THE OPTICAL
MAGIC LANTERN
JOURNAL
AND
PHOTOGRAPHIC ENLARGER.

A Magazine of Popular Science for the Lecture-room and
the Domestic Circle.

Vol. 1.—No. 8. [Entered at
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**The Optical Magic Lantern Journal and Photographic Enlarger.**

**Vol. 1.—No. 8.** (Stationers Hall.) **JANUARY, 1890.** Price One Penny.

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**Notices.**

The Optical Magic Lantern Journal and Photographic Enlarger is issued on the 1st of every month, price One Penny, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:

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The Lantern Committee of the Birmingham Photographic Society report a successful year. At all the meetings where the lantern was employed, the attendance was numerous, which goes to prove that this is one of the most popular methods of exhibiting photographs.

**Notice.**

As previously announced, this journal is now published on the 1st of each month, instead of the 15th, as hitherto. All communications for publication should reach this office not later than the 24th of each month.

**Notes.**

At a recent lantern entertainment given at New York, the audience were shown a slide which was of a particularly interesting character. While the meeting was in process, a flash light picture was taken of the audience, which after its development, and a transparency made from it, was projected on the screen in a short space of time, much to the delight of the audience.

The lantern plays a prominent part in connection with many late discoveries and inventions. By the aid of the electric current it is said to be possible to reproduce at an indefinite distance a photographic image, which by means of the lantern can be enlarged, so as to enable the audience to see the result of the reproduction.

The Lantern Committee of the Birmingham Photographic Society informs us that this Society has 286 lantern slides, which may be borrowed by any of its members.

A most enjoyable evening was lately spent by the members and friends of the North Middlesex Photographic Club. An exhibition, concert, conversation, refreshments, and last, but not least, the optical lantern tending to the general success of the evening.

Mr. J. H. Pickard, hon. sec. of the Birmingham Photographic Society, informs us that this Society has 286 lantern slides, which may be borrowed by any of its members.

VIII.—THE OPAQUE LANTERN.

The opaque lantern is so named because by its agency pictures or objects other than those of a transparent nature can, by its means, be projected upon a screen on an enlarged scale. This form of lantern is known by several names, such as Megascope, Aphengescope, &c. In the earliest form of opaque lantern—which according to record was about one hundred and five years ago—the light of the sun was employed to illuminate objects which were then shown on a screen. About fifty years ago Mr. Longbottom used the oxy-hydrogen light in conjunction with this lantern when exhibiting by it at the London Polytechnic Institution. Twenty years later Mr. Chadburn, of Liverpool, obtained a patent for a lantern of this nature, the oxy-hydrogen light also being used as the illuminant; and it is modifications of this lantern that are employed at the present time.

In its optical arrangements it differs somewhat from that used for showing pictures of a transparent class; and in consequence of the necessary loss of many of the rays of light, it is requisite that a powerful illuminant be employed.

The two popular kinds of opaque lanterns are those by which the light from one or more ordinary optical lanterns can be utilized. The single form is shown in Fig. 33; and the double in Fig. 34.

What is wanted in an opaque lantern is great intensity of illumination, and it matters not from what direction, or in how many directions, the light falls upon the object, so long as it does so.

Dr. E. B. Foote, jun., of New York, endeavoured to construct an opaque lantern which should work with an ordinary oil lamp, and succeeded to a degree he had not anticipated. He subsequently brought out his invention under the name of the Polyopticon Wonder Camera, and they are somewhat extensively used in the United States for projecting enlarged views of cartes and coloured lithographs of small sizes. The one which we have examined is constructed on scientific principles. The lamp is an argand, burning kerosene. Its flame is small but very intense, and is placed in one focus of an elliptical reflector, the small picture to be shown being at or near its other focus, where the light is concentrated.

The reflector is pierced for the lamp-chimney, and also for the object glass. It may be compared to a huge egg, having one end sliced off obliquely, against which opening the picture is placed. There is no condenser, and the object glass is small, and is not achromatic, as the lantern sells at a comparatively small price.

If this Wonder Camera were fitted with a compound achromatic portrait lens it would enable enlargements of prints to be produced with ease by the light of the kerosene argand lamp with which it is fitted, and it would also project the images with a greatly increased brightness; for as the object is opaque, it follows that an object glass of large diameter, in comparison with its focus, will gather and transmit more of the light from the object than will one of smaller diameter.

