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THE OPTICAL MAGIC LANTERN JOURNAL
AND PHOTOGRAPHIC ENLARGER.
EDITED BY J. HAY TAYLOR.

Vol. 2.—No. 17. [Entered at Stationers' Hall.] OCTOBER 1, 1890. Price One Penny.

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Notes.
Our readers will observe that a few additional pages have been added to this issue.

On September 23 a disastrous fire occurred on the premises of Mawson and Swan, Newcastle. We understand that two firemen have died from the effects of the fumes of nitric acid, and several of their employees are laid up with affection of the throat from the same cause.

A novel exhibition is being arranged in connection with the Imperial Commercial Museum, Vienna. It is to indicate various modes of advertising, and specimens are being obtained from various parts of the world. These include newspapers, cards and bills of all kinds, sky signs, sails of boats, the optical lantern, and numerous other devices.

From the hon. secretary of the Camera Club we have received tickets for the Press View on the 6th inst., of the sixth of the One Man Photographic Exhibitions, which will consist of photographs by Mr. Lyd. Sawyer, of Newcastle-upon-Tyne. The exhibit will be a fully representative collection, including much new work prepared specially for this exhibition. The pictures will be on view for about two months.

The auxanoscope of M. Trouvé, electrician, 14, Rue Vivienne, Paris, is a magic lantern in which the ordinary lamp is replaced by an incandescent electric lamp, an improvement which enables the whole apparatus to be greatly simplified and reduced in size. So much is this the case that it has been adopted by the Ligue de l'Enseignement, whose members travel from town to town and village to village, communicating instruction by lectures. The field of projection is about six feet square, and the light nearly as good as the oxy-hydrogen lamp.

A Chicago chemist claims to have discovered a method whereby aluminium may be produced for
a few coppers per pound. A company has been formed for supplying various articles, including optical instruments, made of this metal.

The exhibition of the Photographic Society of Great Britain, 5a, Pall Mall, S.W., opened on September 27, and will continue until Nov. 12. Photographic lantern slides will be shown with the society's lantern. As we go to press on the eve of the opening, we shall have to postpone our remarks until next issue.

Professor B. J. Malden has lately had a magnificent triple lantern built by Mr. W. C. Hughes, of Kingsland. This is replete with numerous fittings and novelties, which will enable Mr. Malden to give with certainty those fine effects and registrations for which he is so well known.

The first meeting of the season of the Lantern Society will take place on the 13th inst., at 20, Hanover-square, when Mr. Andrew Pringle will give a lecture on "Modern applications and appliances of the lantern."

We have received a visit from a London gentleman, who assures us that he will soon be able to show us a photograph on the screen with stereoscopic relief. The slide that is to be put in the lantern is, he says, "a single picture with everything standing out." Should we see or receive such a picture, due notice will be given.

The photographic business of Mr. F. Crowley, of Leamington, has lately, through the instrumentality of the well-known photo business agent, Mr. H. J. Beasley, of 65, Chancery-lane, been sold to Mr. H. E. Sawyer.

The total proceeds of the award from the Drapers' Hall Exhibition to the Photographers' Benevolent Association has amounted to £4 2s. 5d.

Dr. Kassler, of Breslau, has discovered a new method of obtaining oxygen from the air. Water is poured upon a mixture of peroxide of barium and ferricyanide of potash, and oxygen is given off. The oxygen thus obtained is said to be of great purity.

A correspondent suggests the employment of paper, pressed and chemically prepared, for making lantern bodies, lens tubes, and slide frames, as it would tend considerably towards lightness. Paper can be prepared very hard and firm, and is a non-conductor of heat.

Dry Collodion Plates for Lantern Transparencies.

While the wet collodion process is that by which the manufacturer on a large scale can make most progress in his output of lantern slides, yet to the amateur who wishes to make only a dozen or two when it suits his whim or convenience it certainly entails a little trouble and mess, for the nitrate of silver bath must be kept in good condition, which may possibly not be the case when he decides upon using it. Dry collodion, by which we mean dry collodion plates, proves much the more convenient process of the two, for the plates can be made so as to keep well for several weeks at least, and besides they possess this great advantage, that while they can be printed in the camera, they can also be printed in contact with the negative, which cannot be done with wet collodion.

Although dry plates can be prepared by the agency of the nitrate bath, the emulsion process is so much more handy, and the pictures are so good that we will here confine ourselves to the latter. Its convenience is very great, for with a bottle of emulsion at hand, the coating of a few plates can be proceeded with, without any special preparation beyond lighting the yellow—not the red lamp in this case—and dusting the required number of previously cleaned plates.

In all cases when lantern slide collodion emulsion can be purchased, we recommend this to be done; but there is no doubt that a great number of those who employ collodio-bromide make it for themselves, for this operation is not attended by any difficulty. The proportions in the following are those published by Mr. F. C. Beach, but previously used by others.

Prepare a stock supply of plain collodion, by placing 2202. of methylated alcohol in a large bottle, then adding 1oz. of gun cotton, prepared at a high temperature; and after giving it a shake, adding 180z. of sulphuric ether, by which the cotton will be dissolved.

To 1oz. of this plain collodion add 13 grains of bromide of ammonium dissolved by aid of heat in 13 drachms of methylated spirits and 20 minims of distilled water, and after well shaking take to the dark room and add 20 grains nitrate of silver dissolved in 12 minims distilled water. Keep in the dark room for twenty-four hours, shaking up at intervals. Next pour the emulsion into a large flat dish and allow the solvents to evaporate, breaking up the thick skin occasionally with an ivory paper-knife. Now wash with distilled water until all the soluble salts are removed. Dry the pellicle by squeezing in calico and then submitting to a moderate heat. All this must be...
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Yours faithfully,
(Signed) E. J. H. CARTER.

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In order to effect a change of plate a milled head
is turned. This, in the outfit sent to us, is situated at
the end of the camera, opposite to the lens, and com-
municates with a screw, which draws the series of
grooves backwards as desired. In the camera shown
in the cut this motion is imparted by a rack and
pinion movement, the knob being situated low down
at the side of the camera. But, as regards smoothness
of motion and general handiness, we think the screw
and knob at the rear is the better method.

As the grooves must necessarily be sufficiently far
apart to allow even the thickest plates to pass easily,
arrangement is provided whereby each plate, not-
withstanding variation in thickness, is brought to the
exact focus. This is done by a slight turn of the milled
head in the opposite direction after the plate has
descended. If desired, the plates may be used with-
out sheaths, but in this case non-actinic paper
must be stuck on the back of the plate. This, how-
ever, is sold ready gummed and cut to size.

The lens, which is an "Optimus" of rapid
rectilinear type, needs no comment, the name of the
maker being sufficiently recommended by itself.

The exposing shutter is actuated by two pins at the
side, and always remains "set."

The front of the camera is hinged to enable any
desired stop to be inserted in the lens, and as this
front carries the exposure shutter, a safety slide is
placed immediately behind the lens. Two finders
are also provided. As part of the back of camera has
a sliding opening, a ground glass may be inserted
in the end groove, focussed on any near object, and
a sensitive plate substituted for the ground glass.
If for a prolonged exposure the shutter behind the lens
may then be found most convenient, the front of the
camera being left open.

The most minute wants have been fully anticipated
in the working out of the details of this camera.

Photomicrographic Lantern
Transparencies for Histological
Teaching and Research.

By M. Hedley.

(Continued from page 30.)

Erratum.—On p. 30 of last issue, fifth line from bottom
of first column, read "The sodium-theosulphate" instead of
"the sodium. This sulphate."

