfactorily by the alcohol lamp.

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AND ELECTROTYPYER'S AND STEREOTYPYER'S REVIEW.

Try to get Killed.

Blondin with a Camera balancing pole: valuable hints on photographing under difficulties.

WHAT a winding-up Mr. Lane gave to the Wednesday lectures at Bolt Court! What an end—and what a beginning! For the official photographer of the London County Council has been brought on to the lecture platform at last, and now we have tasted blood, now we know his quality, we shan't be happy till we have him among us again. Into one, or more strictly into two, "crowded hours of glorious life," Mr. Lane gave us the fruits of whole years of rare experience of photographing under difficulties. The L.C.C. is everlastingly calling for photographic miracles, and he is everlastingly surprising himself by the way he manages to perform the miracles called for. As, for instance, by making a three-days'-long exposure in some cavernous structure in the bowels of the earth; or crouching like some wild animal preparing to spring; only that the crouch has to be maintained a darnation long time. It is some boiler or heater for which he must crouch; the heater is small and tightly boxed in; yet the Council must needs have it photographed, to show a certain sagging that has occurred in the roof; and it must have exterior and interior views. This sort of thing is all in the day's work.

Mr. Lane's talk was, as we have said, the last but most emphatically not the least—we incline to say it was the greatest—of all the Wednesday evening talks in the new Lecture Hall at Bolt Court (L.C.C.) Engraving School. So busy as he has been with his camera, Mr. Lane has had little time to talk about his activities. This was his actual debut as a lecturer. He had never turned to this particular avenue to fame; but it's a long lane that has no turning. Certainly his success on the rostrum was most striking.

Mr. Lane began by reminding his hearers that during the very interesting course of lectures that had preceded his own he had had the pleasure of sitting amongst them. That night he stood before them.

"I intend," he said, "as far as possible, to show you the class of work that is part of my everyday life, work which is carried out on a commercial basis. The slides to be shown upon the screen do not necessarily represent fine examples of photography, for, as a matter of fact, I have had to pass over much of my best work in an endeavour to show you the more difficult portions of it."

Difficulty in photography, he declared,

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was relative; it was in nearly all cases a matter of ways and means, the difficulty of many jobs vanished when a piece of apparatus suitable for the work in hand was brought into use. Often the difficulty vanished on the application of a little common sense and ingenuity.

"Although official photographer to the L.C.C., I, unlike the outside man (who is often equipped with a battery of a dozen different lenses), have to be content with quite a limited amount of apparatus and accommodation, and under such circumstances certain work proves, to say the least of it, distinctly difficult to accomplish. . . . The whole of the work has been accomplished by the aid of

A COUPLE OF LENSES,
viz., a Ross 8 in. wide angle and a 12 in. 10 by 8 Goerz anastigmat.

Such equipment (when awkward subjects have to be tackled), I can assure you, compels the display of much ingenuity, and a large amount of scheming to overcome them; good practice, I agree, but nevertheless, practice that at times one can get tired of.

However, enthusiasm breaks down all barriers, and in this connection I think I cannot do better than commend to you the late Lord Wolseley's motto, 'Try to get killed.' (Laughter.) Incidentally, don't succeed in getting killed. But," Mr. Lane continued, "a man who has his heart in his work and never says 'die' will always rise to the occasion, and 'get home'; and you will see to-night, I hope, that even with limited facilities much good work can be accomplished. In the

IS THE ACTINOMETER worked for all it is worth in the sense of enabling British engravers to use daylight when they can. We cannot hope to emulate the New Zealand engraver who often uses sunlight as his entire, or almost entire, reliance. But though we cannot

pursuit of your calling you may be

A SORT OF BLONDIN

and steeplejack combined, for there are many roofs to be scaled, many 9 in. brick walls to be traversed, many parapets to operate from, and dizzy heights to be contemplated, all with a 12 by 10 camera on your arm to act as a balancing pole.

Nerve is an asset. A quick eye will save you when other aids fail. Be foot sure, be 'mind sure.' *Never trust your weight on a parapet stone until you have tested it with your foot; for you have seen them come hurtling down in the street of their own accord.*

In all cases your motto should be
ONE SUBJECT, ONE PLATE, AND THE BEST
POSSIBLE.

Emblazon these words on your brain. Never let it be said that So-and-so can turn out better work than you. Until you *have* the 'best possible' do not be satisfied. Let it haunt you in your sleep and in your play, and when you have attained such results as you can conscientiously say are the 'best possible,' you will reap the true and lasting rewards of good work, a contented and satisfied mind.

Personally, I very rarely put two plates on one subject, unless exceptional circumstances demand it. Cost and time are my reasons."

Mr. Lane then proceeded with detailed explanations of how many serious difficulties such as an official photographer might some day encounter were overcome. We deal with these in our next issue.

(To be concluded.)

in the United Kingdom parallel that happy case, that is no reason why we should go to the opposite extreme and never or hardly ever use daylight. Use it all you can, with help of some simple actinometer to measure its intensity at the time of the exposure.

The American Process Engravers’ Convention—A Review.

THE Indianapolis Convention, the seventeenth in the history of the International Association, was largely advertised as “A Business Convention for Business Men.” Whoever coined that slogan hit upon a happy thought. The idea of business permeated the Convention atmosphere from beginning to end. The entire Convention was well conceived and perfectly planned and carried out in strict compliance with the plan. The Cost Committee, which had the important task of perfecting a scale of prices entrusted to their care one year ago, met two days prior to the convention and completed its work. The Executive Committee met the following day and reviewed the work of the Cost Committee. Monday morning, when the Convention opened, there was nothing to do but go ahead with business. That this plan of operation is the correct one was proved on the second and third days of the Convention. The delegates and visitors understood perfectly that the subjects before them had received full consideration and a great deal of time and thought at the hands of men fully competent to handle them. Thus it was possible for the Indianapolis Convention to transact more business, to cover more ground, during its regular sessions for three days than any previous Convention had ever been able to accomplish, regardless of the amount of time consumed.

Two hundred representatives of photo-engraving establishments were present. As an evidence of the interest that had been aroused, it is only necessary to state that men were there from Seattle,

Portland, San Francisco, Houston, Fort Worth, Denver, Minneapolis and St. Paul, Winnipeg, Toronto, Montreal, New Orleans and all points East. It was a most representative meeting.

The all-important topic and the first one heard upon meeting other delegates, was the adoption of the Cost Committee’s Scale of Prices. You could not spend ten minutes in the lobby of the hotel without receiving the impression that the Standard Scale of Prices was the magnet that brought these men together.

We are now at the opening session of the Convention: Groups of men begin to gather at the entrance of the Convention hall, President Houser is escorted to the Chair by Mr. E. E. Stafford, Secretary Epstean, Vice-President Folsom and Treasurer Bragdon bringing up the rear; introductions are unnecessary, because these men are well known to all and in turn know them all. It looks like a family gathering and everybody feels perfectly at home. Commissioner Flader is kept busy answering questions and introducing late arrivals to the Registration Committee, which quickly separates them from their change, supplies them with admission tickets for the various forms of entertainment and adorns them with a handsome badge. At last the hour arrives.

Strange as it may seem, Mr. Stafford calls the Convention to order promptly at 10 a.m., and it is formally declared in session. Committees are appointed, the officers’ reports are read and somebody moved to adjourn. Adjournment followed.

The afternoon session is on. After

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routine matters are disposed of, Mr. L. B. Folsom read a paper dealing with "The Relationship of Local and Sectional Organisations towards the I.A.M.P.E."

Messrs. H. A. Gatchel, B. J. Gray, E. J. Ransom and C. W. Klauminzer next addressed the Convention, in the order named, on the topic, "The Local Organisation: Its Functions and the Benefits Therefrom."

When these gentlemen finished expounding their ideas and theories, it was plain to see that direct returns to the individual engravers are obtained through the local organisation, and that it was very important to increase their number and strength. The ideal condition was pointed out to be strong local organisations banded together solidly in the International Association. The subject of an Organiser, one who would devote his entire time toward perfecting local organisations, as well as the International Association, received considerable attention. It was finally decided, however, that since our present method of operation had produced such good results, it would be wise to continue along present lines until conditions demanded a change.

President Houser now called for a report from one officer of each local organisation represented in the Convention and some very interesting remarks followed. These reports indicated, better than anything else could have done it, that good local organisation and good prices and conditions in the engraving industry are synonymous. Here, then, is a moral: Organize locally and Internationally if you want to increase your profits and improve your conditions.

Mr. E. H. Clark, of Cleveland, rotund and smiling, read a paper entitled "Fire Insurance Policies and Riders." Mr. Clark's address was listened to with great attention and brought out some startling facts. He read a sample of an insurance

policy "rider" covering gasoline and other privileges which was considered by his hearers as being ideal.

* * *

On Tuesday morning Mr. F. P. Bush, of Louisville, delivered his address, aided by stereopticon views, on "The Cost of Long, Narrow Plates as Compared with Those of Normal Size." Everything said and shown demonstrates that the cost of long, narrow plates is abnormal, and that they cannot properly be sold on a basis of strict area measurement. It was decided that long, narrow plates shall be charged for on a basis in which the height is considered at least one-quarter of the width.

That good old document and popular target of all Conventions—"The Constitution"—now comes in for its share of attention. Oratory runs rampant for a while and old laws are unmade, while new ones are injected into it. The most important changes accomplished are those affecting the revenues of the organization. The membership fee of \$10, formerly paid yearly by every member, was eliminated, and an initiation fee of \$10, this to be paid only on the part of new members, was substituted therefor. The quarterly dues, which formerly were \$1.50 for each person employed in a productive capacity in the photo-engraving department of members, were reduced 33 $\frac{1}{3}$ per cent., bringing them down to \$1 per workman per quarter, or \$4 per year for each person employed in a productive capacity in the photo-engraving department. The minimum amount of yearly dues is reduced from \$25 to \$20 for plants employing five journeymen or less. This very substantial decrease in dues and revenues means that an increase in membership must be accomplished from now on.

Mr. S. H. Horgan delivered an address entitled "Photolithography and Its Effect

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upon the Photo-Engraving Industry.” Mr. Horgan had the close attention of his audience and his remarks proved highly interesting.

Geo. H. Benedict is next introduced to address the Convention on his latest creation, “A Simple Cost-Finding System.” Mr. Benedict exercised his prerogatives and departed from the topic immediately. He advised his audience that the next speaker would cover the subject assigned to him and he proceeded to make a partial report for the Cost Committee, of which he is a member. He displayed a number of charts and diagrams which illustrated in a graphic manner the vital statistics pertaining to the cost of production and conditions in the photo-engraving business.

The next speaker, Commissioner Flader, upon whose shoulders had been placed the task of describing and demonstrating the Simple Cost System, was consequently compelled to touch lightly upon the subject originally assigned to him, “The Cost of Production and Its Relation to Salesmanship and Profits.” He launched into the combined topics without further preliminaries and had the full attention of his audience from the start. No need to describe his remarks in this instance, as they are published in another page of this issue, except to say that Mr. Flader gave an exposition of Cost Finding and a description of the Simple Cost System in a manner that made a profound impression upon his hearers. It was the consensus of opinion of those who heard his remarks that he conveyed more information on the subject of Cost Finding than any other speaker who had ever appeared before a body of engravers. Enthusiasm reached its highest point at the close of his address, and it is safe to predict that the Simple Cost System will be installed immediately by those present at the Convention who have not already a

cost system in operation.*

Tuesday afternoon “The College Annual Problem” was dragged out into the open, and if there were any persons present still unfamiliar with the peculiarities surrounding the sale and manufacture of college annual plates they certainly received full instructions in the remarks made by the gentlemen who so ably covered this topic. It’s a painful task even to talk about it, and inasmuch as nothing definite, further than the recital of abuses, came out of the discussion, it is well to drop it. This does not indicate that no good was accomplished, because publicity of such matters as pertain to college annual work does a great deal of good. Substantial benefits will follow later on.

Wednesday, the Big Day of the Convention, the first order of business is the Nominating Committee’s report.

Everybody cheers the report and the names mentioned and it is quite evident that the Nominating Committee had carefully sounded the sentiment of the Convention in making up their slate of officers. The Convention wants Mr. Houser for President. Of that there could be no doubt, and they get what they want. Secretary Epstein casts the ballot of the Convention for the entire list of officers and all are declared elected. Cheers and congratulations for all.

Mr. N. S. Amstutz, Research Engineer and well known to engravers, entertained and enlightened his hearers with a lecture profusely illustrated with stereopticon views and blackboard sketches, entitled “Practical Standardisation.” His is a learned discussion and holds the audience from start to finish. Mr. Amstutz has the happy faculty of making his hearers

* This simple costing system was fully explained in our August number.

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understand involved problems and scientific terms in a way that is pleasing and instructive as well. Much good advice and many sound business principles were contained in his address, and not one who heard it but is better off for it.

Now comes the Cost Committee's Report. Mr. Gage takes the floor and briefly describes the work of the Cost Committee and its final culmination in the Standard Scale of Prices presented to this Convention for approval. This is what everybody had been waiting for, and the peculiar part of it is that the discussion which followed dealt only with a better understanding of the Scale and its provisions; the wisdom of the Cost Committee was never in question. A roll-call vote was taken and every member voted in favour of its approval. After the vote,

individuals from every city represented at the Convention voiced their opinions on the subject and all made known their intentions to use the Standard Scale of Prices as the basis of value of the photo-engraver's product.

The Convention accomplished two important things: It approved the Standard Scale of Prices and adopted the Simple Cost System, at the same time providing the ways and means for the general installation and use of both. The Simple Cost System and the Standard Scale of Prices are co-related. The use of the Cost System will teach Manufacturing Photo-Engravers the necessity of selling their products according to the Standard Scale of Prices.

Thus endeth the Indianapolis Convention.

How not to do it.

By Harold Hood, F.R.P.S.

PANCHROMATIC plates and yellow filters, essential as they are in so many directions, do not meet every requirement of reproduction, because one does not always want *orthochromatic* reproduction. This is well enough understood by the observant, but curiously enough when there is to be reproduced a faded yellow silver print, the unthinking person sometimes rushes on to orthochromatic plates, which, combined with a colour filter cutting out the blue-violet, just makes the very worst possible of the contingency.

The illustrations accompanying this article are both reproduced from one of the most outrageous copies it was surely ever the lot of a photo-engraver to be expected to work from. This was a p.o.p. print, diabolically stained during its

alleged process of toning, and showing little else but a slightly varying blur of more or less dirty amber and brown tones, and the highest lights were approximately the colour of dirty yellowish stone colour.

In the illustration No. 1 you see as faithfully as we can give it—though the original is really worse than the reproduction—a representation of the original print—in greys, of course, instead of in variations of brown. In order to get it like this, we used a panchromatic plate and a K₃ yellow filter.

But observe No. 2! This transformation is the outcome of using (as we did in the original block reproduced much larger) an ordinary wet collodion plate. There is a trifling amount of hand-work here and there, but the fine-etching is

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quite the minimum for a block of its kind.

It is a reproduction of this sort that makes one disposed to show together the

course, this rather surprising result is purely the outcome of normal routine with perhaps an increased screen distance or a



original and the half-tone reproduction in the office window, with a note showing what clever engravers we are! Yet, of

larger square stop to steepen the graduation a little.



Why so few English Process Blocks find their way into America: England all Behind.

ONE of our American contemporaries has an article upon the "Cost of Production" of process blocks, in which the writer purports to explain why it is that so few of these find their way into America from Great Britain, and incidentally deals with the question of "Comparative Efficiency" as between the English and the American process worker, and comes to the conclusion that it is not the American tariff but the slowness of the English workman that makes the imported blocks too dear, as the Britisher is utterly incapable of competing with the American workman in the quantity and quality of his production.

He says—'Bearing on this connection or basis of cost, the Bureau of Foreign and Domestic Commerce has issued a report showing comparative efficiencies and demonstrating' "that in the United Kingdom one-sixth more power and two and a half as many wage-earners are needed to produce a net output of equal value." He then goes on to inform his readers that 'This is rather unfavourable to the activities of the British workman. Just think of it, 1,375 workmen in the process plants of the United Kingdom would turn out only about the same quantity as the product of 550 men in the photo engraving plants of Chicago, U.S.A.' He further assures us that "The Government officials at Washington regard this comparison as reliable."

Having satisfied himself of the superiority of the American process engraver and shielded himself behind the Washington Government officials, he tells us that the photo-engraving industry is not specially dealt with in the report from which he quotes, all the same the facts

from which his argument is deduced are equally applicable and can be accepted as gospel truth.

Having thus made his position plain, he assures his readers that they have nothing to fear from English competition, as the individual slowness of the British process worker makes it quite impossible for us to compete in the American market, so that the U.S.A. is quite safe from any fear of large imports of English process plates.

It has been said that figures don't lie, except when they are statistics. Whether that be so or not it is not our province to decide, but we feel quite safe in saying that if the article in question is correctly and accurately founded upon the figures given in the report referred to, it is quite patent to every English employing process engraver that someone has blundered, and seriously blundered, too. Consequently, if the officials of the U.S.A. are depending upon reports such as these they must be living in a fool's paradise, and must sooner or later have a rude awakening.

Had the article referred to appeared in some official paper we might have smiled, and passed on, but as it appears in one of the technical papers issued for the Electrotyping, Stereotyping and Process Trades, it might be supposed that the writer should have some general knowledge of the subject with which he was dealing. If not conversant with every phase of the question, he should at least have a wide outlook and an acquaintance with existing conditions.

It seems to us that any writer or editor who had the merest acquaintance with the process trade, would have quickly spotted

the fallacy underlying this argument, especially in view of the great amount of knowledge made available during the last year or two through the costing congresses that have become such a feature of American business life.

The question that immediately arises in one's mind upon reading such a statement as this is: If 550 men in the American process shops can and do turn out an amount of work in a given time equal to that of 1,375 workmen in the English process shops, how is it that the cost of 10-inch square half-tones in America is more than double the cost of 12-inch square half-tones in this country?

It cannot be on account of the higher wages paid, for admitting, for the sake of argument, that the wages in America are double what they are in this country, even then the wages cost per block would be 20 per cent. less than ours. Neither can the difference be made up by the cost of materials, for most of the copper used by English houses comes from America, and cannot cost less here than in the country from which it comes. Then, again, the American process engravers tell us that their costing campaign has proved conclusively that their wages cost is 40 per cent. of the whole, which is remarkably in accord with the experience of those English houses who keep an analysis of their costs, which, so far as we have been able to gather, vary from 35 per cent. to 40 per cent. of the whole, an amount exactly corresponding to that stated to be accurate by the American houses. This being the case, how then is it possible that “each American workman turns out $2\frac{1}{2}$ times as much work as the English workman”?

Whether the writer of the article in question, or the statistics to which he refers, is at fault, we do not know, but, upon the face of it, the argument built up around these statistics seems to be pre-

pared for home consumption, though we are inclined to think it will be a very long time before any practical process worker in America will accept the conclusions come to, especially if he has any fair knowledge of the quantity, quality and value of the work turned out by the process houses of this country.

We believe it is agreed that American workmen put more hustle into their work than do the men in this country, but we have yet to learn that hustle and quality or even quantity go hand-in-hand in the process trade, but when we have given them credit for all they can possibly claim, it is very far indeed from being 1 to $2\frac{1}{2}$; as a matter of fact, we on this side claim that, taking things all round, any average English worker in the process houses is fully equal to any average American worker, and if certain reports that come to hand from time to time are true, it would tend to the belief that the Englishman, after all, is, on the whole, the better of the two. It will be a great pleasure if our contemporary will return to this subject, and give us a further instalment upon this interesting matter.

Had the writer in question taken a wider outlook at his subject, we should have thought that he would have found the reason for the smallness of the importation of British-made process plates in the Copyright Laws of the U.S.A. rather than in the slowness of the British workman, for surely he cannot be unaware, or have forgotten, that to secure the copyright of any illustration in the U.S.A. it is necessary to have the plate engraved or made and printed there; no print, we are informed, from an imported plate can secure copyright in the U.S.A., though the American owner can secure copyright for his illustrations in this country by the mere fact of being the first to publish them here.

Textiles and Paper: Some things to remember.

CRAFTS are too prone to look askance at each other, and to fail to recognise mutual adaptability. Of all crafts, ours should be among the very last to be unobservant of or disinterested in processes nearly allied to our own. Agreeing, then, as we doubtless do, that textile printing is a thing we should study with sedulous and constant care, what is one of the first things we note? We find that the technique of copper roller printing in textile work has in every way been brought to a very high pitch of perfection. Any suggestion that we can now come into the industry with some new undreamt-of wonderfulness of knowledge or of method, may prove quite out of place. But for all that we may do something in this connection, and something technically and commercially quite important, although it may simply be a matter of improved work on lines already being tried. Next, we find that when concerned with textiles we are in presence of a gigantic trade. We have to learn a new technical dialect; we have to think in new terms. It is not enough for us to prove, per se, that intrinsically a particular thing is advisable technically; we must not expect to persuade a firm to adopt it

unless it fits in with the whole operation of the mill. What, for instance, would be the importance of some trifling or even considerable economy in roller preparation, assuming we can demonstrate it, if it indirectly in any way delayed the output of a particular product. Even large platemaking costs, as printers on paper deem costs to be large, may be as nothing relatively to the total outlay of the textile manufacturer.

In this connection it is interesting to recall that the immense rotary photogravure business which has now through sixteen years or more been conducted at Lancaster by the Rembrandt Intaglio Printing Co., is a direct outcome of a business of printing upon textiles. Messrs. Storey built up a notable success with their lithographic printing of "table bays," as the trade called the oil cloths, sometimes styled American cloths, long so popular, and still widely used in working class and rural middle-class homes. In the Lancaster case the move was from printing on textiles to printing on paper. Now, in the whirligig of time it would appear that some of the most modern adaptations of printing on paper are to be applied to the printing on textiles.

"Credit Due."

"It is only necessary to appreciate the wonderful effects of pictures and cartoons in general to get a fair idea of the power of properly illustrated work. Pictures have educated ignorant people, and turned bad men into righteous paths. Pictures have modified public opinion, and have created sentiment where mere words would have failed, and all because they are able to tell a story at a glance, and

then photograph it on the brain."—G. H. Powell.

There is a wealth of truth in the foregoing statement, but whether it is fully realised by the lay mind, or even by the printer, whom it directly affects, is sometimes open to considerable question. The point of chief interest to us as Process workers is, however, not so much in the

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power or influence of pictorial expression, as in a just appreciation of the work which has materialised it.

Prior to the development of the half-tone process, low-priced illustration was almost impossible, because the cost of effective wood engraving was prohibitive, whereas now innumerable phases of industrial progress have been made possible by modern engraving methods.

Take the printing industry for example. It is a most striking example, for does it not invariably work along the lines of commercial and industrial requirements?

How many of us really realise and appreciate how much credit is due to the photo engraver for the vast strides and improvements that have been made in the printing industry the past twenty-five years.

Following out the natural law, the demand and the supply, note the wonderful developments that have been made in printing presses, inks, rollers, papers, etc., to meet with the requirements of photo engravings; note the vast increase in the quantity of printed matter, as well as the broadened variety of the product, among the more important of which may be mentioned calendars, postcards, blotters, magazines, newspapers, books, catalogues, etc., most of which are of value, and exist chiefly because of the illustrations displayed therein—such illustrations having been made possible by the skill and the comparatively inexpensive product of the photo engraver.

Consider the vast influence that the product of the photo engraver has had in widely disseminating knowledge throughout the world—by means of pictures—

educating through the sight even the most illiterate. School books of to-day are bright and attractive with illustrations, facsimiles of photographs; compare these with the dull books of the past, with absurd and grotesque wood-cuts illustrating scenes that never existed.

The photo engraver faithfully reproduces landscapes, portraits, buildings, objects of merchandise, etc., making them either direct from the objects themselves or from photographs, and is often able to intensify and improve the details while faithfully reproducing a facsimile of the object itself. To meet the requirements of cost and the conditions under which the plates are to be printed, depending upon the copy and material furnished, he produces plates so that the desired illustrations may be either a line engraving or a half-tone.

The work of the process engraver permeates almost every avenue of trade, for illustration is now regarded as essential for the development of business. Pictures form a universal language which require no interpreter, and consequently engravings are demanded by the business world.

A glance at any of the current magazines or publications will show at once the immense volume of business that is built up on the use of half-tone engraving.

For effective pictorial expression high-class engraving is essential. If a half-tone is worth having at all, it is worth while to have a good one. The better the photo, the better the half-tone, and the better the half-tone the better the print from it will be.

WHO SHOULD MAKE MY STEREOS AND ELECTROS is a very neat little booklet issued by Carl Hentschel. It is well done, and carries its appeal to the prospective customer. The simplicity of its get-up has a

great charm, and the harmony of the tints of paper, covers, and inks gives it additional lustre. We congratulate Hentschels upon its production.

✓ *The Cost of Production and its Relation to Salesmanship and Profits.*

By Mr. Louis Flader.

THE influence the cost of production has on the salesman is a great one.

If you stop to consider that the majority of photo-engravers have very little knowledge of the cost of production and that the salesmen, their representatives, have even a lesser understanding of that part of the business, you can readily appreciate why some of the things are as they are. The salesmen are simply incompetent in many instances to even properly estimate a job, either in advance or after the order is completed. They are guided entirely by custom and by existing conditions; a salesman will fix the price according to his mental state at that particular time. If he is told there is keen competition, he will shade his price to get the order. There has been no fundamental law to guide anyone. The business has been conducted on a hit-and-miss basis, and I think there are more misses recorded than hits! The regrettable feature is that men who gather at conventions come here because they have already some understanding and interest in the subject, and the immense number, by comparison, to whom this is directed, are conspicuous by their absence. If we had them here we could probably enlighten them to a point where our difficulties would disappear. We have got to reach them through our publications, reports of conventions and talks on the subject, and personal contact with them when you get back home. There are some salient points in the paper that I will read which express certain thoughts that have a direct bearing on the cost system, and I think it is worth while to read a few

short extracts. I will not read it all. They serve as an introduction to what is to follow.

I am reading from a talk directed to salesmen. This was delivered at a meeting of the Chicago Photo-Engravers' Club, including the salesmen. We had about one hundred and twenty-five or fifty men in the audience listening to the address.

“Recently a new thought has crept into the engraving business and the surprising part of it is that we have had to wait all these years in order to come to this conclusion. The thought can best be expressed in one sentence — ‘Business for Profits.’ All other lines of endeavour that can be dignified by the name of business have recognised that fundamental from the days of the Phœnicians up to this minute. Photo-engravers alone, as far as I know, have been satisfied with conducting business for pleasure. If that has been their idea, I am of the opinion that they have been cheated, because there is very little pleasure connected with business unless profits are present in their proper proportions. I think that none of you would care to continue in your present vocation as engraving salesmen, if your only compensation were the pleasure you derive from your endeavours. You, strictly speaking, are salesmen for profit. You may derive considerable pleasure out of your work, but with profits removed, pleasure would vanish immediately. Up to this time you have concerned yourself largely with selling something, with little or any thought of the influence your sales have

upon your own life and upon the life of the business that gives you employment.

“All of you are vitally interested in the prospects of increasing your sales. Increased sales to you mean increased wages; they ought to mean increased profits for your employer, but that does not necessarily follow. There are two ways in which sales may be increased: one is to sell a greater volume, and the other is to raise prices on what you are selling. Ordinarily, when your employer tells you to increase your sales, it conveys the impression that he wants you to bring in more orders, and frequently he is kind enough, although foolish, to tell you to lower your prices in order to accomplish more sales. A moment's thought will demonstrate to you the absurdity of such a proposition. Trying to increase sales for the photo-engraving business by lowering prices is like trying to swim against the current of a rapidly flowing river. The lowering of prices may create a demand for many lines of merchandise. It positively has no such effect upon the users and buyers of the photo-engravers' product. No one has ever purchased commercial art and printing plates for no other reason than because they were offered to him at a low price; the demand for what you sell is ever present. It remains but with you to find someone desiring the services of the house you represent. In very few instances is it possible for the salesman of a photo-engraving establishment to create a demand for his products. In all cases price does not enter into the argument. If your employer tells you to increase sales by reducing rates, he demonstrates, first of all, his own ignorance of the business he is engaged in, and if you follow his instructions to the letter, you will condemn yourself in being utterly incompetent, even though prices be lowered temporarily and for a stated

period. As a precedent is thus established, it will certainly cause loss of sales and profits later on should you attempt to raise prices up to their former level. No one in the engraving industry has ever established what might be termed a ‘top notch’ price; anyone can establish a low price. Please bear that in mind. A reduction of twenty per cent. from regular rates means, first of all, a twenty per cent. reduction of your normal sales; to overcome that handicap you have to increase your sales twenty per cent. to arrive at the same point you formerly occupied. Now, then, you realise that whoever buys your products buys them for only one reason—because he needs them. You can see what an injury you have inflicted upon yourself and the business as a whole and how much harder you will have to work with scant prospects of accomplishment.

“By contrast, I offer the suggestion that you raise prices and thus increase not only your sales and salary, but your employer's profits as well. If you follow that plan, you will perhaps for the first time realise what salesmanship means. Salesmanship does not mean merely the disposal of goods; it does not mean the dispensing of charity. It does mean the scientific and business-like distribution of a manufactured product. Let us forever cast out the idea that the salesman's sole occupation is to get orders and that the selling price needs no consideration from him or anyone else. You will find that the buyer gives a great deal of consideration to your selling price, and if you are as good a business man as he is, you will do likewise.

“When we began to examine the cost of production, we discovered some startling facts. We found that many of the so-called little things, which, however, form a large part of the engraving business,

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cost sums all out of proportion to the amounts for which they are sold. It is very plain to see that with such a situation there cannot be a great margin of profit at the end of any fixed period, such as a business year. To give you an illustration, I call your attention to the item of proofing. The engraver has placed very little value, if any, upon his proofs. The public, guided by the engraver, has come to regard them as very useful and necessary, but an item they expect to receive for nothing. There was a time when the half-tone photographer received considerable more in wages than did the proofer. To-day they receive exactly the same wages, and whether you have ever noticed it or not, I want to call to your attention that every engraving establishment employs just as many proofers as it does half-tone photographers. We all know that it costs something to make a negative; most of us have had an idea that it costs nothing to make proofs. A good many half-tone plates can be photographed at less cost than they can be proofed. As an example, take a complicated wash drawing, from which a vignetted plate is to be made. The photographer will probably make the negative in thirty minutes, the proofer will perhaps spend one hour and a half proofing the plate. Both receive the same wages, and proofer's materials cost almost as much in such cases as those used by the half-tone photographer. Kindly remember this: formerly there was quite an appreciable difference in the wages paid to the workmen in the different branches; to-day there is practically none. The little inside mortise that appears insignificant may have taken the blocker thirty minutes to make; the blocker very likely receives wages equal to those of the half-tone finisher. That little job of stripping perhaps requires an hour's time on the part of the man who

receives exactly as much as the photographer who made the negative. If in your daily work you have overlooked any or all of these items and a great many other like them, and you have sold your employer's products at a low price as well, then stop and reflect in what part of the business, then, profits rest. We must first wipe out the losses incurred, as before stated, and leave a net profit besides. I think you will agree that such a thing is impossible, and if it is, then you can get a very fair idea of what is necessary to improve conditions all around.

"Most of you doubtless have some thought of going into business yourself some day, and if you have, it must be based upon the assumption that handsome profits are to be made in the photo-engraving business. Without going into minute details, I want to say to you that most of you have your wages based upon the amount of your sales, or you are working for a weekly salary. There must be a foundation upon which your salary is computed, and custom in the photo-engraving business has pretty firmly established that the salesman's salary is to equal ten per cent. of his sales. In other words, on an average, you are receiving for your part of the work ten per cent. on every dollar's worth of goods you sell. With that in mind, I want to say that you are receiving more actual profits out of the photo-engraving business than the men who employ you. In other words, your employer does not realize a ten per cent. profit on your sales taken all the year round, and you do. You have your time invested in the photo-engraving business, and you have an assured income of ten per cent. on your sales. Your employer invests his time and his money, assumes all business risks and takes what is left, which, and I want to repeat it, is less than ten per

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cent. of the volume of your sales. That is the true situation, stripped of all verbosity and by-play, and reveals an industry that is built upon shifting sands, indeed.”

That gives you an idea of what was said to the salesmen to endeavour to interest them in the cost of production, so that they would realise the foundation upon which we are trying to build up this business.

The engraving business is not the same to-day as it was years ago. It has to be conducted upon entirely different lines if you would remain in it. Formerly competition, by numbers at least, was very much less. The records show that thirty plants, as well as I could trace them, had been started in the last year, and five of those are in one city, Chicago—all these plants contending for a volume of business that I am satisfied is no greater to-day than a year or two ago. I do not look for any new or growing demand for photo-engraved plates in the future, and

because of these changed conditions the industry will have to be built on a different basis from that of the past.

If we realize and recognize the situation, as I have just briefly described it, and the possible future of the photo-engraving business, then we must come to the conclusion that we will have to conduct it in such a way that we may equalize this business so that something like a profit will be obtained on every order. Not upon twenty-five or thirty per cent. of the volume of your business, but a practically uniform rate of profit must be obtained upon every operation. I do not mean every single plate, but practically so. There will always be instances where for various reasons you will entail a loss, much like a merchant over his bargain counter. No merchant would engage in a business selling fifty per cent. of his goods at a loss and trying to recover that loss and show a profit on a small percentage of his sales.

The Vindication of Moses.

