THE OPTICAL MAGIC LANTERN JOURNAL AND PHOTOGRAPHIC ENLARGER.

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

Edited by J. Hay Taylor.

Vol. 2—No. 24. MAY 1, 1891. Price One Penny.

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

Vol. 2.—No. 24. [Entered at Stationers’ Hall.] MAY 1, 1891. Price One Penny.

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Notes—Fantoccini Slides—Hand Cameras for Obtaining Slides for the Lantern (No. 11.)—Pressure Gauges—Experience with Ethoxo Lime Light—Electric Incandescent Lamps for Optical Lanterns—Hints on Enlarging—Flame Extinguishers and Method of Testing Flashes on Lantern Topics—Ether Saturators—On "Pressure," Riddle and Regulators in General—Fluid in Gas Cylinder—Correspondence (The Lantern for Suffering Humanity—The "Ethoxo Light"—Notes and Queries.)

Notes.

The Spectacle Makers’ Company have of late been "backward in coming forward," but arrangements are being made to hold an exhibition next year. Various optical instruments will be exhibited. It may be of interest to know that use of single spectacles may be traced back two thousand years, whilst binocular spectacles only date back to about 1290 A.D.

Two drop-the-penny-in-the-slot photographic machines are placed in the north of London, one in Upper-street, nearly opposite the premises of Humphries & Co., lantern apparatus manufacturers; and the other at Crisp’s, Seven Sisters-road. In both cases, however, a bill is posted across them, "NOT WORKING." Perhaps when the weather is brighter they will be in operation.

At the Camera Club Conference (April 7 and 8), interesting papers were given by Messrs. Clark, Pinrell, Lambert, Nott, Sutton, Boys and Elder. By permission of the council, the meetings were held in the theatre of the Society of Arts. On the evening of the 7th, a fine collection of lantern slides were projected before a large audience, whilst on that of the 8th the annual club dinner was given at the Criterion Restaurant. The annual exhibition of photographs will be on view in the club-house, Charing Cross-road, for about three weeks longer, from 10 a.m. to 4 p.m.

Societies intending to purchase a high class lantern outfit will do well to observe an advertisement of a fine apparatus to be found in this issue. We understand that the instrument and fittings cost upwards of £150, and that about one-half only of its cost is asked; also that arrangements are being made to send it to London, where it may be inspected.

On 15th inst. Scott’s Verak lantern for projecting photographs in natural colour will be exhibited before the Manchester Photographic Society.

Advertisements (Scale of Charges), displayed as follows:

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Advertisements must reach the office not later than the 24th of each month. All cheques and postal orders to be made payable to Taylor Brothers.

Editorial communications must be addressed, The Editor; advertisements and business communications to Taylor Brothers, care of the Publishers, Dorset Works, Salisbury Square, Fleet Street, London, E.C.

American Agents:—The International News Co., 83 and 85, Duane Street, New York City.
During a part of last month the Duke of Newcastle's new church in Clumber Park has been the scene of some rather unusual proceedings. A series of "magic lantern services" was held in the church, the lantern being worked by the Duke's labourers, and the chaplain accompanying it with a "narrative."

Messrs. Newton & Co. have recently completed a fine lantern for the Camera Club. We learn that it is pronounced perfect in all respects.

With reference to the article on Fantoccini slides in our last issue, we have to state that Messrs. Perken, Sons, and Rayment are now sole agents for this ingenious and amusing slide, which will be ready in a month.

During the visit of the British Association, the Cardiff Photographic Society will hold an International Photographic Exhibition from August 12 to 26. Lantern slides sent for competition must be marked with the title; and the entrance charge for each set of six will be one shilling. All winning slides must be presented to the society.

In about a fortnight Messrs. Theobald & Co. will have ready a set of coloured engravings of the various rooms in their new premises at Farringdon-street, E.C.

Medals were awarded for lantern slides to the following competitors at the Crystal Palace Exhibition:—Professionals: G. West and Son; Amateurs: Messrs. Austin, Beetham, Taverner, J. W. Wade, A. R. Dresser, and Dr. T. Morton.

Hand Cameras for Obtaining Slides for the Lantern.

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<th>No.</th>
<th>Name</th>
<th>Maker</th>
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<td>1</td>
<td>Facile</td>
<td>(Fallowfield)</td>
<td>March 1st, 1890</td>
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<tr>
<td>2</td>
<td>Quadrant</td>
<td>(W. H. Humphries &amp; Co.)</td>
<td>May 1st</td>
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<td>3</td>
<td>Eclipse</td>
<td>(J. F. Shew &amp; Co.)</td>
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<td>Eureka</td>
<td>(W. W. Rouch &amp; Co.)</td>
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<td>Key</td>
<td>(Platinotype Co.)</td>
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<td>6</td>
<td>Optimus</td>
<td>(Perken, Son &amp; Rayment)</td>
<td>Sept. 1st</td>
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<td>7</td>
<td>The Griffin</td>
<td>(Griffin &amp; Sons, Limited)</td>
<td>Oct. 1st</td>
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<td>8</td>
<td>The Swinle-Earp Patent</td>
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<td>Nov. 1st</td>
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<td>Collins</td>
<td>(C. G. Collins)</td>
<td>Dec. 1st</td>
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<td>10</td>
<td>Kodak</td>
<td>(Eastman Co.)</td>
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<td>11</td>
<td>Guinea</td>
<td>(WalterGriffith)</td>
<td>Apr. 1st, 1891</td>
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No. 12.—VANNECK.