"According to the length of time the plate is im-
mersed the tone passes from a brown to a red. This
method is very useful for some shades, giving a
slightly opaque red. The process would appear to be
that silver and potassium ferro-cyanides are formed,
and the latter is subsequently decomposed, forming
uranium ferro-cyanide, the silver salt remaining and
giving rise to the opacity mentioned. At this stage
the colour can be very much heightened, and rendered
more transparent by placing the slide in sodium theo-
sulphate, which dissolves the silver salt, and leaves
an image formed solely of uranium ferro-cyanide. The
shade thus obtained strongly resembles that of insects
ordinarily prepared for microscopic examination, and
those who have occasion to photograph these will find
this method of transparency staining of considerable
utility. It must be remembered that no process is universally applicable; and that it requires a little care to use either method according to the particular shade of the object photographed. In a specimen of the cerebellum stained with santonin wood, I have been able to copy the shade of the original almost exactly, while it is an approximation of the colour of microcarmine and carmine, although hardly so red. The next step was an easy one. Given that the action of a 2 per cent. solution of potassium ferric-cyanide (K_2Fe(CN)_6) is to form a pale white image of silver ferricyanide, then let the plate be well washed to remove the free ferricyanide from the gelatine, and afterwards flood it with a solution of ferric chloride. The image will turn to an opaque blue, which can be rendered transparent if the silver chloride is dissolved out in sodium theosulphate. This latter method gives an image in Prussian blue; but the method is more easily worked for lantern slides than any hitherto described, the other methods, such as that of Benecke of St Louis (quoted in “Anthony’s Bulletin”), requiring long exposure in sunlight.

These last methods are particularly applicable to tissues such as the central nervous system, which are generally stained by diffuse protoplasmic stains like carmine or soluble aniline blue; for the latter the blue method is an exact imitation. By stopping out different parts of the negative I have been able to combine both colours—obtain, as it would appear, a double stained slide. The trouble, however, is considerable, and the number of specimens to which it appears applicable are few. Although I have been able by modifications of the method to obtain a three-coloured slide, I cannot at present recommend it to you to copy.

The chemical changes involved in these processes are probably something of the following nature:—

The potassium ferri-cyanide is reduced by the free silver in the plate, silver and potassium ferri-cyanides being formed thus:—4Ag + 2K_2Fe(CN)_6 = 2KFe(CN)_6 + 3K + Fe(CN)_6^-; the potassium ferri-cyanide then forming uranyl ferri-cyanide by double decomposition:—K_2Fe(CN)_6 + 2UO_2(NO_3)_2 = (UO_2)_2Fe(CN)_6 + 4KNO_3.

In the blue process, the silver ferri-cyanide being alone left in the film by the prolonged washing, reacts with the ferric chloride, forming Prussian blue:—3Ag:Fe(CN)_6^- + 2FeCl_3 = (FeCl_6)^3- + 3AgCl.

These reactions have been repeated by ordinary chemical methods by Professor Lapper and myself in the laboratories of the Royal College of Surgeons of Ireland, and have been found to agree with those observed in the gelatine film.

I may mention for the benefit of any who may wish to use these methods a few facts which I have observed during my experiments.

In order to avoid staining the plate it is advisable to use the toning solution fresh. Although the solution will act a second time, the second plate in my hands always has had a yellow tone when it should be colourless. This yellow colour can be removed by dilute alkalies, but at the risk of unnecessarily reducing the picture in colour.

If the colour is not satisfactory after the plate is washed, it can in white light be put into some alkaline developer. I found hydroquinone and potassium carbonate satisfactory. By this means the uranium will be removed and the ferro-cyanide of silver reduced to its original condition or with very little noticeable change. The toning process can be repeated or modified.

It is also requisite to avoid any traces of sodium theosulphate or developer in the film, because they are all active reducing agents, and staining will be sure to follow. As a saturated solution of alum appears to have no deleterious effect on the uranium colour, it can be used with advantage after washing to remove any traces of the above reducing agents. This it appears to perfectly accomplish.

Reminiscences of my First Lantern Show.

By A. R. W.

Of late years the ingenuity of man has perfected various methods of supporting and securing screens; but in years gone by, when I was a young man, these new-fangled things were unheard of, and in these days some rather primitive methods were resorted to, when setting up the apparatus for a lantern show. I was at one time considered the scientist of the village where I lived, perhaps because I owned a magic lantern and some hand-painted slides. However, let that pass.

I remember on one occasion when the quietude of our village was disturbed by the fair day, I was prevailed upon to wind up the day by giving a public show in the largest hall available, the munificent sum of five shillings being subscribed to meet my expenses.

The loft (hall sounds better) was a somewhat long room about roft. high, and during the afternoon I busied myself with the aid of my son in erecting a screen, in the middle of the room. First I placed a plank of wood against the ceiling, and then with two uprights from the floor secured this in position, also placing a plank of wood on the floor under the ends of the uprights. The standards being a shade longer than filled the space, they were nice and firm when forced to the perpendicular; the screen was then tacked around this frame.

In due time everything being in readiness, the condenser warm, and the gas bags in good order, the audience were admitted, and ranged themselves on plank seats on either side of the screen. All being in place the first picture was projected on the screen. This if I remember right was a man swallowing rats. This caused a stamping and shouting, such as would eclipse a more civilized audience, and made the teams of the floor spring, which in turn made the fit of my uprights somewhat loose, and as luck would have it the screen framework, &c., fell over towards the lantern; the cross beam, which was placed against the ceiling, was held to the uprights by the sheeting being tacked well all round, and crash—the frame knocked the lens out of the flange, and the lantern over. After peace was restored and the audience dismissed, I examined the apparatus, and concluded that the five shillings I received hardly compensated for a broken
condenser and a dented lens mount. Now-a-days with bamboo rods and rollers upon which the screen is screwed, accidents of this kind are unheard of. Although at the time this was a sad experience, still, after all these years, I have a certain pleasure in recounting to the present generation the result of my first public lantern entertainment.

---

**Lantern Slide and Transparency Making.**

*By C. Beadle.*

I do not think there can be a more interesting branch of our fascinating art than the production of slides for the optical lantern, and in the remarks I shall make in connection with this topic, I trust to induce some who have not as yet tried this branch to do so. Now that the holiday season is over, we are all anxious to show our work in the best possible way, and I think it cannot be denied that in a glass transparency we obtain more complete results of our negatives than by any other printing process. As to the production of those, I claim to have carefully followed instructions given by the makers of the plates rather than gone in for original research. I find in various articles upon this subject that great stress is laid upon cleanliness in connection with all dishes, measures, &c. This is perfectly correct; but at the same time it will be found that the ordinary care which has enabled you to produce a negative will in all probability enable you to obtain a good transparency from it.

Although there are many ways of producing transparencies, nothing to my mind surpasses in beauty those produced by collodion process; but it is not my intention to go into detail, for dry plates are now made in such perfection, the facilities so great in producing slides from them, and the probable results so good, that we amateurs of little leisure hardly need anything better. With many it is a disputed point as to whether contact negatives or those made in the camera are the better. Although there may be little material difference, the result of my experiences is that those made by reduction are slightly sharper than the others. But as this has a tendency to reducing the density, it is well to avoid the stain when at all possible. Perhaps the success of the finished picture hinges for the most part on giving a proper exposure. In my own practice I have generally obtained the best results by giving as long an exposure as the plate will stand and then developing smartly. When by reason of under exposure a yellow stain results from prolonged development, it can be removed by an application of citric acid clearing solutions; but if the exposure has been correctly timed, there will be no necessity for their use.

I find that the average time for exposure with an afternoon light with F22 to be about 15 minutes, when reducing from a half-plate negative to lantern size; whilst by contact with a kerosene lamp, held at 12in. or 14in. distance, 45 seconds will suffice.

I may here remark that as the result of experimenting with various developers in the same brand of plates, those developed with pyro, ammonia, ammonium, bromide, and carbonate of ammonia required a longer exposure than those developed with hydrokinone. When printing by contact, a dense negative should be held a few inches from the flame; whilst a thin one produces best results when held 18in. or 2ft. away. The same principle applies when making bromide prints.