MR. MOSES PRIMROSE we mean, the young unsophisticated son of the Vicar of Wakefield. Who does not remember how he went to the fair and sold his father's horse for a gross of green spectacles? There is a delightful picture in a public picture gallery in Manchester of the return home of young Moses, and of the amazed and sorely disgruntled father and mother, and rueful if not tearful smaller brothers and sisters when Moses explains and exhibits his bargain. A century and a half have passed since the tale was told and for all that time we have joined in laughing at young Moses. In 1913 he is vindicated at last, and that by process engravers, for green

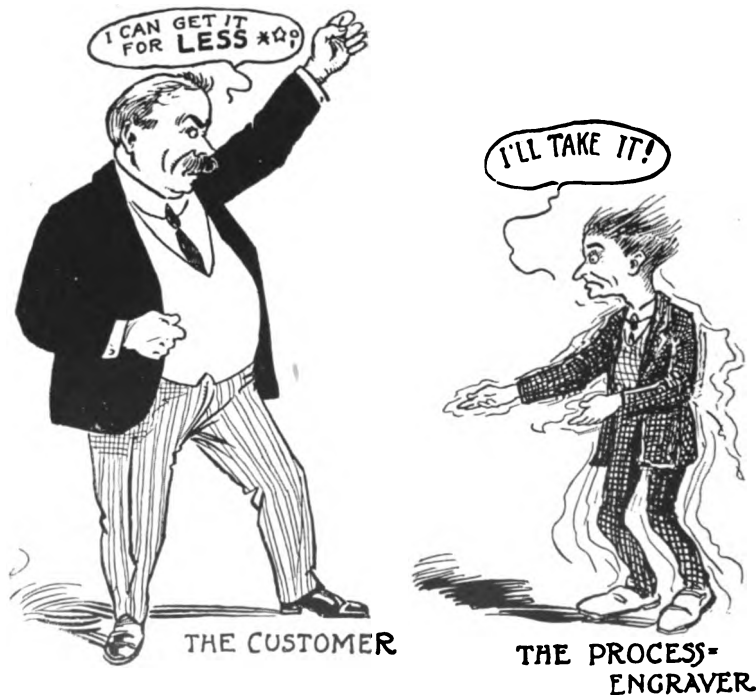
spectacles now are to be all the wear in process studios. We must organise a buried treasure hunt on the lines of the Spanish doubloons quests, and see if we can't unearth that gross of glasses, for they have a market value now.

The blue glasses which so long have been the main reliance of our operators or their helpers to prevent their eyes "going wrong" in a few years' time, have been very delusive. They have stopped out hardly any of the rays from enclosed arcs which are most injurious to the delicate organism of the eye. But green glasses have been shown, on careful testing, to do effectively what the blues have pretended to do, and have been

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so unwarrantably, but so confidently credited with doing. If our readers have not had their attention called to this matter let them communicate with the Principal of the L.C.C. Engraving School. The matter is, of course, one demanding grave consideration; and our bit of fun should serve to secure attention without being taken to indicate any undervaluing on our part of its essential importance. Quite apart from the great calamity of impaired eyesight there is the relativity of general health to be considered. Many and many a condition of sickness and suffering derives from some disorder of the eyes. The mere extent of that part of the interior of the head which is directly connected with the eyes is far larger than most seem

to imagine, and certainly the action and interaction of the eyes and the whole bodily system are of the utmost delicacy and importance. While speaking of this let us repeat once more that old counsel by Dr. Mees, that the quartz lamp is attended with a danger of which operators are commonly not aware. The writer recalled his warning when he visited the Wratten and Wainwright laboratories at Croydon, not to look straight at a certain quartz lamp there employed unless he wanted to be partially colour blinded for life; which result might be reached in a very few seconds. The trade ought to be much more carefully informed and warned as to this danger, Dr. Mees impressed.



Referring to our article in the August number, "Too often Photo-Engravings are Bought, not Sold," a correspondent sends us the above, which humorously portrays the position too often met with to-day. How long will the Process Engraver take what the customer chooses to pay for his work?

✓ *Levelling Cuts and Registering Tints.*

By H. G. Batchelder.

MANY articles have been written about the time that is saved in the cylinder press-room by having the cuts in mixed type and cut formes made type-high before leaving the composing room. Cuts should be made the proper printing height, not only before leaving the composing room, but before they reach the compositor or make-up.

The compositor has not been born who can underlay a cut to suit the average pressman. If left to the compositor he brings the cuts up a trifle higher than the type, for in this way he has less trouble in securing a good proof on the hand press. The cylinder pressman, on the other hand, usually desires the cuts slightly lower than the type, to get the proper gradation of colour values by overlaying, especially in the case of vignettes.

I have always contended that the proper way to secure the best results and save time on cut-forms was to hand the cuts over to the pressman, as they come from the engraver, to be evened up and underlaid between the shell and the block. Then, if it is necessary for the compositor to build them up in order to get a satisfactory hand-press proof, he may do so by putting temporary underlays on the bottom of the block, to be removed after the form is locked up. This is seldom necessary, however, except in the case of extremely large blocks.

This method puts all the make-ready on the form where it properly belongs, in the press-room, and it is done by the man most competent to do it. It will also facilitate the work, by allowing the compositor to start composition immediately,

as the item of a slight delay in having the cuts to work with is not usually important. Much of this work may be done by the pressman during otherwise unproductive time, while the unproductive time of the compositor may be used to better advantage in distribution.

It is always better in renailing a cut to the block to use nails slightly larger than the ones removed, as the action of drawing the nails tends to enlarge the holes, and if the same nails are used they are liable to work up on a long run. To protect the face of the cut from the hammer when renailing, cover it with a strip of heavy pulp-board with a slot cut in it the width of the nail. The nail may then be driven almost flush before using the set.

Engravers are not always careful to have tint-blocks mounted at the proper angle to register with keyplates. This causes a waste of time to the printer, and all such cuts should be tested out by the compositor in this way :

Tie a cord or place a rubber band around the keyplate, and slip a piece of two-point face-rule between the block and band, at the top and left-hand side ; then pull a proof on onion skin or tissue paper. Proceed the same way with the tint-block, and if, by superimposing the two proofs in register by holding up to the light, the ruled lines on both proofs are found to be parallel, the tint-block is mounted at the proper angle. If not correct, the cuts should be returned to the engraver to be remounted in register. A batch of cuts recently tested in this manner showed fifteen out of sixteen badly out of register.—From *Inland Printer*.

✓ *Why Collotype Flags.*

THERE must be always some who are considering whether to add collotype to their operations. A very little thing may decide them one way or the other. Mr. Robert Hart, M.A., Controller of the Oxford University Press, told the writer, with a chuckle, how the casual call of a tramp printer who was handy with a camera led to the important collotype work of that world-famous printery. Some beautiful specimens of its collotype are among the writer's most prized possessions. A singularly informed writer on process matters, who contributes to the "Stationery Trades Journal," discusses "The Decadence of Collotype."

"Comparing a certain method of printing with that of collotype and photogravure it was seen that these latter processes owed their richness of effect to the fact that the amount of ink carried on the printing surface was proportioned to the strength of light and shade effect in the picture, and thus approximated more closely to the practice of the painter in laying on his colours more or less thickly in the different parts of the picture in order to get the depths of light and shade. Photogravure was for a time put on one side (in the United Kingdom and during recent years) by reason of the slowness of the printing method, though the superiority of the results were admitted and for some years a strong effort was made to commercialise the collotype process.

Power machinery was brought into requisition for printing, and for a time it seemed as though the process had a great future. It was found, however, that the results were uncertain, fluctuating with

atmospheric conditions. Financially, collotype proved a disastrous speculation, and one by one firms which had started out to work the process on a large scale dropped out of the running, until at the present time the number of firms working the process in this country may be counted on the fingers of one hand. The failure of the process may not have been due entirely to atmospheric difficulties. It was also no doubt due to keen Continental competition, and to the difficulty of securing skilled workmen. In Germany the process still flourishes, and is apparently profitable. The supposition is that climatic conditions are there more favourable, and the qualifications and temperament of the workmen are better.

Apart from this, visitors to Continental collotype establishments have noted that far better physical conditions prevail. Premises have been built suitable for the work, careful attention being paid to cleanliness, ventilation, warming, lighting, etc. English firms too often endeavoured to start and run their collotype businesses with inadequate capital, which prevented them from securing the ideal conditions attained by their Continental neighbours. There is another reason, however, for their failure and that was the rapid development of the half-tone process and concurrent improvement in letterpress printing. This was brought about in England at a much earlier stage than in Germany, and thus collotype was able to hold its own over there for a much longer period, enabling it to become firmly established.

The failure of the collotype process led to attention being again turned in the direction of photogravure."

Photolithography and its Effect upon the Engraving Industry.

By S. H. Horgan. *An Address delivered to the Indianapolis Convention.*

THE title of this talk assigned me reads: "Photolithography and Its Effect upon the Engraving Industry." What is intended by the word "Photolithography" is the process work used on the offset press. As photolithography refers, of course, to photography as applied to stone, the title "Photolithography" is suggested, as this word covers the photographing on metal plates for surface printing. And offset printing, as you know, is one in which an impression is taken from a perfectly smooth rubber surface, on which the printed matter has been offset from a flat, plano, or metal surface, drawn around a cylinder.

Those of us who were present at the Buffalo Convention, will remember our attention was called to the offset press by two addresses from gentlemen representing offset press builders. One of them began with the statement that it had been discovered that aluminium and zinc had the same properties as lithographic stone as far as the absorption of grease and water was concerned, and consequently these metals were being substituted for the cumbersome stone, and with the greater speed obtained in printing from them they would revolutionize the printing industry.

You may also recall that the present speaker objected to the above statement as misleading, and then explained for the first time publicly the way in which metal was used as a substitute for lithographic stone.

It is well to repeat the secret of the substitution of metal for stone here, so

we may better understand why this offset press is competing to an increasing extent with our relief engraving industry.

The use of lithographic stone in printing was due to its being porous to an unusual degree; freely absorbing grease when dry, and absorbing water with even greater facility, except where grease has already been applied. Now a sheet of polished zinc will not, as you well know, absorb water any quicker than a sheet of glass, or a bald head. But if the surface of the sheet of zinc is ploughed full of minute furrows crossing one another in every direction, and so fine as not to be seen by the eye, then the grained surface of the zinc will hold moisture by capillary attraction just as a head covered with hair will. And this grained surface on the metal will also hold grease.

Now the advantages of such a printing plate are many: It need be only ten one-thousandths of an inch thick and can be easily drawn around a cylinder of a press, while our relief plates must be electrotyped or stereotyped before they can be secured to the printing cylinder. Duplicates of originals can be easily and cheaply made, as it is only a matter of transferring. Further, no underlay or overlay is required in printing, and the tones in a plate grade into pure whites in the highest lights without the slightest difficulty. What the buying public approves of most about offset press results is that an uncoated stock is used and all the objections to disagreeable gloss and the injury it was causing eyesight is done away with. For magazine covers a tough, fibrous, antique stock can be

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printed on that will not crack but withstand rough handling.

In former planographic printing methods, such as printing direct from stone, aluminium or zinc, these surfaces were rolled with water and greasy ink alternately, so that the paper, being pressed against the moist plate, absorbed much of the moisture, causing the paper to stretch and giving trouble in registration later. With the offset press the sheets do not touch the wet printing plate. They come in contact only with the rubber sheet containing the offset, so that distortion from dampness is to a large extent avoided.

We all understand that a rotary movement in mechanics is far more easily maintained than a reciprocating one; that printing from a cylinder is more practical than printing from a heavy bed that must be moved forward and stopped, then started back and stopped. The offset press gives a continuous rotary movement that is limited in speed only by the capacity of the feeder and the quality of the printing required. All of these advantages are mentioned that we may understand why the offset press is coming into use and why it is affecting our business.

Process workers have always been ahead of the press builder until the offset press was devised. We have had such a struggle perfecting our present engraving processes and are so busy battling with one another to get business and eke out small profits, that this offset press has come into the field without attracting much attention from us heretofore. Now, when we find that much business formerly done with relief plates is being printed on the offset press and an increasing amount of business is going that way, it is time we were aware of this and be prepared to handle this business ourselves.

One reason why the offset press has

come in so quickly to take away much of our former business and create much new business, is that this press is operated most successfully by lithographers, who naturally have no great regard for our prosperity. For years we have been taking away their business, and now they have an opportunity to retaliate. Further, lithographers have always been secretive about their methods. Ten years of the best part of my life have been given to lithography, so that I had unrivalled facilities for knowing this subject. A lithographic transferrer, or pressman, would have his own secrets about transfer paper, inks and points about working that he would never think of confiding to his brother workman alongside of him.

On a trip across most of this continent it was my privilege to be invited to inspect all the photo-engraving plants in the cities visited, while I was not permitted to enter any lithographic establishments further than the office.

When I was requested to describe in a book the methods by which we photo-engravers could assist the offset pressman, in our neighbourhood, I searched lithographers' literature to find something bearing on process work as applied to the offset press, only to run across plenty of misinformation and much that was deliberately misleading.

The chief reason why little is known or printed about the offset press is due to its being utilised chiefly by great lithographic companies, who in several cases have the presses perfected in their own establishments and maintain in secret their own process departments. Though the photography for the offset press is practised in their own place, the relief plate engraving for their typographic presses is done by us after competitive bidding and most frequently at a loss to ourselves.

These great lithographic companies are

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quietly absorbing much of our business, besides creating new business. They now control many lines of illustrative work. They are busy at all times of the year manufacturing calendars, catalogues, booklets, magazine covers, blotters, labels, etc., their hope being that by keeping their business and processes secret they can develop large organizations and eventually drive us out of business. It is well for us to be awakened to these dangers ahead and prepare ourselves to meet them.

It would seem that one way to forestall these monopolies would be for us to prepare to handle offset process work, or photolithography ourselves, and either to use these planographic plates on our own offset presses or encourage our local printers to install offset presses and furnish them the plates they require. Many of our leading photo-engravers are already doing photoplanographic work for the offset press and our programme states that to-morrow morning we are to be favoured by an address by an expert on the subject, who will tell us "The Proper Basis of Charges on Photolitho-

graphic Plates."

These figures, that I have gathered, may give you an idea of the importance of this subject:

It was only seven years ago since the first offset press was installed in this country. It took a couple of years before sceptical printers were convinced that offset printing could be as good as direct printing. During the past five years 540 offset presses have been sold at \$3,000 each, and 160 presses at an average price of \$4,000 each, making a total of about 700 offset presses now running in this country, representing an outlay of \$2,260,000.

"Nor is that all. You may not have noticed it, but it is a fact that photolithography and the offset press are coming into greater use every day. Don't let anyone fool you that photolithography will never displace photo-engraving. This much is certain. EVERY ORDER THAT GOES TO A LITHOGRAPHER MEANS ONE ORDER LOST TO THE PHOTO-ENGRAVER."

FOREWARNED IS FOREARMED."

The Forthcoming Exhibition.

Why not a Process Engravers' Convention?

We seem just now to be in the time of Conventions, we hear of them for practically every purpose under the sun, especially for the discussion of Costing, till one almost comes to believe that costing is the principal thing for which businesses exist.

The Process Engravers' Association recently put out a Costing Scheme that seemed well adapted to the needs of most of the English houses, and in our last month's issue we re-printed a very simple scheme prepared for the American Pro-

cess Engravers' Association, so that by now it is in the power of every Process House in the country to install and work either system, both of which are at once simple and effective.

Is the day far distant when every Process House will make a Costing system part of their office routine? It requires a little determination and application at the outset to conquer the essential facts and adapt any scheme to the particular needs of the individual business, also an amount of steady application for a few months

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afterwards, to see that all is in order and working smoothly, but having once accomplished this, it requires the very minimum of attention daily so as to keep everything in perfect order; in fact, any ordinary typist can easily do the greater part of the work in her spare time.

Once the Heads of a House realise the value of the knowledge obtained by an effective costing scheme we are persuaded they would never return to the old system; in fact, it is a surprise that so many houses are content to go on from year to year with the most vague idea of what their costs actually are.

One of the greatest benefits that come to a house that uses an efficient costing system is the ability to discover the class of work that is the least remunerative and so know what kind of work to avoid taking and by reducing the unprofitable work to increase their profits without much alteration in their turnover, for why should certain customers who demand more for their money than they are willing to pay for be encouraged? A sound costing system will soon show the weak spots and in a short time these gentlemen will be compelled to pay a higher price than at present, because they cannot any longer purchase at the present price.

Are the Process Engraving firms of this country entirely satisfied with the amount of the profit shown by their balance sheets? From some figures we have seen we should say that some of them have every reason to be much concerned at the outlook, others we hear of who have just paid their way, some have made a small profit, but where are the Process firms that are doing really well? They are few in number, but hold a very influential place in the trade, and there is a very noticeable fact in this connection, viz., that they are not the houses that cut prices in any way, consequently it is manifest that cutting is not absolutely

necessary in order to gain success.

The Process Engravers' Association is making a move towards the betterment of prices, if the trade as a whole is united in the desire for such a betterment; here then is an opportunity for every house to join hands with every other house in the trade and make a bold and united movement forward. The Association has done almost everything possible to induce those outside its ranks to join up, yet there is about 50 per cent. of the firms outside its membership. Will that 50 per cent. come in? They will find that the firms already in the Association represent fully 75 per cent. of the annual output, so that by coming in they will be coming into the company of the best firms in the trade, and the added impetus of their membership will put further life and power into the Association and help to make it more powerful, putting new heart and soul into its work with a resulting improvement for themselves and every other house.

Is it possible to arrange for a Process Engravers' Convention during the forthcoming Exhibition of the trade at the Agricultural Hall early next spring? It is not too early to commence a campaign for such a Convention. There will be special trains arranged from the provinces, and how could Process Engravers spend a more profitable day than by visiting the Exhibition and attending a congress in one of the halls?

The American Process houses have just held their 17th Annual Convention, and they had a much more difficult problem to deal with than we have in this country, yet they have gone steadily forward and are now reaping some of the fruits of their earnest labours, and are in a great many cases securing for themselves a far greater share of the profits than heretofore. Of course, they have still to deal with the price and quality cutter, for he

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is not entirely eliminated, and, in fact, we have no hope that he will ever be quite killed, for there are always fools enough in every trade who seem to think that nothing matters but turnover. Get a big turnover, no matter how you get it, and you are sure to succeed. Was there ever greater fallacy? There is still much educational work to be done before some houses can be convinced that the game is not worth the candle.

Will the Process Engravers' Association rise to the opportunity and organise, or attempt to organise, a Convention during the Exhibition and make a bold bid to get in those at present outside? Surely a National Convention would strike their

imagination and go a long way to lead them to consider the matter, and once secure the co-operation of nearly every house in the trade, it will then be possible to meet the demands of unreasonable customers with a united front.

Of course, we do not promise the Millennium immediately. It may take a long time to educate some of the members, and the pace is restricted by that of the slowest member, but once we can get together and feel mutual respect for each other and put a fair amount of enthusiasm into the work of organisation we feel that the future of Process will be assured.

Shall we have a Convention at the Exhibition, or shall we not?

The Halftonometer.

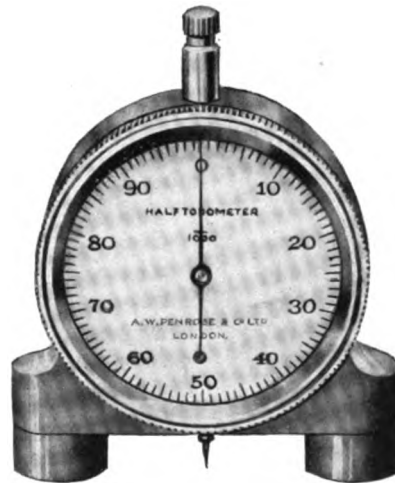
THIS instrument is designed and manufactured for automatically and accurately determining in thousandths of an inch the depth of halftones, line-etchings, curved or flat electrotypes and stereotypes, matrices, etc.

Depth in printing plates of all kinds has always been a moot question; and, in spite of its great importance, one that has heretofore been determinable solely by conjecture.

The Photo Engraver might insist that his plates were plenty deep enough for printing, or as deep or deeper than those of his competitors; but his insistence would be only a matter of opinion. With the Halftonometer he can prove it in a fraction of a second, and beyond all question.

What business manager of a newspaper is not frequently called upon to decide whether the engraving, the stereotyping, or the printing department is responsible for a disappointing appearance of the illustrations. Whatever decision is reached is always open to question. The Halftonometer will place the respon-

sibility in two minutes, and place it without argument. Measure the etching and



the curved stereotype plate therefrom, and a comparison of the figures will tell the story.

Why argue about something you can't prove, when you can prove the thing so that there can be no argument.

The Halftonometer is a necessity to every one connected with the manufacture

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or use of printing surfaces, and is an instrument carefully and accurately built to do its work for a lifetime. Each degree on the dial indicates 1/1,000 in., but for metric measurements should be read as

.0254 mm. Special gauges reading in .01 mm. can be furnished. Only a few of the many uses of the Halftonometer have been indicated, but even these few uses are sufficient to indicate its value.

Profit—Efficiency.

PROFIT is the net amount that you have left after paying all the cost of production and selling, including a proper reserve for depreciation and renewal and your own salary.

Are you getting a real profit?

Profits depend on your business ability and the efficiency of your plant. Low efficiency brings small profits.

Are your profits large enough?

The efficiency of your plant is indexed by the findings of your cost system. Without an accurate cost system you cannot know whether your plant is really efficient.

Have you an accurate cost system?

You are entitled to at least as much profit as similar investments of capital and energy are earning in other lines.

Are you getting it?

The Federation of Master Printers are endeavouring to teach printers that the first requisite to success is to know their costs. The Process Engravers' Association are doing a similar service for those engaged in the Process Trade.

If you do not know your costs write to headquarters, Cranbrook Chambers, Ilford, London, E.

✓ *Photo-Litho. "Transfer Paper."*

APROMINENT photo-lithographer gives the following hints about photo-litho. transfer paper:—

There is really no such thing as photo-litho. "transfer paper," in the usual understanding of the term, for the reason that when you reach the stage in the process where transfer paper is required the "photo" part of the operation is completed and you have reached the "litho." stage, and you proceed to transfer as with any other lithographic job.

What would ordinarily be called transfer paper is, in photographic process, merely sensitized photographing paper. This paper must be made fresh and used quickly. If exposed to the light or allowed to dry it becomes worthless, just as any photographic paper will if exposed to light. To make this paper, take a

smooth, hard, writing paper, equal to about 17 x 22—20, coat it with a gelatine solution consisting of gelatine and water in equal parts, and sensitize it with bichromate of potassium. A sensitizing solution can be prepared by dissolving one ounce of bichromate of potassium in twenty fluid ounces of water and adding sufficient ammonia to give it a bright orange tinge. Float the paper on this solution for about a minute. Thin down your transfer ink with turpentine and distribute it evenly on a composition roller. Roll up the print until it is completely covered and then allow the turpentine to evaporate. Soak this transfer in warm water for about ten minutes, rub it with cotton until the extra ink is removed, and put on the stone or plate in the regular way. —*National Lithographer.*

My Causerie.

Es STIMMT." "It tallies." A very simple phrase; but uttered once on a very memorable day. One day in the mid-sixties when Prussia and Austria were at war, Moltke woke the King in the middle of the night as he lay in a little inn. He proposed to send an adventurous rider to the Crown Prince to bid him hasten so that his troops might come upon one side of the enemy by at least the next afternoon. The message got through. The fight of Sadowa was grim and great; and the Prussians were over-weighted in some directions. But at long last Moltke's glass detected on the hill what might at first be deemed to be strange furrows, but were moving men. The Prince was swiftly coming. The trap was soon to be complete; with the Austrians attacked front, flank and rear. Moltke quietly put up his glasses. All he said was "Es Stimmt." "It tallies." Sadowa was won; and Austria was beaten and forced out of the German "Bund."

We are constantly having to, or are constrained to, make calculations or forecastings. We cannot always say "Es Stimmt." I have just been turning over pages of an 1874 *Lithographer*. I find an old worker, I mean one who was then already an old worker in other illustrative fields writing: "I can assure you that this simple substance of bichromate of potash, in combination with organic substances such as glycerine, glue and gelatine, is destined to produce at no distant day astounding results. I look forward hopefully to a process of printing that will give us our morning illustrated penny paper of the events of yesterday." Even he dared not suggest, or didn't suggest, the halfpenny paper. The words

morning illustrated penny paper he italicised.

There was his seeming over-bold calculation; and now "Es Stimmt."

Again I find the editor writing: "All that we can reproduce is a picture drawn in line. A little reflection will show the reason for this. . . . The lithographic stone cannot discriminate between shades of colour; as every artist knows, it does not matter whether one part of his drawing may be done in lighter ink than other parts, and that he cannot increase depth by laying on more black—the stone takes a certain uniform quantity of ink. The same thing applies to wood engraving. Tone must be got by the admixture of pure white, and this is done by hatching, stippling, etc. Anything in the latter styles can be reproduced in photo-lithography, but nothing can be done with an ordinary picture from nature."

The editor puts a footnote to this article. He writes: "An attempt has however, been made to produce photographs of non-line objects in half-tone by means of a grained stone and breaking up with a network. Mr. Woodbury is experimenting on the subject at the present time."

Mr. Woodbury was a sort of Moltke of the time. He, too, saw far ahead. And though he may not have lived to see the triumph, the triumph has been won. "Es Stimmt."

What a very long way we have had to go, we may realise by recalling how the morning illustrated paper of those times was produced; for a morning illustrated paper was actually appearing.

The whole outside of the paper (the *Daily Graphic* of New York), the part containing the illustration, was printed

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from a litho. stone or zinc plate as large as the newspaper. Any letterpress occurring on this side of the picture was litho'd, as well as the pictures, by the aid of the camera and the transfer process.

When one stone had been prepared for an edition the pictures were transferred to as many duplicate stones as might be needed to supply the presses.

Six, eight or ten litho steam driven presses might be kept running with transfers. After the outside was printed the inside was run through a six-feeder press to receive the news, leaders and literary matter generally.

At the same time some blocks were already being made by photographic action, and were finding place in another American journal. That, I take it, was experimental work. It was possibly regarded as merely a wild fancy. Yet it is of the forecasting in the block making, however slight the scale of the work, and not of the policy and plan embodied in the lithographed *Daily Graphic* of New York, that we can now say "Es Stimmt."

The words can hardly yet be applied all round. The trades' rewards are not in due correspondence to the technical progress and to the labour involved. But that, too, is being righted. There, too, we shall surely be able to say before long "Es Stimmt."

F. COLEBROOK.

A CHANCE FOR AN ENGRAVING. — Bernard Shaw declares that the finest view in the world, next to that obtainable from the Star and Garter Hotel, Richmond, is to be seen from the third arch looking east, of Charing Cross Railway Bridge.

PLATEN PRINTERS OF THREE COLOUR HALFTONES will be interested to know that quite a large number of Haddon platens have been ordered for the United States of late months, the high duties notwithstanding.

THE NEWSPAPER AND PERIODICAL printing houses of the country employ 45,000 manual workers, and have an annual output of £13,237,000.

SWAIN'S QUARTERLY is certainly the best house journal issued by the process trade, and reflects the highest credit upon the house and those responsible for the issues. As an ordinary one shilling magazine, it is worth the money for the interest and beauty of its contents. Its dignity and refinement must appeal strongly to every lover of illustrated work.

Of course its object is to show the quality of the output of the house, and in this respect it should be of inestimable value in bringing golden return.

FOR those having business relations with India Khoslas Directory of India, Burmah and Ceylon seems to be invaluable, as it contains practically all the information needed by those who find a fair portion of their clientele in that country.

It is the Official and Commercial Directory for Bombay, Burmah, Ceylon, Madras and Calcutta, and has full information relating to the following trade houses:—Tea, indigo, coffee, cocoa, fibre, pepper, rubber, minerals, railways, banks, etc., etc., together with full information re the Customs, stamps, Government appointments, native States, Governors and Rulers, etc.; and a complete list of newspapers, hotels, clubs; and, in short, we seem here to have everything that is essential to the English house doing business with India.

We heartily recommend it to our readers and will gladly procure it for any house requiring a copy.

THE ENGINEERING GAZETTE.

WE heartily, very heartily, congratulate Messrs. Marryat and Place upon the production of so highly interesting a house journal as that issued by them; a weekly issue, well edited, well printed, well illustrated, and upon remarkably good paper. It is certainly a model of what such a journal should be, and reflects upon them the highest credit, and we shall be very much surprised if they do not find a very adequate return from their enterprise.

This London firm is well known in the engineering world and bears a reputable name, and this journal worthily maintains that reputation.

The Foundry.

By Ion.

MR. J. A. COREY has returned from his month or five weeks in the States. He found that we cannot do anything in this country comparable with what the United States can do in the way of heat waves. Perhaps his misfortune in "striking it," or having it strike him right in its intensest strength, had something to do with his not carrying through more than half his foundry-visiting programme. The head of Eyre and Spottiswoode's plate-making department would have been welcome enough anywhere and everywhere, but he simply "couldn't get round." What he did see, however, was interesting enough, and I hope he may be induced to tell us something about it.

This simple announcement will have interested many in the duplicating world:—Posener, Walters, Harris and Co., Ltd. Private company. Registered, with capital £1,600 in £1 shares, to carry on the business of colour, process and half-tone engravers, photo etchers, stationers, printers, etc., and to adopt agreements with L. Posener, G. Walters and H. Harris and with F. T. Rachel. The first directors are L. Posener, F. T. Rachel, G. Walters and F. Harris, each of whom may retain office while holding 200 ordinary shares. Mr. Louis Posener, long-time head of the Henschel electro and stereo foundry in Goldsmith Street, E.C., is the first of the above-named directors.

It is not in human nature that any prominent business concern should desire to face new competition, but the head of the Henschel firm is a philosopher, as well as a plate-maker—I might almost say is a philosopher because he is a plate-maker—and he will not lose sight of the fact

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that there are forty million people in this Kingdom, and that there's a good deal of room for all our foundries.

Besides, there's always room on top.

Holland's "Metal Memos.," issued by Holland & Co., the metal merchants and refiners, of Marlborough Road, S.E., has a paragraph which may surprise some readers. We read: "Holland's Monotype standard metal is arrived at after practical experience of Monotype machines and of what is required to ensure sound type and smooth working. Holland's receive 1 cwt. and 4 lb. of metal from customers, refine it and return 1 cwt., losing only 4 lb. in the process. Yet it is common talk among people familiar with metal that 5 per cent. Monotype metal is lost in every ordinary refining. Very likely it is, and often perhaps the loss is greater. But that is just where experience and special study and care can show their value to a customer."

I imagine that many have been dealing in metals on and off for years, and have not realised that the loss in refining can be brought so low. Five per cent. loss is the figure which has been mentioned in this year's various printers' cost congresses up and down the country, when the cost of the foundry has come up for consideration.

Another paragraph, too, is significant. We read: "Monotypes have been condemned as unprofitable for the lack of proper metal handling. The handling, that is, to give just the right flow, to make the metal fit and free, metal that will not block up the nozzles."

It is true that non-flowing metal stops the nozzle of a Monotype, or clogs a Linotype or Typograph. Badly blended metal causes sinks in your plates, and generally they occur in the middle of the plates.

There's a dash of sauce in the claim Holland's make that their metal has won

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its good repute for all purposes through its being compounded of four ingredients:—1, lead; 2, tin; 3, antimony; 4, know-how. "Metal made in that way will flow all right. If stereo metal won't flow, gold must. Not that even the outflow of gold will cure the trouble. There is only one remedy for badly composed metal, and that is, not to compose it badly."

Is enough attention paid to the proper "fan" ventilation of metal pots—Linotype, Monotype or other? If the owners will not seek this from considerations of purity of the air, they may have to see to it to prevent the pipes becoming blocked up.

Petrol seems to be coming in as a

heater of metal in the Linotype pot where artificial or natural gas cannot be obtained, or as a substitute in an emergency. The "Newspaper World" says that "if used with ordinary intelligence it is just as safe as gas. To obtain the best results from petrol it must be converted into gas and then used in a manner similar to artificial or natural gas. A burner has been devised which performs the whole operation, and still is so small that it takes up no more room than the regular gas burner. The petrol tank which is furnished with these burners holds six quarts of fluid, but a larger tank can be used if desired. The burner, etc., is supplied by Linotype and Machinery, Ltd."

✓ *Intaglio from Day to Day.*

THE point is sometimes raised as to why letterpress printing from the engraved cylinder in rotary gravure work is not sharper. Perhaps we should rather say that the disposition is to accept a certain bluntness as inevitable in view of the nature of the printing. What seems to be the case is that something of bluntness derives from the type-matter having to be photographed from a proof. The proof is often rather too full of ink; and it may be that the impression is rather needlessly heavy. This becomes intensified in the photographic process. It becomes further intensified in the

actual printing. It is now up to ingenuity to devise a better method of getting the text on to the cylinder. When we reflect on the exquisite lines of ordinary hand-copperplate work, it will be seen that there is nothing in the nature of the case to involve dullness and bluntness in type printed intaglio from the cylinder. Once this type is improved, it follows that there is likely to be in intaglio a very formidable rival to the letterpress machine. The more so, that practically any kind of paper can be readily printed upon by this method.

The August issue of "The Theosophical Path" (Katherine Tingley, Editor, Point Loma, California) is an exceptionally attractive one. A mere glance at the contents: "Peace and War," "The Modern Platonists and Theosophy," "Brighter Britain" (illustrated), "Symbolism of Indian Basketry" (illustrated), "The Ruined Abbeys of England" (illustrated), "Personality in Art," etc., is sufficient to arouse wide interest, while its splendid illustrations are at once a

delight and an education in themselves. These include authorised reproductions of four of the most celebrated pictures in the Walker Art Gallery, Liverpool: "Faithful unto Death," "Dante and Beatrice," "Ruth and Naomi," and "The Goose Girl." For the sake of these splendid illustrations alone—truly works of art—if for nothing else, the magazine is worthy of a place in every home. There are also fine views from Colorado and from Munich, Germany.

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AND ELECTROTYPERS AND STEREOTYPERS REVIEW.

Photography in Difficult Places.

We give this month the conclusion of the lecture by Mr. Lane, the official photographer to the London County Council, and the L.C.C. Photo-Engraving School, at Bolt Court.