In Foote's Wonder, if two lamps and two elliptical reflectors of the nature described were used, one being placed at each side, and a portrait lens of the class described as a baby lens were used as the object glass, there seems no doubt that a very useful lantern would result—one which would show not only pictures on the screen, but also such objects as the work of a watch in motion, and others of a like sensational character.

The reason of the good illumination in the Wonder Camera is that none of the light—at least scarcely any—is allowed to escape, but all the rays, both coming direct from the flame, and those reflected from the ellipse, all fall upon the object.

The opaque lantern is well adapted for showing views in series, as a number of them may easily be pasted on a flexible band wound on spools, one of which is mounted vertically at each side of the square aperture through which the pictures show, the winding of one causing
the pictures to pass in succession before the spectators.

The subjects suitable for the opaque lantern are numerous, and may be cheaply obtained. Amongst the most effective of these are small chromo-lithographic views, such as those of the Scottish lakes, Highland scenery, fashionable watering-places, and other holiday resorts, almost every one of which is represented in chromo form as a card. For children, whose appreciation of the sensational and marvellous is not hampered by any aesthetic considerations, such a subject as the Lord Mayor's Show, a yard of which is sold at a penny gaudily coloured, never fails to afford the most intense delight. Thus the opaque lantern may be made to conduce to the tastes of all classes.

**Marking Lantern Slides.**

Various means have, from time to time, been suggested to insure slides being put in the lantern the right side up and the correct face out. The Birmingham Photographic Society have decided that at all their slide exhibitions the title of the scene shall be seen when the picture is viewed in correct position. In the annual report of the committee they say:—

"Attention is again directed to the marking of slides. The proper method of labelling a lantern slide is to attach the name or title so that it may be seen on the front of the picture—preferably at the top—when viewed in its correct position. An example is given in the sketch.

![Image of lantern slides]

"All slides for exhibition should be 3\frac{1}{2} in. square, and properly mounted. They should bear the title legibly written. Where the picture is to be projected upon an opaque screen the slide must be inserted label side downward, and next to the condenser; but if a transparent screen is employed, the position of the label must be reversed, and it must be next the screen."

The Birmingham system, as above described, is now being adopted as a standard by all the leading societies.

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**New Limelight.**

During the past ten years, off and on, I have been engaged in attempts to increase the power of the limelight. Before I commenced experimenting, the best light I could get was that given by a mixed gas jet of small aperture in the nipple, which, with the highest pressure of gas obtainable from bags, gave a light equal to 250 candles.

Being accustomed to exhibit in the largest halls, on screens 18 ft. and 23 ft. square, I was conscious that a vast improvement in the quality of the exhibition would be produced if a more powerful light was used in the lantern.

The first improvement consisted in the use of a two-hole nipple, which gave a light of 300 c.-p. The next was a single-hole nipple of peculiar internal form, which gave 600 c.-p., with a good pressure of gas. This jet, which has a bore at the tip of one-fourteenth of an inch in diameter, is what I still employ. It is made entirely of brass, as I found that platinum tips were worn out much sooner than solid brass nipples.

Ether saturators were tried, but did not offer any improvement over coal gas. It was possible to get a light of 400 c.-p. with ether, but the expense was an objection, a night's exhibition costing 1s. in ether. Other objections were the inflammability of the fluid and its volatility, a bottle of it being liable to burst if left in a warm place, such as in the sunlight. Ether is also difficult to obtain in small towns, and dangerous in transport.

I have long had a conviction that benzoline would give a better limelight than coal gas, because it is richer in carbon. Calculating from the recognised heating powers of hydrogen and carbon, when consumed with their equivalents of oxygen, it appears that the theoretical oxy-carbon flame is considerably hotter than the oxy-hydrogen flame. Hence the more carbon is consumed in the limelight the hotter does the lime become, and the more brilliant is the light. So far as benzoline is concerned this theory is true, for benzoline gives a limelight at least 40 per cent. brighter than coal gas, the same nipple and pressure of oxygen being used in both cases. I may state that with a mixed gas jet, having a nipple of one-fourteenth of an inch bore, the light was as follows:—With a 10 ft. gas-bag, half-filled with oxygen, placed under pressure-boards loaded with 2 cwt., the light was equal to 700 standard candles; with 3 cwt. pressure it was 900 candles; and with a gas-bottle the maximum light was 1,350 candles. These lights were obtained with benzoline and oxygen alone.
This is not the only advantage of the benzoline limelight; besides being more powerful, it is cheaper than ether, or even coal gas, if the wear and tear of the gas-bag is considered. Good ether costs about £5. a gallon; benzoline about is. a gallon. The cost of ether for a limelight of 400 candle-power may be put at 6d. or 8d. per hour; benzoline gives a limelight equal to 600 candles at a cost in fluid of about one halfpenny per hour. Coal gas costs 3d. per hour, reckoning 200 exhibitions as being the lifetime of a gas-bag. These figures exclude the cost of the oxygen.