Of course, in speaking of transparencies, larger sizes than 3½in. square can be treated in a similar manner. I have for my own use made a box for reducing or enlarging, but since making have ascertained that one of a suitable nature for reductions has been put upon the market for about 15s. The plan I use saves all blocking out of the windows of the room in which it is used. It consists of two parts—a platform to hold negatives of any reasonable size, and a box to put the same in when the camera has been adjusted. The platform has a narrow groove down the entire length, to enable the camera to pass up and down, and can be fixed in any desired position by a thumb screw. At the extreme end is nested a set of frames to hold different-sized negatives, which are held in position by small brass buttons. When the exact position has been ascertained for different negatives a mark can be made upon the board, and the complete action of this apparatus is as follows:—The lantern plate being

---

*Read before N. Middlesex Photo. Club.*

Although hydrokinone as a developer for negatives is somewhat uncertain, and has a tendency to choke the distance, still for transparency work and slow plates I think it has yet to be surpassed. It is both simple and clean. I intend using the same solution to develop both a lantern slide and a half-plate transparency. The developer is composed as follows:

_**A.**_

<table>
<thead>
<tr>
<th>Sodium Sulphite</th>
<th>2 ounces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric Acid</td>
<td>60 grains</td>
</tr>
<tr>
<td>Potassium Bromide</td>
<td>30 oz.</td>
</tr>
<tr>
<td>Water to make up</td>
<td>20 ounces</td>
</tr>
</tbody>
</table>

_**B.**_

<table>
<thead>
<tr>
<th>Sodium Hydrate</th>
<th>160 grains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>20 ounces</td>
</tr>
</tbody>
</table>

For development equal parts of **A** and **B** are employed. Perhaps the success of the finished picture hinges for the most part on giving a proper exposure. In my own practice I have generally obtained the best results by giving as long an exposure as the plate will stand and then developing smartly. When by reason of under exposure a yellow stain results from prolonged development, it can be removed by an application of citric acid clearing solutions; but if the exposure has been correctly timed, there will be no necessity for their use.

I find that the average time for exposure with an afternoon light with F22 to be about 15 minutes, when reducing from a half-plate negative to lantern size; whilst by contact with a kerosene lamp, held at 12in. or 14in. distance, 45 seconds will suffice.

I may here remark that as the result of experimenting with various developers in the same brand of plates, those developed with pyro, ammonia, ammonium, bromide, and carbonate of ammonia required a longer exposure than those developed with hydrokinone.

When printing by contact, a dense negative should be held a few inches from the flame; whilst a thin one produces best results when held 18in. or 2ft. away. The same principle applies when making bromide prints.

Of course, in speaking of transparencies, larger sizes than 3½in. square can be treated in a similar manner. I have for my own use made a box for reducing or enlarging, but since making have ascertained that one of a suitable nature for reductions has been put upon the market for about 15s. The plan I use saves all blocking out of the windows of the room in which it is used. It consists of two parts—a platform to hold negatives of any reasonable size, and a box to put the same in when the camera has been adjusted. The platform has a narrow groove down the entire length, to enable the camera to pass up and down, and can be fixed in any desired position by a thumb screw. At the extreme end is nested a set of frames to hold different-sized negatives, which are held in position by small brass buttons. When the exact position has been ascertained for different negatives a mark can be made upon the board, and the complete action of this apparatus is as follows:—The lantern plate being
placed in the dark slide, the slide is placed in the camera, which we will suppose has been adjusted in the platform to the required place. Stop the lens down to F16 or F22 (if light is good the latter). Cap the lens, draw the slide, and place the whole in the box, which has been made with a light-tight fitting cover and a door at the end where the negative is. Place this box in any position suitable, either pointing it to the sky, or even setting it on end. Should this, however, be impossible, owing to walls or trees, a cardboard reflector can be placed at an angle of 45 degrees to the negative. This reflector may be supported in the door at the negative end. So as to make a box that is portable, the lens should not be more than 6in. focus. The lens having been previously uncapped, the exposure is made by opening the flap door. I have also found another use for this box,—when not in use it forms a nice dust-proof cupboard for stowing away the ever-increasing photographic impediments.

Music Halls and the Lantern.

MONSIEUR R. PITROT, whose forte lies in personating several prominent individuals, possesses the ability to so bedeck himself and change his countenance in a short space of time, that he is able in the course of half an hour to represent about a score of the public men of the day. This change was easily recognizable by those to whom the features of the party represented were known, but to the uninitiated the change, beyond seeming clever, represented nothing. So the lantern has been called into requisition, and Mr. Walter Tyler, Waterloo-road, has added zest to this performance by so fitting one of his Helioscopic lanterns with a revolving plate containing sixteen photographs, so under control of the artist that he is enabled by a mere touch to change the picture upon the screen, and then proceed to represent the individual depicted. This apparatus is used with a transparent screen, and the image projected being little over life size, the audience are easily enabled to make a comparison. When a change is about to be made the artist steps behind the screen, rotates the disc containing the photographs—say to Mr. Gladstone—and with the aid of a "collar," and a few dexterous touches, assumes the facial expression of the individual depicted on the screen. Of course suitable means are provided for the proper illumination of the living pantomimium.

Metamorphic Effect Slides.

BY C. A. P.

Setting to one side the serious and instructive part that the optical magic lantern fulfils, there is also the comic department, a little of which agrees with old as well as young. As the juvenile can hardly be expected to prepare slides for himself, the paternal element is looked up to in order to obtain certain slides that cannot be purchased ready prepared.

The word metamorphosis means a change of form or shape, or a transformation. There are numerous subjects which appear in the comic papers, illustrating in the course of half-a-dozen sketches how one picture may be transformed into another of quite a different nature. As an example, Punch, in an issue of two or three weeks back, illustrated this change, the subject commencing as a four-wheeled cab, which developed in the course of a few sketches into a snail; but subjects such as are alluded to will readily suggest themselves to those who are handy with the pencil.

Having the series of sketches made, the next most important part is that of colouring, as upon this depends to a great extent successful and pleasing effects.

The first picture, which represents the subject which is to undergo the change, should be coloured as desired, and then the last picture representing the series. Although these two may differ in every respect in colour as well as shape, it is necessary to establish harmony between them by so colouring the intervening slides that the contrasts between 1 and 2, 2 and 3, 3 and 4, and so on, will not be too violent. A dark colour on No. 1 should be considerably lightened in No. 2 if it is to be entirely changed in No. 3; but perhaps it will be found best in a series of, say, seven pictures, to colour them in the following order—1, 2, 6, 3, 5.

Slides of this nature are best depicted upon the screen with either a bi-unial or triple lantern, and when the changes are made rapidly and smoothly have a very pleasing appearance. They may be changed either backwards or forwards, with equally good effect.

The Lantern and Art Education.

WRITING to our contemporary, The Beacon (Chicago), Mr. Peter Dow says:

"Being an old lantern hand and slidemaker, I have long ago held strong views as to the valuable use of the lantern, for educational purposes, in science and art. These views were publicly and privately declared, as well as my opinion as to many lantern exhibitions, projecting slides on the screen at the rate of one or two hundred in an hour, or two at most. A glance was got—some slides good, others indifferent or bad. After sight, tumbled into their boxes and there an end. To most of them it may have been just what should have happened, but to some quite otherwise. It has at times reminded me of some agricultural exhibitions, little farmers showing their best specimens of, say, turnips, bulb by bulb for a few seconds to the audience, and when done, pitched into a cart and off to the yard for consumption, nevermore to be seen; or like a glance at a landscape from a railway train going at a rate of fifty miles an hour.

"The lantern may be made one of the best aids to improve the eye and mind to correct knowledge of true art. The eye requires to be educated as well as the mind. There are many hidden beauties in nature, as well as in art subjects, brought to light through the lantern. Nothing used to give me greater pleasure than the opportunity to study a high class work, projected on the screen by a pure limelight, where it could be examined in quietness, going over every part perhaps for an hour or more, leaving an impression that even a hundred slides flashed across the screen in the same time could never impart. An old photographic friend of mine, a great slidemaker and the best colourist of slides I have ever known, used oil colours, and was so thoroughly conversant with the quality of slide necessary to be penetrated by the
light for the effect on the screen, as well as the particular colour in density and tint, slides which might appear to an ordinary observer not of much account, when placed in the lantern and projected on the screen, the result was very different and sometimes remarkable.

"Fine paintings photographed and reproduced in this way—the colours of the original carefully repeated—and when thrown on the screen through the lantern, had no appearance of a 'magic lantern picture' about it, but the actual picture itself there before the eye; every touch of the master visible on the canvas that could be seen on the original. No hand-painted copy on canvas by any one could compare with it. Such a picture could be exhibited in any city through the lantern for a given number of hours each day or evening for weeks or months; just as great paintings are exhibited in suitable places to the public at large.