Mr. Lane showed as one subject a shop in the Strand. This illustrated the difficulty of getting a good photograph of a building where there was a large vehicular traffic and very many people passing. He stood in the centre of the road about three-quarters of an hour. He was working a 5 in. by 6½ in. lens. A three or four seconds' exposure in all was wanted; he had to keep continually capping to "stop out" figures of people passing by.

In a study of a fire scene he noted that unless one was very careful there might probably be halation of the white space between burnt wood. He was called upon to photograph a chrysanthemum display and there he took pains in arranging the flowers to get some of the best of them at the front. As always, he had to study how to make not simply an exact photographic copy of the article or articles, but how to make the best picture. Tact was greatly needed by the operator. Particularly he had found this necessary in work in the East End. He might have to do some

street scene. No sooner had one set up one's camera than a crowd gathered round. He had had to stay in the street quite a long time before he got friendly enough with the people to be able to get just the kind of photograph he wanted. It would often happen that it was desirable to get figures in action in a photograph; figures either engaged in the ordinary action of daily life, their daily coming and going, or possibly shown as exercising some particular activity to illustrate an operation.

In photographing moving spectacles and the like, if you cannot get a good position from a ground level, always see if you can work satisfactorily from some elevated position. Vibration will not trouble you, because you are working at a fairly high speed. In cases of probable difficulty, if possible, one should have a look at the spot beforehand, and make a trial exposure; it will teach one a lot. Be quite sure you don't pot away aimlessly. Always save one plate in ceremonial work; an incident may occur to demand one more exposure.

Mr. Lane is often called upon to make a photographic record of some road surfaces—of some "creeping" or cracks or otherwise broken surfaces or bad laying; some mischief at work in the roadways.

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In this case there were wrinkles as to the particular way of manipulating the tripod, as to which it would be best for the reader to refer to Mr. Smith at the School. It is better demonstrated than described.

One might want a tilting table; but the camera could be angled by tripod movements. The front leg could be brought to the back; conversely, for looking upwards, two back legs could be brought to the front. Marks on the roadway could perhaps be washed out, brushed, blacked in, or whitened in, or oiled or polished.

It was necessary sometimes to depict some exact markings on the surfaces of rails of tram lines in a subway. This meant rather a long exposure, and, further, the job could only be done between times; the tram running had to be taken into account. The distinction between the dull and bright parts of the rails had to be shown in full contrast. Apparently the tram jumped upon them a little; there were corrugations about $1/16$ th of an inch apart. In this case he first made a mistake of attempting to illuminate a too great length of the rails, about 45 ft. He decided afterwards that 10 ft. was about as much as he could usefully illuminate. He found, too, that having two lamps for the illumination in this case was not so good as having one good lamp. One flash seemed to annul the other. Illuminating the track from the rear of the camera was no use. He set the lamps higher than the lens and was very careful not to shake the lens.

A light above the camera; work by reflected light; the due angling of the camera and the due shielding of the lens from the light—these, then, were hints for such a task as photographing tram line corrugations or anything presenting approximately the like difficulty.

In panoramic work, when he has to

take in a very wide area, Mr. Lane's usual practice is to swing the camera and make two or three plates and join them on. He showed a large subject compounded of three plates thus joined. You must set the camera at dead level. He took a mental note of where he thought the overlapping would come, and he allowed a trifle for trimming. One should try to join up on suitable objects, such as pillars, columns or trees. Use sufficient plates. If three might just do, it would be well to use four. Don't use a wide-angle lens; it distorts so. Mr. Lane recommended one, say, of 15 in. focus for this work; on a 12 by 10.

In photographing doorways one should not forget the deep shadows. Here, again, if a position on the floor level will not serve, get high up. To get the detail of a certain curved doorway he got up exactly on a level with it.

A ladder was very useful to a photographer in a crowded thoroughfare. There must be full exposure for projections. One should show a "return," if possible, where signs hung over a doorway. Sometimes the exposure in such cases ran into minutes. You might control the exposure by a shutter or by use of a bowler over the lens. Mr. Lane touched on Scott joints and "universal heads" in this connection.

At times one was called upon for a photograph of cracks in buildings. Cracks must not be unfairly treated; they must not be magnified; but that being remembered and acted upon, cracks still could be prepared for being photographed by cleaning out, by brushing out, by rubbing with white or black, by damping, or by cleaning down the surface surrounding the crack. Flashlight was sometimes useful, giving good contrast, and bringing out the full depth of the crack.

In interior work one had often to deal with rooms with windows; also rooms

which had heavy cast shadows, and again with rooms with human figures. Of course, one might have all these and other things to deal with. He used in this part of his work Imperial ordinary and Imperial special sensitive plates.

All his indoor work was done with Imperial special sensitive orthochromatic plates. A little flash powder might be used to bring up heavy shadows. Old houses usually had narrow passages, low ceilings, and steep and winding staircases, and small windows and dark surfaces, and this necessitated long exposure. It was difficult to get enough in the plate to make an adequate, clear illustration. It was difficult to operate the flash light, especially under the stairs; but there was always a way out. Windows might be covered with an opaque material or one might draw the venetian or other blinds. In extreme cases a flash would help. Rooms with figures required a quick exposure. If the light was poor, artificial illumination was imperative. About 4 secs. was the limit during which a person could stand still. About twenty seconds seemed to be the limit during which a person could sit absolutely still. Explosive flashlight was instantaneous. Rooms with windows and cast shadows required further illumination, either by reflection or by artificial light—arc, magnesium, wire or flash. Very dark rooms naturally demanded artificial lighting; for focussing he generally used a lighted taper to find his points and final focus up. The best view of a room usually included the windows, and usually caused the photographer the most trouble. In museum work the avoidance of reflections was imperative and often troublesome. At times objects in the foreground had to be cleared, and could be cleared by raising the camera.

In photographing interiors by screened daylight he covered up all windows in-

cluded on the focussing screen and used the daylight from the remaining windows or open doors. He then uncovered for anything from 2 to 15 seconds to get the impression of the windows on the plate. The covering material used should by preference be opaque.

In church work it might be necessary to work on the very altar steps. Here and in other interior work it was often a question of adjusting the camera till one got the least reflection.

If you get any daylight at all in a difficult subject, use it; if there is only a trace—use it. It runs into the rest of the lighting. Then you can put a flash in at the end.

In engineering rooms one might rig up some sheets of tracing paper in front of the lighting. One must be careful about getting the paper burnt; which might set the whole place on fire. If you could use the lamps in an engineering room, avoiding cast shadows, it was very desirable. Mr. Lane also showed ways of screening arcs with brown paper and making use of them. The light of a basement in which this was done could hardly be distinguished from daylight, even at 10 o'clock at night. Whether the lamps were set high or low made a difference.

Mr. Lane showed a photograph of a basement with three windows and a door on the right. He closed up two windows entirely, worked with one and then used a flash. In that case he used a second flash. In a dark cellar he exposed for 20 minutes and then finished with flash powder.

He had to photo. a subterranean passage with two manholes, which provided its sole lighting. In the first day he used $\frac{3}{5}$ th of an ounce of powder, and he left the camera exposed for in all three days, and gave in all four flashes; the picture was not over-exposed.

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Speaking generally of flashlight, it was primarily for dark rooms and quick working. It was very useful where figures were included.

There were some Todd Forrett lamps open and closed, working with an automatic (clockworked) magnesium wire apparatus. These lamps were not generally known, but he had got one there for the students to see. The lamp was useful in some cases. An idea embodied was that of blowing through magnesium wire.

The Opal type, Weiss lamp (open or closed) was next mentioned. Mr. Lane exhibited an adaptation of a Weiss lamp; there was a telescope stand. The whole thing was composite and its pieces were readily put up together. It was heavy; and if one happened to drop a part there might be trouble. He did not consider it as at present a practicable thing and one to recommend.

Regarding flash powders, Mr. Lane spoke of Argentoral, a substance probably related to aluminium; it sold at 5s. per 100 grammes. The "Ideal Powder" cost 4s. 9d. per 100 grammes; and Agfa, a magnesium powder, cost 5s. 3d. per 100 grammes. He considered Agfa the best of commercial powders. The smoke was slight; it created a thin blue haze. The firing was rapid. Its hygroscopic or damp-absorbing qualities must be remembered. It must be kept perfectly tightly bottled.

He made his own magnesium. It must not be hammered in a mortar. In grinding one must have a clean mortar. His formula was:—

Magnesium	...	...	500 grs.
Chlorate of potass. pulv.			300 grs.
Charcoal	...	...	80 grs.

It cost him 9d. per oz. approximately; and was much cheaper than commercial powders. Care and common sense were required in the compounding of any flash powder. Chemists told him that the

compounding of his own as above detailed was dangerous. In his case there had been no mishap in manufacture during five years. One mustn't smash or bang nor grind too forcefully. One must err on the side of safety. However, it needed a good deal of force to explode it even with an anvil and hammer.

The greatest value was obtained when the lighting was behind the camera, but there might be the inclination to flatness. One must light according to one's subject. No hard or fast rules could usefully be laid down. One should generally light a little to the side of the camera.

One must beware of fog from a light from the flash striking the lens. One must beware of cast shadows being too apparent. One must beware of burning fabrics or ceilings. One must beware of blackening distempered walls and ceilings through flames coming into contact with them. No harm would usually come to white-washed walls. One must beware of mishap to oneself.

Train the powder in a long, thin line; and fire by wool or touch paper. Electric lighting by a small arc from coil and accumulator was the best mode. We had not yet got the ideal electric apparatus for the purpose. Keep clear of the lamp yourself. Automatic firing Mr. Lane considers is liable to prove dangerous; on the whole, he thought electric lighting was the best method and the least likely to cause a premature explosion.

Over exposure was rare in purely flashlight subjects. It could, however, arise at times, and did arise when one employed both daylight and flash powder. In this connection one must consider the size of the room, the contrasts, the colour of the walls, the amount of daylight, if any, and also if there were any animate figures. Remember that the light always falls rapidly. Set the lamp high, but don't forget the ceiling. The smoke nuisance was,

(“The Process Photogram.”) Oct., 1913.

no doubt, a drawback. He might later say something about smoke bags.

Small interiors could be lighted at times satisfactorily by Tantalum lamps, say, by two lamps of 50 c.p. He spoke of doing a piece of work under such conditions at f.22; with plate 275 (Imperial S.S. orthochromatic); a 12½ minutes' exposure.

He had to photo. a saddle-type boiler; he worked by a focussing light from a taper inserted through a bottom plug. His lighting was by two 80 c.p. Tantalums.

One had to guard against fog through

the light in such close quarters striking the lens.

In cases of flashlight alone, f.22 served him pretty well; in case of flash, plus daylight, he used f.32.

Mr. Lane emphasised that the use of a few printed warnings, to be placed near the spot where he was photographing, were in general very efficacious.

This long and most comprehensive lecture was listened to most intently, and was most warmly appreciated, and Mr. Lane is sure of a very hearty welcome on his return to the rostrum at Bolt Court.

Mr. Bawtree's Process at the Royal Photographic Society's Exhibition.

ONE of the most interesting displays at the exhibition of the Royal Photographic Society, at the rooms in Suffolk Street, near the National Gallery, was that in which Mr. Bawtree demonstrated what can be done by his process in the way of production of colour transparencies. Mr. Bawtree, we may mention, has been one of the most appreciated lecturers at the L.C.C. Engraving School, and he has had quite special experience in connection with bank note and related engravings. Cheque tint grounds figured among the prints shown in this exhibit. It was described as “an original process for the production of colour transparencies.” The process consists essentially in printing the image in fish glue and colouring with aniline dyes. The claims to novelty are: (1) The discovery of the fact that while few dyes will alone impart to the fish glue image any depth of colour, certain dyes have the power of precipitating one another into the film, and so enabling any required depth of shadow

to be secured. (2) The selection of suitable dyes to yield the full range of the spectrum, and also a large variety of mixed shades. (3) Discovery of the suitable insulating medium to support successive printings upon the same glass. (4) Discovery of suitable means for printing a design upon the covering glass of the lantern slide, so that it will register with the other portion of the slide when bound up.

To colour the print it is soaked after washing in the first dye, rinsed well, in order to clear away the bulk of the adhering dye, without completely removing it from the film, and then soaked in the second dye.

The process may be repeated several times, if necessary, in order to build up sufficient depth of colour.

“The tablets in the whole of the two top rows of the exhibit, and all but two right-hand ones in the third row, give formulæ for the various colours. This represents the result of experiments extending for over five years.” The tablets

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referred to are as under :—

Claret.—Soluble blue, 1 per cent. ; Methyl violet, 3 per cent. ; Auramine, 0.3 per cent.

Violet.—Soluble blue, 1 per cent. ; Methyl violet, 3 per cent.

Deep Blue.—Soluble blue, 1 per cent. ; Methyl violet, 3 per cent. ; Malachite green, 5 per cent.

Blue.—Soluble blue, 5 per cent.

Peacock Blue.—Soluble blue, 5 per cent. ; Naphthol green, 1 per cent. ; Malachite green, 5 per cent.

Blue Green.—Naphthol green, 1 per cent. ; Malachite green, 5 per cent.

Myrtle Green.—Brilliant yellow, 1 per cent. ; Chrysoidine, 2 per cent. ; Soluble blue, 5 per cent.

Grass Green.—Brilliant yellow, 1 per cent. ; Chrysoidine, 2 per cent. ; Malachite green, 5 per cent.

Yellow Green.—Naphthol green, 1 per cent. ; Malachite green, 5 per cent. ; Auramine, 0.3 per cent.

Lemon Yellow. — Auramine, 0.3 per cent. ; Aurantia, 2 per cent.

Orange.—Brilliant yellow, 1 per cent. ; Acridine, 1 per cent.

Deep Orange.—Brilliant yellow, 1 per cent. ; Chrysoidine, 2 per cent.

Buff.—Rose bengale, 1 per cent. ; Auramine, 0.3 per cent.

Orange Red.—Rose bengale, 10 per cent. ; Auramine, 0.3 per cent.

Scarlet.—Rose bengale, 10 per cent. ; Auramine, 0.3 per cent. ; Rose bengale, 10 per cent.

Deep Red. — Rose bengale, 10 per cent. ; Auramine, 0.3 per cent. ; Rose bengale, 10 per cent. ; Chrysoidine, 2 per cent.

Grey.—Dust undeveloped print with plumbago. Then wash whites clean.

Blue-Grey.—Grey, Blue.

Green-Grey.—Grey, Grass green.

Warm Grey.—Grey, Brown.

Brown.—Acid brown, 2 per cent. ; Bis-

marck brown, 2 per cent.

Pink.—Rose bengale, 10 per cent.

Some colours are most conveniently carried by successive printings from one negative, as in the case of certain Clarnico advertisements (exhibited).

The process would be but of limited use if it were not possible to superimpose successive printings, as shown in the cases of the three-colour print (in the exhibit). For this purpose a varnish was required to be quite impervious to the dye solutions, on account of the strong reactions which they exercise upon one another. The varnish should also hold the fish glue image when strongly heated, if the transparencies are to be used for lantern slides. Crystal varnish, and many others possess the first qualifications, but cause the film to crack when heated (as shown on next table in the display—a very marked, nearly inch-long crack in about a two-inch tablet).

Collodion fulfils the second condition, but not the first. A successful medium was found in first coating with the rubber solution, about twice as thick as is used for wet plate stripping work, backing quite dry, and then coating with collodion again, backing dry without washing out the solvents. Where the original is symmetrical, as in many geometrical patterns, stained glass windows, etc., it is most convenient to print two-colour work upon two separate glasses and bind together. For this purpose a print is made upon larger glass, 5 in. by 4 in., for a lantern slide, for example. The two are clipped together in register, pieces of combined strip are stuck on to the larger one, just touching the edges of the smaller. The latter is then removed and the larger glass cut down to the size indicated by the inner edges of the strips.

Uses for the process may be set forth, as follows :—

The preparation of transparency from

process negatives, either in line or half-tone.

Producing lantern slides of stained glass windows, various colours being roughly selected by means of suitable light filters on to panchromatic plates, and the selection completed by blocking out with opaque pigments on the negative.

Reproduction or production of maps in colour for lantern slides. An ordinary negative of the map is first made, and from this a sufficient number of enlargements, one more than is required for each colour printing.

The line work on this one is touched-up well, while the various colour sections are painted in in solid black on each of the others. Negatives of the required reductions are made from these enlargements from the first print, made upon an ordinary lantern slide and varnished with the rubber and collodion.

The lines are blocked out of the others and the colour sections successively printed from them.

A cheap and accurate process for the preparation of chromotrope lantern slide components.

The reproduction for projection purposes of the geometrical engraving work

used upon bank notes.

A rapid method of preparing light filters of any absorption. An optical flat is not distorted by the fish glue film, as it would be by one of gelatine, and the covering glass can be bound on at once with any cement. The production of certain lime-light tints in much greater variety than has been possible with stained glass. The preparation of screen plates for colour photography. The manufacture of dark room safe lights, more durable and heat-resisting than those of paper or gelatine film. Rainbow work in two printings.

(1) Yellow ends by dipping, and pink centre washed on.

(2) Blue green ends by dipping, centre undyed.

Two symmetrical printings, one on each printing glass. Fine register work in two printings. End colours in each case obtained by dipping. Centre colour washed on with cotton wool. Fine register work in two printings. Third colour obtained by two workings, being printed over one another.

Combining silver and colour images. Silver image by wet plate on one glass. Orange red tint on covering glass.

WILL YOU PAY THE PRICE?

AMONG every man's acquaintances is someone of whom he says:—

“Look at that brilliant, successful fellow. See where he is to-day:—widely known, prosperous, a big man in the (?) Organization. I wish I had his luck.”

But success isn't a matter of luck.

What is the reason one man rises higher than another?

Isn't it, after all, just a matter of paying the price?

Successful men pay well and willingly for their attainments.

They pay in long hours of work and study.

They pay in responsibility and discouragement.

They pay in economy, monotony and energy.

Have you, like they, put a life-time of thought and care and productivity into your work?

Have you hung on in the face of obstacles, and won in the face of failure?

Have you curtailed expense: abjured luxury and done without what other men call necessities?

Have you fixed your mind steadily on the single object of your pursuit, refusing temptations to divide your time?

Have you shown patience and accuracy in planning and executing?

In short, have you paid the same price that the other man paid?

Whenever you are lax: whenever you do less of these things than you are capable of doing, you are trying to buy success at a bargain rate. You are trying to get something for nothing.

If you really want success, go into the open market and, in the face of competition, buy it.

The Cost of Long, Narrow Plates as compared with those of Normal Size.

An Address by Mr. F. P. Bush to the Indianapolis Convention.

DID you ever notice the big man as he passes along the street—how the crowd separates and gives him a free passage in a straight line? Unconsciously we are impressed and awed by his size and get out of the way. Did you ever see a street crowded with people and notice what happens when a column of well-drilled soldiers comes marching down?—The crowd scatters. Why? Because the body of soldiers represents size and momentum and consequently power.

We engravers represent an unorganized crowd. Mr. Big Plate represents the Big Man and Mr. Minimum, because of his numbers and bunching together, represents the body of soldiers, and we've been getting out of the way of both of them for a long time. The crowd is beginning to learn, however, that size and power must be opposed by organization and strength, and occasionally the minimum column bumps up against a counter-marching column of cost system and gets a jolt.

The Big Fellow, however, still has us bluffed, because he's gone straight ahead with little noise and because there are so few of him and his laugh and talk are so pleasant that we naturally welcome him as a friend.

It is the purpose of this discussion to look him over, take his measure, find his weak points, then stand up before him as man to man and make of him a better friend than ever.

In the production of printing plates,

half-tones, zinc etchings and electrotypes, it is well known that there is a constantly decreasing cost per inch as the size of the plates increases, but how many of you know that there comes a point, as the size goes up, where the decrease in cost stops and an increase begins?

Even our Cost Commission, with all its accumulated wisdom, had overlooked the fact, because, as before stated, the great big fellows are so few as to attract no attention except as a curiosity.

In my shop we have run into quite a number of orders for big panoramic pictures, made six, seven and eight inches high by thirty-six to fifty inches long, and before the advent of the cost system thought they were big profit-producers, but we've found out something.

The Big Fellow is a nice fellow, usually a mighty nice fellow, if we will only meet him half way and give him a chance to show how good he really is.

Let's take him as he is and not try to belittle him. Let him be a sport, big in price as well as big in size. Let's analyze a few of the big fellows and find why they are not cheap either in cost or selling price.

COPY.—All of these long, slim fellows come in rolled up and sometimes wrinkled and edges torn. They must go to the art department and be mounted on extra large, heavy and expensive board and usually require more or less retouching and must be scaled and proportioned for the operator.

("The Process Photogram.") Oct., 1913.

NEGATIVES.—Always two, three or four negatives are required, and the greatest skill of the operator must be used to preserve a uniform colour, especially where the negatives patch, and make-overs are not infrequent.

STRIPPING.—The stripping and matching of big negatives require a lot of extra time not required on one-negative plates.

PRINTING.—All extra large plates require extra time, and the time of at least two men to coat and flow the plates, and in many instances the first coating is not a success and has to be done over the second time. The average whirler will not handle these plates, requiring special apparatus at an extra cost to buy and rig up.

PRINTING FRAME.—If a special printing frame is bought for these plates, it is seldom used, and eats its head off in interest on investment. Then glasses have been known to crack.

ETCHING AND FINISHING.—We have made many panoramics containing five hundred to one thousand people. Do you get me on the re-etching? Where the negatives patch, some tooling and bur-nishing are sometimes required, and it isn't a question of minutes, but often takes the good part of a whole time ticket.

ROUTING AND BLOCKING.—None of these big plates can be trimmed on a beveller, so have to be outlined by hand, routed at a big expense of time and trimmed and lined by hand at a finisher's hour cost. The making of a block for one of these big plates is no small item, as

you will see if you get it made on the outside, and it will cost you just as much to make it yourself.

PROOFS.—Usually more than one proof is requested. There isn't a proof press made big enough to prove one, and it has to be done on a cylinder and costs more than five cents, the ordinary charge for extra proofs.

Sometimes big plates are made in pieces and soldered together. This does not reduce the cost and is never satisfactory to the customer.

EQUIPMENT. — One source of reduced profits to the engraver is in equipment investment that cannot be kept constantly busy, and this especially applies to equipment for extra large work. We all know that it doesn't pay to use extra large apparatus of any kind on ordinary work, so we must figure into the cost enough to cover, not only original investment interest, but a very rapid depreciation, because apparatus, even when not in use, is depreciating, and this depreciation must be covered by the very few big fellows who come along. As the big fellows are big, they can easily carry the load if we will only give them the chance.

We have not as yet been able to produce any of these plates at less than eleven cents, and thirteen is more nearly the correct price. If the selling price is made on the actual area of the plate, it should be not less than twenty cents per inch. The better plan, however, is to use one-fourth the length for the width and sell for a lower price per inch.

MR. SHERWIN—addressing a gathering of business men the other day—dealt with the form letter as a "great stimulant at different periods, particularly when a new territory is being opened or a new speciality is being launched."

BETTER LET IT BE 'BUSINESS MANAGER.' The magic word Sales before the Manager makes the prospective purchaser suspicious that you want to sell him something, and the message does not get by the censor."

✓ *A New Idea in a Specimen Book.*

THOSE who handle the 1912-1913 "Examples of Work by Students attending the St. Bride Foundation Practical Printing Classes" will find towards the end of this delightful portfolio some examples of lay-out sketches by typographical students. What is new is that these efforts have not been carried through all the stages of hand composition, imposition and press work. Instead the students have lettered their designs, which have then been printed by offset. They have lettered the designs undoubtedly with more care than would ordinarily be expended upon this stage of the job.

It is a long day since it became an accepted counsel in the trade that the young printer should use his pencil to realise on paper what he was proposing finally to realise with impressions from metal, and, probably, in no self-respecting printery is any job which it is intended shall be a special credit to the office, embodied in actual composition without just a little preliminary pencilling. Here, accordingly, we have the sketching carefully done in pencil.

The next stage, as stated, has been that prints have been made by rotary offset process. We have here eleven subjects treated in this way, three of them with black and red. The lettering includes pure Latin and bold Latin "text," Cheltenham style, upper and lower (that is type with long ascenders and long descenders, and with the middle portion laterally compressed). Three instances only of sans do we note in the whole of the subjects, and they are of quite subordinate lines. It is obviously recognised that the Latin letter with its serrifs, if it be not ill-drawn and unbalanced, is the

most graceful of all. The lettering inscribed nearly two thousand years ago on the Trajan column in Rome is at this moment, as it has ever been, an accepted guide in graceful lettering for artists the wide world over, and its influence is very marked in the work of these young students.

The offset printing method now adopted has some obvious advantages. The students can realise more accurately and more conveniently than they otherwise could, just how their work would appear if they had the opportunity to see it in type. At any rate, what is offsetted will be accepted as a fair, if faint, reflection of the full strength, definiteness and vigour which the type would give it. Speaking broadly, we would say that there does not seem to be a bad example in the lot; and the use of the red, where it occurs, is quite effective; particularly in the two Selfridge headings. We are not so keen upon the red as we find adopted in two broad lines across the card advertising some printing rollers.

It will perhaps be asked, why not have reproduced these subjects by ordinary engraving? The answer is that it was thought well to make prints for them which should give as much of the feeling and character of pencil drawing as might be practicable. This could be very well done by offset litho with its capacity for printing upon a very rough surface paper. Actually the papers which are employed in this instance are of that character, almost suggestive of being blotting sheets. The creamy tone of the paper adds its own charm.

All the lithographic work in the volume has been produced on the rotary offset machine recently installed in the St.

Bride School. This includes the reproduction of these typographical students' lay-outs for composition. These original lay-outs are preserved at the school, and may be seen on application, together with proofs of most of the unpublished jobs. The examples of lay-outs and composition bear the students' name wherever practicable. The printing off is done by students of the machine class.

The portfolio is called "Practical Printing," a sub-title denoting that it is a "Collection of Work produced by Students of St. Bride Foundation Practical Printing Classes, Session 1912-1913." The title page is a lay-out and a setting in type by Mr. F. W. Simmons, and very creditable to Mr. Simmons it is. He has employed an initial P with ornament, probably specially drawn in the Bolt Court drawing school. His title page follows the accepted canon of having only one style of letter in all its lines. Its ornament is harmoniously related to and is subordinated to the letterpress which, however, it very distinctly enhances.

The ornament introducing in red the letters S.B.F. (St. Bride Foundation) shows us how very marked is the difference between the luminosity of the same ink when only massed in a very small compass, and when covering an appreciably larger area. There was, of course, only one working of the red in this page, and yet at the first glance the two reds of the ornament and the initial letter P would seem to be quite distinct. There is a three-colour subject, an old sailor's head, and this is quite successful. It is here shown by courtesy of Messrs. Harrand and Fuller. The blocks were made by Mr. Maurice Harrand by a special process. Many of the blocks from which prints appear in this portfolio were produced by the L.C.C. School of Photo-Engraving and Lithography, with which

the St. Bride Foundation is in close touch. It will be remembered that not so long ago Mr. A. J. Newton, Principal of the L.C.C. School, was also for a year or more the Principal of the St. Bride Engraving School. The negatives of the lithographic subjects have also been produced by the L.C.C. School.

The proprietors of "Yachting" allowed the reproduction of certain yachting scenes in this publication, and Messrs. Arthur Cox Illustrating Company provide the blocks of a two-colour portrait.

Many of the specimens are more naturally subject matter for a printing journal than for an engraving journal, and we pass them in this place; but it is due to remark upon the difficulty presented by a number of the half-tone subjects chosen for inclusion in this collection and upon the success with which these difficult subjects have been executed. One interesting half-tone depicts a terrible scene on Hampstead Heath, where a company of Boy Scouts, hold up an "Express" dairy cart. The daring captain has sprung upon the knife board and has got the driver by the throat, regardless of the whip which that defender has upraised. Here is a bit of realistic warfare for you. Who said cinema? The next page gives us a pencil—or is it a charcoal?—subject, a Dutch trader fogbound off Cowes. The suggestion of water is wonderful, especially considering the foggy conditions which are sought to be interpreted. Some other full page yachting scenes follow. Then we have a special design for an entertainment by the scholars of Cavendish School at the Balham Assembly Rooms, South London. This is really a very beautiful design by H. Jones, A.R.C.A., art master of the Cavendish School. The negative was made by the L.C.C. School, and the printing is by direct photographic method

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on a zinc plate, printed on a rotary offset machine. The plate was made and printed by honours students of the St. Bride Foundation lithographic classes.

A beautiful winter mountain scene is another direct photographic print on zinc, by rotary offset method. The plate was made and printed in this case also by honours students of the St. Bride litho classes. A young girl's face is very pleasantly reproduced by the same rotary offset method.

Messrs. Arthur Cox provided the blocks for a two-colour portrait and this, to be sure, is wonderfully successful. The screen seems to be about 200; it may even be finer.

Next year it is, we believe, the intention of the enthusiastic and successful Principal of the school, Mr. Riddell, to do still more to dispose of any objection to the work of the school as not being sufficiently practical or sufficiently conducted under workshop conditions. The

comment is sometimes made that the students will do a page very nicely, but that what is wanted in the workshop is ability to produce four-up, eight-up, or sixteen-up. There are in this instance two very good pages, four columns, the subject matter being "Bernard Shaw and Modern Typography," and the lettering being old face twelve point. However, next year we shall probably have an eight-page job, a four-page job, and things of that character, embodied in the specimen portfolio of the St. Bride work. By the way, the school has added considerably of late to the staff and to the number of the classes, and at this moment a linotype mechanical composer is being installed.

Quite a little city could be populated by the 6,419 students who have joined St. Bride foundation classes since their inception, and who between them have in eighteen sessions won forty-one medals.

Honesty—Policy.

THE old adage which says that "Honesty is the best Policy," is as familiar to our readers as is that other one, equally old and equally true, "Familiarity breeds Contempt." The juxtaposition of these proverbs, quite accidental, brings to us a train of thought that leads us to wonder whether the latter proverb supplies the reason why the former one is so frequently ignored. Now-a-days there seems to be a very widespread idea among certain sections of the trading community that it is impossible to be strictly honest in modern business. When it should be impossible they do not tell us, the statement is made and we are left to take it or leave it as we choose;

but somehow the impression is conveyed that if they were strictly honest they might not be able to make quite so much money as they desire. It seems to us that any responsible persons making a statement such as this, in all seriousness, must leave a very bad impression respecting their business rectitude upon those to whom the remark is made, for it would seem to be an assertion that they are prepared to "be crooked" for the purposes of gain, and the very assertion is a greater reflection upon their own methods than upon those of their competitors against whom the suggestion was made.

For our part, we are convinced that the remark of Ralph Frost in "Swain's Quarterly," is by far nearer accuracy,

viz., "The truth is that no business can be built up with any stability that is not based on the solid rock of honest trading."

There can, of course, be no doubt that the firm which sets out to do honest work, or honest work at honest prices, will at times be hard put to it by the house that cuts either price or quality or both; as well as by the customer, who seems to care more for low prices than for anything else.

We can, of course, understand the attitude of the firm who wants illustrations of a kind, and does not care what they are so long as they bear some remote resemblance to the article intended to be represented; they know their own business, at any rate we give them credit for doing so, and if the crude, unfinished article is good enough for their purposes, we can hardly expect them to pay for something better, something they do not want; neither can we find fault with the process firm who supplies such an inferior article, providing they are supplying it at a price that leaves them a fair margin of profit.

We, however, cannot understand the attitude of the process engraver whose only aim seems to be to get a large turnover, no matter in what way or at what price, ignoring completely all questions of cost and quality.

It was but the other day the representative of a well-known process house assured us he had been shown a letter which one of his customers had received from a competing house, the purport of which was along the following lines:—

Have you yet realised that our offer is to do your b'ock work at a lower price than that at which you are now getting it done. We do not know what is your present price, but whatever it is, if you will place your contract with us we will do it cheaper.

If the foregoing is an accurate indication of the methods of the house in question, we do not feel that we can compliment them upon it. Of course, it may be their considered "policy," but most certainly we cannot congratulate them upon the "honesty" of it.

In every line of business we may have competition, in fact, we welcome clean, healthy, wholesome competition, it is the life of the business community, and we should not care to be without it; but it seems very hard that any house which is striving to do good work and to give satisfaction should be met with such unhealthy and dishonest competition, which is sure to lead to severe heartburning and sometimes tempt one to wonder whether after all honesty is the best policy.

Yet, after all, there is a great deal of satisfaction for the honest trader, for he knows that the house that deals upon such lines as that just named must be working on a very narrow margin of profit, and must make a very poor show with the balance sheet, that is if they prepare one at all, for if the best houses with the best equipment, the best methods of turning out their work, and the best staff, satisfied and efficient, make but a reasonable or poor profit upon their turnover, what can be the result to those houses whose only ambition in life seems to be to cut prices.

How many of those houses that work at very low prices really succeed? We do not find many of them, but we do hear now and again of their closing down and going through the Bankruptcy Court, a not very desirable experience for any house.

When will every process house put in an efficient costing system and so learn the cost of their various products and sell accordingly?

Theory and Practice.

“**W**HAT!” said the line etcher, across the table to the clerk, “that thin gent. with the long nose?” The clerk gave a lofty nod of assent.

“I shouldn’t have thought it,” said the line etcher.

It was the occasion of the firm’s annual outing, and the operator, having done himself well, now began to evince an interest in the conversation of his immediate neighbours.

“Shouldn’t have thought what?” he demanded.

“Why,” confided the etcher, “that Johnnie sitting next to the governor has written a book on the trade.”

“Well, what about it?” rejoined the operator, who had his own views on the value of authors and their works.

“And it’s published at twenty-two shillings,” interposed the gentleman from the counting house in a tone that was meant to clinch matters.

“Did he sell any?” asked the operator.

“I suppose he did,” said the clerk, drily, “people don’t usually write books for nothing.”