I have obtained provisional protection for a benzoline saturator. This is placed in a bath of warm air, heated by a night-light or fairy lamp, burning ten hours without attention. I formerly used a water bath, but prefer the air bath for its simplicity, and also because when properly made there is no fear of the saturator getting too hot, and causing thereby unsteadiness of the light. ALBERT Wm. SCOTT.

Flashes on Lantern Topics.

LANTERN SLIDE MOUNTING.—At present this seems to be a burning question; and of all the methods mentioned lately, that introduced by Vevers, of Leeds, and to which attention was drawn in your last, composed of different coloured strips, seems about the best, the present almost universal black being the worst. I think a much better, although far older, thing is that which I have had in use for, shall I say, uncounted ages. Instead of any coloured mount whatever—which in the indistinct light at the lantern might be misleading, and are somewhat annoying, if not deceptive—I have used strips of plain white paper of firm body, and not gummed, but pasted on with common flour paste, which adheres to glass much better than gum, dextrine glue, or any such dried coating on the paper, and is quite as handy to use.

On the top edge is written or printed in as large letters as possible the names of the set, such as Egypt, Palestine, &c.; and on the proper front at the top, which is the one which looks into the lantern, is put first at the one corner the consecutive number of the set, which is constant, and on the same line the special title of the subject, leaving space at the opposite corner for an affixed number, which may be removed at pleasure; the running number of the set is also put on the top edge with the general title series. The use of the affixed numbers is to make a running set of numbers when the sets are not shown in consecutive order, but mixed, it may be, indiscriminately. This method, it will be seen, keeps each set to itself, while allowing every latitude for interchange with separate sets.

Another wrinkle may be noted in this connection which I have found very useful. With every slide I have a card of the same size, on which all the material notes for description at the screen are carefully and legibly written, and they are titled and numbered as the slides are, and kept with them in the same boxes till wanted. These, after the subject has been read up and noted in this way, form quite a compendium, and each slide has its own story at once to hand, which can be used after the introductory portion of the lecture has been got through in a longer or shorter verbal description according to circumstances. If the idea is worth anything, there it is, and I believe Dr. Nicol (of your contemporary "The Beacon," U.S.A.) and myself may claim the joint credit (if any) of originating and first using this method. The whole set of cards describing a lecture may be held in the hand as easily as a pack of playing cards. The movable numbers should be on gummed paper of a markedly different colour. I have found black, with white opaque ink, very suitable. They may be either square cut with the scissors, or what is neater, punched with a circular punch, having a bit of hard close-grained wood on end as a bolster or anvil. Very slight damping attacks or removes these temporary numbers without affecting the white mounting paper or card.

While on this subject, it may also be mentioned that since adopting boxes with a couple of strips of rubber-band tubing on the bottom, and a loose lid with a spring attached on the top, under a sliding one, I have never had a break, although they have sometimes had pretty rough journeys.

In No. 3 I find that I have inadvertently done Professor Muybridge injustice, in assuming that he had not studied the prehistoric drawings, or rather engravings, of animals in motion, on horns, tusks, and other materials. Having made this mistake, and found mine, the retraction (although unasked) is most cheerfully given. Accompanied by the hope that I may soon have the pleasure and profit of seeing his pictures shown by the Zoopraxiscope (as his lantern is called), and hearing his exposition thereof. The first set I had the pleasure of exhibiting were those of the horse in motion only: they were very perfect, as well as curious and instructive, but simply shown by the ordinary lantern.

BULL'S-EYE.

Lantern Slide Competitions.

COMPETITIONS of slides have become of a very interesting character at many meetings of our photographic societies, and by the method to be described great delight is afforded, not only to the competitors, but also to the others present, who act in the capacity of judges. A certain set of negatives is lent in turn to those who desire to compete, and the transparencies handed in to the proper official at a stated time, with a mark on each slide so as to facilitate identification. As the
qualities of two pictures can be better ascertained when they are placed side by side, two lanterns are used for projection, their lighting and optical properties being similar. All those slides made from the same negative are disposed of before those from another are introduced.