In like manner many works of the great masters of old might be—as some have been—carefully photographed, from the negative of which lantern slides of high quality could be produced, and coloured by some able artist, with the tone and colour of the original reproduced projected on the screen the same size as the original, and exhibited for the edification and benefit of artistic souls in all parts of the world. This would be the nearest approach to witnessing the great original, where all its qualities could be examined at leisure, criticised and remembered. What an amount of delight would exhibitions of this kind not give to very many who might never have an opportunity of visiting the places and countries where so many great works are to be seen. Outside of reproduction of great artistic creations, ancient and modern, many subjects in nature are capable of being photographed in a manner worthy of being included among high-class artistic productions. Fine landscape pictures, coloured in the manner referred to, had an appearance on the screen that might be taken for a production of Hor. McCulloch or Waller Paton. In ordinary exhibitions of slides a certain number may be shown, giving time for reasonable description, and maybe criticism, on each, but pictures of real merit can well afford to be shown alone, or a few if equal, and should have an hour or an evening devoted to one or more for criticism, admiration, and consideration. I am aware of the difficulty at present to get such a proposal carried out, but still, if placed before clubs and societies in suitable terms, it is sometimes surprising the number of real lovers of art willing to move in the right direction. Of course there are some people who cannot endure to look at anything that they have not seen before, pictures or anything else; but I mean those who know and believe, with Keats, that

A thing of beauty is a joy for ever:
Its loveliness increases. It will never
Pass into nothingness."

The Lantern Society.—A Hint.

By L. M.

I observe in a recent issue that the Lantern Society is to launch into its meetings very soon. Some non-photographic societies to which I have the honour to belong have some very pleasant meetings, and very instructive too, at which no lecture or paper is read. They may, in fact, be termed conversational meetings. No subject is announced, but after the meeting is called to order, a few remarks may be made by the chairman upon some subject within the range for which the society exists. This not as a speech, but simply as a means of opening a conversation, which method will be found to call forth opinions from those present, and once the general conversation gets started, it will be found that many will express opinions, give hints about their ways of working, and supply very acceptable information. Now, with regard to a paper which is first read and then debated upon, there is a certain formality about the replies, which must be kept within a certain groove. It is well known that about 75 per cent. of a general meeting, although they may have all the knowledge required, prefer to listen only, instead of replying by a set speech, whereas had they been in conversation, those present would feel free from the restraint connected with making a speech.

If this method of conversation were carried out at certain meetings I think there will be no doubt of their being a very great success.

Signals for Changing Slides.

By ARTHUR K. DEARDEN.

A number of first-class lantern exhibitions are to a great extent spoiled by the use of a bad signal for changing the slides.

The signal has hitherto been looked upon as a very minor part of the exhibition, but I believe in future it will be regarded as a most important item among lantern accessories.

What can be more annoying to a lecturer than to have to rattle a tinkling bell, perhaps at the most interesting part of his lecture? Besides being a nuisance to the lecturer, it distracts the attention of the audience; and supposing the operator should not have the slide already in the lantern, half the audience turn round to see what he is doing. This is no exaggerated idea. Then there is the flash signal. This I consider very little better than the bell, as most of the audience see the flash, and of course expect to see the picture changing immediately. Another great disadvantage of this signal is that the operator must be on the look out for it, or there may be a very awkward pause in the middle of the lecture. This should not be the case if the operator is working only a small lantern, but with a triple and mixed gases he has plenty to do to look after them. This signal lamp must also be in a fixed place, and of course requires the lecturer to be always near it when a fresh slide is required.

These forms have no doubt answered their purpose to a certain extent, but only in a very rude way, as also the well-known "thump, thump" on the floor with the pointer, or "Next, please."

There are many other methods for signalling, but all more or less have great disadvantages, and are certainly against the success of a good exhibition. What is wanted is a good signal, which the lecturer can use at any part of the platform, and that the operator may hear without in any way distracting the attention of the audience. This seems a large order,
and the only thing I know of that can supply it is electricity.

I have had in use for the last six months an electric signal, which fully answers the above, and works admirably. It is exceedingly simple, although to readers unacquainted with electricity it may seem complicated to explain. It is simply an electro-magnet, with a short armature above, which can be drawn down on to the magnet with a weak current from an electric battery, and gives a sharp tap. A double line of wire runs round the room or hall, and need not be fastened with staples, but laid across a wall, ledge, or gas-bracket. The wire ends at the platform, with about three yards of flexible wire cord, with a push at the end.

The magnet, or—as it should properly be called—the "sounder," is put on the lantern box, and can be connected to a small portable Leclanché battery. It is then quite ready for working. As soon as the hands are down the lecturer may take up the small push and proceed with his lecture, and when a fresh slide is required he has simply to press the button. The operator will then hear a sharp tap on the magnet, which can very rarely be heard by the audience. By this means a code of communication may be made between lecturer and operator—one tap for next slide, two taps for focussing, and so on.

The whole affair can be put up in a few minutes, and the slight extra trouble is fully repaid in the working.

I have used a small instrument of this kind in all kinds of halls and school-rooms with the greatest success, the operator generally taking the credit for having a good memory, and bringing the views on the canvas just when required.

Almost any electrician would make up all required for a few shillings; or to those having a slight knowledge of electricity it would be quite easy to make the instrument one's self.

——

Washing Sitters' Faces.

By Artist.

Attention has already been called in this Journal to the fact that a better photograph of an individual may be taken if the face is sponged a short time before "sitting," than can be obtained an hour or more after the individual has performed his toilet. From a photographer's point of view much retouching labour is saved by the "washing." The skin of persons of mature age becomes filled with numerous lines and crevices; these are mostly at and around the eyes, mouth and between the eye-brows, and a skilful photographer, in arranging the lighting, tries his best to overcome the hardness of the shadows caused thereby; but all crevices will in a short time collect—to speak plainly—dirt, not perhaps sufficient to be detectable to the ordinary eye, but certainly to the eye of the camera, the lens. These lines, though slight, are reproduced in the negative with a great degree of sharpness, which the retoucher has to pile lead upon in order to reduce them more in keeping with the surroundings. Although I am not a professional photographer, but a painter of portraits, the same rule applies, and I have oftentimes observed in various sittings with the same customer, that sometimes I have experienced great difficulty in procuring the desired expression; and have frequently advised my sitter to bathe the face with a handkerchief wet with bay rum. This was a delicate way of obtaining the effects of "a wash," and has in my experience never given any offence. I have also noticed that, for five to ten minutes after one has thoroughly washed one's face with soap and water, there is a certain puffiness under the eyes; this however rapidly goes off. Consequently I think that the most favourable time to have a negative taken is about a quarter of an hour after making the toilet.

——

Discs and their Relation to the Lens.

As the issue of this Journal containing the table for ascertaining the relation of the lens to the size of disc, &c., is almost out of print, and there are applications being made for that number, we here reproduce the article, together with the table.

When one is called upon to give a lantern entertainment in a hall or room, the following questions will be uppermost in the mind of the operator:—(1) What size of disc can be obtained with a lens of a certain focus? (2) How far distant from the screen must the lantern be placed in order to get a disc of a certain size with a given lens of ascertained focus? Doubtless many more questions will arise, but these mentioned will be of the most importance. It is a "rule of thumb" practice for an operator to wheel his apparatus up and down a room in order to find the desired position from which to officiate; and the minds of any spectators will not be confirmed in the idea that the exhibitor thoroughly understands his business. How very much more simple and satisfactory it is to reason thus before starting for the place of entertainment. A screen of 10ft. diameter is required, so if I bring a lens of 6in. focus the lantern must be 6ft. from the screen, the length of the room being of course taken into consideration in order to ascertain that it is possible to erect the lantern at the desired distance. This having been ascertained beforehand, all that is required is to take an objective of the desired focus and measure off the necessary space between the screen and the place where the lantern should be set.

Supposing we are called upon to operate the lantern in a hall 25ft. in length, we first ascertain the size of disc desired, which we will suppose to be 10ft. With an objective having a focus of 6in., how far from the screen must the lantern be placed in order to produce a 10ft. disc?

Here is the rule by which it can be ascertained.