The Vanneck, introduced by Messrs. Watson and Sons, 313, High Holborn, is named after its inventor.

An excellent feature in this camera is that one is enabled to see by looking at the finder, when an object is sharply focussed. This will be understood by the following description of the internal arrangement of the camera.

The front containing the lens is capable of being racked in or out by turning a small thumb screw situated underneath the camera. The exposing shutter is placed at an angle of 45 deg., midway between the lens and the plane at which the sensitive plate is held. On this shutter or flap is a mirror which throws the image from the lens to a focussing glass on the upper part of camera (see cut). As the distance from the lens to the sensitive plate is precisely the same as that from lens to focussing glass via the mirror, it follows that when an object is sharply depicted upon the finder, it will also be absolutely sharp at the exposing plane.

Two methods are provided for making the exposure—that for time exposures being operated by a cord on top which lifts the flap spoken of, and it returns to its position by means of a spring as soon as the cord is released; instantaneous exposures are operated by a trigger action from underneath.

A small finder is situated at the bottom of the camera, which enables it to be used inverted should it be desired that a greater exposure be given to a dark foreground.

The camera is made to hold plates or a film roll holder, and the fittings for either can be changed in a few seconds.

The plates (twelve) are contained in sheaths: a turn of a knob at the end causes the plate at the back to rise, and also records its number; a flexible reservoir being over the plate, it can then be lifted slightly and pushed down at the exposing plane.

To change this attachment for a film holder, a vulcanite slide is placed in front of the plate, when the whole reservoir may be lifted out and the roll holder substituted.

By providing oneself with several reservoirs, a large number of plates may be exposed without necessitating the use of a dark room. These reservoirs are attached by a secret catch, so that there is little fear of meddlesome fingers opening the camera should it be at any time left in the way of such.

The various actions work with smoothness and precision. The camera is covered with leather, and has nickel fittings.

A short time ago I lent my hand camera to a friend, and now he is like the child in Pears' soap advertisement—he won't be happy till he gets one.—J. T. Lees.
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Proved superior to all others. See reports.

ARCHER & SONS, LANTERN SPECIALISTS, Lists free One stamp. Many Novelties. 43 to 49, Lord Street, Liverpool. Established 1845. Effect Slides painted for the Wholesale London Houses. All kinds of Slides made to Order.


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Gentlemen wishing to include property in these Sales, are requested to send particulars on such note prior to Sale.

F. W. HART, Patentee & Manufacturer 8 & 9, KINGSLAND GREEN (JULSTON.) LONDON, N.E. Portable Adjustable Magic Lantern Screen Stands—Garden Studio and Background Stands. FLASH LAMPS—Original Patent for distribution and other Appliances for Photographic, Scenic, and Signal Purposes. PHOTOGRAPHIC APPARATUS, CHEMICALS, &C., SUPPLY STORE.

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TO SECRETARIES OF SOCIETIES OR LECTURERS.

A well-known gentleman having just concluded a series of "Military Lectures," wishes to dispose of a very SUPERIOR LANTERN OUTFIT, which he engaged in conjunction with the same.

It comprises a most powerful mahogany body triple (or can be used as bi-unial) lantern, with massive brass fittings, highly finished, and is fitted with all the most recent improvements that science has yet invented.

Sets of high-class long and short focus lenses, blow-through and mixed jets with Noakes patent regulators; also two 10ft. oxygen and two 100ft. hydrogen cylinders with Bead's patent regulators and gauges; set of screens, 200ft., 125ft., and 90ft.; also two black screens and interchangeable frames to fit each size screen.

The whole packed in strong travelling cases; the lantern box being telescopic to sufficient height for all halls. The above is the most complete set of apparatus it is possible to obtain for which no expense was spared.

Price £5 Guineas. Being less than half its cost.

Apply ROCKHOLME, Southampton.

The Optical Magic Lantern Journal and Photographic Enlarger.

GENERAL WANTS, &c.

ON SALE.—A "Chadwick Lantern," fitted complete, with best safety blow-through jet, 8 in. focus lens, "Eclipse" Carrier, and case; also 12 ft. screen and frame; all quite new, only used twice; price £1 16s.—E., 341, Walmersley Road, Burnley, Lancashire.

PATENT SATURATOR, by Scott; made of brass and copper; quite new; oxygen only required to obtain a brilliant light; price 40/-; sent on approval, if amount deposited with Editor.—Address, HITCHING, c.o. this journal.