At the outset we have two transparencies projected side by side; it is to be determined which of the two is the better. This, then, is decided by general vote, such as "the right" or "the left." Supposing that it has been determined that that on the "right" is the better, the slide on the "left" is removed and laid to one side, and its place supplied by another, which is then voted for, that which is deemed the better remaining in the screen. In this way all the slides are disposed of, and that remaining last upon the screen will be that which, according to vote, will have been decided to be the best of the series. Sometimes it is even advantageous to transpose the two pictures shown, when there is any difficulty in deciding the better.

When several slides of the same subject are thus exhibited in succession, it is not an infrequent occurrence for those who made the slides not to recognise their own when on the screen.

Lantern Slides and Lantern Slide Making.

Within the past two years a greater amount of interest has been shown in lantern slides and lantern slide making than ever before, partly on account of the better and more uniform quality of plates supplied and the simplicity of the development processes which have come into use. The use of the wet plate process and the collodion-bromide process is so limited, that neither can be regarded as a factor of importance at the present time. But it may be said in their favour that, while their rapidity is much less, they are less expensive than the dry plate. The process is, therefore, well adapted for the manufacture of lantern slides by the quantity; but it is doubtful whether the delicate half-tones can be brought out as beautifully as with the improved dry plate. The peculiar advantage of the wet process is the remarkable clearness of the high lights so easily obtained. However, it is a variable process, requires more attention, time, and care than the average amateur has to spare, and involves a certain disagreeable soiling of the hands and clothes, which is unpleasant. It is a great saving of time and labour to use plates already cleaned and repaired, as is now the case; which accounts for the ease and certainty with which lantern slides may be made. After a little practice the technical difficulties are easily mastered; then the making of a slide becomes a pleasure and more certain in its results than is usually the case in the making of silver print, besides possessing a delicacy of detail that it is nearly impossible to see on paper. One of the chief requirements of a negative for slide making is that it shall be very sharp and distinct, with sufficient density in the high lights to prevent the clouding of the sky portion of the slide. A moderately dense negative, therefore, generally produces a crisp slide, since it enlarges the limits of exposure, and allows more latitude in development. It does not follow, however, that an excellent slide may not be made from a very thin, clear negative. It can be done by careful timing and a proper developer. A foggy negative will produce an unsatisfactory slide. Thus much depends on the negative; in selecting such for slide work from a summer's collection, reserve only those that are sharp and of good average density.

There are two different ways of making slides. One is called the contact method, and the other reduction by the camera. In the contact method a portion of a large negative is sometimes selected, on which the sensitive plate is laid in contact, film side next to the negative film, in a printing frame. Over the back of the sensitive plate should be placed a sheet of black or orange-coloured paper, to prevent the reflection of actinic rays from the back of the sensitive plate against the under side of the sensitive film. The plate is then clamped in contact with the negative by the usual springs attached to the printing-frame back.

To be continued.

An attachment for supporting the fronts of optical lanterns has been invented by Mr. J. H. Steward, London. By means of racks the fronts may be raised or lowered in a manner that ensures perfect registration of the discs. The accompanying cut will show at a glance the general arrangements of this invention.
Curious Deterioration of Lantern Slides.

That lantern slides themselves occasionally fade is a fact that many are well aware of, this depending upon the treatment they receive by way of toning and fixing, but at a recent meeting of the London and Provincial Photographic Society, an illustration was given of an entirely new cause of degradation. Writing on this subject in the British Journal of Photography, the editor says:—"A few weeks ago we received a parcel of French lantern slides from a correspondent, who informed us that they formed portion of some which he had taken with him to India, where they had been for two years. Observing that they had gradually been becoming somewhat obscured by a species of mistiness, he undid the binding of one of them with a view of wiping off the scum which seemed to have settled upon the covering glass, when he found that all the area not protected by the mat had become corroded. Only those slides of French manufacture were thus effected; those of English make suffered no change. Curious to know the cause of this erosion he sent them to us.