Let A=focus of objective. 
B=diameter of slide. 
C=diameter of disc. 
D=distance between the lantern and screen.

Multiply the diameter of the circle required (C) by the focus of the lens (A), and divide by the diameter of the slide (B).

\[ C \times A \div B = D \]

It is thus seen that in order to produce a 10ft. disc with
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40 Slides, Price £2.

A companion set to the Oxford one. Entering from the Railway we are taken round the Hills of the city, and are shown, among others, views of King's College, and Chapel, 7 of Trinity, 6 of St. John's, 8 of Queens', 3 of Christ's, 3 of Clare's, 3 of Lucy's, and several views of the River and Bridges, &c., and wind up with some of the Public Buildings.

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Maps of the Principal Countries in the World.

Detailed Lantern Slide Catalogue sent Post-free on application. 2, St. Swithin St., Aberdeen, See page v.
a 6in. objective, the lantern must be placed 20ft. from the screen. On the other hand, we may possess several lenses of different foci, and it is necessary that the screen and the lantern must occupy certain positions which we will suppose to be just 20ft. apart, and that the diameter of the disc must be 10ft. How are we to ascertain whether we must use a lens of 4in., 5in., 6in., 7in., or other number of inches in focus?

Multiply the distance between the lantern and the screen (D) by the size of opening of slide (B) and divide by the size of disc (C).

\[
\frac{D \times B}{C} = \text{A focus of lens} = \frac{20 \times 3}{6} = \text{6in. focus.}
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### READY REFERENCE TABLE.

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<th>Distance between Lantern and Screen</th>
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### EXAMPLES.

An 8in. focus lens at a distance of 35ft. will give a disc of 13in. in. To produce a disc of 12in. with a lens of 10in. focus, the lantern and screen must be separated by 40ft. To produce a disc of 15in. at a distance of 45ft. will require a lens of 9in. focus.

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**The Arc Light for Projection.**

**By Dr. L. H. Laudy.**

A general adoption of the electric arc light for purposes of projection is not far distant, and having devoted some time to the subject, following it up from the days in which the current was produced from batteries until to-day, when we have on tap a current of electricity, as we have gas or water supplies, it seems not seem possible, for the best dynamos at that time yielded only a small amount of electrical energy.

The electric light is the outgrowth of the experiments of Sir Humphrey Davy, made at the Royal Institute, London, in 1801, when he used 2,000 cells, with which he decomposed Na. and K. and separated their metallic bases. These experiments were repeated and extended, and by using charcoal points as terminals an intense and dazzling light was produced, to which the name voltaic arc was given. Foucault used a more dense form of carbon for his newly-invented lamp or regulator, producing a more steady and uniform light. The arc light when produced from a battery, brilliant as it is, was confined to the lecture-room or an occasional outdoor display. The fatal difficulty was the labour and cost of the electrical energy, and it was not until the discovery of induced currents by Faraday that this obstacle was removed.

It was many years before any practical application was made of this most important electrical discovery, and it required the combined forces of Nollett, Von Malden, Holmes, Wilde, Ladd, and Siemens to produce by mechanical means, direct from motion, a supply of electrical energy that would equal that produced from the battery. Even as late as 1870 this did not seem possible, for the best dynamos at that time yielded only a small amount of electrical energy.
In 1871 Gramme presented to the Academy of Science a description of a new form of magneto-electric machine possessing new features, which were so remarkable as to astonish all the world. Gramme conceived the idea of using a ring, and rotating this between the poles of a magnet in such a way as to prevent reversals in the armature. Many ridiculed this idea. Nevertheless it produced in practice a machine that yielded large currents at much less cost, and laid the foundation of our present system of electric lighting.

From whatever source the electricity is supplied to produce light, it is necessary that the current meets with a resistance, and this condition is best fulfilled when two pieces of carbon are made to touch and then slightly separated. The current in passing between the space so increases the resistance as to produce light of great intensity, and is called the arc light.

That a constant resistance may be maintained favourable to the production of light, some mechanical device that will separate and regulate the distance of the carbons is essential. Such an apparatus is called a regulator or arc lamp. There are few inventions on which so much ingenuity has been expended as on arc lamps. The number is already very great and is on the increase, and every bulletin of the patent office is sure to contain several inventions of this kind.

Between the better lamps there is not much to choose for ordinary illumination, but for special purposes, as in the case of lantern projection, some points are of vital importance, for the success will depend mainly upon the steadiness, good behaviour, and the excellence of the automatic feed, quality and position of the carbons, together with a uniform action of the dynamos.

At present arc lights are run both by continuous and by alternating currents, i.e., in some cases the current is steadily in the same direction, while in others the current consists of pulses, alternatingly positive and negative, succeeding each other at the rate of from 200 to 300 per second.

The first lamp for regulating the position of the carbons was devised by Thomas Wright, of London, in 1845. A few years later Le Molt, of France, devised a clock-work regulator which kept the light steady for several minutes at a time, but the flickering was too great to make it of any practical value. These were followed by Archean, Lacassagre, and Garfe, each lamp an improvement on the other, which brought the standard of regulators near to practical application.

In 1849 Foucault devised a clock-work regulator that differed in many details from the ones before used, and gave comparative satisfaction. It was extensively employed for scientific purposes, and, in fact, was the only lamp that was suitable for lantern projection, and is to-day used in many physical laboratories in preference to other lamps.

The next advance was by Serrin, whose regulator kept the carbons exceedingly steady and maintained them in their relative positions. This lamp has been used for light-house illumination, and still maintains that position, for, like the Foucault, it is a focussing lamp, the function of which is to maintain the carbons at a central point. To produce this effect the carbons are so arranged that a different motion is imparted to each, that the wearing away be compensated for by a rapid movement of the positive pole with only a gradual waste of the negative carbon. By this simultaneous approach of both carbons, the positive moving through double the distance of the negative, the arc preserves its normal length and its position is maintained in space. This is accomplished by an ingenious mechanical device, actuated either by clock-work or electric magnets.

The regulation of the length of the arc that shall produce the most intense light with the least current is confined to very narrow limits, and the mechanical construction of the lamp that will yield satisfactory results must be most perfect. In many of the lamps this regulation is still wanting, and lamps lacking the above essentials, that are put together without regard to any electrical laws, with the hope that chance may make them work, produce a hissing and hammering noise that is disagreeable when silence is required, and are not to be recommended for any purpose.

However well the regulation, due to the electrical and mechanical part of the lamp, they cannot regulate the minute accidental variations in the structure of the carbons which cause a shifting of the arc or chasing, and as the arc flies around the direction of maximum emission will change with it. These fluctuations produce immense variation in the intensity of the light, changing back and forth from 400 to 2,000 candles. Great improvements have been effected in the homogeneity of the carbons, and the time is not far distant when the flickering will be entirely removed.

The mechanical and electrical regulating devices are all that could be desired, and at present the light lamp is not too irregular to be adopted for purposes of projection. With any good regulation, results may be obtained that far exceed in brilliancy any of the old methods employed. This matter of increased intensity is of great importance, especially in large public halls, where in many cases the picture is enlarged many hundred times without regard to the diminished light produced by means of the oxy-hydrogen light.

In considering the application of the electric light as a source of illumination, it is very important to notice just what position the carbon poles must occupy in relation to certain requirements.

For outdoor illumination the axes should coincide, that the crater formed in the upper carbon may act as a reflector, and thus produce an increased downward illumination. Advantage is taken of the crater-like reflection to cast the rays at variable angles in a given direction.

To obtain the best effects for lantern projection the carbons are arranged that the axis of the upper carbon coincides with the edge of the lower carbon farthest from the condenser. In this position of the carbons the light will be concentrated upon one side and radiate freely in front, and will be cut off from behind, with little escape at either side. From this it follows that many different results can be obtained, depending upon the position of the carbon.

(To be continued.)
The Optical Magic Lantern Journal and Photographic Enlarger.

FOR SUCCESSFUL SLIDE MAKING USE ONLY
FRY'S LANTERN PLATES.
OF ALL DEALERS.

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Works—KINGSTON-ON-THAMES. Telephonic Address—'ENLARGEMENTS, LONDON.'

Rouch's "Eureka" Hand Detective Camera.