SALE OR EXCHANGE.—20 Coloured Slides, "Isle of Wight and Southampton"; 50 English and Welsh Cathedrals; 62 Life of Christ and Holy Land; 12 Life of Joseph. Average price, with boxes and packing, 6d. each.—F. BALSON, Allington, Bridport.

EXCHANGE.—TRICYCLE, Singer's Telescopic, bai bearings, in good condition, for Good Lantern or Camera.—Full particulars, GEO. NEALE, Wood Dalling, Norfolk.

MAHOGANY-BODIED BI-UNIAL or SLIDE-BY-SIDE LANTERNS, 4in. condensers, 2 safety jets, best double pressure boards; lot £3.—W. CARE, 25, Chapel Street, West Bromwich, Stafford.

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LANTERN SLIDES from Negatives, Photos, Prints, Enlarging, Printing, Copying, Developing. Price List free.—BELLYSE, Steeple Claydon, Bucks.

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Saves 75o. a Developer. No handling of Plates.

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P.S.—Now is the time to get New Designs made for next Season.
**THE GUINEA—DETECTIVE CAMERA**

A Thoroughly Effective and Serviceable Quarter-Plate Camera.

**REQUIRES NO FOCUSSING.**

HAS AN ENGLISH ACHROMATIC LENS AND THREE DOUBLE SLIDES.

**PARTICULARS FREE FROM THE PATENTERS AND MANUFACTURERS.**

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**HIGHGATE SQUARE, BIRMINGHAM.**

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**ROUCH'S "EUREKA" HAND DETECTIVE CAMERA.**

Eulogised by Melton Prior, Special War Artist to the "Illustrated London News."

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.

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

Price—For Lantern size Plates, £5 17s. 6d.; Quarter Plates, £6 12s. 6d. If reservoir is made detachable, 10s. each instrument extra. Additional reservoirs fitted—Lantern size, £2 5s.; Quarter Plate, £2 10s.

Awarded the only Medal for Hand Cameras at Crystal Palace Exhibition.


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**BALLARD'S ACTINOMETER (Patent).**

An instrument for accurately measuring the actinic power of light by direct vision. Constructed on entirely novel principle. Extremely simple and absolutely reliable, as it indicates the actual, not the probable, exposure necessary. Always ready for use. No prepared paper to spoil, vary in tint, or run out. Very portable and easily adjusted. Suitable for any latitude, subject, or condition of light.

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Of all Dealers in Photographic materials and Wholesale of "**LEVIATHAN, LONDON**." (Trade Mark and Telegraphic Address.)

Photographic Catalogue, 80 pages. (Trade only.)
Crystal Palace Photo Exhibition.

The exhibition this year, although not of the magnitude of those preceding it, is one in which great interest is manifested. A good collection of photographs are arranged on screens in the Central Hall, and several exhibits of apparatus are also shown.

Among the principal exhibitors are:

Watson & Son, who have a tastefully arranged stand of photographic apparatus in general, hand cameras, cameras with aluminium fittings and triple lanterns.

Some fine examples of platinotype are shown by the Platinotype Company.

Perhaps the most interesting stand is that of D. Noakes and Son, who have fitted up lathes and other apparatus; they also make a fine show of lanterns, fittings, slides, lenses, &c.

Matthews and Co. (Birmingham) have novelties in the form of two inexpensive metal magazine hand cameras, named "Takeabout," and "Itakit."

Taylor, Taylor, and Hobson have a stand containing a number of their well-known lenses, including the "Cushett lens," also the Hawk-eye hand camera.

F. Weeks, 14, Thorpe-road, Forest Gate, shows himself to be an artist of high-class qualifications; he has on exhibition two large frames of drawings prepared for their reproduction on lantern slides. Mr. Weeks designs and makes drawings for the leading lantern slide makers.

Parker and Co. (Holborn) exhibit amongst other photographic apparatus a compact hand camera called the "Companion."

Broughton and Son have one of their portable studios fitted up as an office, and on tables surrounding it have a general stock of dishes, rockers, cameras, stands, and also their new hand camera. They also show a peculiar form of ladder and camera stand combined, which enables a camera to be placed in an elevated position.

As usual the lantern displays attract large audiences. These entertainments are given on alternate evenings by Messrs. J. B. Wollaston, and Noakes and Locke.

Mr. Wollaston projected the competition slides with a binocular lantern, the body of which was made by Watson and Sons, and the optical portion by Taylor, Taylor, and Hobson. Whilst on the alternate evenings Mr. Noakes gave his interesting lecture, "England bisected with a Steam Launch," Mr. Locke operating at the lantern (D. Noakes and Son). The photographs illustrating this lecture were for the most part coloured. During the evening some startling dioramic effects were given in such an excellent manner as to show that Mr. Locke is "in his element" when manipulating effects with a triple lantern.

A Lantern Curiosity.

By H. W. Collins.

Magnificent triples, grand biunials, and wonderful single lanterns are known more or less by every lanternist, and are in use in every corner of the land. But I have in my possession a lantern the like of which is not seen every day, and I thought perhaps a description of it might interest some of the readers of the Optical Lantern Journal.