"Upon removing the binding and opening up some of these, the covering glass, where unprotected by the mat, presented a finely dimmed appearance, not so coarse as even the finest ground glass, but as if breathed upon, or as if it had been exposed to the fumes of hydrofluoric acid. The extreme fineness of this elicited from friends to whom it was shown warm expressions of desire that such could be obtained in sheets for focussing screens for cameras. Indeed so fine was it, that some at first considered it was only a scum of the nature of a varnish, which could be moved by scraping with a knife, especially as such scraping did remove a dusty deposit from the surface, only, however, to reveal the fact, under the microscope, that the dust was disintegrated glass, and that the surface below was eroded. We had previously applied to the glass quite a variety of solvents of gums, including alcohol, ether, chloroform, and benzole, without any action being apparent. The image on the slide having been formed on albumen, we were quite at a loss to account for the liberation of any corrosive, such as hydrofluoric acid—the only one we could then think of as capable of having an action of this nature on glass.

"As it was somewhat of a puzzle, we showed it to opticians, experts in glass burning, and others likely to throw light upon the subject, but without avail. Knowing that the singular beauty of many of the French slides depends upon their being toned with mercury, we casually mentioned this when bringing the subject before the meeting of the London and Provincial Association on Thursday last week, and a clue to the difficulty was suggested by Mr. Everett, one of the members. Mercury, he said, was well known to attack glass, presumably from its affinity for lead.

"Following up this idea, we think a valid cause of the disintegration of the glass is to be found in the fact that mercurial vapour, liberated from that imbedded in the interstices of the image by the heat of India, operated upon the glass and decomposed it. We have obtained numerous formulae employed by French glass makers in the manufacture of glass of a nature similar to that made use of in covering lantern slides, and we find that not only lead but arsenic and other metallic substances form component parts of the same. We here give as a specimen formula one of these employed in actual practice:—Sand, 110lbs.; oxide of lead, 493lbs.; potash, 393lbs.; arsenious acid, 1lb. Why slides of English manufacture should have enjoyed immunity from the erosion spoken of it is difficult to say, unless there is some difference in the composition of the glass, or perhaps there is no mercury employed in the toning. We have known innumerable instances in which the image on the slide has itself faded as a result of this toning, even when it was protected by a varnish possessing a good body, but in this case it was probably washed in an imperfect manner. Heat, at any rate, was not a factor in the destruction, as several of the slides in question had never even been subjected to even the heat of the lantern; but never before have we known of a corroding action on the cover glass such as that described. The action of moist air we all know exercises an action upon optical flint glass, especially that of French manufacture, as most persons who have taken opera or field glasses to India are but too well aware, the action showing itself in the form of a brown stain on the flat side of the object glass. This is sometimes, too, the case with photographic lenses, although, happily, it is of less frequent occurrence, owing perhaps to the fact that photographers in hot, humid climates probably keep the lenses of their photographic objectives cleaner than they do those of their binoculars. In every case we have seen, it is the flint glass of the achromatic lens that has suffered from atmospheric causes."

Editorial Table.

A CONVENIENT form of frame for holding transparencies has recently been introduced by Messrs. Mawson and Swan. These frames are made of brass, and are silver-plated. The picture is secured in place by a neat arrangement at the corners. A chain is supplied for hanging the frame, and it presents an attractive appearance.
MESSRS. G. W. WILSON AND CO., of Aberdeen, have sent us a book of the reading which accompanies their set of twelve lantern slides of the Forth Bridge. It describes in an interesting and concise manner, in fifteen pages, the work and workmanship of this famous bridge.

We have received from the Anti-dark Room Photographic Co., New York, one of their apparatus employed in developing plates in daylight.

This outfit consists of an oblong frame fitted with a trap-door on the outside, and completely enveloping the framework is a rubber hood with contracting aperture, for the reception and inclosure of the hands.

After the plate has been placed in the developer, and the rubber hood removed, the changer should be removed and the lid of the developing table closed. After a few seconds the lid may be opened from time to time to examine the development, and when it has progressed sufficiently to call for an examination of its density, the upper and lower lids of the developing table are opened, and the light reflected through the plate, as shown in the cut, affords full opportunity to judge density.

Applications for Patents, 1889.

No. 17318.—Nov. 1, F. Miall, "Photographic camera."

No. 17319.—Nov. 2, A. W. Scott, "Saturator for lime-light purposes."

No. 18452.—Nov. 19, H. Stainforth, "Holder for adjusting lime-light jets in optical lanterns."

No. 18523.—Nov. 19, J. T. Leighton, "Apparatus for exhibiting photographs."