GIVES instantaneous pictures eminently adapted for the Optical Lantern, Book Illustrations, or Sketches for the Artist; and is now in great demand by Tourists, Artists, Special Correspondents, and Missionaries. It differs from all others in its compactness, but is invaluable in this special feature, that when its contents of one dozen plates have been exposed the reservoir containing them may be removed in open daylight, and a second, third, or fourth reservoir, each containing twelve or more plates, may be inserted in succession, no dark tent for changing plates being now necessary.

Lenses, Camera, and all fittings of very highest class, and made on our premises.

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Most suitable Hand Camera for making Lantern Slide Negatives is undoubtedly the Swinden and Earp's Patent. Most portable, most reliable, most simple. 20 exposures without refilling. Write for particulars and specimens.

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Is a high-class journal that has long been recognised as the guide and instructor of the beginner, the medium of communication and interchange of ideas between more advanced students, and the record of all improvements and discoveries which take place in photography and the allied sciences. It contains information derived from foreign as well as domestic sources; reviews of photographic books, reports of the transactions of English and foreign photographic societies; replies to correspondents seeking information on photographic and other scientific subjects of a like nature, &c., &c.

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Beautifully Coloured. Each Set contains 12 Slides. 

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Price 46 per Set; 3 Sets for 13s. 6d; 6 Sets for 25s.
WILKINSON AND CO.'S SLIDES.—For some time past Messrs. W. T. Wilkinson and Co. have been advertising, “Send three negatives to have lantern slides produced, &c., and compare them with others.” This firm have sent us a sample dozen slides made from negatives thus received, some being from glass negatives of various sizes, whilst others have been taken from films, paper negatives. The transparencies, which are made by their special process, are clear, crisp, and well-defined, whilst they seem to be able to produce almost any tone required, ranging from a cold tone to one of great warmth, the former being a very desirable one when the slides are to be coloured, whilst the latter present a pleasing effect on the screen.

FLASH LAMP.—A new flash lamp (Optimus) has made its appearance. Like all good things, it is very simple in construction. A supply of magnesium powder is placed in a reservoir situated immediately above the stand of the lamp; and a sponge contained in a receptacle at the outer end is charged with methylated spirit. To produce the flash, it is simply necessary to push the knob which is immediately below the reservoir, light the lamp, and squeeze the ball. The movement of the knob allows a certain quantity of the powder to descend into the tube, from whence it is blown up through the centre of the spirit flame. This instrument is finely finished, and is nickel-plated, the stand being of wood.

PAMPHLET.—How to Make Transparencies, Lantern Slides, and Stereoscopic Slides, is a new and interesting pamphlet issued by Messrs. Mawson and Son. It contains nine pages of well-written and interesting matter, which is sub-divided under several headings. Particulars are also given of various developing and toning formula. We recommend our readers to obtain a copy. There being no price mentioned, we presume it is the intention of this firm to present a copy to those who may apply.

G. W. WILSON’S CATALOGUE.—We have before us the catalogue of this well-known and popular Aberdeen firm. A condensed list of sets of high class will be found on our advertising pages, and a detailed list of the slides of each set will be sent, post free, on application. These sets have, we understand, been made up from the best plates in the series of the various districts illustrated. To those who have used the lantern slides of Messrs. Wilson and Co., their high class quality will be well known, whilst to others we would say that prizes have been awarded to this firm at numerous exhibitions for the excellence of their slides. Although retail purchasers are requested to order through a dealer, Messrs. Wilson will take pleasure in affording any information and forwarding catalogues.

COLOURED SLIDES, by J. W. McLellan, 36, St. Paul’s road, Canonbury, London, N.—This firm have sent us a number of coloured photographic lantern slides, some of which are particularly fine; they are produced at a very low price.

RANSON’S FOLDING APPARATUS FOR COPYING, ENLARGING, AND MAKING LANTERN SLIDES supplies a long felt want by both amateur and professional photographers. An easel at the end is made to travel backward and forward by means of a fine rack and pinion adjustment, which enables the operator to quickly and accurately focus the picture to be copied. The easel has also two carriers, grooved to hold cards or other papers, and rabbeted to hold frames carrying negatives, to be reduced or enlarged. These carriers can be raised or lowered, so as to bring the centre of the picture to be copied in the proper position required on the sensitive plate. The base-board is grooved on the edges to receive two brass clips to hold any of the modern cameras at any distance from the easel for copying or reducing. For enlarging a special bellows with focussing screen and dark slide to suit the requirements of the user can be supplied. When folded this apparatus is very compact. The cut shows it when closed.

SLIDES.—We have just received from Mr. R. H. Clark, of Royston, a number of slides, being samples of sets he is introducing this season, consisting of religious subjects (plain), photo-micrographs (coloured), portraits of celebrities (plain), mottoes on tinted background, and also combined in a view, hoar frost (tinted), hymns (both plain and tinted background), nursery tales, comics and landscape (painted), fine art gallery (painted); also a few specially for use with oil lanterns, some being in colours and others in monochrome. The painted photographs before us display the work of a clever artist; and those that are merely tinted are delicate and even. On referring to the catalogue sent with the box of slides we find that their cost is extremely low, and we feel assured that Mr. Clark’s customers will be pleased with both the price and the quality. We shall have pleasure in projecting some of these slides during this season.
and illustrated in our catalogue, a copy of which we send you by mail this day.

We claim to have led the way in the manufacture of the most compact forms of lanterns, and send you a copy of our Bulletin No. 1, issued in 1886, at which time we introduced our New York model magic lantern, with oil light, and which was made possible by our patented bi-unial lamp, as it allowed us to dispense with the bulky forms of case previously required to enclose the light; and the model and model solving view apparatus, described on pages 32 and 36 of our catalogue, were the pioneers of small compact magic lanterns, and we therefore gave this style of instrument the name of "New Departure." The advantages of these new forms led to our having many imitators.

Our next addition was the oxy-hydrogen light, from which it was but a step to the double Metropolitan, and double and triple International Stereopticons, which we introduced in 1887.

Later, in 1889, and to meet the demand for a cheaper form of instrument, we brought out our Popular lantern. These "New Departure" styles of instruments have the advantages of being strong, compact, light in weight, neat in appearance, simple in construction, easy to operate, furnished with the best of lenses and all accessories, and render magnificent results.

You will note that one of the lanterns in article (Fig. 2) shows our patent bi-unial lamp, as you will see by comparing it with page 40 of catalogue, which lamp being a patented article, the manufacturers of the lantern illustrated purchase of us.

We would also add that we were the first to adapt the bellows collapsible extension front, applying to our Universal Stereopticon in 1876, but, unfortunately, we did not patent this application, and it is now extensively used.

We cannot but believe that the author of the article must have been ignorant of these facts, and we, therefore, take pleasure in giving this information, which, in justice to ourselves we trust you will notice.

Caving your pardon for trespassing so much on your valuable time.--We are yours truly,

New York, Sept. 10th, 1890. T. H. McAllister.

THE LANTERN SOCIETY.

[To the Editor.]

DEAR SIR,—I have the pleasure to forward you herewith a copy of the bye-laws and regulations, which have been drawn up by the council, and which are applicable to the loan collection of slides.

With the view of making this loan collection a success, I am desired to ask if you will donate or lend any slides in accordance with the enclosed regulations; and in the event of your being so disposed, will you let me know, as soon as convenient, how many slides you will contribute, in order that they may be available for the use of members during the coming season?

The society has obtained most excellent premises at 20, Hanover-square (the property of the Royal Medical and Chirurgical Society), where the meetings will be held.

The following is the programme for the session, so far as already arranged:


Nov. 3. Annual general meeting.

Nov. 10. No meeting.

Nov. 24. Exhibition of lantern slides, for which tickets will be issued for members and friends.


Papers will also be read, at dates to be arranged, by the following gentlemen: J. Traill Taylor, Esq.; W. H. Maw, Esq.; and R. M. Nelson, Esq., F.R.M.S.

A second exhibition of lantern slides will also be held later in the session, probably on Feb. 9, 1891.

Notification of each meeting will be sent to members at least a week in advance.