“Big book, I should think,” said the etcher, who measured the book by the number of shillings.

“Three hundred and ninety-five pages, not counting the advertisements,” said the clerk. “We have one in the office. He sent it to the governor.”

“Who returned the compliment by a beano ticket?” added the operator.

“There are things in it you’d like to know,” said the clerk, warmly.

“O!” observed the other.

“Anything about line etching?” asked the etcher.

“Of course there is, plenty about it,” said the clerk.

“And about other subjects, too, mounting, three-colour, offset.”

“Offset,” exclaimed the etcher, “what’s that?”

“Setting your screen distance,” said the operator in an undertone.

“And it *does* show you a method for setting the screen,” said the clerk.

“Does it really?”

“And it tells you that it’s better to have the screen gear in the camera, than carry the screen in the dark slide.”

“Has the author been in the trade?” asked the operator, ironically.

“You had better ask him,” was the angry retort.

“No offence, old man, but we practical men are somewhat dubious of theorists. Still, that idea of having the screen in the camera is not bad. I wonder it was not thought of long since.” Ignoring the sarcasm the scribe continued, “He contributes two full pages on exposing alone.”

“Indeed, he evidently knows something about it, then!”

“And he says that if you under expose a negative you must intensify twice.”

“Do you mind me making a note of that?” asked the operator, taking out a pocket book.

“He says that it’s best to warm the studio by electricity, failing that, you need a good, clean stove.”

“Did the governor see that?” asked the operator, eagerly.

“Possibly, though he never mentioned it.”

“Just my luck,” moaned the operator, “it might have encouraged him to invest in an oil stove for the winter.”

"If memory serves me, he says you should have an evaporating dish and several funnels. Cleanliness is of vital importance, towels should be supplied and the room swept down each day."

"If memory serves me," echoed the other, "I have never possessed a boiling down dish. My sole funnel lost its stem years ago. I have a piece of rag for a towel, and I consider myself lucky if my studio is swept once a week."

"This book, then, is of special interest to the trade?"

"If those passages you cite were marked out and sent to each employer, the book would be invaluable, and its importance could not be over-estimated."

Attention was now focussed on the governor, who had risen, and was briefly dealing with the events of the past year. He was full of praises and expressed his satisfaction at the good relationship and harmony existing in the firm. The honoured guests saw in him a model employer, and in the uplifted and eager faces of the men the ideal employees.

The thin gentleman with the long nose, who had written a book, replied for the visitors. His speech was brilliant, and even the operator admitted that he was interesting. He told them that he had been in the trade from its infancy; had seen and studied every change that had taken place. He had, moreover, been indirectly connected with many firms; but had never come across workmen who had the appearance of smartness and intelligence as those seated before him. Finally, he said he hoped shortly to pay them a visit. To the disappointment of the line etcher, he omitted all reference to the book.

He was as good as his word regarding his promised visit, and on the Monday afternoon he went over the firm under the guidance of the clerk, who, conscious of the honour conferred upon himself, en-

deavoured to recall passages of the book and to employ them in the right place, should the occasion arise.

The studio came in for a fair amount of attention, and it was here that an opportunity to shine presented itself to the clerk.

"It's rather dusty," said he, sagely, rubbing his finger lightly on the dust lying thickly on the top of a small camera, "that's not conducive to good work, is it?"

"I don't know that it matters much," replied the author, "better there than in the bath."

"But still, sir," said the clerk, somewhat taken aback by this unexpected reply, "better no dust at all; they could easily sweep the place down once a day; you recommend that in your book, I think."

"Certainly," said the author, "it's an excellent idea; and a necessity in the case where emulsion is employed. But the present-day intensive methods hardly permit of time being spared in which to clean up."

"Well," said the clerk, "I think they might at least order the boy to do it."

"I expect even the boy has sufficient labour to perform. Eh, Tommy?" said the author, turning kindly to the boy.

"We rarely get the time, sir," replied the youngster, "but I sometimes stay on at night to have a clean up."

"You are a good boy," said the author, approvingly, "and you'll be a smart workman at some future day. What can you do now?"

"I clean the glass, coat and sensitise the plates, and sometimes develop. I can fix, intensify and finish the negative."

"That's excellent," said the author, encouragingly. "Now, do you know what chemical changes take place while you are performing those pleasant duties?"

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The boy admitted that he did not.

"No, of course not; all in good time. Rome was not built in a day," said the author, kindly. "However, ask the gentleman with whom you work, when he is not too occupied, and I am sure he will be happy to further your knowledge on that point. Good-bye."

A head came round the dark-room door and a pair of astonished eyes followed the retreating form of the visitor.

"What's the chemical action . . ." demanded the boy, as the footsteps died away.

"You shut up," said the operator, viciously, "I've spoilt this plate through listening to that chap. Get me another, and don't ask any questions to-day, I'm busy."

He went off sharp to time that evening and instead of pursuing his usual route to the station called in at a bookseller.

It was something of a twist paying twenty-two shillings for that book, but before retiring that night he knew all about the chemical action, and was able to inform the boy on the morrow.

E. J. G.

✓ *The Correlation of Photography, Lithography and Typography.*

Some Hints for following up.

IN this issue we give in the form of Mr. Lane's talk as official photographer to the London County Council a few of the latest words in camera science. Conjointly we invite attention to some neglected hints of earlier days; to some things which were perhaps a little before their time; but whose time, whose opportunity to be operated under the perfect conditions once lacking, may now have arrived.

There have indeed been some notable workers, not often remembered perhaps, but very helpful to their own day and generation and possibly—this is our present point—possibly able to be still more useful to our day and generation, owing to our greater progress in the arts. Just as Clerk Maxwell helps us more than he helped people in the sixties. That great scientist had got three colour right enough fifty years ago; but the conditions were not ready for him; he could get nowhere the apparatus, the

appliances he needed to enable him to express and illustrate all he knew or to pursue and investigate and develop all of which he had a good inkling.

Joseph Lewis was one of the little-known early men. In 1841 he produced in the camera a picture of St. George's Church, Liverpool; on a glass plate coated with bichromate of potash and gum, "I could distinctly see the engraved surface when the plate was wet," he has told us; and he brought the matter to the notice of Sir John Herschel, who was perfecting photographic processes by substituting salts of iron as the sensitive agent.

Then there was Paul Pretsch; who had ideas perhaps not yet wholly developed for all they are worth. He not only utilised the relief surface of the chromatised glue for obtaining surface electro blocks, but he also used the exposed surface after the manner of lithography, so that by applying the ordinary printing

(“The Process Photogram.”) Oct., 1913.

ink roller he could ink up the picture.

Mr. Woodbury, again, not only invented the ordinary Woodbury type (in which hot gelatine was flowed over up-standing moulds, bearing the sunken moulds on their top surface and paper was then pressed on the gelatine to draw it away from the unequally deep hollows into which it ran), but he devised a much less known method. Instead of procuring relief as in his first process, he added a considerable amount of colouring matter to his gelatine film, to prevent the action of light causing such relief. He also added to the gelatine different substances, such as fine emery, fine powdered glass, some colours, such as charcoal-greys or madder, which all have the peculiar effect of causing the gelatine to become granulated more or less as the part has been acted upon by light. When this relief is rolled in contact with a sheet of metal the whole of the detail is impressed into the metal, giving it the effect of a mezzotint engraving. This being too soft to print from has to be electrotyped twice over, and then steel faced. Goupil, of Paris, have in their time done a lot of work by this method, their manager, M. Rousselton, bringing it to a high state of perfection.

There was interest, and may be interest for us now, in an old method in which a sheet of glass was coated with a resinous material which dried and left a hard, non-transparent film on the surface. On this film a drawing was made, the lines being cut with a sharp point, leaving the clear glass exposed. Lines rivalling those of the most delicate etching were got in this way; but equally the broadest effects could be secured. The glass so carved out by the artist was placed in the printing frame; result, a print on sensitised paper. The exposure was for about ten minutes of strong daylight; but if it was left longer it did not matter,

the actinic light never penetrated through the film with which the paper was coated. (Bichromate of potash was employed.) The stone or plate which received the image was set up in the litho. press and inked sparingly with retransfer ink. The operator took the photo-transfer out of the printing frame and rapidly placed the face of it in the inked surface of the stone and passed it several times through the press. Then the blackened transfer was dipped into clean cold water and a sponge passed carefully over its surface and the transfer lines were found beautifully clear and sharp. In some cases the results rivalled the very finest steel engraving.

Perhaps Helio-type has hints still worth noting under the altered conditions of to-day. It is not to be confounded with Woodbury-type. It was more lithographic in character. The gelatine itself was a plane printing surface; it was wholly inked and the differentiation entirely depended upon the different action of light upon different parts; the different degrees of solubility which had been brought about.

In another old process coated paper which had been left unacted upon by light was moistened and allowed to swell and thus became in relief. But then the brainy worker thought—why not let the moistening go on still further, till this saturated part of the paper is not simply swelled but is washed away altogether? Then the portions acted upon and which were very humbly down in the depths while the other paper portions were swelling themselves, come to be in relief; and in that capacity can be utilised by transferring method or as may be desired.

There are plenty of hints for the up-taking from the half-developed ideas of past years.

Negatives in Tone.

FOR these negatives the silver bath should contain 35 to 40 grains of silver nitrate per ounce of water, work perfectly clean, and be carefully filtered each morning. The collodion should be iodised at least a week. The glass plates should have a substratum of either albumen or gelatine, polished plates wasting time, temper and material.

In making negatives through the screen, the most important items are the screen distance, and the exposure; both must be correct.

The factors governing screen distance are the stop or diaphragm, the camera extension, and the number of lines with which the screen is ruled.

The largest size of stop that can be used, so as to give good results, with a screen distance that interferes least with fine detail, is 1-64th of the camera extension, but for best results a stop with aperture 1-90 or 1-120 of camera extension will be the standard.

A stop with an aperture of 1-90th the screen distance for a screen ruled with 133 lines to inch will be about 6-32 of an inch, and the finer the screen ruling the less the screen distance, the coarser the screen ruling the greater the screen distance.

Taking the camera extension at 30 inches and the stop aperture at 1-90th (say 10-32 of an inch) the screen distance for the following screen rulings are about as shown:—

Screen rulings—75, 85, 100, 120, 133, 150, 175 lines per inch.

Screen distances—14, 12, 9, 7, 6, 5, 4 32nds of an inch.

These distances are for average copy. For flat copy the stop aperture may be enlarged to 1-64 of camera extension;

for very contrasty copy the stop aperture should be reduced to 1-120 of camera extension. With average copy the stop is inserted, and the screen gear adjusted, to the approximate distance, but should be finally adjusted by observation of the screen appearance on the focussing glass by using a focussing magnifier, which will show at a glance if the dot formation is correct, if not, a touch on the screen gear will put it right, fine black dots on light portions of picture, white dots in shadows.

The sensitive plate must be exposed sufficiently long to obtain dots all over the darker or shadow portions of picture, these dots being graded in size from deep shadow to dark half-tones, i.e., the deeper the shadow the smaller the dot.

When developing the image it is these dots on the shadows that are the criterion of correct exposure, and unless these shadow dots are strong and well gradated the negative need not be proceeded with.

Given a well-exposed negative, the finishing of it is almost a work of art. First of all it is well washed after the cyanide, then immersed in a solution of

Potassium 2 ounces

Copper Sulphate ... 1½

Water 40 ounces

until bleached right through the image; now wash for a very short time, and be careful to keep the plate moving under the tap so as to get the film washed evenly (this washing must not be prolonged over the time sufficient to get rid of copper bromide on the surface of film). Now flood with

Silver Nitrate 1 ounce

Water 20 ounces

Nitric Acid 30 minims

This will blacken the image right through; not much apparent improvement in density has taken place, but the strength of silver, in the image, has been much augmented. Wash thoroughly, then immerse in—

Iodide of Potass.	...	30 grains
Iodine	... ..	10 grains
Water	... ..	20 ounces

until image is bleached right through. Again wash, and now comes the most important operation, viz., cutting, which really means clearing away the silver deposit between the dots, and also cutting down the size of the dots from the apparently solid, to the solidity that really is, this cutting down getting rid of the halo of deposit caused by the action of diffraction.

The cutting, or clearing, is effected with very dilute solutions of potass. cyanide, the exact strength cannot be given, but, as a guide try 1 grain of potass. cyanide and ¼-grain ferricyanide potass. in 10 ounces of water. This formula is only approximate, the usual plan of procedure being to take about half an

ounce of potass. cyanide fixing solution as ordinarily used, and dilute with from 20 to 30 ounces of water, and flow a little of this over the negative bleached in idoine and potass. iodide. The application of this solution to the film at once alters the colour of film from a yellow to white. Allow this solution to act for 30 seconds, then wash off and examine the negative. The shadow dots will be found sharper and clearer from scum, and doubtless still too large, so apply a second lot of the dilute cyanide, watching the action very closely. Wash before examining negative, or the cyanide may reduce unevenly. The application of the cyanide is continued until the dots in the extreme shadows are very fine, but still strong, and in lights the large dots touch each other. Then wash, well flood with

Nitric acid	... ..	1 ounce
Water	... ..	80 ounces

Rinse, then blacken with a 10 per cent. solution of sodium sulphide.

W. T. WILKINSON.

Two Wrongs make a Right.

As a generalisation this may be a bit risky. No doubt a clerk who has missed threepence in a long tot and has wrongfully added threepence somewhere towards the end of the tot has made a right total. Two wrongs may make a right. No doubt wrongs make a right in the case of slight out-of-focus photographic printing which just produces softness and richness without any important sacrifice of definition. Two wrongs make a right in Duple printing. Our readers will long have been familiar with the main element of Duple printing, that is, the method by which two print-

ings being made from the same half-tone block, each in a different colour, and the second printing being slightly out of register with the first, a distinct addition may be made to the roundness, softness and generally to the quality of the picture. It is particularly in the quality of added richness that success is attained.

To be sure, where it has been badly done it has been bad indeed. We can say of it, as used to be said of Carlyle's style, that he was magnificent in a line in which no one else was even tolerable.

Duple printing has hardly come into its own before it is in danger of being

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abolished, for now inkmakers are giving us inks which, in certain cases at any rate, are calculated to produce in one printing very much the same effect that formerly was deemed only possible with two. There are certain pigments incorporated in various coloured inks, and these pigments spread and stain the paper between the actual dots of the half-tone. Practically we seem to have no white spaces where this is done in perfection, but there is a tinting between all the darker inky impacts.

It is very natural that subjects which are of themselves somewhat hazy and indistinct, landscape subjects as distinct from figure studies, lend themselves peculiarly well to such treatment. It may well occur to one that it must be more difficult to guarantee that all copies shall be alike. No one, we imagine, can tell exactly how this faint filling with a light tone of the inter-spaces is going to operate, or exactly how it is going to affect the whole picture. The law of "simultaneous colour contrast" comes into play; and perhaps other laws.

We notice that F.H.S., writing in the "Newspaper World" as to his own ex-

perience or observation on this subject, declares that Duple printing would be more generally practised to-day were it not for the undue amount of throw-outs necessitated by comparatively infinitesimal irregularities of register. Of course, if the workers really are clamouring for "a larger share of the spoils" this may not matter so much to a firm, but it is always possible that these are not the "spoils" that are wanted. F.H.S. gives these hints, which he thinks may be useful to the beginner: Have the paper stacked in the printing room for as long a period anterior to printing as possible. Keep work closely stacked between printings, with waste sheets always protecting the "top lot," for the time being, from the air. See that the first printing is thoroughly set before proceeding with the second, otherwise the block will lift particles of the darker pigment, fouling the ink on the rollers, etc., and also that in the fountain. This, of course, applies to the cases where the tinted varnish is printed last. Where a matt effect is desired the tint may be printed first, the second printing being proceeded with as soon as may be.

Newcastle and District Printers' Managers' and Overseers' Association :

Lecture on the Art of Imitation, by Mr. J. Philipson.

AT the September meeting of the above (which was open to friends of the members) Mr. Philipson, Jun. (of Messrs. Philipson and Son, process engravers, Newcastle-on-Tyne), gave an interesting lecture on "The Art of Illustration."

There was a good attendance, and the lecturer's remarks were followed with interest by those present. The lecturer

gave a very comprehensive history of illustration from its earliest days when the woodcut, with its slow and tedious method, was the chief process, and while acknowledging the beauty of effect obtained by the artists of early days, claimed that modern methods were producing work quite as wonderful, both in execution and effect. Mr. Philipson described several methods — colotype, photo-

gravure, line and process engraving, photo-lithography, etc., and exhibited several specimens of work produced by the various methods, as well as the means of their production, which were shown in various stages of manufacture.

Mr. Philipson showed some excellent specimens of half-tone work produced by his firm’s special process for lithography, one sheet of 60 x 40 showing the possibilities of this new process, which is quite a departure from usual methods of photo-litho. work, lending itself to a multitude of uses in modern illustration.

At the close, Mr. Philipson invited questions relating to the subject, and useful information was obtained respecting the printer’s method of giving instruc-

tions to the process engraver. He pointed out that these were often vague, and assured those present that with the assistance of the printer, the engraver could often obviate the trouble caused by blocks not being correctly made. Quality of work could be produced which would give the best results, if those responsible for the price to be paid would recognise that excellence was often a matter of £ s. d., and would therefore, when ordering, state the quality of work required.

A vote of thanks was passed to the lecturer for his excellent exposition, and everyone felt that they had learned something which would prove useful in their business experience.

✓ Draught-Board Effect in Colour Work.

A SUBSCRIBER writes:—Desiring to take advantage of your offer to assist, may I ask if you can suggest the reason of such a strong “pattern” on enclosed cutting from a job in hand? The screen crossings are correct, and register good. I had a similar difficulty recently in a flat but strong background, tricolour and black, screen angles:—

Black 45°
Yellow 90°
Red 75°
Blue 105°

The only thing I can think of is the strength of colour. Do you confirm this, or can you put me right?

My point is this, that just as in ordinary tricolour there is an accepted system for straightforward work, so in exceptional jobs it would be well to have laid down the principles, whereby the finished proof will be correct. I should be glad if you would confirm or correct my suggestion that:—

I.—In four-colour work when the fourth printer is black it is essential that one or more negatives be made with the oval stop.

Only when the fourth plate is a grey may the ordinary stops be used.

II.—When making a fourth plate for a tricolour set where the separation is 30° apart, the negative *must* be irregular grain if pattern is to be avoided.

III.—When doing a job in three printings which are strong colours, as in sample—red, green, and black—either the oval stop must be used in two, or grained screen in one of them.

With regard to the angles for screen in four-colour work I think A:—

Red 75°
Yellow 90°
Blue 105°
Black 45°

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better than B:—

Red	60°
Yellow	75°
Blue	90°
Black	120°

In A and B the distances are the same. The darker colours are nearer 45°, as in ordinary black and white half-tone, the screen being least prominent in that position.

Thanking you for the helpfulness of the magazine, I remain, a subscriber from first number.

The specimen submitted gives a decided draught-board effect, due to the use of three *strong* colours, and can only be remedied by using one colour much lighter, or by the use of a Metzograph screen, consequently we agree that the strength of the colours is the factor governing this undesirable result. The screen angles you name are the best compromise possible, yet with these you may sometimes get a pattern with some four-colour work, due to one or other of the blocks being pulled in too strong an ink,

or through the plate being too strong, consequently it is usual to use a light ink for the blue block, so as to reduce the risk.

The answer to your paragraph No. I. is yes, in order to be quite safe. No. II. is Yes, if pattern is to be avoided. No. III., yes, or use a Metzograph screen for the green.

Regarding the screen angles, A is usually accepted as the best set for ordinary use. Generally in three-colour work the absence of pattern is due to the fact that one colour, viz., the yellow, is a light ink, but if this was printed in a strong colour the pattern would be evident, as in your enclosed cutting. In four-colour work A is the correct set of angles, and is quite safe for the usual run of work, but occasionally you will find a set that will give pattern, but you can usually get over that by reducing the strength of one or other of the blocks, but the only method by which you may be sure of avoiding getting a pattern is by using one irregular screen, either for the yellow or black.

✓ *An impartial warning to would-be Engravers*

A VERY competent critic, who answers questions sent to "The Newspaper Owner and World," has been asked, "Is it practicable for a county weekly to consider the making of its own half-tone blocks in order to give illustrations on a more generous scale? I am told that a small process plant can be laid down complete for about £100. Is there any reason why one of the staff, who is an experienced and expert amateur photographer, should not learn the process and work it?"

The reply is: We are afraid your plant would cost you considerably more than

£100, but it would depend on how many blocks you intended to produce per week, but if you will let us have more details we will go more fully into the matter. For a matter of, say, a dozen or twenty blocks per week, we should hardly say that, with the present competitive prices in the trade, it would pay you to install your own plant. There is no reason why an expert photographer should not become a fair zinco-etcher, and we have known cases of the kind, but there is much to be learnt and many disappointments and difficulties would have to be overcome.

The Reopening of the Schools.

FROM all quarters come reports of the restarting of the various Schools of Engraving, or design, or photography, or drawing for process; or litho., or some work with which the readers of this journal are particularly concerned. There is a new and quite special interest this time in this re-start; for the largest educational body of the country, the London County Council, has decided to work henceforth on new lines. It has been decided that in future no lads under 17 not already on the books shall receive instruction as on previous lines at any of its technical institutes, unless they can pass an educational test or give certain other evidence of satisfactory training. This sounds rather vague, no doubt, and, in fact, a certain discretion is reposed in the Principal. About 150 out of the 700 students of the L.C.C. Engraving and Litho. School at Bolt Court have been affected by the new regulation; and the Principal and his helpers have been kept busy with examination papers.

The wording of the principal operative clause of the new regulations says that no lads under 17, apart from those who were on the register in the 1912-13 session, may be admitted unless they have attended a secondary or central school for three years, or have completed a course of study in a trade school, or can produce a certificate of having satisfactorily attended a two-years' course of study at a junior institute of the same type as the Engraving and Litho. School or pass an educational test to that set by the Principal of the Engraving and Litho. School.

Those who cannot pass the Principal's examination or otherwise qualify them-

selves are put on a two-years' course. In the first year they may have one evening at Bolt Court to learn practically what they want to learn, though the regulations do not exactly say this. As we have said, the Principal has a good deal of discretion reserved to him. On two evenings in the week they must go to the Wild Street Continuation School, off Drury Lane, and there they will be taught English, mathematics, an art subject (in some cases) and gymnastics. Wild Street School is being reorganised in view of these new regulations, so that this School becomes a so-called Junior Technical Institute, and is affiliated as such to Bolt Court School. Every technical institution or school like Bolt Court is having a certain junior technical institute affiliated to it. We understand that after the first year the boys may give two evenings a week to the technical work, and one to the ordinary educational classes.

The prospectus of the Manchester School is featured by a splendid Hedley Filton line drawing of this palace of industry. There are day classes in photo-mechanical processes; these “classes form part of the University courses.” Part-time classes are spread over three years. We must revert to this great school if possible next month.

Two hundred to 250 students appear to be enrolled in the Regent Street Polytechnic photography or photo-engraving classes under Mr. Howard Farmer, that doyen of instructors in “light printing” and all its concomitants. Is it sometimes forgotten, we wonder, that seven or eight hundred students repaired in the old days to the Regent Poly. to learn

photo-engraving from Mr. Howard Farmer? Of course, the centre of gravity, so to say, shifted when the L.C.C. decided to support Bolt Court, and Mr. Farmer, large-hearted man and sound educationalist, has not deplored this. All the same, valuable teaching work in photo-engraving and no little research work for private individuals who get into difficulties or who "have ideas" is done at the School. By the way, "Cinematography," technical and practical, is being taught at Regent Street. A quite important feature is that "Commercial Photography" is to be taught in a trading evening class commencing October 10th at 10.30 (fee 10s. 6d.). The class will be conducted by Alwyn E. Biscoe (Honours, City Guilds; photographer to R. Waygood and Co., Ltd.), and Wm. A. Sivyer (technical photographer to Messrs. Hill and Co., and winner of the Wratten orthochromatic prize, 1913). There are various other lectures or classes dealing with photography.

The Leeds School we hope to deal with in our next issue.

Very interesting and very practical work in designing for posters, showcards, etc., is being done at the Gloucester School of Art. We read in the 1913-14 session prospectus: "During one session over £17 was earned by students, mainly in small sums, for designs to be used for commercial purposes." "Remunerative work may be undertaken by the students almost from the commencement of this course of study." Lettering, illuminating, book illustration, advertisement and poster designing, and modelling are some of the incidental subjects taught. There are three terms, September 22nd to November 3rd, then January 7th to February 23rd, and finally April 18th to June 3rd. Mr. Arthur Englefield is the Head Master.

My Causerie.

"THE glorious human boy" is always a bit of a problem, and he has been especially so in connection with our technical schools. In fact, a great amount of his time and of the time of his teachers has been simply wasted. Upon that there seems to be no disagreement among men of competent judgment. The wastage has arisen from the fact that lads are ordinarily admitted into technical schools or institutes before they have acquired the elementary knowledge of general subjects sufficient to enable them to make good use of what they are taught technically.

It is, after all, of very little service to have a well-informed and highly skilled man engaged in a technical institute pouring water through a sieve or repeating what are really abracadabras, because they carry no real significance or enlightenment to the young listener.

The London County Council has recognised this, and has decided that henceforth all students under seventeen are to cease being instructed in the technical schools in the exact way in which they have been instructed so far. That applies to the L.C.C. School of Photo-engraving and Litho. as much as to others. So in future no lad will be admitted into the Bolt Court Engraving School as a student to be trained in plate-making and to receive the full course of special technical instruction, unless he has already attained a certain standard of elementary knowledge. There are one or two well-known examinations, the passing of which serves for such a standard, and I believe there are certain other criteria which are accepted. In default, however, of a lad seeking technical education, having proven himself, or now proving himself, by answers to examina-

(“The Process Photogram.”) Oct., 1913.

tion papers, to be up to the standard newly imposed by the Council, he is henceforth required to spend two evenings a week at an ordinary continuation school learning ordinary subjects, English, arithmetic, or whatever may be arranged.

In the Bolt Court case it is the Wild Street School near Drury Lane which is affiliated for the purpose. The lad who has put in two evenings at the ordinary continuation school will be allowed to put in one evening in the week at the specific trade school. When he has satisfied a certain test, or by mere lapse of a specific time, he will be allowed to invert this order and to put in two days at the trade school, and only one at the elementary school. This movement is entirely in the right direction.

Sir Benjamin Brodie, a very famous doctor in his day, I remember, had a say-

ing, “All a specialist, half a quack.” The danger of over concentration, the danger of one mind being unfed, unrefreshed, unequipped by the abundant supplies of general knowledge which are existent and which should be available, is a very real danger and quite a pathetic one.

It applies, to be sure, to more than lads learning engraving. I have just been reading for a second time Hodder’s “Life of Lord Shaftesbury.” Nothing impressed me more painfully than the frequent lament entered by this very noble and most effective worker in factory and social reform that, do all he would, he never seemed able to find any time to acquire fresh knowledge. He scarcely ever could read for half an hour save what he was obliged to read in the stress of affairs.

F. COLEBROOK.

Illustrative Art and its Responsibilities.

THE engraver of our grandfather’s days, who was in most cases responsible also for the drawings he reproduced, drew plentifully on his imagination, and it is interesting to note how curiously influential his imaginative genius was, and also the permanence of its effect. Apropos of this, “Londoner” in the “Evening News” writes:—“I had a history book at home on the shelf which my governess took down every morning. The history book had only two pictures, one of Vortigern and Rowena, and the other of King John at Runnymede. Both were reproduced by the art of the steel engraver. I hate steel engraving to this day. Both figured inhuman shapes, beings that never had life in them, historical characters and not men and women.

There was another history book unlicensed for purposes of instruction. In

sixty or seventy pictures it gave you English history from the painted Briton, jolly in his coracle, to the Britons who charged at Balaklava and scrambled up the Alma heights. These pictures were not famous artistry, yet their valiant colour gave me a fancy of a History of England which was own cousin to the Arabian Nights, a glorious tale of galloping and horn blowing and sword swinging.”

It is indeed interesting to reflect, just for a moment, and imagine if we can what might be the true educational value of process engraving and the process illustration of to-day. Will its impressions be of the same lasting character as those of the earlier forms of reproductive art, and are they likely to influence our interest in the art illustrative quite so emphatically?

✓ *The Carbon Resist.*

So much is being said just now about the use of the carbon resist in rotary photogravure that it may be of interest to reproduce these notes on the making of a carbon tissue as appearing in the always valuable *Inland Printer* of Chicago. We are not forgetting the differences in the operations contemplated in the two distinct cases, hand photogravure and rotary photogravure. But certain essential matters are proper to note in both cases. Here, then, is the article:—

Having produced a satisfactory negative we will now see to the preparation of the carbon tissue; there is a special gravure tissue prepared, but this is not necessary to success, the ordinary "Special Transparency" tissue made by the Auto-type Company of London, England, being quite suitable. Cut some of this into convenient sizes and keep in a book or between boards to avoid its tendency to curl. Now take a piece of thin plate glass, say 10 inches by 12 inches, and carefully clean one side; then take powdered French chalk or mica, and with a piece of clean cotton-rag rub the glass with it, using a firm, even pressure until it looks like satin; then dust off non-adhering chalk and set aside. To sensitize the tissue, prepare a solution of bichromate of potash in distilled water, using about one ounce of bichromate to a quart of water. The best way to dissolve it is to wrap it in a piece of clean muslin and suspend it just beneath the surface of the water, which should be in a wide-necked bottle. Keep the solution covered and filter through linen after use. In hot weather it will be necessary to chill the solution before sensitizing the tissue, otherwise the gelatine will dissolve into the solution and ruin it. The temperature of the solution should not exceed 60 degrees F.

SENSITIZING THE TISSUE.

To sensitize the tissue, which may be done in subdued daylight, place the solution in a shallow dish considerably larger than the piece of tissue to be sensitized and immerse the tissue in it, using a flat camel's-hair brush to remove any air bubbles that may rest on the face of the gelatine. This is very important, because if it is neglected spots will form in the developed relief print or "mold," that will spoil the work. When the tissue has been saturated, which may be known by a tendency of the edges to curl backward, remove it by the corners, and lay it on the

chalked glass, the gelatine to the chalked side, and *squeegee* down; if the tissue is over-saturated there will be some difficulty in getting the edges to adhere to the glass, but if taken out of the solution *just before* the curling takes place no difficulty will be experienced. Now place the glass with the tissue on it in a warm drying cupboard where there is good circulation of air, but where no white light can reach it. A very convenient drying cupboard can be provided by making a box of slats, having one side hinged. Cover this with black twilled calico lining and cover the hinged side in such a manner as to allow it to open freely. On the inside, racks can be arranged and the cupboard may be placed where most convenient, but not in full daylight.

BICHROMATE PRECAUTIONS.

Let me here warn the student against carelessness in the handling of bichromate. Rubber gloves should be used, and after sensitizing, thoroughly wash the hands, and rinse the dish and brush, and do not allow the solution to drip on the floor, as the crystals when dry will float in the air, and by adhering to the mucous membrane of the nose cause serious trouble. *On no account touch the nose or face with the hands* after using bichromate, and carefully avoid putting it on the clothing.

When the tissue is dry, which may be known by passing the hand over the back of it, it may be stripped from the glass, when it will be found to present a perfectly flat, smooth surface. Keep the tissue in the dark, and between glass, when it will remain good for perhaps a week. When stale it dissolves slowly. If not thoroughly dry the tissue will refuse to leave the glass. Now having our tissue dry, we take the transparency and place a *safe edge* around the subject. This may be done by pasting strips of black masking paper or non-actinic red paper about half an inch wide around the subject. Then mark pencil lines around the "safe edge" about one-eighth inch from the inner edge; this is to form a guide when placing in the printing-frame. Now lay the tissue face down on a sheet of zinc, similar to that used for trimming photo prints, and cut a piece the exact size of the rectangle formed by the pencil lines on the "safe edge." All this must be done in a *yellow light*, and not too much of that; the sensitizing may be done in subdued light, but all drying and storing must be done in total darkness, while operations involving the sensitized tissue must proceed in yellow light.

PRINTING.

Now take a screw-back printing-frame and after carefully dusting it place the transparency in it and adjust the tissue to the pencil lines, marking with an X the top of the subject. The printing is best done out of doors, exposed to the sky, but shielded from side light; if it be summer and the light too intense, a frame covered with tissue paper or white linen should be placed on the printing-frame about a foot distant. The light should be modified by this means so that the tissue will take from fifteen to twenty minutes to print. A good plan for a beginner is to place a strip of sensitized tissue about one inch wide across the transparency covering, say three-fourths of its length, and print for about five minutes. Then move the opaque cover back to one-half the distance and print for another five minutes; then shift the cover back to one-fourth the distance and print for another five minutes. The cover may then be removed and a final exposure of five minutes made. This will give results all the way from five to twenty minutes' printing, and form a reliable "pilot." This "pilot" should be developed on a piece of copper so as to educate the eye to the proper appearance of the mould.

REAL ORTHOCHROMATISM. 9th Ed. 43rd thousand. Wratten and Wainwright.—The modesty of the publishers of this booklet shown in the preface has not prevented the public from appreciating its value and showing that appreciation by calling for forty-three thousand copies.

It is designated "an attempt to write a perfectly plain statement of the facts about orthochromatic photography, so that they can be understood by anyone acquainted with ordinary photographic work."

It is quite evident that the author has succeeded, and succeeded well, in his task, for the popularity of the booklet is sufficient proof of that, and we can conceive of nothing more likely to be of use to the operator than this carefully written and clearly worded series of articles dealing with practically every phase of orthochromatism, except the advanced and more difficult ones, which it was felt should be treated separately so as to avoid embarrassing those for whom the book was written.

We recommend everyone interested to get a copy of the new and improved edition of the work, to which has been added a number of new illustrations.

ROTARY PHOTOGRAVURE is making great progress in this country, and will, in all probability soon become as familiar to readers as the half-tone block of to-day.