No. 18523.—Nov. 20, A. Hughes, "Optical lantern."

No. 18907.—Nov. 25, E. Galopin, "Controlling supply of gases for dissolving view lanterns."

No. 19319.—Dec. 2, A. Pearson, "Lantern slide camera."

No. 19737.—Dec. 9, R. Brownlie, "Advertising by photographs."

No. 19976.—Dec. 12, G. Isaac, "Frame for lantern slides."

CORRESPONDENCE.

COMIC SLIDE COLOURING.

SIR,—If the colours are as purchased from the artist colourman, mix them with a little megilp, and apply them with a firm brush, selecting the colours to suit the objects.

The question is too indefinite to admit of a reply in more detail.

PAINT.

A TRADE UNION OF PHOTOGRAPHERS.

SIR,—May I ask you to insert this letter in your excellent little periodical?

I wish to inform your readers that a union of workers in every branch of the photographic profession has been proposed, and is now being brought before the notice of the readers of the trade publications. The method of forming it (or rather a method advanced for discussion) has been described at some length in an article on page 560 of this year's British Journal almanack.

Information will readily be given by me to any applicant who encloses stamp for reply.—Yours, &c., Maidstone, Dec. 19, 1889. ARTHUR J. FIELD.

PHOTO-ETCHING.

SIR,—Under the heading, "Flashes on Lantern Topics," in the Magic Lantern Journal for November 15, 1889, I have just come upon a notice of the application for a patent for the use of "A glass-plate or other transparent substance, coated with a non-actinic film, and used as a negative for photographic and other purposes."

Now, if I am correct in my interpretation of this, it exactly describes a process which I myself devised and have worked more or less for several years, that is to say, I have coated glass plates with a special opaque etching ground of my own composition, and have etched the plates so prepared, and used them as negatives to produce both lantern slides and paper prints, to which latter I have given the name of photo-etchings.

It is possible I am misconstruing the specification you quote. If, however, I am not, and you think the matter of sufficient interest, I shall have pleasure in forwarding for your inspection one or two negatives thus made, and which have been in use several years.

I am, yours truly, FRANK R. HINKINS.

Royston, Cambs. [We shall be glad to see the specimen; and if our correspondent does not consider it a trade secret, perhaps he will publish the formula for the composition of his varnish.—ED.]

DARK ROOMS.

SIR,—Referring to the description of dark rooms, which appeared in your Journal, mine is made in a very simple manner. A wash-stand basin with plug, and pail underneath; a frame a little higher than the top of my head, fastened to sides of stand; and some fabric (red and yellow sewn together) which I let down around me to the floor. In the day-time I can set it near the window, and at night the chandelier suffices as far as illumination is concerned.—Yours, &c., Aberdeen.

J. P. M.

FALLOWFIELD'S PHOTOGRAPHIC REMEMBRANCER, TRAVELLER, AND PHOTOGRAPHIC TID BITS has, with the December quarter, entered on a new departure. It has been enlarged, and otherwise improved, and contains particulars of the "Facile" hand camera, a list of the novelties kept in stock by this well-known firm, together with various photographic formulae, and the odd spaces contain humorous paragraphs pertaining to photography.
Selections.

A BI-CONVEX and a meniscus, while not being the most perfect form for a condenser, will be found to yield excellent results, and be at the same time comparatively inexpensive.
—E. M. Nelson.

Before putting your compressed gas cylinder away, test that no gas is escaping. A simple way is to spread, by means of the finger, a little saliva over the opening, so that it forms a film across the aperture, and if there is the slightest escape a bubble will rise.—G. R. Baker.

The lantern-screen I use for parlour use is made of continuous card paper, two yards square, and is mounted on a wooden roller. It answers better than the whitest linen, and is ready for use at a moment's notice.—J. A. Hodges.

No branch of photographic art is more full of promise of practical utility and pleasure than the manufacture and exhibition of lantern slides.—G. M. Rabbeath.

The pleasure one feels in making a really good wet-plate lantern slide far surpasses anything one can ever feel in working the dry method. In the former case the merit—if any—is due to yourself; but in the latter case there is always a questionable amount that should go to the platemaker.—Chas. Whiting.

The artistic feeling is possessed by very few. Without it one cannot make pictures; it is an intuitive knowledge, born of cultivation. A person may possess inherent taste, but without study and cultivation it amounts to little.—A. J. Treat.