It is one of the very early Phantasmagoria lanterns, when lantern exhibitions consisted of dim and shadowy forms, seen through a transparent screen; and the audience were alarmed by the sudden appearance of terrible demons and such like, who quickly enlarged to an appalling size, and again dwindled into the nothingness from whence they came.

The general shape of the lantern is not unlike some of the modern single limelight lanterns; the body is made of stout tin, 7 x 7 x 9, with large door at side, and dome top surmounted by a removable rose chimney. At the back of lantern are fittings for straps for fastening the lantern to the operator's waist for producing the Phantasmagoria effects above described.

Some of my readers might think it rather unpleasant work for the operator with the lantern chimney just under his nose. But I must remind them that the light of those days was not obtained from four and five-wick paraffin lamps giving off about 500 deg. of heat, but from a modest candle. Inside this lantern can be seen the germ of the present sliding tray, about 2in. wide, with the remains of a candle socket and stem for reflector, air being admitted through a small hinged door at back of lantern into a perforated false bottom.

The ingenuity displayed to keep the light central with the condenser was worthy of a better cause, for not only is the reflector adjustable to any height, but the entire stage and front carrying condenser and objective is made to slide up and down in a groove, so that with a fresh candle the operator started with the front well up, and as the candle burned away the front was pushed down accordingly. Evidently the lantern was intended for slides after Pharaoh's lean kine, for the stage opening is only halfway wide, though 5in. broad, and without springs.

The condenser is a thick bull's-eye lens, 3½in. in diameter, and as might be expected is placed on the wrong side of slide-holder, being fitted between the slide and objective. The front is a combination of the old cone shape and modern sliding tubes, necessarily so to get at condenser, the objective being a single lens of 6in. focus, fitted into a tin sliding tube. And now, Mr. Lanternist, you who have just purchased your biunial or single lantern, with all the latest improvements, including the rolling curtain shutter, you think you have got an invention of recent years, don't you? Well, think so no longer, for at the back of the stage in my old lantern is to be seen the groove for the curtain shutter, no doubt intended for shutting off the light during the change of slides.

Substitutes for Hydrogen for the Limelight.

By Alfred Pumphrey.

I have often noticed in this journal inquiries in relation to the use of ether or other volatile fluids in lieu of hydrogen gas, and not unfrequently somewhat random statements in favour of the use of such fluids, or else unqualified disapproval of their use.

With the view of helping those who are open to be convinced, I will explain what must be borne in mind to handle these materials with safety.

The advantages to be gained are a more powerful light, at less expense, and in a more portable form than with gas; these are points worth consideration.

It is easy to state the conditions of safety; they are
two-fold. From one common stock of oxygen, either in a bag or a cylinder, there must be maintained two quite distinct currents of gas—one which carries a supply of oxygen which takes along with it a much larger measure of ether vapour than of oxygen (it should carry about eight parts of ether vapour to one of oxygen), and a second supply of oxygen which is entirely free from any trace of ether vapour.

In order to make my meaning clear, I give an illustration of the apparatus I have used; but in any modifications the same points will require attention.

There is also a branch union for the supply of the pure oxygen, as per illustration.

First, let us pay attention to the oxygen which has passed through the vaporiser, and learn by sight when the vapour is quite safe to handle. Pass a little of the vapour through the jet before attempting to light it; turn off the gas, and allow the vapour to dissipate; then turn on the light, noting carefully the character of the flame (this best done by withdrawing the lime).

If the sample of ether is good for the purpose the flame will be luminous, and when the flame is applied to the lime it will not heat it to white heat. Such a flame is quite safe; it will burn in all respects like ordinary gas, and with a burner of ordinary aperture, and so far as this supply is concerned, if a flame is obtained which gives light, and will not heat the lime, all is safe. Now turn on a little oxygen, and note the character of the flame—it is reduced in size, is not luminous, and it heats the lime to white heat.

It is quite possible to get the non-luminous heating flame from the one current of oxygen and vapour, and then you are very close to a dangerous condition when the current of gas is explosive, and everything is easy for the light to pass backwards. A light which is safe one minute directly, and be anything like a change from safe to half an hour or so, and not of the position; possible change must stand. This possible comes about from there not being a sufficient supply of fluid in the vaporiser, a reduction of temperature, or the sample of fluid being unsuitable. These points have often been dwelt upon, and it is not here that there has been most often failure; but I think the attention has not been directed to the possible danger of getting an explosive mixture in the other supply, which I now come to consider.

In this form of the limelight we get over one difficulty—the pressure will always be the same on both the currents, the inflammable and non-inflammable.

If readers will notice the illustration, they will see that at the point B the two streams are very close together, and if care is not taken, the vapour of ether may pass back to the bag or contaminate the oxygen supply in the tubes.

In my early practice I found such to be the case, and until I found a simple remedy for this, the light was unmanageable. I made several bags of gas, which were quite explosive—the least quantity of which lighted with a crack.