We understand Messrs. Griffin have just delivered to an important trade house one of their cross-ruled photogravure screen plates, size 30 by 24, so that we may look for some specimens of large work from this house at an early date.

Messrs. Griffin have placed on the market special screens for photogravure work, either single or cross-lined rulings, on one plate, without cover glass in both negative and positive screens. These screens are meeting with the success they richly deserve.

Another of their specialities is Dr. Heseckiel's "Ham-lack" Retouching Varnish. This is very popular among photogravure workers, and as it becomes better known will increase in popularity. It is claimed that by the use of this medium better and cleaner work can be done than by the use of any of the other medium upon the market.

Other necessary material for rotary photogravure work supplied by Messrs. Griffin comprises carbon tissues, made expressly for copper etching, and known as "A16 Orange"; also high quality charcoal of very special selection, with just the required tooth and bite; it is sold in blocks of about 5 x 3 x 2, and is very highly spoken of by those who have already adopted it for use in their works.

MESSRS. PENROSE' SUCCESS AT AMSTERDAM.—At the International Graphic Arts Exhibition, recently held at Amsterdam, Messrs. A. W. Penrose and Co., Ltd., of 109 Farringdon Road, London, E.C., received the highest award for their exhibit of a complete photo-engraving plant, which was shown in operation by the firm of L. Van Leer and Co., Amsterdam.

A "B.J." WORD ON STOPS IS WORTH PASSING ON. It may but re-impress a familiar counsel; if so it would seem to be the sort of counsel too often out of mind. "Many operators dislike using a sufficiently small stop with a corresponding long screen-distance, yet this is the only plan by which a sharp result, still having all the detail in the shadows, can be secured. Sharpness may be obtained by using a large stop and giving short exposure but it will generally be found that in this case the shadow dots are insufficiently opaque, and the result is absence of detail in the shadows of the reproduction." This criticism is the more worth

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noting from the fact that apparent want of sharpness seems to be about the commonest defect of inferior half-tone; generally due not to careless focussing, but to use of too large a stop or too much exposure.

MESSRS. WRATTEN AND WAINWRIGHT, the makers of the famous Panchromatic Plates, Colour Filters, etc., are now carrying a full supply of all their materials, filters, plates, etc., at Kodak House, Kingsway, where the trade, both wholesale and retail, may be certain of procuring whatever they may require.

Their business has outgrown the Croydon works, so a new and large up-to-date factory has been erected for them in connection with the Kodak works at Wealdstone, where they will enjoy all the added advantages of the enormous resources of the Kodak plant, one result of which will be that the future output of the company will, if possible, excel the deservedly high reputation it has already attained.

HARD ON THE NEWSPAPER.

MR. FRANK ALVAH PARSONS has been "saying some things" to those whom it may concern. Particularly he has addressed himself to the newspaper world. The newspaper is naturally inclined to think it is right in the van of progress in all particulars. It often forgets the truth that a good thing is sometimes forced out of public notice or favour by a worse thing, simply because the public is constantly desiring something new; or perhaps is supposed to be constantly desiring something new. Mr. Parsons in the piece of straight talking we have in mind deals with colour. We suppose most agree that colour should seldom be used in its original brightness, but should be blended, as a rule, with other colours, and subdued hues be secured by adding other shade or shades. "The Egyptians," says Mr. Parsons, "used five colours—yellow, red, orange, green and blue. They used them in their natural, intense primitive way and in a purely symbolic sense. The early American-Indian had four colours, and used them in their pure normal strongest way. The Aztecs and other primitive races followed the same symbolic use. A certain newspaper uses red and blue in its advertisements, it puts together two elements of colour in a manner fit only for barbarians; it grasps only the primitive form of expression of the thing for which it stands.

Mr. Parsons gives a few helpful hints. Backgrounds must be greyer, softer, or less intense than the objects shown upon them. A man can wear a redder necktie than coat. The smaller the area the more intense the colour must be and the more intense the colour gets, the less area it must have. At its full intensity it must be in small spots and placed at the points you wish to emphasise.

THE PRINTING OF THE FUTURE.—Printing of to-day is of either of three kinds. It is

Intaglio, or printing by means of impressing paper with ink drawn out of hollows, variously deep; or it is Planographic, *i.e.*, printing produced through impressing paper with ink all evenly deep, spread upon the face of a lithographic stone, or lithographic metal plate, or a gelatinous film; or, thirdly, it is Relievo, that is, it is printing by impressing paper with ink, again of even depth throughout, as that ink happens to be lying upon the faces of letters or the grains or dots of engravings. More and more the printing of the future will be intaglio; adding a third dimension to the mere length and breadth which alone differentiate the parts of the lithographed or the ordinary photo-engraved or the letterpress printed page. Already some German newspapers of small circulation are illustrating their pages with intaglio or photogravure, and the *Illustrated London News* and *L'Illustration* in Paris are understood to have now effected installation of the appropriate machinery to produce the same work. It is probable that before the century reaches "half time" many daily newspapers will feature their pages with pictures of the preceding day's, or even of the current day's events, produced by intaglio; and upon the same machine, and at the same travel of the reel of paper through the press, though the contact which prints the type and that which prints the intaglio illustration may take place in separate parts of the machine. Printing without ink is another possibility of the future. In that case a discoloration of the paper will probably be produced by electrical action transmitted downward through piles of sheets. Colour work is likely to be much more prevalent than it is at present, and to be of a greatly superior order. The ideal must be said to be photogravure in colour. At present colour photogravure presents very great difficulties, even where there is plenty of time for the working. Getting register in colour photogravure rapidly executed by machine seems almost hopeless.

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AND ELECTROTYPERS' AND STEREOTYPERS' REVIEW.

Mr. Carl Hentschel talks Illustration

To Scottish Journalists.

MEMBERS of the Glasgow and West of Scotland branches of the Institute of Journalists foregathered in Glasgow on October 4th, to hear an address by Mr. Carl Hentschel on the technique of illustration from the journalists' point of view.

We are, said Mr. Hentschel, all keen on illustration of a kind; I suppose because it speaks to the universal mind; it is a universal language; a universal appeal. As to that, I remember a yarn about Melton Prior. When travelling he could often help out his deficiencies in language through his pencil. To be sure he one day had a little surprise when he had sketched a couple of ovals to convey to the bright maid of the inn, to whom he could give no idea in her own language, that he wanted a couple of eggs. She quite understood, tripped off, and brought him a pair of spectacles! Thereupon he drew a hen, I won't say laying the spectacles; but, anyhow, with the hen and two more ovals he finally got his eggs.

Illustration has served all generations. In 1587 it was a cut of Drake's ship which was spread abroad. Thirty years later

we find floods in Wales being depicted with plenty of moralising. In 1680 a "Loyal Protestant and True Domestic Intelligencer" gives a cut of the true form of a prodigious egg which was the giant gooseberry of that period. One hundred years later Thomas Bewick's beautiful wood engraving of natural subjects delighted all who saw them. The *Times* early in the nineteenth century depicted Nelson's funeral card, and, curiously, illustrated some articles by Robert Owen, the Socialist, dealing with mutual co-operation. Queen Victoria's Coronation induced quite a fine full page picture in the *Observer* about 75 years ago. A few years later Herbert Ingram, the Nottingham newsagent, noting that papers with illustrations, however crude, had the best sale, came up to London and started the *Illustrated London News*. In 1854 he gave, by an aquatint process, the first colour printing in a newspaper. He was a hasty man; he snatched up a lot of these first colour prints while they were still lacking a colour or two, because they seemed to him passable enough, and he really would not keep the eager crowd

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waiting any longer. The Crimean War had its special artists, who seem to have spent almost as much time under military detention as afield. G. H. Thomas later did fine drawings for the *Illustrated London News*, and his brother, W. L. Thomas, in 1869, just before the Franco-German war broke out, started the *Graphic*. Having great events to depict, that new journal and the *News* both made wonderful headway.

At that time the artists worked on selected pieces of boxwood . . . but in 1878 many drawings were being printed on to sensitised wood. Here I began to come in, for my time as a youth was largely occupied in photographing drawings on to wood for the leading wood engravers; and through doing this work I remember coming into touch with many well-known men, such as Linton, Dalziel Brothers, Roberts, Klinkicht, and others.

I was helping my father who, I think, I may claim was quite an important pioneer in process illustration, and some mention of his work may serve very well as a kind of thread to connect the stages of technical development and to lead up to what improvements have been made by this time. You will understand that 1866 saw the introduction of photographing upon wood. There was really no line photo etching work at that time, and we were still further removed by a number of years from half-tone photo etching. It is curious that the process should have been so delayed, for in 1824 Nepece had actually produced a half-tone etching upon metal, and in 1848, in France, Monsieur Gillot invented and one might almost say perfected a zinc type process. He was a lithographic artist, and when he was once etching a commercial job upon the litho. stone and proposing to raise that part which was to print high above the other surface of the stone, the idea occurred to him to do the like in metal. He did this

successfully, and yet his method was not introduced into England until 28 years after, that is, 1876. As then introduced it became what we call line work. . . .

In the sixties and seventies my father was doing practical work and experimenting with a process of engraving upon zinc. He did this work at the Ordnance Survey Office at Southampton, putting some photographs on zinc; but they were treated as litho. plates, and to be printed, as we say, planographically; that is, the whole plane surface of the plate to be in contact with the paper. What was relied upon to prevent colour getting into a wrong place was simply the natural chemical law of the inter-repulsion of oil and water. All lithography is based mainly upon this law. While my father was working on various lines of lithographic transfer, producing various blocks in this way, and was also experimenting with various photographic applications, the Franco-German War broke out, and Gillot, of Paris, and the men he had trained, soon came over to London. They were obliged to come, for they were all Communists. As a youngster I remember learning the rudiments of etching from them. I had charge of them, and a pretty handful do I well remember them to have been. Particularly do I remember Paul Lafargue, who only recently died in Paris, and whose funeral was attended by some twenty thousand people.

Although the line method is now delightfully simple, Mr. Hentschel said, it was by no means so at that time. In those early days there was a degree of uncertainty enough to drive crazy men only accustomed to modern methods. The early method of making blocks by his father's process of photozincography was as follows.

He had invented a sensitised tissue, a sort of autotype paper, which was placed under the negative. When printed it

was taken out of the frame, placed in water to soak, and squeezed on to the zinc. It was then placed into a bath, which dissolved the tissue of the parts not affected by the light. After a short time the paper was removed and the picture was left in the zinc. This was carefully washed and the plates dried. The tissue consisted of a preparation of caseine and printers' ink and various other ingredients, forming a resist which would withstand the acid. The plates were then put into an acid solution and etched. The white parts were gradually eaten away by the acid, leaving the other parts in relief. Briefly that was the procedure, but the trouble was to secure the tissue on to the zinc, and apart from that the preparation of this special tissue itself caused the lecturer many sleepless nights. Nowadays the line process was much simpler. He explained it in detail as he also explained other processes comprehended in photo-engraving.

It might interest them that it was the invention of photozincography which led to the starting of the *Daily Graphic*. The observant and alert mind of the late Mr. Thomas recognised an opportunity here for a new journal which, for a time at any rate, would probably be left without serious opposition—as indeed proved to be the case. In those early days only line drawings were used in the *Daily Graphic*, and even so, considerable trouble was experienced in getting work through. He could testify as to this because he had the privilege for many years of handling all the *Daily Graphic* work.

One of his experiences on which he reflected with peculiar pleasure was his work for the *Daily Chronicle* nearly twenty years ago. The *Chronicle* tried to assist the Progressives of the London County Council in the election of 1895 by producing a wonderful series of pictures of various institutions or places which the

Council had provided or was controlling. Mr. Massingham, the editor, led off with a drawing by Sir Edwin Burne Jones, entitled "Labour," and among the leading illustrators of that time who were drawn into the service were McNeill Whistler, Joseph Pennell, A. S. Hartrich, Raven Hill, E. J. Sullivan, Walter Crane, Phil May, H. Railton, Maurice Griesenhagen, Lindley Sambourne and Cecil Alden. For about three weeks Mr. Hentschel pretty well lived in the *Daily Chronicle* press-room. The trouble was that stereotyping was not then nearly as efficient as now. Things were now faced with various enamel-like compositions which brought out all detail with very fine definition. But stereos were then so bad comparatively that he at last in desperation urged the firm to let him make a separate original photo-zinc of the page or whatever might be the illustration for each machine that was to have part in printing the day's issue. They did this. These original zincos were curved and fixed on to each cylinder. The result was grand. All the strong lines were kept. The results had never been surpassed. The appreciation of the owner and of Mr. Massingham, the editor, was very hearty, and, he might say, gave him very great pleasure. Stereotypers and machine men were distinctly prejudiced against the fine photo-engraved metal block and, in truth, until machines and their blanketing and general paraphernalia were brought to the present pitch of perfection, it was only fair to acknowledge that the problem of journeymen directly responsible for the plates was a very serious one.

Perhaps it might fit in here to say that his firm had also made blocks in great numbers for the *Times*, *Daily Telegraph*, *Daily Express*, *Daily Mail*, and for nearly all the leading provincial journals. They had had a glorious reward for their labours in this direction in that they had so im-

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pressed these different journals with what could be done in this way, impressed them with its artistry, effectiveness and journalistic value, that they had pretty well all decided that they really must establish their own studios and make their own plates! And so the zealous engraver was left lamenting. What did Talleyrand say? "Surtout, pas de zèle."

It was often said that there is no finality in illustrated journalism, and when we saw how everything was being improved we must agree that finality would never be reached. However it was interesting to see which paper at the moment had won pride of place even if it was possible that some other might come up to and surpass it. The youngest of the leading sixpennies, the *Sphere*, had unquestionably outstripped all its older competitors in regard to its general "get-up," and to the artistic arrangement of its pages. The diagrammatic subjects were invariably prepared in a manner which must compel the admiration of all readers, and he might here mention that their friend, Mr. John Duncan, was responsible for many of them. Immense labour was directed towards enabling the reader to appreciate a great number of things with the minimum of his own labour. The double summer number of the *Sphere* had justly been referred to by one journalistic critic as "superb." Sometimes in its double page illustrations, figures of men or women were wrought in on to the basic pictorial design, and were super-added with such artistic skill that these figures seemed as if they were actually walking off the page as the Scotch ancestors walked out of their frames in the famous Dewar advertisement. What with its colour illustrations and all these features the *Sphere's* Double Summer Number was very hard to beat. Frankly, he could not pretend to be wholly unbiassed in criticism, for he had had the privilege of

superintending all the productions in this periodical since its start. Other journals of this class with which he had also been actively associated included the *Illustrated London News*, *Sketch*, *Graphic* (as distinct from the *Daily Graphic* beforementioned), *Tatler* (published in the same office as the *Sphere*), the *Bystander* (published in the same office as the *Graphic*), the *Car*, the *Ladies' Pictorial*, and the *Lady*. Altogether, he had had a pretty good doing in illustrated journalism during the last 33 years.

It was a little curious that so far the *Scotsman* and the *Glasgow Herald* had been rather slow to move. The *Glasgow Herald* celebrated its centenary in 1882, and might be forgiven for a little over-disposition to linger lovingly in contemplating the good old times. Besides, it was enormously prosperous, and even Scotsmen were probably prone to let well alone. The *Scotsman* of Edinburgh reminds one rather of the two rivers in the south of France which, murky on one bank and bright on the other, flowed on together. From the *Scotsman* office issued an evening paper which was abundantly and exceptionally well illustrated. There was, he believed, a very fine studio in the *Scotsman* office.

While the illustration work for the evening journal was so good and the stereos were so excellent that the *Scotsman* was continually being written to for any friendly hint it might choose to give as to how these results were obtained, the great journal itself—he was speaking of the *Scotsman* simply—made next to no use of illustration in its pages. One wondered if the motive, conscious or subconscious, might be this, that the *Scotsman* had no morning paper rival in Edinburgh, but there was a rival to the evening paper. The *Dundee Advertiser* thirty years ago was to his knowledge doing very decent work in line etching,

though he didn't think that the camera entered into it. It was probably simple litho. transfer on to zinc.

Regarding American illustration, it is difficult, said Mr. Hentschel, to tell a lie just as it is hard to tell the truth. Almost anything you like to say will be true of some aspect of it, and untrue of others, just as almost anything you like to say will be true of some aspect, or some period, or some part of America itself, and untrue of other aspects or periods or parts. Americans certainly bury their readers under their enormous Sunday and other journals. They do acres of illustration, but they don't turn out good topical illustrations so quickly as we do. One of our engravers visiting the States told them, "We don't hustle in London, we haven't got time." They hustle over there and their weeklies are filled up with belated pictorial matter. Mr. Collier, of *Collier's Weekly*, once asked me the flattering question as to how we managed to get out our illustrations so rapidly. Well, I will own up that I was a little more than ordinarily pleased to answer him on the matter. There was a big fire some time ago in this country, and one of our evening papers came out with an illustration of it before the brigade had got fairly under way. Even a trade monthly came out not long ago with a full report (with illustrations) of a ball that had been held only the previous night. It was quite a smart piece of journalism, and the editor,

photographer, printer and publisher all deserve credit. A half-tone block can be turned out within half an hour nowadays. Time after time it has happened that only six hours have been allowed to us to finish off a large double page, which in the old days of wood engraving, in spite of the block being split up into several sections, would have required several days.

Just one word regarding ink. I have in mind the *Belfast Evening News*, which, I am assured, and I think it probably quite true, has paid a little extra for its news ink for some years, with the result that its illustrations do illustrate. They do satisfy the eye. There is a world of difference between half-tone that will just do and the half-tone that is really effective. "Good enough" is never good enough. By the way, the *Belfast News Letter* brought out its tercentenary edition not long ago, and it certainly was a wonderful production in regard to the abundance and the informing character of its half-tone. Talking of newspaper achievements, the *Daily Telegraph's* recent panoramic view, obtained by apparatus which is quite recently put upon the market, ought to have mention here.

The *Times* brought out a special printing number some months ago. This was enriched with strong good line. It was rather curious, Mr. Hentschel remarked, that this *Times* issue contained no half-tone.

ARE YOU THE MAN?

WHO comes down to the office in the morning feeling that this will be a Day of Days?

Who has long ago concluded that honesty is the best policy?

Who believes in being the directing mind in your business and letting the de-

tail be taken care of by those you employ for that purpose?

Who figures that one job turned out well is worth more in returns than ten ordinary jobs?

Who is ever on the alert for new business and knows how to take care of the old?

✓ *Photo-Engravings—Guaranteed for Life (?)* *“How many will it Print?”*

Fred W. Gage.

PROBABLY no photo-engraver has been long in the business without having that query put to him, and doubtless every one of us has answered substantially to this effect, “Oh, it will print a hundred thousand or more.” This reply usually reassures the political candidate who contemplates using a few thousand cards to boost his nomination, but what right have we, as a matter of fact, to make any sort of promise without knowing just how the printing from the plate is to be handled?

What shoe dealer would guarantee a given pair of shoes to last the purchaser for an unlimited number of miles or hundreds of miles' travel, knowing that even a week's walking on rough, rocky ground would cut them all to pieces?

The engraver who prints the half-tones he engraves is in a minority, but he is the only one in a position to promise anything regarding the life or printing endurance of half-tone plates. And to “make good” on his promise he must always exercise great care in doing the printing.

Relatively few, excepting those engravers and printers who have made a special study of the matter, realise the extreme delicacy of a half-tone plate. It is hard to comprehend that an ordinary 150-line plate has 22,500 minute dots to the square inch in a high-light section. These dots are often so finely etched as to be little coarser than needle points, and *copper needle points* are easily dulled! Indeed, such a plate may be instantly ruined by the careless scrape of a thumb nail.

The writer chanced to have completed

his apprenticeship as a cylinder pressman at about the time of the introduction of the halftone as a commercial means of illustration, and has been in a position to observe very closely its development and the wonderful changes it has brought to the entire printing industry. The first plates were etched on zinc, and, although considered “fine” when made with a 133-line screen, were so shallow as to “bottom” if given a single tissue paper too much impression.

Plates made nowadays, even of 150- or 175-line screen, are much more deeply etched than were the earlier plates, yet more often than would seem reasonable, halftones show *wear*, even although but a few thousand impressions have been printed from them,—with blackened edges, dirty sky and middle tones entirely lost.

As a rule, the engraver is blamed for such results, the printer quickly jumping to the conclusion that the plate was defective in some way; whereas, in the writer's judgment, the printer is the one really at fault in about nine cases out of ten. Once in a great while the engraver *does* etch a halftone too shallow,—this perhaps on vignettes or other delicate plates,—resulting in easily blackened edges and other unsatisfactory developments.

Most trouble of the sort, however, can be traced to ignorant handling in the pressroom, and usually from one cause,—the printing surfaces not travelling in *exact unison*. Many pressmen fail to realise that a modern cylinder press may become an engine of destruction if the cylinder be made larger in diameter than

originally designed, by the addition of a few sheets too many in the “packing.” This added diameter means an increase in circumference and a lengthening of the printing surface.

The printing surface of a cylinder so “overpacked” must inevitably travel faster than the bed, for they are both driven by a train of gearing which will not allow of any slowing up of the cylinder to allow for its increased size. Naturally the slippage will show most on the edges of the plates or along the “gutters” of the form, and the grinding action soon ruins the plates. This grinding action is, of course, increased by “fuzz” from the paper or dirt from any other source.

The result is often noted on even the relatively coarse type forms printed on presses so out of adjustment, and it is not to be wondered at that the fine dots of a halftone show it even quicker, and then the engraver is blamed for a result that he could not possibly foresee nor prevent,—one that would not have resulted had his engraving been given proper handling.

Rotary presses with their curved plates are usually handled with greater care in this respect, yet in a recent instance which came under the writer’s observation, curved electrotypes which “mysteriously” wore out after a few thousand impressions had been taken from them, were found to be “thin” by about $\frac{4}{1000}$ of an inch, and the consequently necessary over-packing of the printing cylinder made it a fine “scouring” surface, as the plates clearly showed.

One other cause of worn plates, and particularly of darkened edges of vignettes, is a *rocking block*. As a matter of fact, nothing but a metal base should ever be used under a halftone plate, but necessity more often impels the use of wood.

The very best of wood is susceptible to the influence of the atmosphere, and though it is usually well dried before having nailed to its upper surface the metal plate which pretty thoroughly protects it from the air, the exposed portions of the wood can readily absorb moisture, and warping often results, making a miniature rocking-horse of the block, the edges scraping more or less each time the printing impression flattens out the surface; a heavy underlay sometimes gives this same “rocking” effect, with like results.

Any of these ways of misusing a halftone plate will so shorten its life as to discredit the engraver, unless careful investigation shall reveal the real reason for the trouble. So how can any engraver safely promise any definite “life” for his product, when he cannot control the way in which it is handled?

The more sensible plan would be to promise *only* that the plate will give satisfactory results if rightly handled. The engraver must *know* that the halftone is up to the accepted standard as to depth (recent inventions make it possible to *measure* this exactly), and that the block on which it is mounted is level and true, but after it leaves his hands, his responsibility ceases.

When is a halftone plate a GOOD PRINTING plate, and when is it not a good printing plate?

When does the engraver’s responsibility cease?

How many impressions shall we guarantee from halftones of various screens?

Why should we guarantee any number of impressions as long as others make the impressions?

Let us draw a definite line somewhere and stand on that line.

What do YOU think about it?

Send your thoughts and ideas to the PROCESS MONTHLY.

The Ilford Screened Chromatic Plate for Architectural Photography.

By Henry W. Bennett, F.R.P.S.

THE great advantage of colour-sensitive plates for landscape photography has long been fully recognised; the marked improvement in the rendering of green foliage and the more truthful translation into monochrome of the varied colours of the subject are duly appreciated.

But it is not so generally known that the gain in monochromatic reproduction by the use of colour-sensitive plates is almost equally great in architectural photography, a branch of work that is not ordinarily associated with orthochromatism.

In architectural photography, as in landscape, or still-life subjects, the photographer forms his impression of the subject and determines the effect that he wishes his picture to convey by the relative brightnesses of its component parts.

If the translation of the colours into monochrome should differ from their effect on the eye, his picture will fail to attain his ideal. It may be more or less satisfactory, but most often it will be disappointing.

Although in architecture, as in landscape, there are subjects in which the result given by a colour-sensitive plate is not very different from that produced on one that is not colour-sensitive, yet in the great majority there is a distinct difference, this difference being invariably in favour of the orthochromatic plate.

In a special case recently, this fact was very strikingly illustrated. An architect who specialised in designing schools, and who had endeavoured to combine simple artistic design and quality with economy, had utilised bricks of three different

colours in order to produce an effective building without employing stone or terra-cotta. The bricks used were buff and two shades of dull red.

Photographs of these buildings taken on colour-sensitive plates reproduced the colours of the different bricks—not obtrusively, but as seen by the eye in looking at the building, in such a way as to convey a good impression of their value in relieving the monotone of plain brick. Photographs previously taken on ordinary plates, on the other hand, showed all the bricks in one uniform tone, and it was impossible to distinguish more than one colour of brick, however carefully they were examined. The yellow-buff colour appeared as dark as the red, and, from the architect's point of view, the photographs were absolutely valueless.

It may be contended that this was an exceptional case, but there are many others in which the difference, though not so strikingly evident, plainly affects the result. The same principle applies throughout; the colour-effect of a building which is preserved when translated into monochrome by means of a plate which is colour-sensitive, is lost on an ordinary plate.

Some red bricks are very attractive in colour, and although much of this charm must necessarily disappear when reproduced in monochrome, there is no reason why the result should be as unsatisfactory as it is when taken on an ordinary plate under conditions in which sunshine is impossible. It is dull and dark, quite different from the effect of the rich, warm, bright colour of the building itself.

A very great improvement in my own

work resulted from the use of a colour-sensitive plate and a suitable screen, but in many cases, the slowing effect of the screen rendered the exposures prohibitive; the Ilford screened plate now affords me a means of obtaining the best and most attractive rendering possible, at all times.

There is another type of building in which a distinct difference is secured by the employment of the Screened Chromatic plate. A house with white rough-cast walls and a red tiled roof, standing against a background of green foliage and blue sky. Red, white, green and blue form a colour-combination that is reproduced with striking infidelity on an ordinary plate, and although the result may be passed as satisfactory when it cannot be compared with anything better, the rendering given by a plate that is

really colour-sensitive shows its superiority at once. The white walls standing out against the blue sky, the red tiles and the green foliage are all clearly indicated.

These are common examples, and many others might be given, all illustrating the fact that in architecture, as in every other subject in which colour forms a feature, there is a distinct comparative difference between the reproductions on an ordinary plate and those on a plate that is truly colour-sensitive. It cannot be too strongly insisted on that this difference is invariably in favour of the colour-sensitive plate.

The Screened Chromatic plate represents the tone-values of the subject approximately as they appear to the eye, without any increase in exposure; and this constitutes its value.

System in the Artists' Room.

THERE are hints for all artists in a short sketch by Arthur Guerdon in the "Art Record" regarding the "system" adopted by Linley Sambourne in preparing his drawings. It should be remembered that a "Punch" cartoonist has a very short time in which to prepare his subject. The subject is settled at the weekly dinner and the sketch must be in the Editor's hands a day and a half later. There is practically no chance to prepare earlier. Here is an account of what Mr. Guerdon noted: Mr. Sambourne crossed the room and drew out a shallow drawer in which there were three compartments, packed to repletion with what looked like stereoscopic slides arranged on end. Here and there a tag protruded, bearing some such title as "Military Uniforms," "Sixteenth Century Costumes," "Armour,"

"Dogs," "Ancient Egypt," "Actresses," and so on. "In a few cases, such as portraits," said Mr. Sambourne, "I am able to buy portraits. As a general rule I make them to suit my purpose. I use a camera for rapidity, and can take fifty studies in the time it would take to make an imperfect sketch." He drew out a slip of card on which was mounted a figure of Napoleon in a tragic attitude of despair. "That," said he, "is my servant. He was dressed for the part, and, as you see, looks very much an Emperor. Such studies are of great assistance to me. I have a dozen drawers full of such subjects." "I could not," said the interviewer, "repress my admiration. . . . You are at once an artist and a man of method. I had thought the conjunction quite impossible."

✓ *Offset Methods for Name Plate Engraving.*

By W. T. Wilkinson.

THE methods of preparing offset plates for Photo Lithography, or for metal engraving are as follows:—The paper method of preparing a photo litho. transfer for subsequent transfer to stone or metal; by printing direct upon the offset plate, zinc or aluminium, and by coating the metal plates, (zinc or aluminium) with a ten per cent. solution of gelatine, drying this at the ordinary temperature, and then sensitising with ammonium bichromate.

The paper method calls for little comment here, as it is so well known, the other two offering much better results with less trouble.

Zinc plates are prepared by polishing with very fine pumice powder, then grained in a mixture of Nitric Acid, 1 ounce, Water 80 ounces, Alum 1 dram, well wash, and on the whirler coat with

Fish glue	...	...	½ ounce.
White of egg	...	...	1 ounce.
Ammonia bichromate	...	...	¼ ounce.
Water	...	...	30 ounces.

Filter through cotton wool, after coating and whirling detach the plate from whirler, and dry over gas stove, film uppermost.

Expose under line negative (not reversed), after exposure ink up with transfer ink thinned with turpentine and applied with a glue roller, develop in cold water, allow to dry, then gum in, roll up, etch, and proceed as for ordinary lithographic printing, except that the etch should be much deeper than for ordinary litho. work, so as to get a much thicker body of ink on the work when required for metal plate etching.

Aluminium plates can be used instead of zinc if preferred.

The next method is this:—Prepare a solution of

Nelson's Gelatine No. 2	...	...	1 ounce.
Photographic	...	...	10 ounces.
Water	...	...	10 ounces.

Soak the gelatine till soft, then melt by placing containing jar in a water bath, filter through muslin and keep at a temperature not exceeding 120° F.

Zinc or aluminium plates are grained, scrubbed, washed and dried, warm up to 90° F., then coat with the above gelatine, allowing five minims to each square inch of surface to be coated. When coated, place plate upon a cold, level slab till gelatine is set, then place on a rack to dry in a warm current of air. Plates so prepared will keep in good condition for any length of time if kept from damp.

When required for use they are sensitised by brushing over with a spirit sensitiser, sufficient being applied to thoroughly saturate the film. When this is done the plate is placed in a box heated to about 100° F. or held in front of a brisk fire till dry, an operation occupying three to five minutes. The sensitive plate is now exposed to light under a negative or positive in line, in bright sunshine or to arc light; five minutes will be ample exposure. After exposure immerse plate in clean cold water until yellow colour is removed from protected portions of film, then stand up to dry.

The formula for the Spirit sensitiser is:—

Ammonium Bichromate...	1 ounce.
Soda Carbonate (crystals)	2 drams.
Water	... 20 ounces.

This is the Stock solution, and for use it is mixed one part of the above with two parts of methylated spirit. The Stock

solution will keep any length of time, but the Alcoholic mixture only a day.

As mentioned above, zinc and aluminium plates can be used for this process, but thick glass plates will be found better and cheaper in the end, as once the metal plates are taken through the press they are no longer quite level and this entails trouble in obtaining contact with negative in printing frame. Glass plates $\frac{1}{4}$ to $\frac{3}{8}$ inch in thickness are ground on one side with flour emery (Wellington knife polish is a good guide as to the fineness suitable), well washed and scrubbed, then placed in hot water, withdrawn from the hot water, drained, and coated with

- Soda Silicate (S.G. 1.5)... 1 ounce.
- Acetic Acid 1 dram.
- Tannin 60 grains.
- Water 10 ounces.

See that this solution covers the plate to the edges, then place on rack to drain and dry. When dry coat with the 10 per cent. gelatine, five minims per square inch, place on level, cold slab till gelatine has set, then stand on rack till film is dry, sensitise and print as above.

When printing on these plates from a positive, i.e., where the ground is clear, a safe edge must be provided by masking the extreme edges so that the edges of

sensitive plate are not acted upon by the light; unless this precaution is taken the film will come away from plate after rolled up a few times, the safe edge avoiding this disaster.

When the printed film is dry (after washing away the bichromate) it is soaked in cold water for fifteen or twenty minutes, then dabbed surface dry with a damp chamois leather, then covered with a mixture of

- Glycerine 10 ounces.
- Water 40 ounces.
- Liq. Ammonia 1 ounce.

This is spread all over the film and allowed to act for about fifteen minutes, soak up with a sponge and dab surface dry with a damp leather, place on the offset press, and proceed to ink up, using either a lithographic roller, or a glue roller, and the rest is ordinary litho. printing.

When printing on brass plates (name plates) the metal must be well polished, and free from grease, and when the offset print is made, dust well with finely powdered asphaltum, or dragon's blood, rub well in, then wash off surplus and at once warm up till the powder melts and incorporates with the ink.

Don'ts for Employers.

By George W. Hastings.

Don't boost.

Don't speak kindly when things go wrong—swear; the effect will be better.

Don't overcome a difficulty — worry about it.

Don't be pleasant.

Don't be courteous.

Don't get direct information—listen to gossip.

Don't expect too little of your employees.

Don't arrange for systematic cleaning —let dirt accumulate.

Don't show appreciation — someone may get egotistic.

Don't be optimistic—look in the hell box.

Don't encourage the foreman—it isn't human.

Don't smile—it may not be dignified.

The Dry or Wet Plate.

THIS perennial controversy is upon us now again with a new vigour.

It is astonishing how intense becomes the advocacy of either partisan. We happily are under no necessity to take sides; indeed, we fall back on the classic formula, "You are both quite right." Each has its especial advantages. One may go farther and say that each has its own especial cheapness. For continuous work of a perfectly regular and uniform kind day in, day out in a British city the wet plate would be likely to win pretty heavily, we dare say; but that is not the whole story. Who among British engravers gets continuous work of a perfectly regular and uniform kind? Moreover, the process engraver is a ubiquitous animal, and his experiences are more and more diversified. Engravers within our Empire have to be provided with the means of working in very warm and very cold temperatures. "They find it difficult," a "British Journal of Photography" correspondent reminds him, "to work with solutions above 90 deg. or below 50 deg." And there are, of course, portability, adaptability, and instantability all to be taken into account. Yes, there's no doubt about it; they are

"both quite right" in their own sphere.