You are further desired to ask if you would be good enough to promote the interests of the society by making it known amongst your readers, with the view of obtaining as many additional suitable members as possible during the forthcoming session.

You will observe that the council have decided that ladies are eligible for election.--I am, yours faithfully,

CHARLES E. GLADSTONE, Hon. Sec.

BYE-LAWS.

1. The ordinary meetings shall be held on the second and fourth Mondays in each month, from October to April inclusive, at 8 p.m.

2. The council shall hold their meetings at such times and places as they may appoint.

3. Any member may introduce one visitor at a time to any ordinary meeting of the society on writing the name and address of such visitor to the hon. sec. for their consideration at least fourteen clear days before the date fixed for the reading of the paper.

REGULATIONS RELATING TO THE LOAN COLLECTION OF SLIDES.

1. Members are invited to contribute slides to the above collection. All slides sent in for this purpose shall be placed in the hands of a sub-committee, who shall select such of them as they may consider of sufficient merit and interest, returning the remainder to the owner. The decision of the sub-committee shall be final.

2. All slides submitted for selection must be clearly marked with the title or number, and have two white spots or a white band at the top of the slide when viewed as in nature; and it is desirable that a written description of the slides should accompany them, as well as a statement of the processes by which the negatives and slides were made, and any other matters of interest connected with them. (A form, showing the particulars required, may be obtained on application from the hon. sec.)

3. Contributors to the loan collection of slides are to be of two classes, viz., donors and lenders. Slides contributed by donors, and accepted by the sub-committee, are to become the property of the society, and are to be kept in its possession when not in use. Slides lent to the loan collection, and accepted by the sub-committee, are to become the property of the society during the time they are so lent, and are to be subject to the same rules as slides forming the permanent loan collection. They may, however, be at any time withdrawn from the loan collection, and the members are entitled to the free use of slides for one year from the date of such contribution. Not more than 100 slides are to be lent to any member at one time.

4. Each member donating twelve, or lending fifty, slides approved by the sub-committee, shall be entitled to the free use of slides for one year from the date of such contribution. Not more than 100 slides are to be lent to any member at any one time.

5. Non-contributing members may have the privilege of
IMPROVED
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CAMERA
MEASURES ONLY
8 x 5 x 4 ins.
PRICE,
QUARTER-PLATE, £7 7s.

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MANUFACTURER
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Photographic
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‘Time’
Shutter.

W. H. HUMPHRIES & CO.,
Magic Lantern, Dissolving View, and Photographic Apparatus Makers.
xii. The Optical Magic Lantern Journal and Photographic En arger,

W. WATSON & SONS, 313, High Holborn, London,
MANUFACTURERS OF HIGHEST CLASS OPTICAL & SCIENTIFIC INSTRUMENTS

BI-UNIAL AND TRIPLE LANTERNS.
THREE AND FOUR WICK OIL LANTERNS, of Highest Quality and Efficiency.
LANTERN TRIPODS, GAS APPARATUS, SCREENS, AND SCREEN STANDS.

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251, SWANSTON ST., MELBOURNE, AUSTRALIA.

OPTICAL LANTERNS.

Amateurs should send for Mr. Hughes' full Illustrated Catalogue, over 300 pages, 1s., postage 6d.; small, ditto, 6d., postage 2d., giving useful and valuable information, also prices of every description of Lantern Apparatus, Slides, &c., cheapest and best. Over 15 Patents. Perfection in every direction. In proof of this Mr. Hughes has this season constructed a most magnificent Triple for B. J. MALDEN, Esq. The Chouwn Triple also gained the only Prize Medal and Highest Award, and supplied to the Royal Polytechnic Institution; by Dr. H. GRATIAN GUINNESS, CAPT. SELWYN, M.P., &c. His high-class Lanters and Objectives are used by CAPT. C. READ and the REV. F. WHITE, therefore go direct and have a first-class instrument, and not the common Commercial. The Patent Pamphengos has stood the test against all imitations—it approaches the limelight. Price, with 4-in. Condensers, from £2 10s. Commercial, 4-in. four-wick Lanters, £1 15s. 6d. Teachers' Aid Science Lantern for all purposes, Oxy-hydrogen Microscopes, &c. Patent Presto Carrier. Patent Skeleton Triple and Bi-unial for travelling exhibitors; marvel of portability. 60,000 Slides from 6d. each; 300 Lecture Sets. The Patent Bijou Enlarging Lantern with Rectangular Condensers, perfect results scientifically considered—Special, 5 by 4, £7 15s. 6d. Before deciding, consult Mr. Hughes, Specialist and Manufacturer, who can give greater value than all others. PAMPHLETS FREE.

SYVYINDEN « EARP'S PATENT (Prize Medal) HAND CAMERA

THIS CAMERA combines with extreme simplicity more advantages than any other, and is admired to be the best and most perfect invented. It is constructed to carry Twenty Plates, though any less number may be placed in the Camera. The plates are changed automatically, and instantly. No carriers, metal sheaths, or double backs are used. The Camera is fitted with an excellent R. R. DETECTIVE LENS, the 1-plate size with one of 3/4 in. equiv. focus, working at f7, and the 5 by 4 size with one of 1 1/2 in. focus and special adaptation of Kershaw Shutter. It is perfectly free from hill and projections, has rising front-to-Lens, an ingenious method of focussing, and an indicator for showing the number of Plates remaining unexposed. It is adapted for use on a Stand, and Vertical Pictures can be taken with it. Outside Measurements (1-plate), 10 inches long, 5 1/2 inches wide, 4 1/2 inches deep. Neatly covered in leather. PRICE: 1-plate Size, £7; 5 by 4 Size, £8.

To be obtained of all Dealers, and of GEO. MAXON & CO., Glasgow; PEARSON AND DERMAN, Leeds; J. T. ATKINSON, Liverpool; T. A. & C. S. Association, 49, Charing Cross, London; J. T. CHAPMAN, Manchester; MAWSON AND SWAN, Newcastle-on-Tyne. Descriptive circular on application, or of SWINDEY AND EARP, 21, Islington, Liverpool.
The Optical Magic Lantern Journal and Photographic Enlarger.

LANTERN SLIDE CAMERAS.

Sir,—Since writing my last letter to you I notice an advertisement of Mr. Griffiths, of Birmingham, in your November, 1889, issue, of a lantern slide camera to make transparencies where they have not the use of gas. In the November number, page 47, you draw attention to it. Would you kindly tell me whether it has been tried and has proved successful? The cost is not much; but there is no pleasure in buying a thing which after all your efforts might prove a failure.—Yours sincerely,

R. GODDARD.

Singleton, Foulton le Fylde.

[We use one of Mr. Griffiths' cameras, and are well pleased with it. Any description of apparatus that appears in our "Editorial Table" is written only after we have had an opportunity of trying it. We may here remark that the same applies to the series of descriptions of "Ham. Cameras for Obtaining Slides for the Lantern."—Ed.]

SOUTH LONDON PHOTOGRAPHIC SOCIETY.

Sir,—In consequence of the large measure of success that has attended the efforts of the founders of the East Dulwich and Peckham Photographic Society, their membership roll is swelled upwards of one hundred, many of whom are living quite out of the locality, it has been decided to change the title to the South London Photographic Society; and, moreover, as they find their present accommodation anything but sufficient, they have secured for their future meetings Hanover Hall, Rye-lane, S.E.

The first meeting in this hall will take place on Friday, October 3, when they will entertain their friends with a lantern evening, using a triple the treasurer (Mr. H. G. Banks) has just had built for him.

On November 7 Mr. Banks has also arranged to give a lecture on "A Tour to the Channel Islands," which he will illustrate with a number of his own slides.

On November 21 and 22, the society will hold their annual exhibition, on both of which nights the slides in competition for a bronze medal will be shown.

On December 9th, experiments with the optical lantern will be given by Messrs. Carter and Banks.—Yours truly,

7, Barry-road, East Dulwich.

S. W. GARDNER.

SOUTH LONDON PHOTOGRAPHIC SOCIETY.

The conditions and schedule of awards have been revised beyond that time the borrower shall be fined at the rate of five shillings per day, or part of a day.

7. All expenses of carriage shall be defrayed by the borrower, and on returning the slides the carriage must be prepaid.

8. The borrower shall be held responsible for all losses and damage which may accrue to the slides from their despatch until they are received back by the society.