In the directions I published, I put it as a first precaution. The vapour of ether is prevented from passing back by regulating the supply at the inlet at D, and opening fully the tap H, and keeping the tap at the jet open.

I have said that the condition of the safety as regards the inflammable supply of gas will not alter quickly from a safe to a dangerous condition; but it must be evident that where it depends upon the introduction of only a small quantity of vapour into the limited area of the supply tubes, a change may much sooner take place. But here there is a simple indication to guide the operator. If the oxygen supply is pure, and the other supply fully charged with ether, the smallest reduction of the oxygen supply will cause the light to go down; and, on the contrary, if a wrong condition is coming on, a reduction of oxygen will not affect the light as much.

The form of the vaporiser has a good deal to do with its continued action. I have one which I cannot use an hour or a half without being obliged to turn it over during the exhibition, or it does not continue to saturate the oxygen with vapour. This is because it is made to stand upright about 9 in. I find quite a shallow vessel is decidedly the best.
AN EXPLANATION
RE
PATENT TRIPLE RACK FRONTS

Attention having been called to a passage in one of Mr. Lewis Wright's works, which is calculated to give an altogether wrong idea as to the merits of the above Fronts, and to affect the sale, the solicitors of the Patentee have been in correspondence with Mr. Wright with reference to the matter, and that gentleman has apologised for having inserted the passage complained of, and undertaken to cancel it in future editions of the book.

COPY OF LETTER FROM MR. LEWIS WRIGHT.

London, March 26th, 1891.

Gentlemen,

The statement contained in . . . the book . . . of which I am the author, referring to the Triple-rack Telescopic Fronts for optical lanterns, was written by me entirely from recollection of an inspection of such a Front at an Exhibition, and not from any experience I had of the actual working of the invention on lanterns.

It having been now brought to my notice that the TRIPLE RACK FRONT is a Patent Proprietary Article, of which fact I was not aware, and that some Exhibitors, after repeated use of this particular adjustment, speak in the highest terms of it, I regret having inserted the passage above referred to, and undertake that in all future editions of the book it shall be cancelled.

You are at liberty to publish this letter in such manner as you may consider desirable.

I am, yours fraternally, Lewis Wright.
A PRACTICAL HAND CAMERA

AND

A COMMON-SENSE WAY OF USING IT.

See Hand Camera Pamphlet (just published), 2 Stamps.


£2 15s. R.R. LENZ, 35s. EXTRA. SIZE, SHAPE AND WEIGHT OF A BOX OF CIGARS.

It is admitted by all disinterested photographers of experience that I have produced the most practical Hand Camera ever offered. It is not a Magazine, and has, therefore, not the intricacy of a sewing machine, because such is not required. It is a straightforward, common-sense apparatus for a certain purpose, viz., "Snap Shot" Photography; and at the same time equally suitable for use as any ordinary camera for time exposures when mounted on a tripod, &c.

By not being a Magazine it has the merit of simplicity, and by being provided with Barnett’s Patent Dark Slides (for which I am the sole agent in Europe) it has the virtue of efficiency, besides other advantages, such as portability, lightness, &c., &c. (and these are not all; you must read the pamphlet).

But just try and think of the scores of times a Hand Camera is required for perhaps two or three exposures only. With this Camera, two or three, four or five, or six plates may be carried in the pocket as little memoranda books, and we can sally forth with a perfect little instrument no bigger than a cigar box. But with a Magazine Camera we must trudge off with the whole affair, sometimes as big as a portmanteau, for the sake of one or two exposures, and to change the Plates we must set some machinery in motion, “turn this button first, push up this knob and release that spring,” and adjust the whole so carefully, or it won’t go, “hold it quite level, then turn the whole thing over,” or fiddle about with a black bag, and so on, and so on. In fact, the whole thing is too ridiculous in the face of a simpler method.

My method of holding a Hand Camera—viz., under the chin—has, since it was first published in the British Journal of Photography, met with such approval, that there can be little doubt it will become universal. It was only one of the common-sense ideas connected with my Camera.

PAMPHLET: CATALOGUE, 2 STAMPS.

W. I. CHADWICK,
2, ST. MARY’S STREET, MANCHESTER.
The Optical Magic Lantern Journal and Photographic Enlarger.

An Illuminated Fountain, and How to Make it.

By R. Dormer, Newtownbarr.

There are, perhaps, no effects which can be displayed by means of the optical magic lantern more pleasing and beautiful than those produced in connection with a fountain of water. Each drop forms a lens, in which the lights are reflected and intensified, and by means of coloured glasses and a rapid carrier—preferably a dissolving carrier—every variety of shade and tint can be represented.