The writer we have quoted adds a useful note regarding the rapid drying of plates:—

"When dry-plates are used, the time consumed when they are allowed to dry spontaneously can frequently ill be spared. Resort is then generally had to soaking in spirit, but the more hurried the operation the less satisfactory is this method. For if a plate has not been thoroughly washed or thoroughly fixed and the spirit be not over strong, the negatives will show opalescent markings which are yellow to transmitted light. Such a negative is useless for printing. Another disadvantage of the spirit method is that it is expensive, as the spirit needs constant renewal owing to its rapid weakening by the addition of water from the negative, and loss by evaporation. A much better method is to soak the negative for a few minutes in a 10 per cent. solution of formaline. Two minutes is quite sufficient with some makes of plates. After this soaking the negative is rinsed, the superfluous moisture is swabbed off, and the plate may be dried by heat, over a flame if necessary."

The Usefulness of Photographic Backgrounds

THAT whimsical notion of the "American Printer" of prefacing the different sections of the magazine with scripture texts is seldom justified in the text. You anticipate a sermon and find instead a wealth of intensely practical matter.

A recent number contains a short article on "The Usefulness of Photographic Backgrounds" in their associa-

tion with process work. The text is in itself instructive and is effectively illustrated by four plates, one of which provides an excellent title page, while the others are utilised as chapter headings.

The suggestion is that "the possibilities of photography in booklet designing have not been exhausted, although considerable use has been made of the art by men who prepare advertising matter. Neat letter-

("The Process Photogram.") Nov., 1913.

ing combined with specially selected photographs was a feature of a booklet recently printed for the Northern Pacific Railway. The photograph of the railroad track with its sharply defined perspective was a clever selection for the title page, as it blends effectively with a lettered title, while the chapter headings are plates prepared from photographic views of peculiar interest to each State considered."

It is difficult, however, to convey an adequate notion of the exact appearance of these illustrations. The prints are made in photographic colours and the lettering is light and artistic. "A cross cornered border assists in giving a designed appearance to the work."

"This plan of utilizing photographs is one which should be made use of more often. Photographs of a general nature can be applied to special purposes by

judicious cropping. It is remarkable how much more effective a photograph becomes after certain unnecessary portions are cut off. A building or other object is made more prominent by cropping some of the foreground, and the balance and composition of the photograph can sometimes be improved by cropping off a portion of one or both sides of the print.

For chapter headings and initials, one general photograph will sometimes furnish sufficient material, as a portion of a water scene can be used for one heading, and a portion of a landscape for another.

For initial purposes the figure of a person or tree could be taken from another part of the photograph.

Printers and engravers could procure such photographs from any photographer, or could photograph appropriate subjects with their own cameras.

What is the City of London Worth to the Engraver ?

SOME time ago we gave a few figures which perhaps astonished our readers as to the size of the engraving or related industry encompassed in the one square mile of the city. Even at that we think we understated the case; and now that we have further information before us, it is perhaps worth while to add to our readers' knowledge of the subject. For that knowledge certainly ought to have some real business importance at some time, in some ways, connected with business extension, that can perhaps hardly be guessed at the moment.

In the 658 acres of land comprised within the city, the whole great graphic arts industry, of which we form a part, easily takes the lead. The Day Census of the City of London, prepared for the City

Corporation, details the total workers in respect of thirty-five industries carried on in the "one square mile," and the list is headed by "Printers, Publishers, Stationers, etc.," with a total of 38,249. As the next largest total is "Drapery and Allied Trades," with about 35,000, it is seen how easily the 38,249 takes the lead. That presentation is, however, far from stating the whole case, for newspapers, including press agencies, total 10,243 in the City Census, and they are not reckoned in; "advertising," also not included, counts for 2,160; and while we undoubtedly should find many in these two totals with whom our own business relation might be pretty intimate, we should find a further such addition, if a slight one, from among the 1,365 comprehended

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under the heading of "Fine Art, Pictures, and Photography."

The official definition of "photo etchers" figuring as item number 233 in the detailed census is applied to "electrotypers and process engravers," as well as to process engravers proper. The grand total under this heading is 1,342, divided among 55 firms. To these have to be added a 661 total (among twelve firms), the 661 including makers of bank notes and securities, block makers (other than photo etchers), copper-plate engravers on wood, stampers, and stencil makers. The 962 total under the heading "fine arts and pictures," includes photo mechanical transfer producers, dealers in works of art, map colourers, publishers, and Christmas card producers. It is not a far cry to "Artists' designers and draughtsmen," which heading includes the fashion plate studio—(so useful to the process house)—the illuminator and the mosaic designer.

Cardboard box makers total 285, these certainly are of importance to the electro foundry. The very gramophone firms are important for us; their records provide

work for the electrotyper. Lithographers and colour printers number three hundred; the total in each case meaning a grand total of principals and employees; clearly the lithographic workers of large general printing establishments are included with those houses and are not taken into account here. Paper makers, agents, etc., totalling close on 3,000, hardly concern us so intimately, perhaps; particularly as wallpaper factors and wallpaper merchants are included. An interesting item is "photographic materials and apparatus," divided into "dealers, dry plate makers, and optical lens manufacturers," six firms, with eighty-seven as a grand total for the "square mile."

We can well understand that the census compilers found that it was not an easy task to determine under which heading, linked-up trades should go. The compiler, who has a pleasant wit of his own, tells how "some had so many strings to their bow that they had to be put among the 'miscellaneous,' a cloak which covers a multitude of—callings."

Double Exposures in One Negative.

J. W. FARLEY, Brooklyn, asks: "I understand that there is a camera made by which two exposures may be made on one sensitive plate with only one lens. Will you please tell an appreciative reader of 'Process Engraving' where such a camera can be purchased?"

Answer.—Cameras are not made for this purpose; each operator "rigs" up the improvement for himself, though it is to be expected that process camera manufacturers will take the hint from this paragraph, and see to it that their cameras have an attachment on them for this purpose hereafter.

To make two different exposures on a single sensitive plate all that is necessary is that one-half of the plate be shaded or covered so that the light from the lens will not reach it while the other half of the plate is being exposed to the light. This is usually done by fixing strips of wood having grooves in them at the top and bottom of the opening in the camera-box just inside of where the plateholder is attached and so as not to interfere with it; pieces of blackened cardboard are cut one-half the width of the opening in the camera-box and of sufficient length so they can be sprung into the grooves in the strips of wood. To expose one-half

(“The Process Photogram.”) Nov., 1913.

of a sensitive plate, for instance, a cardboard is inserted in the grooves large enough to cover one-half of the opening. The ground glass is inserted and the copy focussed on the half of the ground glass uncovered by the cardboard. The exposure is made, the cardboard blocking out, or preventing the light from reaching one-half of the plate. The plateholder is removed, the cardboard is slid over to the other side of the camera, and the ground glass inserted again. Another

piece of copy is focussed on the part of ground glass exposed to the light, the plateholder inserted again and an exposure made on the remaining half of the sensitive plate. Some operators will, by different widths of cardboard, cover two-thirds of a plate for one exposure, and the remaining third for the second exposure. The attachment is a simple one to a camera, and is in many cases a time and money saver.

Texture in Photography.

THERE was a very capital send-off to the photographic and photo-engraving classes at the Regent Street Polytechnic at the opening of the session. Mr. Howard Farmer gave a lecture upon texture in photography. He has been impressed with the difficulties which a photographer is likely to experience in cashing his skill for good consideration in face of the increasing competition of very cheap and, in some cases, very fairly satisfactory work. In fact, as he rather humorously put it, it did almost seem at times as if the main thing that marked off the different values of the guinea portrait from the portraiture in half-tone was the matter of the mounting!

He advised that the best way for the photographer to meet these conditions was to pay more attention to what he called texture. It was conceivable that certain hand-made papers might be prepared to receive photographic impressions satisfactorily. In various ways a sympathetic feeling, a something which gave a kind of grain quality, a softness, what for lack of a better word we might call an element of mist or mystery, might prove very acceptable, and to study how to produce this under the best conditions might have in it a new and quite definite value for the photographer, and incidentally for the photo-engraver.

Two “Verfasser” Hints—Dark-Room Radiator; The Best Waste Pipe.

JULIUS VERFASSER, in “Half-Tone Process,” speaking of gas stoves and gas radiators which are on the market recommended as specially suitable for dark rooms, and, naming them, he commends them as being as good as anything else obtainable for the purpose, he yet gives the hint: “Perhaps the ideal form of

heating arrangement for the dark room is an electric radiator, which may be in the form of a hot plate so that it can be used to wash up dishes or solutions. A good substitute for an electric radiator, which will cost nothing to run and which may be readily installed, is the arc lamp resistance, which could be placed in the dark room and serve a double purpose, a

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good deal of heat being given off by some resistances. They would, however, have to be removed in the summer time."

He gives the hint, in reference to lead lined sinks, that he does not believe in them unless they are made of very thick lead, and have better than soldered joints, and that makes them expensive.

"For your dark room waste pipe," he says, "you had better have an enamelled stoneware tube, which can be had with a stoneware trap and any kind of band and connections. If the joints are caulked and pitched a waste pipe will be obtained which will stand anything, and which will stand for practically any time; wherea-

a lead pipe will be a constant source of trouble owing to being eaten away by the chemicals put down. The acetic acid used in wet plate development is a very vigorous lead destroyer."

Among the miscellaneous hints in the book, is the one that the engraver should have separate dark rooms for separate processes. If he cannot arrange this, at least let him have separate sinks for separate processes.

Even where the operator is also the metal printer, it is best to give him separate rooms for the separate processes. So that his different appliances shall not get mixed up.

✓ *Half-tones and the Offset Press.*

HARKING back to the time of the introduction of the half-tone engraving, and remembering the discouragement offered to the advocates of that process, one wonders why it is the average photo-engraver persists in doing his best to discredit the offset method of printing. With few exceptions they "knock" the offset whenever they get a chance.

It has not been so very long ago that a well-known photo-engraver undertook to demonstrate that half-tone printing was better than offset work and to this end made a set of plates and run an edition from them on fine paper. Then he had transfers made from the plates—although they were by this time pretty well worn—and putting the transfers down on a zinc plate, worked another edition, on inferior paper, on an offset press. And with this unfair comparison he condemned the offset method.

Of course, a fair-minded public would not accept any such decision, but that has nothing to do with the fact that photo-engravers seem to oppose the offset

method for some reason. As a matter of fact, if the photo-engravers would only try to work in harmony with the offset printers much good would come of the combination. Given a good, clean, high-etched half-tone and the average transferer will put it down on a zinc plate for an offset press and make a better job of it than some people can of an original engraving. Even a common photo-engraving, if the highlights are fairly clear, can be used for offset work to great advantage. If the photo-engraver would only take this into consideration and work along with the offset printer, he would soon find that his business was being increased instead of destroyed by the new method of lithographing.

There is plenty of room in the lithographing and printing business for both the offset printer and the photo-engraver, and if they will work together they will both succeed. The photo-engraver who wants to do work with the offset press can get a lot of information from the offset printer, and if he will take it and use it he will get along all right.

Lord Northcliffe's striking talk to Canadian Journalists. Illustration and the Crippen Arrest.

LORD NORTHCLIFFE was recently the guest at the Canadian Club luncheon at Toronto. He was speaking, he said, in the most highly newspapered city in the Empire, in the presence of an audience daily accustomed to the perusal of six daily newspapers. It was in their Canadian forests that many of the world's newspapers had their origin. "You have been reckless in the past in the sacrifice of these forests. Some of them have gone never to return. But you have quickly realised your error and have demanded their replenishment. You may have this consolation, that the paper from these forests which passed across the ocean has done much, when converted into newspapers, to make known to the old countries your resources and your greatness."

Publicity was the master detective. He could name a hundred cases in recent years where evil men had been arrested who would have got off scot free only twenty years ago. The highly trained readers of the six daily newspapers in Toronto could probably tell of as many more. Let us look back to one in the recollection of all. Quite recently a gentleman, who dignified himself with the title of doctor, by name Crippen, was arrested at Father Point in the St. Lawrence. That arrest was brought about entirely by the master detective of the Press. A mysterious murder had been discovered in London, and it was found then that Crippen and a companion had disappeared. The newspaper machine was set to work, and published these two damning proofs of identity—

the photograph, and the facsimile of handwriting. The facsimile was speedily found in a hotel register in Belgium. The hotel people instantly recognised the photograph, published in the French edition of one of my papers, as a man who had stayed there and tried to book a passage to Canada.

As Crippen and his companion marched on to the gangway of the ship at Antwerp for Quebec, one of the officers had the newspaper in his hand. He compared things, and from that moment the authorities in London and in Canada were able to watch Crippen and his companion in their journey across the Atlantic as if they had been at short range in a ship of glass.

If the sceptre of the newspaper was publicity, the orb was judgment. Hasty people, with short views, were under the impression that newspapers endeavoured to foment civil war in the shape of labour trouble at home, or military warfare abroad. He did not fear to say that newspapers, when sufficient time had been given them, had done much to bring about the lessening of warfare, which they hoped was now taking place.

Take, said his lordship, the recent horrible war, so little understood over here, the war of the Balkan States in South-East Europe. The men who made that war met together in secret, as has been revealed by their secret documents published in the *London Times*, and sprang that war upon a startled world before anyone knew, before even the wisest statesmen knew what was happening. Now, gentlemen, war is like a

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forest fire. We who have had experience of forest fires know that there is only one way to conquer them—if I may use an Irishism—to attack them before they start. Once these people got loose in the Balkans, once they started their

nameless and unprintable horrors, neither the threats nor persuasions of the Czar of Russia, the Kaisers of Germany or Austria, could stop that war. The one thing that would have stopped it was publicity in advance.

Concerning Instructions from Customers.

By A. Artist.

THE innumerable ways in which customers' instructions fall short of conveying their exact ideas, and the frequent misunderstandings resulting from the misinterpretation of these instructions, led one of our prominent photo-engravers, as a matter of curiosity, to ask a commercial artist of long experience in many houses to write his views on the subject. The article prepared by the artist is submitted herewith without correction or emendation—it will probably be interesting to those who place orders for designs and engravings.

"All things come to him who waits"—at last the "Boss" has given we "time-clock pushers" the long-hoped-for opportunity of telling customers, without danger of getting fired, how some of them are regarded by the "hands" who attempt to carry out their instructions. The Boss asked me to state how the instructions received from customers appeal to we artists, and I at once hiked down to the office where the highbrows hold forth, and proceeded to give that little blonde stenographer of ours the earache.

The most frequently abused phrase accompanying orders is to make the work "first-class"—that word means nothing to us. First-class, judged by what standard? If it is a machine, is it to be finished with the utmost care as to detail; is it to have artistic lights and shade without regard to detail; is it to be kept

subdued in its colour values so as to look as much like the machine as possible, or is it to be made as sparkling and bright as the nature of the materials will permit? A retouched photograph or wash drawing of a machine may follow any of these styles and still be "first-class," judged by the highest engraving standards.

But how about the inexperienced buyer who has seen some de luxe catalogues, and, without having any idea of costs, orders the work strictly first-class—the artist blithely proceeds to put about thirty dollars' worth of time on it and forty-two seconds after the bill is received there is a frantic call over the 'phone for the salesman who handled the order, and the irate customer wants to know "what in the name of pickled onions (or words to that effect), you blanked pirates mean charging such a price, etc." Perhaps some of you folks have done it yourselves—Yes! No?

Another type of customer who has caused the artist to make the recording angel work overtime is the one who fusses over detail that ain't worth a tinker's ob-jurgation — consuming hours of time tinkering with details which will never show in the half-tone—and then, like the other one referred to, raises h-allelujah over the bill.

How do we fellows in the art department know that there are kicks about bills? Ha! Ha! Pardon my cachinnations.

You know an artist has no friends anyhow, and when the customer gets through with the salesman who handled the order, why, the only thing left for the salesman to do is to dislocate the artist's cervical vertebræ — in other words, the artist gets it in the neck for not knowing any better. Better than what? I don't know.

But, away with the merry persiflage and back to our job.

From the artist's standpoint, the surest as well as the most economical way to get a desired result is to send with the copy a proof of work, somewhat similar, having the finish and style desired—everything will then be as smooth as a ward worker the day before election day.

Another thoughtless stunt pulled off frequently is this: A customer who buys engravings with some frequency and who, as a rule, supplies fairly good copy, will have his wife's nephew or the stenographer's brother - in - law photograph something with his new hand camera, and he can't understand why results equally good cannot be made from these bum photos at the same price as was charged for the work needed on good copies. Of course, we artists have no kick coming about customers not having sense enough to buy good photos — the more punk photos to retouch—the more artists!

But it is when ordering designs that the idiosyncrasies of the customer shine like a bald head at a burlesque show.

There are laws governing the composition of a design which are as inflexible as the laws of the Medes and Persians (some class, what?), and these laws cannot be violated without "queering" the design. If certain specified elements are made up into a design by the artist, the customer cannot change part of it, add to nor subtract from it, without destroying the balance, and even though it may please the customer himself because the

idea is his, the result will jar on the sensibilities of the observer having good taste.

The commercial side of art conflicts with the æsthetic along designing and illustrative lines more than in any other branch—a man who wants an illustration of a fair damsel using his Peerless Bug Powder wants a Wenzell or a Dana Gibson result for eleven dollars and a half—and doesn't get it, strange to say, and as a result is peeved.

Any engraving house of size has a large art department, which naturally includes a variety of talents, first-class artists, good artists and others — including academy graduates. A clear, lucid description of the purpose for which the desired work is to be used and the printing conditions will enable the house to select the artist whose style and speed give the desired result most economically.

Many blotched and unsatisfactory results are caused by misguided customers formulating in their own minds the method they think should be followed in producing what they want, instead of specifying clearly the results desired and leaving it to the artist to get them—in the first case the artist is not responsible if he follows orders, in the second case he is responsible for the results.

Many years of experience in art departments of different houses and in various cities lead me to believe that satisfaction may be reasonably assured in advance by submitting a sample of the style and quality of work desired with written detailed instructions, and threshing out the question of price in advance with the salesman, so that the submitted sample and the definite written instructions can be given to the artist by the management with the number of hours possible to spend profitably on the work.

Simple enough, isn't it? And it would put the fool-killer out of business.

—*The Inland Printer.*

✓ *Efficiency in Production from a Practical Standpoint.*

John R. Bevan.

THE efficiency of a photo-engraving plant can be separated into three divisions: First, executive or office efficiency in its relation to the workshop and workmen; second, individual efficiency of the workman; and third, team efficiency of the force as a whole. If either of the first two are lacking, the third can never be up to the highest standard. On the other hand, you may have both executive ability and individual ability, and still be woefully lacking in team or general efficiency.

The birthplace of efficiency in a photo-engraving plant is in the office. You may not be a trained and experienced photo-engraver yourself, but, to be successful you certainly should have enough business acumen and good enough knowledge of human nature to select a competent man for superintendent or foreman, and when I say competent, it not only means a man who knows a good negative or poor plate, but a man who is big enough, and broad enough, to handle workmen, and get them to return value for value, work in exchange for wages, and at the same time command their respect.

At this point I should like to say that the office is very often to blame for the annoying and costly fault of failing to give or to write instructions plainly. Nothing is more provoking to a workman than to have to do his work over because either instructions were not given fully enough, or else were too vague, and left room for a wrong interpretation.

It is in the interest of efficiency that the executive end of the plant should see

that the workrooms are kept clean and sanitary and properly ventilated. There are always a lot of chemical fumes floating around in a photo-engraving plant, and if they are not positively injurious to health, I imagine we would all be better off without them.

Did you ever stop to think that it costs more to turn out engravings in a dirty shop than it does in a clean one? In the first place, no workman can be inspired to do his best work in a dirty shop. Then dirt and dust are a serious nuisance in a great many of the solutions used in the trade: dust in the collodion causes spots and streaks in the negative; dust in the stripping solutions is responsible for torn negatives and contact spots; indeed, when working collodion negatives, extreme cleanliness is absolutely necessary. So you see we should keep our workrooms clean, not only for sanitary reasons, but also for pecuniary reasons.

Now as to individual efficiency. The making of a photo-engraving is a process of evolution through the different branches of the trade—from the photographer to the making of the finished proof—and the quality of one man's work is so dependent on the quality of the work done on the job before it reaches him, that to produce good work you must start right, and you must keep it up all down the line. It is expensive to start a job with a poor negative and expect to pick up quality as you go along, and it is just as foolish to give an etcher a bad print as it is to give a good customer a shallow or a poor plate.

So efficiency in a workman means that

he shall do, not a lot of work, but a fair amount of good work—work that he can pass on to the next man who handles it with the knowledge that so far it is a good job.

I feel that under the head of efficiency some attention should be paid to the apprentice. The selection of apprentices certainly has an influence on the future efficiency of your plant. A good plan to follow would be to have a boy under your observance for, say, six months, before deciding to make him an apprentice to the trade. That should be ample time in which to determine a boy's fitness for the trade, and if he shows inaptitude, it is better for him, for you and for the craft to advise him to seek other fields of labour. But when you have taken a boy as apprentice, then it is to your interest, as well as your duty, to see that he is properly guided and instructed. Too often he is left to his own resources, and the final result is an inefficient workman, and here again is another phase of efficiency in a journeyman. If he is efficient in his work, it is almost sure that he will take a kindly interest in the apprentice under him, and will devote some of his time to assisting and instructing him, and here I want to say that in my mind it is a grave question whether one of the weak points of the cost system (and all systems have their weak points) will be that non-thinking superintendents or foremen, mind, I say non-thinking, will have a tendency to hold a workman down to such a strict accounting of his time that he will have little time or inclination to pause to aid or advise an apprentice. Remember that the journeyman trains the apprentice and you ought not to take away his one source of knowledge without providing another, so in the interest of efficiency I advise to devote a little time and thought to your apprentices, either directly or through your foreman.

Remember you profit by an efficient apprentice, so will the apprentice profit by a little attention, and so does the trade by the addition of a good journeyman.

Now the third, team efficiency. A good photo-engraving force, like a good football team, to get good results, must pull together, and the man who can bring about good team work, more than anyone else, is the man who has charge of the workmen, whether you call him foreman, manager or what not, and herein comes his knowledge and judgment of character. He must set his face sternly against petty bickerings among his men and he must use tact to prevent that greatest of all disrupters, jealousy. Often a man who is a good individual workman is not a good team mate. He may be sullen or he may be egotistical to a degree that is irritating to his fellow-workman. If he is, he is lacking in efficiency. Give me rather the cheerful, mediocre man who is willing to learn than the egotist who knows it all.

In conclusion I should like to say that it costs little or no more to produce good engravings than it does to make poor ones. Most frequently we see the best results turned out at lowest cost, while the poor results cost high.

Set your standard high. Make your workmen understand that you want the best they can produce. Doing good work will become a habit, and poor work a shame. Make an occasional sacrifice in the interest of efficiency by turning down work that you might possibly pull through. It may hurt for a while, but it will put the workman on his merit, and you will soon discover that you are doing good work at the same cost that you previously paid to produce poor. You will feel better satisfied with yourself, and you will be in line to get better and fairer prices for your product.

Pottering in Process.

OUR affairs were in a dismal state, so there came the floating of a company and things brightened considerably. A series of changes in the staff took place, not the least of which was the advent of the General Manager. A tall, stout man, of pleasant appearance and easy-going propensities. He came in like the dewy morn and with becoming grace installed himself in a comfortable office, newly painted and furnished. He then made a tour of inspection of the works and bade each worker a cheery "Good morning." Rumour said he had invested a fabulous sum in the concern, but the rabble said "What a fool."

Having introduced the General Manager, the Governor retired temporarily to the Continent, where the sunshine of France and the glaciers of Switzerland have such a soothing effect on the jaded spirits.

The General Manager gave himself over to the business; studied the chemical list, the rise in the price of copper, and gazed approvingly at the voluminous accounts. He evinced an interest in the various manipulations of the process, peered into the dark-room at inopportune moments, and retired precipitately when a megaphone-like voice yelled out something savage. He stood unflinching in the spray of the acid bath, and watched the etcher taste the strength of the acid. He tasted it, too, and in the quest of knowledge tasted it neat. He wiped his fingers on his morning coat, and afterwards reflected on the appearance of red spots upon his garments. The routing machine was a centre of deepest interest, until sundry pieces of flying metal found refuge in his eyes. The printing-room too, was ornamented by his presence until the danger of bichromate poisoning was pointed out to him. His chief de-

light, however, was in taking the freshly pulled proofs from the proofer's hand and admiring the results. To him it was wonderful. The proofer, following up his advantage in having so genial a critic, informed the guileless watcher, how by dint of hard work he had arrived at a stage whereby he could hold every detail in a plate, even to the extent of improving it. Others, he avowed, often achieved fair results from a bad plate, and lost customers. This confession gained him a rise of ten shillings per week, but he spent anxious moments calculating how long he would hold his berth after the governor got wind of the transaction.

Naturally to the General Manager there was nothing new about the telephone. A customer rang up one day and asked if he could get a large line map done in an hour. He replied "Most certainly." And when the customer, surprised beyond his wildest calculation, suggested that if it could be done under the hour he would be much obliged, he promised to forward the block practically upon receipt of the original.

The map came quickly, carried by the only honest boy in London, who, fresh from school, ran all the way and arrived red and breathless.

An hour afterwards, the telephone bell rang again and a voice slightly elevated enquired the whereabouts of the block.

"Oh, yes, I remember," replied the G.M. "A block of a map—yes. Have you not received it?"

The voice evidently confessed that the block had not arrived.

"Dear me," deplored the G.M. "I can quite understand your dilemma. But—are you there?—I say. I will go down to the works and send it along instantly. You shall not be kept waiting."

He stepped out of the office and pat-

tered down the stairs to the studio. Addressing a gentleman whom he observed in the act of passing a brush delicately over a double sheet of dull glass, he enquired after the map.

"Half-tone or line, sir?" asked the gentleman.

"It doesn't matter which," replied the G.M.; "we promised it in an hour."

"Perhaps the line operator can tell you," said the gentleman.

"I have made three maps," replied the other upon interrogation.

"Three!" exclaimed the G.M., "that explains why you've been so long. They only ordered one. You should pay more attention to your work, my good man."

Directed to the etching department, he discovered a plate of maps, soldered and inked up for the deep etch. He actually seized them and would have conveyed them away but for the remonstrance of the foreman. Then for the first time in his life he washed his hands with turps and potash.

The moulder and the printer could offer no explanation, and as a last resource he sought the amiable proofer, and felt sure that this clever workman had the block in hand. He was, however, doomed to further disappointment.

Retiring to the office he found the original where he had left it; on his desk.

Taking up the receiver he informed the impatient customer that the original had been overlooked.

A few seconds of ominous rumbling followed. Something unusual was sounding in his ears, and his face flushed crimson.

When the speaker paused for breath, the G.M. said:—

"I am sorry your machine is held up. Couldn't you start it and print the map afterwards?"

The ominous rumbling recommenced and the hopeful look that had crept over

the G.M.'s face as he made the suggestion vanished, and was succeeded by a flush deeper than its predecessor.

"Well, I will let you have it in twenty minutes," he said, and hung up the receiver.

His first intentions were to deliver the original to the proofer, in whom he had the utmost confidence. But on passing through the studio the gentleman with very black fingers saw him coming and said: "Is that the special map, sir?"

Being assured of the fact he volunteered to do it immediately.

"How long will it take you?" asked the G.M.

"That depends on the size," said the operator; "same size would take me twenty minutes."

"Half size would take you ten minutes?" suggested the G.M., hopefully.

"About that," assented the other, "a small plate is much more quickly manipulated."

"Quarter size, then, would occupy you five minutes?" opined the G.M.

"Say seven," replied the operator.

"Well, make it quarter size," said the G.M. "They asked for it to be made same size, but I don't suppose it matters."

The operator got into stride and, true to time, made the negative.

"I'll dry it for you," said he, as the anxious attendant held out his hands.

"Is that necessary?" asked the G.M., glancing at his watch.

"Oh, yes," said the other, and suited the action to the word.

In a few minutes the G.M. was in the office feverishly wrapping the negative in paper and tying it with string. The waiting boy received the parcel, and as he descended to the street, the G.M. rang up the customer and informed him that his block was on the way.

E.J.G.

Prize Winners at the L.C.C. Engraving School.

WE are rather sorry that we only noticed the names of two engraving firms among the list of prize donors at the L.C.C. School of Engraving and Litho. in London. Both the best known supply houses, Messrs. Penrose and Co., Limited, and Hunters, Limited, are prize donors. Whether Messrs. Griffin have been approached in the matter we cannot say. We can hardly doubt that they would respond.

A prize is so much more than—itsself; so much more than its actual cost in shillings. It is a very great friendliness and encouragement. There are not enough encouragers in the world. Engravers particularly should realise this; for many of them, almost all of them, by our observation, are men who have grown from the day of small things. Lithographers,

too, are not well represented in the prize-giving list. Sir Joseph Causton and Sons, Limited, are the only donors in that great craft. Messrs. G. W. Bacon and Co., Limited, whose name appears, are more specifically map producers and publishers. That the very restricted field which they typify should be represented might shame the other broader sections of the graphic arts. After all, a 'phone call costs but a penny or less, and a word with the Principal upon this subject would, we are sure, be warmly welcomed by him, and equally, we are sure, would not be regretted by the firm who rang up, should it lead to an arrangement for a small prize.

The following is the list of the prize winners for the session:—

Session 1912-13. Prize Winners.

Subject.	Donor.	Awarded to.
Map and Plan Drawing ...	G. W. Bacon & Co., Ltd. ...	H. Bennett.
Lithography. ...	Master Printers' Association. ...	E. Shipley.
Photogravure ...	Anglo Engraving Co., Ltd. ...	W. G. Meredith.
Elem. Line Negative ...	Mr. W. J. Smith (1st prize) ...	N. Davis.
" ... "	(2nd prize) ...	W. Chapman.
" ... "	" ... "	J. E. Mylchreest.
Line Etching ...	Gee & Watson, Ltd. ...	H. J. Reiger.
Half-tone Etching ...	Hunters, Ltd. ...	F. Hurwitz.
Design ...	Sir J. Causton & Sons, Ltd. ...	W. Baker.
Prep. of Originals ...	A. W. Penrose & Co., Ltd. ...	W. Robb.
Research Work ...	Wratten & Wainwright, Ltd. ...	W. A. Sivyer.
Mezzotint ...	Major-Gen. Lord Cheylesmore ...	R. C. Peter.

("The Process Photogram.") Nov., 1913.

My Causerie.

JUST once in a way I want to bespeak especial and grateful recollection of the abundant good work done for the engraving trade by the Regent Street Polytechnic. We are in some danger in forgetting this service.

Quintin Hogg was a marvel. He was a wonderful boy, and, in fact, was never anything but a boy in spirit. His fire, intentness and irresistible force were a perpetual amazement. He was, first of all, a very hard worker among the very poor. He finally concluded, however, that he could serve his day and generation best by concentration upon a great educational establishment worked in connection with a religious institution; and this he called into being at the Regent Street Polytechnic. This was opened, as we now know it, in 1882; though, to be sure, I remember going down a diving bell in the old "Poly." ten years before that time.

Mr. Howard Farmer who is, and all these thirty-one years has been, the head of the photographic and photo-engraving department at the Polytechnic, could tell a wonderful story if he chose. He hardly seems to choose, preferring doing things to talking about them. He had a two hundred or three hundred strong class of young photographers right away from the beginning in those early eighties, and what a wide outlook he has all along maintained upon the photographic world may be inferred from the syllabus of classes and lectures which he has arranged for this very session. Particularly there is to be a Friday evening class, which started on October 10th, for the subject of "Commercial Photography."

What long ago caused Mr. Farmer to interrupt the straight course of pure photography was a virtual appeal which

was made to him on behalf of the threatened wood engraving craft. Its younger workers were keen on mastering the new photo-engraving art. He had no idea how ardent and how numerous the applicants for such instruction would prove to be; but he and the fiery spirit in chief control of the Polytechnic soon determined that there was enough call to warrant them in a bold adventure.

Accordingly Mr. Farmer spent about a year on the Continent, and spent no little money to boot, in order personally to acquire that direct mastery of the technique of photo-engraving which at that time was possessed by so very few in this country—by hardly any, in fact. He even went right overseas to Calcutta, and surprised Colonel Waterhouse by looking in upon him where that gallant officer was attending to his work as head of a Government establishment which required photo-engraving, particularly photo-gravure, in its ordinary working. He was most kindly received by Colonel Waterhouse. Between his acquirements in Germany and his acquirements in India, he obtained such thorough knowledge of the subject that when he returned he was able to meet the needs of the nearly eight hundred students who flocked to get from the "Poly." that instruction in photo-engraving which they could then obtain nowhere else. It is a stimulating chapter in our craft history.

While Mr. Quintin Hogg and Mr. Farmer gave loyally of their utmost service to the young engravers of London at a time when there was no other helper for them, they later stood aside, if not altogether with unconcern, still with British willingness. The London County Council, coming late into the field with the money entrusted to it for assisting our crafts, concluded as between the Polytechnic with the many responsibilities resting

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upon it, and the Engraving School at Bolt Court, which had only one, or, at most, only three, main interests (and those three all closely related) that Bolt Court was the place for their money. It was, they thought, the place which offered the best field to be cultivated by them in this special sense. So they made Bolt Court henceforth the headquarters of the photo-engraving instruction of the young worker.