When I have a lantern slide to make of a diagram which consists of very fine lines, I prefer to make it by means of a lens; but for ordinary work, contact gives sufficient exactitude.—T. C. Hepworth.

The ideal lantern band would be a series of pictures printed in their proper order on one long sheet of celluloid. This could be placed on a roller slide adapted to the lantern, and the pictures wound continuously off one roller on to the other.—W. Jerome Harrison.

In the near future it is said the lantern will take the place of blackboards in schools. The pupils will doubtless sit in darkness; and if their behaviour is on a par with that of the present generation—"What an afternoon!"—Jonathan Fallowfield.

If the photographers made lantern slides from some of their negatives, and issued tickets for a free entertainment, it would be the means of bringing them many customers; in fact, it is one of the cheapest ways whereby a photographer could advertise.—Samuel J. Werner.

A LANTERN transparency made from a blurred negative is worse than useless, since the blur is magnified very unpleasantly when the picture is projected on the screen.—F. C. Beach.

The hand camera used in the summer can produce you tons of amusement in the winter—make lantern slides of your pictures.—Jonathan Fallowfield.

Notes and Queries.

Events.—Use paste instead of gum for fastening the binding strips. We published the formula for a paste in our issue for Nov. 15.

F. B. A.—Please send us your address; your letter was only headed "London."

Amateur writes:—"At a lantern entertainment lately given the pictures were fuzzy and distorted at the top, and in the case of square slides the top was very much longer than the bottom, even had the lower corners not been cut off, and the sides of the picture were leaning, instead of being upright. The lantern itself stood on a pile of boxes, and was tilted up at an angle of nearly 45 degress, and the operators had to stand on chairs at either side in order to reach to put the slides in. What is the reason of the indistinctness? and why was the lantern set up so high? There was evidently a reason for it, as it would have been more simple to have set it on a table? Even with all this the lower part of disc was about four feet from the floor." Reply.—The indistinctness of the upper portion of the image was owing to the lantern being tipped back. Had the screen been placed at a right angle to the base of the lantern a better image would have been produced, and the sides of the pictures would have been parallel. When the lantern is tipped back and the screen upright the distance from the lens to the lower edge of the picture on the screen will be much shorter than that between the upper edge and the lens; consequently the image cannot be sharp at the top if it is focussed for the foreground.

A. H. U. asks:—"1. Whether the etho-oxygen or the oxy-hydrogen light is the better? 2. Would you advise me to use gas cylinders, or to make my own oxygen and employ a bag?" Answer.—We have not had sufficient experience with the etho-oxygen light to warrant an opinion. 2. If you have a gas bag you might find it expedient to make your own gas, but it is a question of a balance of advantages which each must determine for oneself.

N. N. writes:—"1. What is the proper adjustment of a lamp? 2. Can a long or short focus lens be used indifferently with the same condenser, or does the focus of condenser require a corresponding focus of lens? 3. Will a Sciopticon lamp illuminate a square picture quite sharp to the very corners?" Answer.—1. No measurements can be given but must be determined by experiment—moving it in various directions, both up and down and sideways, until the disc shows even illumination. 2. The same condenser will serve with lenses of various focal lengths. 3. Yes, the lamp will give the illumination, but sharpness depends upon the object glass.

S. W. Gardiner.—Thanks for the tickets for the exhibition and lantern entertainment in connection with the East Dulwich and Peckham Photographic Society. We shall endeavour to be present.

Igna. Fatum.—"We think the instrument you enquire about is of a high class.

Subscriber.—We have only just received the parcel. Thanks.

B. S.—You can ascertain from our advertising columns.

North Middlesex Photographic Club.—List of awards for members' work at the exhibition, held at Jubilee House, Hornsey-road, N., on December 16, 1889—Landscapes in silver: 1st class certificate, C. Beadle; 2nd, J. W. Marchant; hon. mention, W. T. Goodhew. Landscape in platinum or bromide: 1st class certificate, W. T. Goodhew; 2nd, C. Beadle; hon. mention, Geo. R. Martin. Portraiture: 1st class certificate, H. Beckett. Figure studies: certificate to R. B. Lodge. Lantern transparencies: 1st class certificate, C. Beadle; 2nd, H. Walker. Enlargements: 1st class certificate, A. Le Vieger (enlargement of cat); 2nd, W. Sweeting.
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