The illuminated fountain, when skilfully managed, is a truly charming spectacle, and one well worthy a place, wherever practicable, in the programmes of lantern entertainments. Owing probably to the difficulty—and in many cases the impossibility—of getting water at the requisite pressure from the main, or of having the waste disposed of, even when the water can easily be procured, the illuminated fountain is a far rarer adjunct to the lanternist's outfit than it otherwise might be; and as there are, no doubt, many lantern enthusiasts who do not grudge a little outlay, in order to add materially to the attractiveness of their entertainments, it affords me much pleasure, in response to the Editor's invitation—to whom I am indebted for much of the information herein contained—to describe how I had a fountain constructed for limelight display which is independent of main pipes and reservoirs, and in connection with which there is no waste water, the overflow being emptied into a cask, from which it is pumped, to be again used as often as required.

The fountain I had made contains thirteen jets; there are three rings of lead piping of }\text{ in. bore, the largest one of which is }\frac{3}{2}\text{ in. in diameter, the other two being }\frac{1}{8}\text{ in. and }\frac{1}{16}\text{ in. respectively.} The jets on largest ring are the smallest, and each contains one orifice, so that a single spray of water is thrown from each; those on the second ring are larger, and contain three orifices, one in centre of jet, and one at each side; the water is thrown higher with the same pressure than that by the jets last described, and a spray is formed somewhat resembling a prince's feather. The third ring is fitted with four rose jets, and they also throw the water higher than those on the other rings. The jets are so arranged that when playing simultaneously, they neither hide nor interfere with each other; this is managed by having the four jets on smallest ring equi-distant, two of those on the second ring }\frac{1}{2}\text{ in. apart, and two others opposite them, whilst two of the jets on the largest ring are }\frac{1}{2}\text{ in. apart, and two opposite them.}

In addition to the twelve jets on rings, there is a centre jet, which is much larger than any of the others, and through which the water is thrown still higher. It is soldered to a straight piece of lead piping of the same bore as the rings, and }\frac{1}{4}\text{ in. long, which is plugged at both ends. The four rings of piping, and the short piece last described, are attached to a circular board of }\frac{3}{4}\text{ in. diameter, by means of narrow strips of lead screwed at each side of the rings, the short piece with centre jet being secured in a similar manner, and kept in position by means of semi-circular wedges screwed to the board, and pressed tightly against each side.}

The fountain is completed by soldering a half-inch union to each of the three rings and the pipe containing centre jet, in such positions that when the rings are fixed to the board in the manner described, the unions are close to each other.

These unions are attached at an angle of about thirty degrees, which is desirable in order to prevent a too abrupt bending of the india-rubber pipes, which are attached when the fountain is playing.

The fountain, when in use is placed in a receptacle or basin with sides slightly tapered, six inches deep, and about thirty-six inches in diameter at bottom. In the side of this receptacle, and about half-way in depth (so as to leave a couple inches of water in the bottom, and thus lessen the noise and splashing), a union is attached, to take }\frac{1}{2}\text{ in. bore india-rubber piping, which constitutes the waste pipe.}

(To be continued.)

How I Became a Lanternist.—IV.

By the Vice-Chairman of the Lantern Society.

I shall always maintain that by the improvement in the apparatus known under the general heading of the oil lantern a great impetus has been given to lantern work generally. As often happens, two factors work together,—the facilities of the dry plate making photography possible, and comparatively easy and cheap to all, whilst the small portable lanterns which followed the utilisation of mineral oils put a lantern practically within everybody's speech. Thus we find in the two arts an unfailing source of amusement of a popular character for the lecture-hall, or school, and have thus achieved a position of usefulness and permanency from which they will never be dethroned.

But to return to my Paphengos. I have seen and tried a variety of oil lanterns, but it seems to me that I got better results with this than with any other little instrument, and I have tried several. It is true that I had a little difficulty in getting rid of the blue haleation on the outer rim of the disc, but I cannot say that I was well satisfied with the results of showing photographs, because I particularly wanted to get the best possible results, results indeed only to be achievable by the aid of the limelight.

But enough was shown to indicate that, all things considered, photographic slides were the most interesting, and for reasons which I will point out. In the early days of hand-painted slides, before photography was popular, and I remember seeing such at the Polytechnic twenty-six years ago—a bold, highly-coloured picture afforded amusement and pleasure. Accuracy of drawing and detail were not sensitized clearly, at least were not considered so much as the general effect. Now let me mention the difference at the present time. A photograph of an interior, a figure, a house, a tree, or bridge, is depicted with such exactness that when we come to see a similar picture thrown on by the laborious hand-painted production we are too critical. To put the thing in a nutshell, photography with its precision has accustomed the eye to detect irregularities or seeming coarseness in hand-painted work, whereas in reality it is probably the work of infinite merit.

It was in the year 1875 that I took, in common
with most others, a decided prejudice to the hand-painted slides; it was at the same time I abandoned these highly coloured productions, and as my family had grown too big to be interested in such, together with comic and slipping slides, I began to buy sets of photographic slides.