A good poster comes to me from the "Northern House," which seems to be the trade name adopted by Messrs. Philipson and Son, process engravers, of Newcastle-on-Tyne. They issue a sheet of forty inches by practically thirty inches, a quad crown; a good white calendered sheet, i.e., calendered on one face, and quite rough at the back. It bears a photo-litho half-tone of a mechanical subject, with its parts well defined. Messrs. Philipson and Son state that it is printed from a "Tyno" transfer by Philipson and Son, and that it is to be viewed at a distance of at least eight feet. So viewed it is certainly a very effective and successful poster, and an exceedingly good instance of the combination of half-tone and lithography. The printing is in a kind of photo-brown, not too dark.

I remember when in the north a year or two ago having a conversation with the one responsible for all the "publicity" of a great railway. Upon the floor of his office was spread out a view of one of the most picturesque towns in the North Country; a town of that medieval aspect which has so much charm for all of us. The printing was, if I remember rightly, in much the same ink as Messrs. Philipson have used. The attraction of colour was, of course, missing—shall I say was not wanted? There certainly were charm and power in the poster, and at the same time there was the assurance on the face of it that it was photographic, that the

place if visited would be found to be as here portrayed.

The publishing manager and myself discussed for some time what to do with the sky, for that was the one part of the subject which was disappointing. It was patchy and "dirty." It was decided at last that the sky had better be taken right out, and the litho. artist be allowed to create a new heavens, if not a new earth.

Later I enquired what had been done with the poster, and found that it had been sent in one particular direction where for quite a time no other appeal of any order of publicity had been made to the public. The tourist traffic from that region had been more than was anticipated. The railway company were thoroughly satisfied, and it would therefore seem that the enlarged transfer from the half-tone was quite a method worth encouraging in such a connection. Yet even so, I am not sure that it has not its more natural field in the direction in which Messrs. Philipson and Son have been making use of it, as here set forth in the technical subject before me.

If we have blundered in regard to the spectacles we have been using in our engraving studios we have but added one more to earlier follies in the matter of these useful "optic machines." That description I quote from my *Encyclopædia of Sciences*, published by Ephraim Chambers in 1727, the year in which Sir Isaac Newton died. I read in that work under "Spectacles," a description of how "shortsighted people or myopes, use concave lens's (sic) to keep the rays from converging so fast through the great roundness of the eye as to make them meet ere they reach the retina. In Spain and at Venice especially spectacles are used with a different view. All the people of note and fashion there have them continually on their noses, a

folly that has its source in the natural pride of those people who value themselves on a profound wisdom, and affect to stare very near at everything as if their eyes were weakned (sic) and wore out with excess of attention.”

I have just turned up “light” in these delightful great tomes. Of course, it is Newton’s emission theory which is encountered. Newton held that all bodies seem to be compounded of hard particles, even light itself, and the most volatile of fluids; and that every particle of matter has an attractive power, or a tendency towards every other particle. It was he who discovered that attraction. Particles of light, he held, were attracted to a particular body; the vibrating motion of the parts of that body in turn cast off what light particles that body had first attracted; and—but here let the encyclopædia speak:

“As in Algebra, where affirmative quantities cease, there negative ones begin, so in mechanics where attraction ceases there the repelling power must succeed. Therefore a ray of light as soon as it is cast off from the luminous body by the vibrating motion of its parts and is got out of the sphere of its attraction, is propelled with an immense velocity.”

Perhaps Newton’s emission theory of light was the true “law” at that time, in the sense that it may have been the teaching which agreed with the greatest number of then ascertained facts and phenomena. It remained for Dr. Young about a hundred years later to set the Edinburgh world laughing and scoffing at him for a presumptuous critic of Newton by his bold assertion of that wave theory of light which seems now to be universally adopted. Sir Walter Scott was made very sick by the wretched treatment which Young received, and by its terribly

serious financial consequences to that bold new thinker.

A certain Father Malebranche was “on to” the wave theory track even in or before 1727, for I read in this Chambers that “Father Malebranche explains the nature of light from a supposed analogy between it and sound; the latter, it is allowed, is produced by the vibrations of the insensible parts of the sonorous body. . . . If there be a greater number of vibrations in the same time in one sonorous body than in another, these being closer become of a different kind; and thus their sounds also differ. . . . Thus he supposes it to be with light and colours. . . . As the vibrations are more quick or more slow the body is of this or that colour.”

This was treason to Newton’s emission theory. But “the treason of to-day is the reason of to-morrow.”

Newton, I have no doubt, was great enough to recognise this. He was so wonderful a man that one needn’t be too hesitating about calling attention to some one point wherein it is now thought that he went wrong. The only thing I have heard imputed against Newton is that he got himself excused from paying his 50s. subscription to the Royal Society; and even as to that, one does not know whether he was compelled to avail of the exemption clause. For over twenty-five years he was President of that great society. He must have been a familiar Fleet Street figure. The Society’s headquarters and library during his presidency were in Crane Court.

One other excerpt in proof how near the scientists of 1727 were to 1913. “The rays of light are composed of dissimilar or heterogeneous parts. . . . The smaller the parts the more refrangible, i.e., they are so much the more easily diverted out of their rectilinear course; and those parts which differ in

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refrangibility (consequently in bulk) we have also observed differ in colour. Hence arises the whole theory of colours. Those parts, . . . which are the most refrangible, constitute violet colour, that is, the most minute particles of light, when separately impelled on the organ, do there excite the shortest vibrations in the retina, which are thence communicated by the solid part of the optic nerve in the brain, and excite in us the sensation of violet colour; . . . and those particles which are the least refrangible constitute a ray of a red colour, i.e., the greatest particles of light excite the longest vibration in the retina and so convey the sensation of a red colour. . . . The other particles being distinguished into little rays according to their respective magnitudes and degrees of refrangibility excite intermediate vibrations and so occasion sensations of the intermediate colours."

F. COLEBROOK.

THE THEOSOPHICAL PATH (Point Loma, California, edited by Katherine Tingley), has for principal features of its October issue: "The Essential Truth of Christianity," by a Christian and a Theosophist; "The Romance of the Dead," by Henry Ridgely Evans (Hon.); "Man's Greater Self," by H. T. Edge, M.A., and "The Island Continent," by Rev. S. J. Neill; "Hiram and an Apple Tree," a charming short story by Old Louis; and a poem by Kenneth Morris, the Welsh Poet, *Myrddin Muses in the Islands of the Blest*.

For illustrations, which, as always, form a most attractive feature of this magazine, are a series of magnificent views of Yosemite Valley; Land's End, Cornwall, England (with brief description); Australian scenery; Würzburg, Germany, and a very interesting series of the International Theosophical Peace Congress recently held at Visingsö, Sweden.

MORE ENGRAVINGS FOR WELSH HALFPENCE.—The "Cambria Daily Leader," Swansea, announces that early in November it will be issuing the largest halfpenny paper yet published. The issue is to be "Industrial Swansea,"

and will consist of thirty-two pages of the ordinary sheet of "The Cambria Daily Leader" on special paper. Notable commercial men of Swansea and district are contributing, and the issue promises to be a big effort at town advertising.

WITH the "Surrey Mirror and County Post," Redhill, of October 3rd, there was included a four-page full-size illustrated art supplement dealing with the jubilee of the incorporation of Reigate and Redhill. The portrait and other engravings were more than forty in number, and the descriptive matter ran to nearly twenty columns.

THE various schools within the administrative county of London, and under the administration of the London County Council, include Aldenham Institute, Goldington Crescent, N.W.; Borough Polytechnic, Borough Road, S.E.; L.C.C. Camberwell School of Arts and Crafts, Peckham Road, S.E.; L.C.C. Camden School of Art, Dalmeny Avenue, N.; L.C.C. Central School of Arts and Crafts, Southampton Row, W.C.; L.C.C. Hammersmith School of Arts and Crafts, Lime Grove, W.; Northampton Polytechnic, Clerkenwell, E.C.; and, reserving towards the last, certainly not the least, the L.C.C. School of Photo-Engraving and Lithography, Bolt Court, Fleet Street, E.C.; Regent Street Polytechnic, W., St. Bride Foundation Institute, Bride Lane, E.C.

A GREAT ARTIST'S LIGHTING. — Mr. Linley Sambourne's studio, a very "workmanlike den," showed conspicuously to an interviewer two large tinted globes. Much of the great cartoonist's work has necessarily been done at night. By passing either one or two 50 c.p. electric lights through a green globe, the artist found he got exactly the kind of light he wanted on his drawing surface.

THERE IS A CLASS OF BOOK in which the illustrations and the text are so intimately connected, in which the marriage between the two is so happy and so complete that you cannot conceive the text adequately without the illustrations, any more than you can conceive the illustrations unelucidated by the text." —A. J. Balfour.

Estab. Jan. 1894.

"The Process
Photogram."



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AND ELECTROTYPERS' AND STEREOTYPERS' REVIEW.

(We have received the following article from one of the best-known practical workers and directing chiefs—for he is both—in the Engraving Craft. The writer prefers for once to be anonymous, though the *Process World* has in past years been favoured with various contributions over his own signature. We are not cavilling in the least at his intimation; we readily give space to this perhaps rather disconcertive utterance of his; and we invite rejoinder, if any in the craft are moved to reply.)

On Labour Value.

"COLLECTIVISM is better than individualism," say the many, and by its very comprehensiveness of expression the platitude delights them and stills argument.

The many, as a body, may be the better for putting into concrete practice this comfortable theory, and yet the material result may be unsatisfying to the soul of each separate individual of that congregate many.

This is the kind of hard fact that so disturbs the mind of the socialist expert, who, being trained in his reasoning powers, cannot but recognise any weak place. The socialist expert is generally a materialist also, and cannot understand why there should be any flaw in the seeming logic of things, as he has no belief in the forces of inherent evil.

This disturbance of mind is becoming very evident among the gentlemen who have combined themselves together to form "The Amalgamated Society of Lithographic Artists, Designers, Engravers, and Process Workers."

Formed in 1885, on a firm basis, after some earlier vicissitudes, this Society has prospered steadily, and, as shown by their history and their rules at this day of grace, has also walked as a sober and

righteous organisation before fellow-craftsmen who have stood aloof from them—it has been a pattern of brotherly love and a matter for self-congratulation.

But there is a fly in the ointment, which torments their souls. For it appears that whereas before they combined to save the individual from a low wage, there existed beside the low wage a fair percentage of men with a very good wage indeed, now, after twenty-nine years' good collective work, the Society feels called upon to consider the advisability of raising their rate for minimum weekly labour, and this at a time of great prosperity among their neighbours, who, being of an individualistic temperament, have not joined forces with them but, selling their skilled labour in the open market, are just now doing very well indeed.

Now the Society process worker does not lay this trouble at the door of the employer, for his Annual Report has a list in which he includes him as "a fair house," and he also cannot complain that his employer underpays for "skilled" labour, when he pays his man for usual sorts of work at the minimum rate, for one of the Society's rules states that:—

An improver is considered to be

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one who has served his apprenticeship, but seeks to learn more of his business, and to qualify for the minimum rate of wages. No one can be considered an Improver more than two years after the termination of his apprenticeship. (Rule 20, Sec. 4.)

Still the individual Society workman in a house carefully subscribing to their rules has undoubtedly come to the opinion that he is not bettered by being in a Society House, and in many cases feels he is in a worse position than if he brought his skill to an open market. Thus comes the growing "collective" restiveness for an increased minimum, the current stock reason being "increased cost of living."

But are we sure of our premises that all is well between Society employers and Society employees? Make no mistake. I mean honest houses, where agreement is supposed to be mutual, and no friction at all between the officials of the Society and the heads of the firm. Where, when men are required, the Society is applied to, and when men are sent round to fill the vacant position, all goes on smoothly. Now that the Society has become established in many places as a complete machine, working presumably in a manner profitable to both the men and the employer, both have been able to review the effect of its establishment with them, and, as it is not too long since the pre-Society days, they are able to compare results.

Now from a money point of view, a remarkable fact has been disclosed, and that is, that the wages bill for a given number of men has neither gone up nor down, but has remained normal. This we must suppose is satisfactory to the employer, but has proved to be a cause of trouble to the worker, though it does not appear to be realised by him, for one hears "that the minimum being low

can be only given to the least skilled workman, and that the master will, if he wants good work, pay more than the minimum." Very well, if he did, his wages bill would swell, because he has no small waged inferior workmen as fill-ups at the other end. So the workman contends that therefore the master is sticking close to the minimum rate, which must therefore be raised. But may not another cause that has kept wages down near the minimum be an unfair interpretation of that saying, "A fair day's work for a fair day's pay."

It is said that in the United States the Societies demand a good wage, and also demand from their members a good day's work. They insist on their members reporting wilful shirking of work among their membership. They wish their employers to see and partake of the benefits of being in agreement with their society. If such a spirit were to predominate in our working here, we should soon see wages go up, and no increased minimum rule would be needed for that result. Those working in Society Houses are able to attest as to whether such a spirit is in them or not. It is to be feared that another spirit may have crept in, a spirit which is not shown where individualism is predominant.

Take for instance the case of a naturally expert and quick craftsman. He has been taken on from the Society at a minimum wage, he quickly shows what he is made of, and his employer increases his wage above the minimum. This is all in fair accord with the Society's rules and aims, and all is well. But what often happens, is that the man is too quick, and has to put up with nasty little undercuts from his slower brethren, notices stuck over his table, or mock medals for smartness hanging around, and as he is a good fellow, who would not willingly harm a worm, he slows down, the benefit his em-

ployer derived becoming nullified, and his enhanced wage is not earned. This does not take place without the employer's knowledge. It is noted for future guidance, and the result may well have some relation to the general discontent of the present-day on both sides. The master not finding it pays to increase wages, inevitably falls back to the minimum rate. He is human as well as his men, and it matters not really what within reason that minimum is, if he is to get only one rate of output per man, whether fast or slow, he will only pay one rate of wage

and that the lowest, for the output rate will also be that of the slowest man.

Now, of course, this is an extreme view of the case, and things are not so bad as they seem when stated so baldly, but the tendency for that condition to increase is evident, and should be checked in its early stages, if the Society desires to be respected both by the employer and employee, and wishes to increase in good membership by the drawing in of all the best men that have hitherto for various reasons thoroughly satisfactory to themselves held aloof therefrom.

✓ *The Use and Abuse of Vignetting Punches.*

THE use of “screened” or “lined” hammers and punches as a means of lowering vignettted edges is discussed by F. H. S. in “The Newspaper World.” He says:—“Cases continually occur where the possession of these tools—especially the punches—helps the printer over an awkward bit of work. This is especially the case where the vignettted edge is short—that is to say, close to the subject design. In such cases the copper cannot be expected to accommodate itself to the interlay, even by the use of many tacks or brads round the rebates; the ‘bend’ is too abrupt. Where this difficulty arises a little persuasion by the judicious use of a vignetting punch will usually make good. The term ‘judicious’ is used advisedly. What pressman has not seen a vignettted block with edges that looked as though pieces had been bitten out of it? That is the result of the misuse of the vignette punch or hammer, and should not be laid to the charge of the implement, but to its careless or incompetent manipulation. . . . One of the earliest forms of these tools was the ‘Müller’ hammer and punch. These tools are of the lined or milled

variety—that is to say, the operating surfaces are milled or machine cut in such fashion that a surface of what are practically minute cutting edges is presented. To all intents and purposes the smooth surfaces of the hammer and punches have been converted into a serrated multitude of microscopic knives or chisels. The effect of their use is the lowering of the vignettted edge without blunting the ‘dots,’ as would certainly occur were a smooth-faced hammer or punch used. The milled surfaces of both hammer and punches are slightly convex in form, thus safeguarding the block to some extent from the evil effects caused by ‘edge-biting.’ Another form of vignetting tool is one using a screen or stipple instead of a lined cutting surface. The hammers and punches of the screen type are level in surface instead of being convex, as in the type previously described; thus the danger of edge-biting is ever present except in the hands of a skilled craftsman who is aware of the danger and guards against it. Against this defect may be set the advantage of comparative cheapness, the screen tools being about half the cost of those of the Müller variety.”

Some Random Notes on Colour Work.

By Mr. W. B. Hislop.

EVERYONE who works intelligently in any branch of our interesting craft is bound to accumulate sundry little helpful dodges which are not mentioned in the text books, and which are sometimes not very generally known. The following are a few disconnected notes which may possess some novelty to most readers.

The problem of making a negative to a definite size is one which presents no difficulty in ordinary half-tone or line operating, but in colour work it frequently happens that negatives have to be made to register exactly with others made some time before, or under conditions which make it necessary to resize in order that they may register. The plan of taking as large a measurement as possible is obvious, and generally practised, but even with this method there is considerable liability for error to occur as the image is on one side of the focussing screen, and the foot rule, paper, or whatever kind of measure is

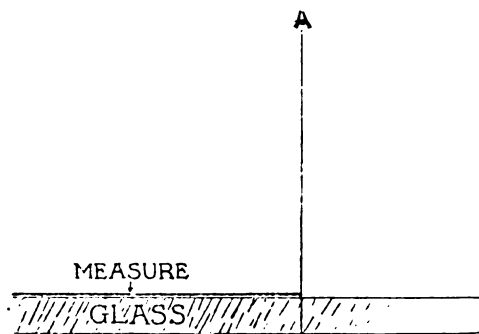


Fig. 1.

used, is on the other. If the eye is not directly above these two points (see Fig. 1), and the line of vision exactly perpendicular to the surface of the focussing screen, then the image will

appear larger or smaller than the measure according to which side the line of vision inclines. Now, there is an extremely simple way of ensuring that the line of sight is exactly at right angles to the glass, and it is based on the optical law that the angle of incidence is equal to the angle of reflection, and that, consequently, it is only when light strikes a mirror exactly at right angles to its surface that it returns along the same path. The practical example is that if we see the image of the pupil of our eye in the focussing screen we are certain that the line from our eye to the point on the surface of the glass where the image of our eye appears is perpendicular to the glass.

This is applied to sizing as follows:— Look for the image of your observing eye in the focussing screen, get the centre of the pupil over the point to be measured in the picture image, then place the measure also in the centre of the eye image, and you are sure of avoiding both the error caused by incorrect eye position, and that caused by refraction in the glass of the focussing screen. (Fig. 2.) This method is also useful in measuring pictures covered by glass, however thick, so long as the picture is parallel to the glass.

When the negative must fit one already made — as when the printer smashes one negative of a set—it is not always possible to work by exact measurement, and the quickest plan is to remove the back and the roller shutter from the slide, place the negative in the position it occupied whilst exposing, and centre the image to fit the negative. It is impossible to be sure of the size thus as the dots on the negative break up the

image too much. Remove the negative and cut a fine line through the film, with a sharp knife and straight-edge, this line

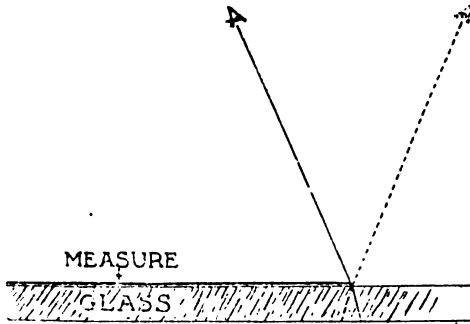


Fig. 2.

to be exactly along the register mark, edge of copy, or whatever mark is being worked from. In the middle of this line scrape the film clean away for, say, quarter-inch square, moisten thoroughly the glossy side of a scrap of fine Norwich film, and press into contact. Repeat at other end and replace in position in slide. It is then easy to see exactly when the line in the lens image received on the Norwich film coincides with the knife cut in the negative.

* * * * *

In direct colour work it should be borne in mind that the colour filters introduce more surfaces into the optical system, the tanks used for liquid filters having practically twice as many as "flats" or cemented dry filters. There is thus much more liability to loss of crispness through scattered light. All the surfaces should be kept as clean and free from dust or scratches as possible, stray light from other lamps or from reflections must be guarded against, and all unnecessary white margin on the original should be masked. The effect of this scattered light is not readily seen in many originals, but if a negative is made of a drawing, containing fine black lines on a light ground, before taking these pre-

cautions, and then another with the same exposure after taking them, the result is often astonishing.

* * * * *

In four-colour work there is little or no room for error in the screen angles if strong colours are used and a pattern avoided. With direct work and a circular screen there is no reason why the angles should not be quite exact, but I have had paired screens of the best makes, in which a slight error in the squareness of the edges produced a constant pattern. With indirect work there is always the risk of the transparencies being at slightly different angles or the plates, and care must be taken to adjust them accordingly. The most unfortunate feature about these "plaid" effects is that they are not discovered till the plates are proved—which is much too late. The following little device is a rapid means of checking the negatives, as the angle and the error, if any, can be read off at once. Make a single line negative from a screen one grade coarser than that commonly used for colour work, say 133. Get a celluloid protractor with a solid centre, and strip the single line tint into the centre semi-circle so that the ruling is *exactly* parallel with the zero line of the protractor, and trim off the excess film leaving the degrees uncovered. Now pierce a fine hole through the protractor at the exact centre of the zero line, and the instrument is complete. To check a set of negatives fix on a line on the original which appears clear on all the negatives, and place the protractor on this line so that the hole is exactly over it, and turn the protractor with this hole as centre. Dark bands will be seen to form, and when these are *exactly* parallel with the zero line the angle can be read off where the line on the negative cuts the edge of the protractor.

✓ *Buying and Selling Commercial Art.*

By George Underdown.

ASIDE from the making of plates, the greatest revenue of the photo-engraver is derived from the art department. While much has been said and written on the cost of production in general, and plate-making in particular, this question seems to have been neglected to a certain extent. The following article on art work will no doubt be of considerable interest to all those selling this class of work. It was a paper read before the conference held in Philadelphia recently.

"Commercial art, or art work produced for trade or commercial benefit, may be applied to carving, sculpture, music, etc., but I shall confine my talk to-day to commercial art relating to illustrating and advertising, including not only the artistic and commercial value of the design, drawing, or painting, but also the importance of commercial art to the engraver and printer.

"The highest of these, from an artistic standpoint, are the better grade of magazine and book illustrations, which in many cases are reproductions of real works of art. In purchasing this class of commercial art, the buyer should be a competent art critic, and the seller or artist should insist that his creations be faithfully reproduced by skilled and competent engravers, insuring to a minimum against the possible loss of the artistic qualities of his work.

"If the painting or drawing should be an advertisement of an article of merchandise, requiring accuracy of detail and artistic skill, it is not only necessary for the buyer to be able to criticise the detail and mechanical construction, nor will it be sufficient for the drawing to be fault-

less in its artistic qualities, but it must be considered from a commercial point or selling value. Unless the illustration is sufficiently attractive to appeal to the observer, the whole will be commercially valueless.

"To get the full benefit it must be both attractive and well done. The designing, composition, drawing, engraving, and printing must be of the very best. The importance of this I cannot make too emphatic, as it is an important point frequently overlooked in an effort to buy at a minimum cost.

"It seldom fails to either discourage the buyer to continue that which is likely to prove a losing venture, or find he has transferred his trade to some higher-priced competitor who has proved more profitable.

"In buying, never lose sight of the commercial or selling value, which is, after all, the only purpose for buying art for a commercial purpose.

"It is human nature for us all to try and buy as cheaply as possible, and the fault of so much wretched work produced is not so much the fault of the buyer as it is the seller, whose business it is to instruct and educate the buyer, impressing upon him that results are to be considered, and the most important consideration should be the greatest percentage of returns from the investment, instead of the minimum amount of money expended.

"An effort to educate would be beneficial to the buyer, and incidently an increase of trade to the seller.

"In these days it is almost impossible for a firm or manufacturer to be successful without illustrating their goods,

and the larger houses recognize the advertising department as one of the most essential, and justly so, for here lies the key to success, and it is safe to say the better the illustration, its drawing, engraving, and printing, the greater the amount of business.

“The wide-awake advertisers who have met with the greatest success have been those who have given quality the first consideration. If you would know who is doing the largest business, you have but to look at the advertising you see and decide which is the most attractive in appearance and argument.

“With the perfection that photo-engraving has attained in the past ten years, the possibility of educating the buyer to the increased commercial value of the better grade of work is becoming less and less difficult, and once educated to the higher grade it is worthy to note they are unwilling to accept inferior work at any price, recognising the importance, and willing to pay the difference between profitable and unprofitable productions.

“The quality of commercial art, like all commercial articles of merchandise, is governed by the price, and the wise buyer knows he gets no more or no less than he pays for. I hope to see the day when the photo-engraver or seller of commercial art will endeavour to educate the buyer to a higher standard, instead of competing at cut-rate prices, never forgetting, but always bearing in mind, ‘Quality is remembered long after price is forgotten.’ Many a possible good advertisement has not received its full share of reward for lack of appreciation or knowledge in judging the proper kind of illustration.

“Can we afford to wait until the buyer discovers through his own numerous failures that the poor and lowest price is the most costly in the end?

“No! I say. No! I repeat. It is the

business of the seller to advise the buyer, as you would expect to be advised should you intend purchasing merchandise, especially that bearing upon the success of your business.

“A few weeks ago, a young man representing a small Philadelphia publisher called on us for an estimate. His question was: ‘How much do you charge per hour for your artist’s time?’ We answered him by asking what his firm would charge us to publish a book. He saw how ridiculous his question was, and explained that he wanted a cover with lettering (mentioning how much lettering), also some illustration that would be in keeping with the title of the book, but still insisted on knowing the price per hour. Our answer to him was that we could sell him artists’ time from five cents to five dollars per hour, depending entirely on the ability of the artist who handled the work.

“The five-cent-per-hour artist was an art student who wanted work for the practical experience. And we also said to him, ‘If you are in no special hurry for your work we think he will answer your purpose. He has one illustration that we gave him nine months ago, and up to the present time he has not submitted the rough sketch.’ Of course, we do not know if he is still working on this job, but if he is, it will cost us double the amount that a similar illustration cost that we gave to an artist yesterday afternoon late, who, we think, charges five dollars per hour for his time, and he delivered the drawing to us this day before noon.

“We remember some years back when art work was supposed to be charged at the rate of one dollar per hour, or one dollar per column for those buying newspaper art, but the firm who sells art work for a flat one dollar per hour, unless their help costs them less than fifty cents per

THE PROCESS MONTHLY.

hour, are very charitable, for they are giving away money with every drawing they sell.

"In selling art time, very often on account of placing the work in the hands of an artist who does not grasp the instructions correctly, we are very fortunate if we break even, and very few, if any, art departments are busy continually the year round.

"Now, this time must be distributed in some way so that your department will show a profit at the end of the year. Our cost sheets show an average in the past twenty months as follows:—

"The first-class mechanical artist or retoucher, who earns from twenty-five to forty dollars per week, or fifty-two cents to eighty-five cents per hour, costs us for every hour he works, one dollar and twenty-eight cents; the second-class man, who earns fifteen dollars to twenty-five dollars per week, or thirty-one cents to fifty-two cents per hour, costs us eighty-eight cents per hour; artists who do lettering or designing, first-class, salary twenty-five dollars to forty dollars per week, cost us one dollar and thirty-nine cents per hour; second-class, fifteen dollars to twenty-five dollars per week, cost us eighty-one cents. Our apprentice boys who earn five dollars per week, or less, are included in the 'overhead' of the department, but they make out time-sheets, so that we can get the benefits of all the time they spend on chargeable work.

"We have used above the term 'retoucher.' This word always sounds and looks queer to us on a bill. For example: A bill reading 'one half-tone plate five dollars,' and directly under it, 'retouching five dollars,' gives the buyer the idea that he was touched for five dollars for half-tone and retouched for the second five dollars. Always use the term 'preparing copy,' or some other

term, but never 'retouching.'

"The art departments of some photo-engraving houses are like some engraving departments. They must get work, regardless of profit, to keep every man busy. We have heard engravers say that they consider the art department an expense and a necessity in order to keep the photo-engraving end of their business busy, and some go so far as to quote a square-inch rate on half-tone work, including the necessary preparing of copy. One house here in Philadelphia runs a 'one-price-only' for art work. They will retouch a photo of an automobile and charge seventy-five cents, or they will charge seventy-five cents for inking over a signature, so that they can make a sharp line negative, and they buy the same way they sell. They are known among the tramp artists as the 'One-Price-Only.'

"What the square-inch rate is to the engraver, so is the free sketch and corrections on estimate work to the art department, and we, with all other photo-engravers, hope the time is close at hand when the hard-working element of the various organisations will be rewarded for their earnest efforts, and all business ills will be a thing of the past."

A merchant who has more authority than ability is overloaded, and it is best that he should seek out some one of his employees and unload part of the authority upon his employee. However, many of us have not sense enough to admit even to ourselves that we haven't the necessary ability. But you might as well admit it to begin with, for it is bound to be discovered some day. — "The National."

THE FIRE AT MESSRS. HUNTER'S premises in St. Bride Street recently, was happily of little moment, and has in no way interfered with their ability to promptly execute all orders coming to hand.

Trade Journals versus Ordinary Journals.

Why they are so serviceable.

THE Hon. Elbert H. Gary, Chairman of the United States Steel Corporation, in the course of an address at the meeting of the American Iron and Steel Institute, recently, compared newspapers with trade journals in the following words:—“It is true that we sometimes read in the newspapers criticisms which are unfavourable, but which misrepresent the facts. As a rule, the newspapers are fair and considerate, and mean to publish the truth and to do the right thing; but, like all others who are compelled to rely upon information which is gathered from various sources, they are frequently imposed upon, and do an injustice to those who are affected, without intending to do so. We have been fortunate in having connected with our efforts editors of the principal trade journals, who have always been fair and accurate in their statements.

“The journal is the best possible representative of the interests of the particular trade it covers. Its editors understand all the technique of the trade—its needs, limitations and possibilities, and through this special knowledge the trade paper wields in its field an influence equalled in scope and power by no other kind of publication. It works for the greatest benefit of its readers and advertisers, not only in their own trade, but among the public also, for in its sphere the trade paper is known to speak from a complete knowledge of all the facts concerned; from a fund of information and experience unknown to the newspapers or magazines read by the public generally.

“To its advertisers the trade journal can offer the services of a corps of trained men, experts in the preparation of commercial or technical advertisements and

reading notices, writers who make no mistakes, because they are so thoroughly familiar with their subject. . . .

“Circulars, booklets, and similar publicity methods are not at all comparable with an attractive announcement in a trade paper, as they are regarded as biassed personal statements, and weighed as such. The powerful influence of a conservative, reliable trade journal among the dealers must be acknowledged, and the advertiser receives the benefit of this influence. The care with which every number of a trade paper is scrutinised by its readers is continually being demonstrated. The misspelling of a name or other trifling error or omission is noted immediately by readers, and they lose no time in suggesting the necessary correction.”—*Inland Stationer.*

Are you the man—

Who believes the world owes a living only to those who are willing to go after it?

Who insists on careful, accurate work both in your office and in your shop?

Who invites criticism that you may strengthen your weak points?

Who is always ready to listen to ways and means of making your business larger, better, and of a higher standard?

If you are all of these, then your business is bound to prosper, your bank account to expand, and your happiness is assured.

OTHER THINGS BEING EQUAL in three-colour printing, the interchangeability of all composition rollers on a machine is a point in its favour. In the case of the Optimus any roller can be used anywhere on forme or table as ductor or rider.

Making Depreciation a Real Cost.

By M. J. Beckett.

DEPRECIATION must be real to be felt. You do not feel the intangible. A depreciation that does not have to be paid in cold cash is a will-o'-the-wisp and disappears when making an estimate. It is so easy to come Rip Van Winkle on it and say "This time don't count," and make an exception. In order to make depreciation a real expense against the business, it must be paid in money and must appear on the books as an expenditure. If the money for the wear and tear of machinery and fixtures has to be dug up each week the same as for pay-roll, then it does look for all the world like a sure-enough thing and not a mere make-believe—a creature of the imagination.

A cost system that is not based on correctly kept books and that deals largely in imaginary expenses is not of much value. The true cost system deals only in realities—has to do only with actual expenditures—keeps the record to fall back upon in every crisis—relies on the facts—can be depended on for correct results. A right cost system is based on the books of general accounting—it begins in the books and ends in the books. It does not deal in fictions of any kind, but relies wholly on the facts as shown by the books.

Some so-called cost systems allow the general books to be kept in "any old way," and the items are culled out and carried on to blanks provided and the costs are calculated from these statistics. If all the items are not corralled, the costs are lower than they ought to be; if some extras are run in from the imagination—as may be easily done—the costs are higher than they ought to be,

and the result is more or less clouded.

How is such a matter as depreciation to be handled so as to appear on the general books as a reality and not a myth?

Open a depreciations fund. Carry this on your pay-roll, charging each department and the office with its pro rata shares, as determined by the best practice based on past experience, and credit depreciations fund. Pay out of this fund all actual repairs and replacements.

Treat this fund as you would one of your employees—hand over the money. Then it becomes a real expense that has to be reckoned with the same as a man. You will feel it. It means digging up more money for pay-roll, and that is where the shoe pinches. Do this for a year—five years—ten years. It will hurt. Of course it will hurt. But let it hurt. If you are going to figure depreciation as a part of your cost, make it a real thing, not a supposition.

What is the difference between the man and the machine? One wears out; so does the other. One works for a wage and collects it weekly. The other works for a wage—wears out—gets obsolete—goes to the scrap-heap and collects at the end of its existence when a new machine is installed in its place. The expense for the man is collected off all the customers he does work for. The expense for the machine in ordinary practice is collected off the proprietor ten years after purchase. His customers paid for the labour of the man, and owe him nothing for the wear of the machine, because it was not included in the bills. Who was the loser but the proprietor?

And why did he lose? He was too timid to make the charge for depreciation. If he had figured that his £200 machine had a life of ten years, running two thousand hours a year and had an hourly wage due to it of three cents per hour, he might have collected off each customer as he did for the man's time and had the money in the bank to show for it.

Making the cost of depreciation a live issue by putting it into the pay-roll takes the timidity out of the usually over-generous printer and he can say *no* with emphasis when requested to take work at a loss.