SOUTH LONDON PHOTOGRAPHIC SOCIETY.

The exhibition will open Wednesday, April 17, and close on Saturday, April 27, 1891. Prospectus will shortly be issued and duly advertised.—We are, dear sir, yours faithfully,

A. H. CLINCH, Esq., Hon. Sec.

F. H. BURR, Esq.

Society Meetings.

Toynbee Camera Club.—An exhibit of photographs and lantern slides took place at Toynbee Hall, Whitechapel, on 20th September. The photographs were the work of members taken on various excursions. Upwards of a couple of hundred transparencies were projected on the screen by the optical lantern. On Thursday, 16th October, the next lantern meeting will be held. Tickets may be obtained from Mr. A. E. Birch, secretary, 35, Heathland-road, Stoke Newington. It is the intention of this society to collect slides for lantern projection at free entertainments at schools and other institutions.

SOUTH LONDON PHOTOGRAPHIC SOCIETY.—On the 19th ult., Mr. F. W. Hart, of Kingsland Green, gave a demonstration in flash-light photography. Mr. Hart also exhibited his new portable stand, which can be rigged up for a stand for flash lamps, a lantern screen, or as the framing for a portable studio. Mr. Ransom exhibited his new copying board, which can be used for lantern slide work, or for enlarging or reducing. A lantern night will be held on October 3 at Hanover Hall, Rye-lane, S.E.

Holborn Camera Club.—On the 19th ult., Mr. N. Baker gave an interesting lecture, "How I spend my holidays in Derby and Yorkshire." A number of interesting views were shown by the lantern—viz., St. Pancras, York, Buxton, Leeds, Matlock, Scarborough, &c. Several slides by Messrs. Chang and Bayston were shown at the conclusion of the lecture.

Sheffield and District Optical Lantern Society.

A large number of members and their friends were present in St. Paul's girls' school on Monday, September 22, on the occasion of the opening meeting of the winter session of the society. The president, Dr. Manton, presided. Over one hundred transparencies, many of them of great beauty, and all the work of members of this society, were exhibited by means of a very powerful oxy-hydrogen apparatus, manipulated by H. Staniforth, Esq., vice-president. Amongst the exhibitors were the Rev. Mr. Deck, Dr. Manton, Messrs. G. Stephenson, P. Slater, J. T. Frith, Wool, Slater, Roach, Woollhouse, Holgate, Draper, Cloves, &c. A pleasant commentary on the pictures was given by the president, which was highly appreciated. The vocal and musical portion of the evening's entertainment was given by members of the Doncaster-street choir. A cordial vote of thanks to the president, Mr. Staniforth, Mr. Slater, and the choir for their exertions brought a delightful evening to a close.—J. F. FRITH, hon. sec., 463, Shoreham-street, Sheffield.

North Middlesex Photographic Club.—On the 22nd ult., Mr. C. Beadle gave an interesting lecture on lantern slide making. It will be remembered that this gentleman took the first prize at the competition held last December. Gentlemen wishing to join this society are invited to send their names to the Secretary (George R. Martin), Harringay Park Granary, Green Lanes, N.

Hackney Photographic Society.—The thirtieth ordinary meeting was held on the 25th August, Mr. Arthur Dean presiding. Several prints were shown by Messrs. Pailthorpe, Foden, and Grant. The former's were taken by
a hand camera of his own construction. The Secretary announced that Mr. John Reynolds had kindly presented an album to the society. Mr. Hubert then gave an able and instructive paper on portraiture and retouching. He thought the rivalry that existed between amateurs, or rather professionals, was a mistake. They must move with the times. A good photographer must be an artist. He said he perceived graduated backgrounds even to scenic ones, which ought not to be sharply defined, or they would detract from the sitter. He always judged his background from the sitter's dress. A rapid rectilinear lens could be used, if in a room the portrait lens was best. The amateur should, when in a garden, find out the N.E. light, screen off the S.W., and with some light material shade off (regulatable) the top light. He demonstrated the lighting with the assistance of two members, and concluded by giving a demonstration of retouchings, for which he is noted. A hearty vote of thanks followed. The Rev. O'Brien Brandon was nominated.

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Notes and Queries.

A. K. D.—Thanks; the article will be found in another column.

B. L. A.—We have made inquiries about the delay, but are unable to account for it; however, as you have now subscribed direct, this Journal will be delivered on the first day of each month.

Constant Reader.—Your letter of 11th ult. to hand, but you give neither your name nor address; from the post mark we understand it comes from Burn, Lanc.

Disc writes: "Will you kindly tell me in your nest, re lantern discs, if the distance from lantern to screen is measured from front of lens; also, if the size of disc given in your table is when a slide has been focussed and taken out, or is it the actual size of picture shown?" Answer.—The distance must be measured from midway between the lenses. The size of disc quoted is on the assumption that a circular picture three inches in diameter is placed in the lantern and focussed.

H. Grundy.—1. Either calico or linen will do well for a transparent sheet; linen will be about twice the cost of calico, but it will stand much more wear and tear. The screen should be wet when using; a good way to do this is with a rose-top syringe after the screen is up. 2. Yes; the Chadwick carrier is a good article. 3. Beard's carrier is constructed on the principle you mention. In an article on dissolvers, p. 34, Vol. I (October, 1889), you will find an article, with illustrations, dealing with the combination of your lens, This will give you its focus. The Rev. O'Brien Brandon was nominated.

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NEW HAND CAMERAS.

THE "TALMER."
Holds 12 4 plates, fitted with self-setting time and instantaneous shutter, and rapid achromatic lens, price 35/., without finder.

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Holds 12 4 plates, has 2 finders, rectilinear lens, time and instantaneous shutter. size only 4 3 by 3 by 8 3. Price 52/., complete in case.

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Thomas's "Pall Mall" Lantern Plate

North Lodge, Melton Mowbray, December 11th, 1889.

Dear Sirs,—My satisfaction with your Lantern Plates is unbounded. Their quality is so consummately excellent that with the quinol developer, a tyro need not fail in getting good slides. Add two gross lanterns to my order in your hands for other plates.

Yours faithfully,

To R. W. Thomas & Co.

WILLIAM ADCOCK.

Rayapuram, Madras, 27th July, 1889.

Dear Sirs,—Mr. F. York was kind enough to send me a sample dozen of your Lantern Plates for trial, and I have much pleasure in stating that in my opinion they are the most perfect Plates of their kind.

I do not think you exaggerate in the least in saying that Collodio-Bromide is superseded, for when one can get such perfect Plates for Is. a dozen, no one would think of going to the trouble of making Collodion Emulsion with its uncertainty and worry.

I spoil the first of the dozen purposely by giving different exposures on the two halves of the Plate to ascertain their rapidity, but after that I got eleven very beautiful transparencies with the remainder of the dozen, and since that I have used many dozens of your plates with the most gratifying success. I have had some thirty dozen out, and find they keep exceedingly well in this climate, for I used some that had been in a cardboard box some four months and they were perfect as at first.

Yours faithfully,

FRED DUNSTERVILLE.

Thomas's Lantern Plates give all colours without Toning, and are warranted to keep indefinitely; in these respects especially they challenge any other make to comparison.

Lantern Plates, on Thin Glass, 3;in. by 3;in., 1s. per dozen.

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When required, at a small additional cost.

A MEDAL has been awarded for these LENSES,
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February, 1888.

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Prices and Illustrated Catalogue for Stamp.
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MAWSON
Lantern Plate

Is specially manufactured for the production of Transparencies. There is nothing to equal it for this work. The tones can be varied according to Developer used, and for Brilliance and Clearness in Shadows it is unsurpassed.

Developing Solutions, Varnishes, Cover Glasses, Paper Masks and Binders and all Requisites.

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33, Soho Square, London; & Mosley Street, Newcastle-on-Tyne.

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SHEW’S POCKET ECLIPSE.
For pictures full 4½ x 3½. Weight, only 12 ounces.
EQUALLY SUITABLE FOR ARCHITECTURE, INTERIORS, &c.
SHEW’S BAMBOO WALKING CANE TRIPOD.

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