I shall resume something of this topic presently, but I purposely make a break to suggest that on the whole it is very handy to have a set or two of slides to amuse one's country friends now and again. I am of opinion that the smaller a man's stock the more he appreciates it, and others will enjoy, a fresh set hired from professional sources a great deal better. This remark does not of course apply to sets made by those who have sufficient determination to produce them, as there is always a personal interest both in making and showing such work. Having therefore become possessed of a considerable number of slides, at Christmas time, at parties, on birthdays, and other home festive occasions, a certain portion of the time is set apart for the lantern "show." They are generally enjoyed and voted good.

I was very much dissatisfied with the result of the oil lantern, as applied to photo reproduction on the screen, and I tried a variety of experiments. The first was to hang a white paper close behind the usual calico sheet. This greatly improved the picture. The next was to reduce the size of the disc. This I found gave superior results. Then ultimately I had a frame about a yard square, and on this I pinned a sheet of cartridge paper. I showed my pictures about 2 ft. in diameter. I do not think that it is too much to say that the actual results of the pictures of that dimension with the oil lantern were not inferior in relative intensity to the limelight production of say a 10 ft. or 15 ft. picture. But here then was a difficulty, and how was it to be got over? The oil exhibition in a medium-sized lecture room or mission hall, by the enlarged size of say a dozen feet, was not good enough, whilst the smaller one was too small to be seen, and so my ambitious soul carried me on a step further.

Registration; or the Art of Dissolving with Precision.

By REGISTER.

To those who use their own slides, or slides which they have previously adjusted to their lanterns, or which they know to be exactly uniform in all necessary particulars, this is a matter of little difficulty; but to those who are dependent upon hired slides, of varying dimensions as to frames, &c., and who, perhaps, scarcely have a chance to handle them until the time has arrived for the exhibition to commence, the case is different. This is the difficulty we have now to face.

With unframed slides, 2\(\frac{1}{2}\)in. \times 2\(\frac{1}{4}\)in., the method to be pursued is simple enough, and it would ensure absolutely perfect registration, but for the irritating irregularity of the mats usually placed between the glasses.

Here is the method:—Make or procure a carrier like A, say 7 in. \times 4\(\frac{1}{2}\)in., with an opening at the top for insertion of slide. Let it be provided with a thin mask of brass (or cardboard might do) so placed within the carrier that it will be in close contact with the condenser side of the slide. This mask should have a circular aperture of about 2\(\frac{1}{2}\)in. or 2\(\frac{3}{4}\)in., its purpose being to cut down the slides (the mats of which are usually of about 2\(\frac{1}{2}\)in. diameter) to a uniform size, and at the same time, and more particularly, to prevent the overlapping of the edges of the pictures which the irregularity of the mats must otherwise produce. If there were no mats in the slides, the aperture of the mask might, with advantage, be a little larger. A "stop" (which may be a strip of wood, 4 in. thick, screwed to the carrier on the end of the condenser side of it, as in the sketch) is to be affixed, and all so adjusted that when the carrier is put into the lantern, well down upon the base of the slide-holder, and well "home" to the stop, the aperture will be exactly concentric with the condenser. Let this carrier be appropriated to, say, the upper lantern of your biunial, and mark it accordingly with a notch, or a round-headed screw in the end of it, or in some such way that you can at once identify it in the dark as belonging to No. 1 lantern.

Now prepare another carrier, similar in all respects, but do not fix the stop just yet; have the strip for this purpose ready, but let it be a little larger than the first. Next time your apparatus is lighted up, put No. 1 carrier (without any slide) into its place in the upper lantern; then take No. 2 carrier and push it gradually into its place in the lower lantern till there is perfect registration of the discs on the screen; now put a little glue, or other sufficiently adhesive substance, on the under surface of the stop, and place it (the stop) carefully in position on the carrier; hold it in place a minute or so to ensure sufficient adhesion, after which withdraw it, with the carrier, from the lantern; slide it in again carefully to see that the registration of the discs is complete, taking care not to shift the stop, which as yet is held only by the still unhardenened glue. If all be right, let the glue set sufficiently to ensure stability, and then put in the screws, and shave off the projecting edges of the stop flush with the carrier. Mark this now completed carrier as belonging to No. 2 lantern; and always use each with its own lantern, unless working with a mathematically true biunial, in which case the carriers may be used interchangeably.

It is advisable similarly to prepare another pair of carriers with square (or cushioned) masks; or if preferred the carriers can be arranged so that the masks in them can be changed; but a separate pair of carriers will be found more convenient in working.

Now you are ready, and your next exhibition of unframed photos will not be open to much fault-finding on the subject of superimposition.

But, you say, all this is simple and obvious enough; my difficulty is to register any casual lot of slides...
The Optical Magic Lantern Journal and Photographic Enlarger.

A Home-Made Lantern.

By C. A. Wade.

As I have gained so much valuable information from the pages of The Optical Magic Lantern Journal, and having promised to give a description of a bi-unial lantern I have built, I take pleasure in giving the readers particulars of same.

To make a lantern which will give satisfactory results is by no means an easy task; a considerable amount both of care and patience must be exercised. The one I made has an iron body, on a mahogany stand, a dome with rose top for exit of heated air, tin stages fitted with rolling curtain shutter, and brass O.G. fronts and fittings.