There are objections to this method of handling depreciation. It looks as if one was taking money out of one pocket and putting it into another pocket. It looks as if the money might better be used in the business than to lie practically idle in the bank drawing two per cent. or three per cent. Most blockmakers by their methods and actions prefer not to have the money at all than to have it in the bank, if they are obliged to collect it off their customers.

There may be other objections to carry-

ing depreciations on the pay-roll and straining every nerve at times to get this extra amount just to hide it away in the bank. The temptation to use this money in a tight pinch would be almost irresistible, but even this tendency can be overcome. Treat this as a trust fund that does not belong to you. It belongs to the machines as much as the money paid the men belongs to them, and you would not think of using their money to promote your interests. The machines will call on you soon enough for replacement. Don't worry about that. “Keep a stiff upper lip” and collect off the customers who use your plant, otherwise when your plant is worn out you will be without capital and your costs will increase to such an extent that it will be hard to meet competition.

Of course, there is another way of working this item of depreciation into the books of general accounting and of making it a real account without taking out the money as suggested above, but it does not have the same moral effect or have the same value as an educator in costs, because it is not so keenly felt.

Free Sketches.

Colonel Bemrose, speaking at the annual dinner of the Master Printers' Federation, made good fun of the cool requests constantly being presented to printers for free drawings of certain subjects in which prospective or possible customers are interested. A man who may only contemplate spending twenty or thirty pounds altogether seems to think nothing at all of getting from a number of printers drawings which may have cost those houses forty or fifty pounds between them. There is no idea of paying any

one of the firms for the drawings they make in the hope of getting the printer's order, however elaborate some of the drawings may be. Colonel Bemrose sketched out a plan of equipping a private garage. One need only intimate to a number of motor car manufacturers that he was intending to give a twenty pound prize to the motor car whose mechanism and make or other features commended themselves most to his judgment. The motor cars must be delivered at a certain place and date named, and would remain the property of the individual who was so enterprising as to offer the twenty pound prize!

Wretched Catalogues.

A Hint to Manufacturers.

Reprinted from the "Engineering Gazette."

WHY is it that responsible manufacturers are willing to be represented by trade catalogues so wretchedly worded and arranged? Why is it that even distinguished manufacturers are content to be represented by "descriptive" booklets utterly unworthy of the name?

Obviously there is no mystery as to the cause of this published wretchedness. The mystery lies in the fact that manufacturers are content with the effect. The cause of the poorly-worded and arranged catalogue is to be found in the fact that the average manufacturer is not a journalist (for which blessing it would be advisable for him to offer up many hymns of praise!) and that the amount of publishing he finds necessary in connection with his business does not warrant the whole time employment of an expert to keep an eye on the production of his "trade literature."

But there are other means to the same end. Surely it is not impossible to get in touch with a friendly journalist, whose advice might be of genuine utility in connection with the production of a booklet? In view of the large sum of money that is involved in the printing of a catalogue, manufacturers would be well advised to give this matter a few moments reflection. If fifty or one hundred pounds is to be spent on the production of a catalogue, surely it would be advisable (not to use a stronger term) to pay five or ten guineas to a man in return for his observation on its general composition? The manufacturer would expect such a man to look through the "copy" prepared for the catalogue, to re-write the "copy"

here and there for the sake of clarity and with some slight regard for the English language, and to give an eye to the general display and arrangement of the whole production.

For such work does *not* come within the sphere of the printer. It is the business of the printer to "compose" or to set-up in type the "copy" with which he is provided, and it is his business to "machine" or to print the finished article with an absence of those marks and blemishes caused by carelessness, by attempting to "rush" a fine art job or by the use of worn-out printing plant. It is not the business of the printer to criticise the "English" of his client. It is not the business of the printer to arrange the general style and lay-out of the catalogue or what-not in hand. Finally, if both these points are attended to before the "copy" is placed in the hands of the printer, the manufacturer will save considerable expense in the matter of "extras," "author's corrections," and re-make-up charges, which the printer is obliged to charge in order to secure some recompense for the chronic loss of time occasioned by the chopping and changing of pages and the alteration of wording after the whole thing is in type.

It is difficult, in the limited space available for these notes, to give an adequate idea of the general lack of clarity to be found in the average trade catalogue. It is possible, however, to select a few individual instances and to demonstrate their clumsiness and foolishness.

A London firm of engineers advises its clients that a certain engine "is fitted with a small evaporator tank in place of

the large cooling water tank which is easily drained." The writer wishes to hint that his small evaporator tank is "easily drained," but in point of fact he asserts that it is the large tank which possesses this advantage!

Regardless of the elementary rules of grammar, a famous manufacturer of lubricators remarks: "By examining various kinds of oil, it was shown that some occasionally contains very fine, short, stringy substances." Would it not be better to say: "It has been shown that various kinds of oil are liable to contain very fine, short, stringy substances?"

An instrument maker observes: "The table on which the pencil movement and spring carrier is mounted requires in all other makes most careful adjustment and frequent re-adjustment to eliminate every trace of lost movement in same, lost movement which is reproduced on the diagram." Surely, language somewhat less involved could have been used for directing attention to alleged defects in rival equipments?

One final instance. A manufacturer of explosion engines says: "Many circumstances have combined to turn attention to the possible use of the various grades of oil in the explosion engine and to the employment of this means of converting potential into mechanical energy." Why not say: "Many circumstances have combined to turn attention to the use of various grades of oil in the explosion engine for the purpose of converting the potential energy of the oil into mechanical energy"?—or—"During the past few years much attention has been devoted to the possibilities of the explosion engine in the matter of converting into mechanical energy the potential energy contained in various grades of oil?"

These four instances have been selected from four different catalogues taken at

random from a little heap of catalogues in front of the writer. It is also worth keeping in mind that although only one instance per catalogue has been quoted it would have been possible to quote half a dozen instances of confused and careless expression from each production. Such a state of affairs is not at all to the credit of the various firms involved. Indeed, it is actually damaging to their reputation. Moreover, such involved phraseology detracts materially from the general utility of a catalogue. If a catalogue is difficult to understand, if the points made are difficult to follow, the chances are that a client will turn to a rival catalogue that he can understand and that *does* direct attention to the merits of the plant under discussion in logical and simple language. Time is too precious to be wasted in wondering what people mean and in writing endless letters of enquiry.

Attention is directed in these columns to the wretched condition of much of the "trade literature" sent out by British manufacturers because the "Engineering Gazette" circulates amongst managers and responsible officials associated with a large number of productive undertakings, and it is suggested that the points raised in these few notes are worthy of some little reflection on their part. To have the benefit of expert advice in connection with the wording and arrangement of trade printed matter is not materially to increase the cost of its production. Indeed, such advice may mean an immediate saving of expense, to say nothing of the increased value, as a "silent canvasser," of the finished production.

HOW DO NEWSPAPERS BECOME ENGRAVERS? It would seem that fairly often it is through a small engraver deciding that on the whole it will pay him better to give up trading on his own, take his engraving installation to some newspaper which would buy it, and would sign an agreement for retaining his services.

Intaglio from Day to Day.

THE different journals connected especially with publicity like *Printers' Ink* and the *Advertisers' World* are increasingly through their news or their advertisement pages popularising photogravure work. The Rembrandt Engraving Company, of Lancaster and London, have in the current *Printers' Ink* a remarkably successful subject, a beautiful hall interior with staircase and various furnishings, giving variety and interest. The Vandyck Company, of Bristol, I notice, have also a subject in the same issue. One of the heads of the Vandyck concern has, I believe, attained most notable success in the inventiveness and the practicability of his inventions. The Rembrandt at one time seemed rather inclined to confine themselves to frontispieces for books and the like, but they evidently have determined to have a good share of that class of work which may be fairly comprehended under the term "Publicity."

Meantime there are many rumours and "sounds of a-going in the tops of the mulberry trees" round Linotype way, and Penrose way, and Mezzogravure way and Kingsway. We believe there are several varieties of modus adopted by the different firms.

It may be well to restate, since, if the Irishism be permitted, it may not after all be simply restating—it may be well to present the brief story of what happens when a carbon resist is used.

For photogravure through a carbon resist is the only process in which we feel particularly interested. It is quite true that the enamel process giving simple inverted half-tone has certain advantages in regard to the cheapness of papers which can be satisfactorily printed there-

from as compared with relief half-tones, and perhaps an advantage in regard to speed. Still, it is of little account in comparison with pure photogravure, with its unequal depth. And it would appear that the carbon resist method has established itself par excellence as the way of obtaining pure photogravure.

So, then, to explain the carbon tissue modus of pure photogravure, there are two printings in the case of carbon tissue. It is printed first with a screen; printed not under, but in conjunction with a screen. That screen is not like the ordinary screen of process engraving, which has black lines and white interspaces. The photogravure screen has white lines with dark interspaces. And as the screen's appearance differs from that of the photo-engraving, so its purpose is different. The functions of the screen of photogravure are to entangle ink and to provide ultimately certain thin copper walls in the copper cylinder, which shall support the supple scraper or doctor.

The carbon tissue (that is, the gelatine substance impregnated with a pigment) having been printed with the screen, is then printed with the subject, and, according to the action of light, portions at the back of the film are left soluble or insoluble. It is at this stage that the differentiation of depth comes into play.

The tissue appears to be then placed face down upon the cylinder, but whether that mode of placing it is of vital importance in this connection appears to be a matter of argument. Anyhow it is ordinarily placed face down. That which was at the underside—which has now become the top—presents unequal elevations; because certain parts on what had been the underside had been variously affected

by light and had been soluble or insoluble accordingly.

The cylinder fitted with this film is then swung into one bath (of perchloride of iron) after another. There has been some controversy as to whether the actual mechanical movement by which this heavy cylinder is thus swung has patent value. Anyhow it is swung into one bath after another, all baths contain-

ing perchloride of iron, but the perchloride being of unequal strengths in the different baths. There is no etching through such portion of the gelatine as was covered by the screen, that is to say, the lines of the screen are finally represented by lines which, being crossed, become cell walls in the copper. Not till they break down does the illustration become "rotten."

The Fable of the Blockmaker who Cut.

With Apologies to Everett R. Roeder.

ONE day a manufacturer had a catalogue to be illustrated, as manufacturers sometimes do. And lo, how the news did travel! Jones, the blockmaker, Smith, the blockmaker, and Tom, Dick and Harry, all of them process engravers, sallied forth to claim the job for their own. But the manufacturer being a man of much wisdom, seeing the assembled hosts, arose and with candour said, "Gentlemen, we must be fair, we will take bids and he who is lowest will get the job."

So back to their shops the engravers all went. And how they did figure! Some forgot that copper was used, others forgot that photographers and etchers tarried in engraving shops simply because the proprietors thereof slipped glittering, shimmering coins into their palms. How they slashed profits and cut costs! Then hither to the manufacturer each of them hied, laid down his bid and hoped the gods were propitious.

The days, one by one, slipped into eternity, as days will do, and Jones, the process engraver, hearing not from his bid, sallied forth again. And lo, as he steppeth into the presence of the august manufacturer there hung a great hush,

the air was calamity-laden and the manufacturer bowed his head in sympathy. He spoke, but it was a voice of anguish—"Mr. Jones, I know thee well, and I have known thee long. Verily thou art a friend of mine whose friendship I deeply cherish. I want you to have this catalogue job. But that justice which guideth my actions demand that I give it to he who is lowest. Now Smith, the engraver, hath bid and doth offer to do said job all for the sum of twenty-five hundred dollars, whereas you demand for the said task twenty-nine hundred dollars. Now, Jonesy boy, for the sake of friendship will I depart from the paths of rectitude and if you meeteth the price of your competitor Smith I will give to thee the job."

So Jones departed, arms full of copy and brain perplexed by how he was going to come out ahead, when he had figured costs at twenty-six hundred. But if Smith could take it at twenty-five hundred he could too.

When Jones left, the contrite manufacturer carefully shut the door, holdeth his sides lest he burst with joy as he gleefully gazes at the bid of Smith, the process engraver. "Thirty-two hundred dollars."

The Foundry.

By Ion.

I AM informed that "all the inflammable character has been taken out of the so-called celluloid stereotypes." That is a possibly somewhat unscientific but a popular way of putting it; and perhaps it fairly expresses the fact. Anyhow I am assured that no printer need hesitate to use celluloid stereotypes (or whatever may be the new name of these blocks) on the ground of what his fire office may say or of what his own nervous system may suffer. But it is extraordinary how very little effort seems to be made to influence trade opinion in favour of the new comer. As a "business proposition" celluloid stereotypes are still "wropt in mystery."

It may be that those who are operating the process are perfectly confident that these stereotypes must in time secure adoption in the trade, and that they feel they can very well afford to bide their time, especially as Italian journalism and Italian printerdom have furnished forth such fine specimens of what the new stereotypes can accomplish. Some over anxious business-seekers hardly realise to what an extent the policy of "Let be—and see" rules in certain directions. The American Lithographic Company, for instance, which is credited with making a simply enormous profit (even if the quarter of a million I have heard of is dollars, not pounds), claims that it has never solicited a single order! At least one very important concern directly associated with plate printing in Great Britain, though not precisely a process engraving house, is pursuing exactly the same line—it is making no direct pursuit of business, so confident is it that the trade must come to it. This may be the explanation of

the comparative silence re celluloid stereotypes.

I see that the *Fourth Estate*, an American journal dealing with the practical working of newspapers, declares that Lord Northcliffe is a most enthusiastic believer in the dry flong. I announced long ago that the dry flong had been adopted in the Carmelite Works. It is certainly a very strong statement which is put forward by Mr. Benjamin Wood in the journal named. He says, "In the course of a conversation between Lord Northcliffe, Mr. James Keeley, of the *Chicago Tribune* and myself, I asked Lord Northcliffe if the statement were true that he had been able to put two hundred thousand on the circulation of the *Evening News* through the use of dry mat, due to the rapidity with which it enabled him to put that paper on the street. This Lord Northcliffe unhesitatingly confirmed, and expressed wonder over the fact that American and Canadian publishers had been so slow in proving the great value of this newest aid to publication."

Lord Northcliffe appears at another time to have said, "I have noticed that we get a paper on the streets of London more quickly than you do in New York, because we have a faster method of stereotyping than you have." Of course, American foundries, just like Lord Northcliffe's offices, use auto plate machines. Any distinction there is between their functions would seem to be connected with just the first stage, just this use of dry flong, or dry "mat," as is the American way of styling it; and not connected particularly with any subsequent operation.

I don't know whether the words “Wood Flong” or “Wood Dry Matt” may be supposed to furnish some special index of the character of the mat, but the Wood in this case appears to be simply the name of the one who is handling the particular flong.

The doctors differ tremendously upon this subject of dry flongs, so it is difficult to see what is to decide the matter, unless it is—experience.

One great London newspaper, with a very large circulation, made trial of dry flong, and turned it down absolutely. I believe it has now thousands of dry flongs on its premises, of which it is not proposing to make any avail. And I suppose it would take a low price for them, since it could not speak of them with the enthusiasm of the successful user! It looks like a chance for some believer in dry flong to get on to a good thing, rather easily.

What is it that some have against dry flong? Perhaps a pride in printing is the main thing. I don't believe dry flong printing can quite equal that obtained by the ordinary methods. Good cheer and all gratitude to those who want to save our eyes and our temper, and to get away from that grey print of newspapers that pretends to be black print.

At the same time they may overdo it, in their zeal. The natural conditions of the problem have to be faced. It's not reasonable to apply to daily newspapers

standards that are quite proper to apply to bookwork and jobbing. The public wants the editor's news and notes; and wants them hot foot — particularly the news. It wants it to be easily legible, if possible; but it wants the news, and quickly, and papers are largely forgiven as regards the appearance of their pages if they are alert and bountiful with news.

Perhaps the metal in the lino. and mono. pots or typograph pots must be improved. That is a nice problem for the metal refiners and metal mixers. It is true that metal may be too good in a sense; it may be too hard to flow without blocking a nozzle; but it must be hard enough. It is the fact that some formes have to stand twenty to thirty flong beatings before the whole edition is worked off. If the metal is not hard enough, it is natural that the face shall become quite rotten before the last flong has been taken from it.

Perhaps it was trouble of that kind which led one important newspaper foundry in London to give up dry flong. Another foundry was much perturbed at finding that when first essaying dry flong it lost some editions through delay in getting good plates. The experts there were at loggerheads. The dry flong people said it was the auto plate caster that was not working properly. They confessed its sins. Conversely the auto plate people were, I believe, quite prepared to confess the sins of the flong people.

School Notes.

THE Heriot-Watt College of Edinburgh shows good three-colour in its 100-paged publication of selections from the work of the Machine, the Mono-type, and the Display classes. The

Display class naturally has the greater part of the volume to its credit, but we are glad to be very fairly represented. We shall be glad to receive continual and full notes of the progress of all the illustrative work being done in this famous school.

More Recollections.

New Zealand.

To say one's happiest days were spent in a process shop sounds a bit "far-fetched," but still I really think that my happiest were spent in our "department" on a weekly illustrated paper in New Zealand. The fellows were such a sociable set that work was nearly a pleasure. Our working day was 9 a.m. till 5 p.m. This is how it went: 9 a.m. till 10 a.m., filter bath and read the paper meanwhile. It was nearly a crime to look what work was to be done before 10.15. From 10.15 to 10.30, THINK about starting. About 11.15 would see the first negative done. Another would be finished by 12.30, which was too near 1 p.m. (dinner time) to think about doing any more. 12.50 would see the whole department with their coats on ready to waste not a minute in getting away prompt at 1 p.m. The manager of our department was very keen on motor boating, so that many an afternoon he wasn't seen. We were supposed to be in by 2 p.m., but as 15 minutes' grace was allowed, of course it was always taken advantage of. I often smile when I think of one particular afternoon. We were thinking of looking at some originals to be done, as the time was only 2.30, when one of the operators (a man from Carl Hentschels) suggested cards. A suggestion was a deed done. A box suddenly appeared in the dark room, four stools around, door shut and play commenced. The two operators with their apprentices quite enjoyed the time. Someone knocked at the door to be greeted with "Can't come in, taking a plate out." After a while the English chap remarked, "How's time?" It was 4.30, so the apprentice suggested putting a plate in to do one negative before

going at 5 p.m., whereupon the man from home remarked, "Oh, I don't think it's worth while now." The above is not fiction, but fact, as the writer was the apprentice. When I first arrived in New Zealand my age was 14, and height, well I don't quite know, but I remember the first thing that was asked me was, "Can you reach the sink, d'ye think?" The climate and time, of course, soon wrought an agreeable change and I became one of them. When I had a camera to myself, a young Irish lad was put apprentice under me. He was a willing lad, but was more cut out for a navy than an operator. Oh! the trouble I had in watching him. For instance, he would be playing imaginary Rugby football with an old dusty rag ball, and then with all sorts of dust and dirt on his hands would take a plate out of the silver bath, holding it up by the top corner to allow it to drain. I don't know what he got on his hands, but one plate I developed came up with a collection of black streaks from the top corner to the bottom. Another time I developed plate after plate and found that a portion of the film came up clear glass while the remainder had the vestige of a picture showing. I said to "Shamrock" (we called him), "Have you dropped anything in the silver bath?" He certainly looked guilty, so I knew something had happened. He answered me in broadest brogue, "Yes, I did accidentally drop some of that into there." The "some of that" was cyanide of potassium, and the "there" was my silver bath. It appeared that just previously I had asked him to put some more cyanide in the jug. Instead of taking the jug to the cupboard he brought the

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cyanide in handfuls and some had fallen from his hand into the bath which he had forgotten to cover. Poor “Shamrock” was an impossible. One of our apprentices was rather smart as a juggler, and we have often stood with hearts in mouths while he balanced a 25 in. by 20 in. screen on his chin, at the same time juggle three wads of wet cotton wool. I distinctly remember the manager appearing over the stairs during one of the above performances and standing stock still when he caught sight of our youthful Cinquivalli. He afterwards told us that he never felt so sold in his life. It was a common thing for that boy to suddenly feel ill and ask to go home. He would perhaps be ill for a fortnight, but he always came back looking remarkably well. It would come out afterwards that he had struck a fortnight’s engagement, so made a holiday and money at the same time. The illness got too old a wheeze, so after a while he always asked straight out, and it was never refused him. Altogether we had twenty-two working in that department, and the idea was conceived that to have a dramatic company would be just the thing, and it was done. Of the twenty-two we had a good three-instrument orchestra, mouth-organs barred. Two of the etchers painted the scenery and one of our engravers threatened to write a play. In his own way he was a poet of, I don’t

know what order. He would discourse on rippling streams and swear at nasty specs all in the same breath. When the influenza scare was bad he burst forth into this verse :

“I had a rooster, his name was Enza, I
opened the window
And—In—flew—Enza.”

We never found out what he did to have such a gift for rhyme. Our first attempt as actors was successful to a degree. We had a drama called “Brought to Justice” and the very first time of showing was at a small village a few miles from Auckland. The party proceeded in a brake, but as the night was very dark the driver mistook the road and drew up at what he thought was the hall. It turned out to be the Asylum which was in the same district. The performance eventually started and some £8 was taken and given to charity. The last I heard of our engraver playwright was that he was engaged upon a “process-drama,” he termed it, in which the villainous artist through the illegal use of over much Chinese white has incurred the displeasure of the operator-hero. The villain is foiled (not filed) by the mounter, who catches him in the attempt of bribing the printer’s kid to fog his enamel and is incidentally driven through torrents of nitric by the etcher second-hero. Truly a remarkable plot.

P. S.

Greater Efficiency—Lower Cost.

WHAT may be termed the primary benefits obtainable from a cost-finding system are now well known. There is a secondary advantage, however, which should not be overlooked. To merely assemble departmental charges with certain added percentages in arriving at the price of a job is

a more or less simple matter.

In some cases where cost-finding systems have been adopted, but have not been extended beyond the book-keeping stage, the prices which prospective customers have been asked to pay have proved to be too high to get the order. Only those who have no right whatever to

be in business would blame the system for loss of orders under those circumstances. As a matter of fact, that type of business man has greater need for a scientific method of cost-finding than has he who finds less difficulty in getting profitable business.

The secondary advantage can only be derived from a close study of the cause of the costs, and, where necessary, the

readjustment of the department or units of those departments in accordance with the deductions made as the result of that study. In very few cases will it be found necessary to pare the wages bill; generally speaking, that will prove to be but a very poor way of reducing costs. The better way is to increase the efficiency of the staff, by laying down new and improved machinery.—*Linotype Notes*.

Business Aids—As seen from a Beneficial Viewpoint. *New Fangled Ideas.*

FIRST of all, let us get the true meaning of what a new-fangled idea really is.

A new idea, whether good or bad, is always the result of a creative brain. Everything in the universe, the universe itself, had first to be created.

How long this world could run on without the aid of new ideas is a question but, as the law of nature decrees that nothing within its compass can remain at a standstill, before many moons had rolled around, the world would be in a sad state of degeneracy.

Inventive genius is the direct result of a creative brain; invention the result of a new idea.

Ideas are continually cropping out in the form of new inventions. During the first day of their existence they are invariably regarded, by an ever-doubting world, as new-fangled and rarely attract much attention. Take any article that has been on the market for fifteen or twenty years; there was a time when it had not been on the market for more than a week, or a day.

If no new-fangled things were put on the market, if no changes were made and improvements were introduced, we should make no progress.

Department stores were a new-fangled method of selling goods not many years ago. Your own shop is full of new-fangled things. Perhaps you do not classify them under that term but, nevertheless, such they are.

At one time it was a new thing to ride on a railroad train, to use an elevator, or to get a newspaper once a day. Now everybody fully realises the advantage of railroads, elevators and newspapers. It is just as unreasonable for a man to be prejudiced against other new ideas as it would be to deny the merits of these institutions.

Eagerness to try new ideas and get the benefit of every up-to-date invention pays. To be prosperous in the face of competition it is necessary to be more progressive than one's neighbours. We can't afford to reject new things merely because they are new.

The difference between the business methods of to-day and those in vogue five years ago is very marked.

Invention is the reason for this. Progress demands invention, invention stimulates progress.

It is the man who first uses a time or labour-saving device that gets the most advantages over his competitor.

Chips.

By the Router.

MR. W. GAMBLE, of Penrose's, should have time to give us a new book of business philosophy, now that his partner, Mr. A. W. Penrose, is back in harness again. Business philosophy is his favourite hobby; at any rate he sometimes thinks it is. A man of so many interests may occasionally forget which is his chief delight.

Besides, he doesn't do so much personal work in the matter of the Process Year Book as he used to do. Altogether he may well have more leisure now, and we think we see that new edition coming along.

I don't suppose it has assumed much body and bulk as yet, but the framework is existent I cannot doubt, as a sort of skeleton in his cupboard, which will haunt him till he gives it the life and light of publication.

Mr. Gamble has had the weight of the whole Penrose business upon him for many strenuous months. That of itself must have given him new pointers. To be sure the business is very departmentalised. But even so, its conduct means a burden of responsibility, and urgent responsibility, for it's so necessary to drive business affairs before they drive you.

The new Lord Mayor is one of us. I chatted with him a few years ago as to a certain freak journal which Hentschel's were then issuing, to illustrate by an example the sort of paper and screens that were just right for newspapers wishing to use art engravings. I found that Bowaters were supplying the paper for the "Daily Mirror," and in conjunction with their good business friends the Harmsworths, had gone very thoroughly into the question as to the exact sort of

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paper a half-tone illustrated daily wanted. The phrase used was interesting.

"We're supplying for the 'Mirror' a paper with, as one might say, a *sort of skin* upon it."

That is to say the interstices, the hollows, the roughnesses were filled up or smoothed over, although it was a news and not an enamelled stock, and the half-tone had a chance.

The mode in which the business correspondence of the Lord Mayor's firm is conducted is a model for all London.

Here's success to his Mayor-royalty, as a comp. once called it, by a quite happy mistake.

There must be almost as much made out of paper as out of plates, to judge from the recent Lord Mayoralties of Sir Vezey Strong (of Strong and Hanbury) and Sir Thomas Bowater, not to speak of that of Sir George Wyatt Truscott. The shadow of the first photo-engraving Lord Mayor has not yet been "cast before."

Quite right Photochrom; make folk talk monotone; as in your "ad.s" is shown. It's better than monochrome. Quite right, Photochrom.

It is an absolute rule of the Dalziel foundry that no one is allowed to make a plate of any type till he has read it, to make sure that nothing goes out which would bring a blush to the cheek of a police inspector. From "Dalziel and the Dalsprites."

By the way, Mr. Dalziel has done a little chipping on his own. Here are extracts from "Our Grumbological Department" in that "Dalsprite" publication. He develops his grumbology under different headings. One is "The Itching for Etching." He writes:—

"Next. There is that poor wretched man, the poor etch man.

"The man that rocks the etch bath, won't rule the world of printing customers much longer. This is the day

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of the etching machine, which not only saves time, makes deeper depressions, but by reason of its vertical drive upon the face of the metal, does not under-cut. The rocking bath by means of its aslant motion, often under-cuts to some extent.

"You can rock etch, and re-etch, till you leave points which have just about strength enough for one impression—one quite honest, perhaps, and very beautiful impression—in the engraving room, but which will be bashed down, directly the serious business of printing the run begins.

"The other day we had to supply 32 Dalziel Stereos from one three colour set. The engraver had introduced some fleecy clouds into the blue sky by his fine, super-fine etching.

"Even with Dalziel Stereos that sky filled up and was all blue. So were we. So was the printer; when he decided to put us to shame by putting the original itself on the machine only to find the original itself printed blue."

"Even if the points on an under-cut block would just stand up for a short run, how is it possible that a stereotyper's or electrotyper's mould can be taken from them, seeing that the material of the mould must get underneath the overhanging metal or enamel eaves. How can it be pulled out without damaging the pin dots themselves. The stuff finds its little recessed cave underneath the overhanging dot a very comfortable sort of prison, and only leaves it with a wrench.

"Then that enamel. Oh that enamel! How beautiful it is! How sheeny! How it helps you to 'see the work' and serves all its purposes. But if it be not firm—ah! the poor stereotyper, then.

"It must in that case be removed, before the mould is taken. But that removal is an Albert Hall suffrage meeting sort of job. The stuff's not strong enough to

resist removal; but not weak enough to be removed with ease.

"And the very slightest tackiness left on the face or in the interstices of the half-tone block will spoil what might otherwise be a perfect duplicate!"

Mr. Dalziel has a sub-heading, "A BAD PUT AWAY," and writes: Printers, too. The printer has not always been as well served as he might have been by the one who has put away his blocks. Result—chemical reaction. Chemical reaction sounds grand, but it only means "anything that happens" — in the chemical world.

"Like the man who was startled to hear that he had been speaking prose all his life, some workers in printeries may be startled to hear that they have been subjecting fine half-tone blocks to chemical reaction—and that by simply doing nothing; putting them away without cleaning off the ink; and certainly without coating them with any protective facing. Ink left on a half-tone block soon forms a tacky enamel, which gives even more trouble to the stereotyper than the faulty enamel of the engravers.

"Compositors, with formes containing half-tones, after press proofs or after working off, will often, without cleaning them, put them in the rack—and put us on the rack, a little later."

— — —

SAID A PRESSMAN IN FLEET STREET, speaking to a friend:—"Well, money talks." "Maybe it does," answered the other, "but all it ever said to me was 'good-bye.'"

— — —

THE *Theosophical Path* for November, printed in its customary first class manner, contains a number of articles appealing to a variety of interests. An article on Velásquez is illustrated with finely printed reproductions of his greatest masterpieces. Another deals with recent archaeological researches. There is also a delightfully written and interesting article on New Zealand, splendidly illustrated.

My Causerie.

I CAME into personal contact with Valentine's, of Dundee, at the Franco-British Exhibition at the White City, and have never lost the impression of the firm's keenness and capacity. Their representative seemed to live there; in one of the adapted but rather dreary arches which the firm had to put up with for its chief exhibition office.

What a firm it is, and how it does enjoy being killed.

For by now quite a number of different classes of picture postcards have been killed, and we used to say, or some of us did, that Valentine's were picture postcard or nothing.

Colour work has doubtless affected the old monotone view card. Yet Valentine's monotone output must surely be enormous; for over a ton of picture post cards are said to be issuing forth daily from this wonderful Dundee factory. Christmas cards and view books and calendars and toybooks add to the output. It is a great total and the view trade was the foundation of it all.

About fifty machines are busy in the main building, on sheets containing per sheet about three or four dozen subjects in collotype, imitation silver print and colour schemes. All the goods are started and completed in the factory.

The candle power of the arc lamps aggregates 24,000 c.p.

Sir Wm. Lever says that "to advertise without illustrations would be like the play of Hamlet with Hamlet left out." Mr. Murray Allison, of the commercial organisation of *The Times* has his own variant on the like counsel: "I consider," he says, "that the pictorial portion is even more important than the letterpress." Mr. Gamage considers illustra-

tion increases the value of a business issue 75 per cent. His general catalogue of 1,142 pp. contains roughly 30,000 illustrations, and Mr. Wareham Smith of the *Daily Mail*, considers that a "good photographic reproduction is infinitely more telling than the best line drawing," and so long as the block is decently printed it should be used in preference to any other kind of picture.

Raphael Tuck and Sons seem to have the same faith. A gigantic advertising scheme is about to be carried out by that house. I understand that on Nov. 1st about 300,000 copies of a specially illustrated edition of their catalogue were sent direct by post to that number of families throughout the kingdom. Sir Arthur Conan Doyle has bent his wits to work, and a new feature in the catalogue represents his particular contribution to the success of the house in which he has now been a director for some years.

A friend of mine, who is engaged in the duplicating—my tricky pen had nearly written the duplicity—department of a very large printing house, has suggested to me to give a timely hint to those who are always ready to pitch into the poor foundry man, but who apparently are not always so ready to scrutinise with care the plates sent out by the original engraver. His comment had special reference to line work, and I am afraid it must be said that he had encountered proofs prepared in a way not quite fair to the printer-customer. It appears that every now and again line work comes to them which has been "slammed out," perhaps because it has not been adequately paid for. There is a lack of the due clearing and deepening. The engraver's proof so carefully pulled has done more

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than justice to the block, it has flattered it.

The electro as turned out is an absolute replica of the block with all its faults. If the printer took the trouble himself to pull the original block, under the same conditions as those in which he worked

electros from the block, he would find himself unable to get a better result than the electros yielded. The obvious moral is that it is for the engraver always to give a block which is capable of being properly duplicated, and always to secure his proper price.

To the Man who Likes to Work.

HERE'S to the man—whoever he is—who says "I like to work!"

And here's to him again—and again—if he proves it by the way he works!

"Whoever he is" I said. From railroad president to water boy on a construction gang; from head of a business to the lowest in the ranks; whether he soils his hands or doesn't. Just so he likes to work.

Why doesn't everybody like to work?

Somebody will answer that by saying—and he'll be somebody far down in the ranks, and sure to stay there—"I wouldn't have to work if there was a square deal."

Who do you want to change places with?

Listen, young man—it's safe to say you're a young man: Considering the fact that you're far down in the ranks, and sure to stay there (for you wouldn't talk like that if you expected to go higher)—what and where would you be if you didn't have to work?

It's more than likely—but let's drop that. The idle without ideals—and nobody with ideals is ever idle—don't furnish food for elevating thought.

"I like to work"—say it over to yourself a few times.

How do you feel now?

A little taller, don't you? And bigger around the chest? And your blood runs

faster? And you're glad—you don't know just why, but you're glad?

I know—because you're growing into that "perfect stature" that an Old Book tells about.

That isn't cant nor sanctimony. I hate both.

You can have your own views on the general order of things, but you've got to agree with me—if you think in a straight line—on this: Man's mission is to work, and the better he works the nearer he fulfils his mission.

How can he work well if he doesn't like to work—if he finds no joy in working?

Say: The happiest Saturday afternoons of my boyhood were those that followed mornings in which I did everyone of the little jobs my father told me to do—and did every one well.

Playing hookey isn't real fun; shirking work never made anybody feel good.

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