My reasons for employing iron for the body were—firstly, that when chipped it does not leave an unsightly patch, as is the case with tin; and secondly, it is much lighter than a wooden one lined with iron—this latter is a consideration to those who, like myself, travel a good deal. It may not look so handsome as a wooden one; but with good lenses, a bright light and proper management, it will give results quite as good, if not superior to some showy outfits one sometimes sees.

I procured a piece of annealed iron (or B.B. steel, as it is called in the trade), 32in. x 18in. After marking out the places for doors, condensers, and jets, I made this into a box, 83in. x 63in. x 173in., and wired the top with No. 10 wire, B.W.G., and then turned a 3in. edge at the bottom. Care must be taken to leave 3in. at the left-hand edge, to enable you to rivet it after it is bent into shape. This should be at back of lantern.

For the base I used a piece of mahogany, 18in. x 9in. x 2in., moulded the edges, and cut a hole, 83in. x 63in., 3in. from the end. The body is fitted into this, and screwed from the inside on to the wooden base with 3in. brass screws. Next I made a rim to fit inside of the top of lantern, after the manner of a saucepan lid. This was provided with a 3in. edge, to which was attached a hollowed or dished top, and I cut a 3in. hole, into which I fitted a rim, turned at the back so as to secure the rose top. This top I obtained from a marine store dealer; but for the benefit of those who may not be so fortunate, I will describe how one may be made: Bend a piece of tin or iron 4in. deep into a 33in. diameter tube; then attach a ventilated cone to prevent escape of light, due provision being of course, made for the exit of heat.

The doors I made 5in. square, the condenser openings 43in. in diameter, and the jet apertures 6in. high, the sliding 4in. wide at the bottom and 13in. at top. The doors, which were placed two on each side, were furnished with blue glass sight-holes and small brass-handle knobs.

The jet shelves were made 83in. long x 4in. wide, with a return angle at sides, and an inch left at each end for rivetting purposes.

For the stages I used tin on account of soldering. I got two pieces of strong tinned steel, and made two cells to hold the condensers, which are 43in. in diameter, and 13in. deep. I cut a hole in the plates to take the cells; then turned a 3in. edge outside, and wired both together with solder.

On one end of the plates I soldered and rivetted two 13in. blank hinges, and made wooden frames for the sliding shutter; these I made 6in. square by 3in. thick, with a central 43in. hole, and a groove 43in. wide, and cut two plates 6in. square, with a 4in. hole, and into these holes I fitted a 4in. cylinder, and at the extremity fitted the O.G. ends to take the lens; these ends can be obtained at most opticians ready for putting on ends of tube. The spring plate I made 6in. square, with a 13in. collar, 3in. in diameter; the corners were cut off. To do this, with a pair of compasses set at 3in. radius I marked a quarter circle at each corner and cut the piece out; this is necessary to enable this plate to pass the rods binding the front and back plates together.

The connecting rods are made of eight pieces of 3in. brass tubing, each two inches long. Holes must be bored through the curtain frame for them to pass.
through. Pieces of clock spring 4in. long are attached to the spring plate to make it press against the slides. These springs should be bent bow shape and have one end slightly turned up; the other is then riveted to the spring plate at either side of the opening. In order to keep them in proper place pieces of tin will be required for a stop; one side of these should be soldered to the spring plate and the other bent over the front plate. The plate is put in position with the collar or tube inside of the tube to which the objective is attached, one end of the 2in. brass tubes soldered to each corner of the front plate, then the wooden shutter frame placed in position, the other ends of the tube are soldered to the back plate. A piece of brass wire may afterwards be placed through the tubes to front and back plates. When these are sweated together they form a firm front. To attach the front to the body of the lantern, it is placed so that the hinges are at top and bottom. Two regulating screws having been riveted to the body, and holes for the same made through the plate, these are slipped over the screws, so that instead of the front being hinged at the centre, as in most lanterns, these are hinged top and bottom with the regulating screws in the centre, and the action of turning the screws will bring one lens up and the other down, causing the discs to co-incide.

After finishing the metal work I gave the lot two coats of black cycle enamel, and polished the mahogany base, which gave the instrument a fine appearance.

I use blow-through jets, and with my lantern as described have given a number of entertainments, at one of which nearly a thousand persons were present, and I may add that each entertainment has been a success. Should any reader desire any further particulars I shall be happy to give them.

**Flashes on Lantern Topics.**

**By Bull's-Eye.**

Few things better illustrate the firm hold and widening spread of lantern influence than the lecture recently given by Professor Barr, of the Glasgow University, on "The Uses of the Optical Lantern for Class-room Work." In addition to the members of the Philosophical Society, to whom it was delivered, the members of the Photographic, Microscopic, Geological, and other societies were invited. The instruments used were specially constructed with many desirable adaptations for class-room work. The lecturer pointed out the increasing popularity of the lantern for popular as well as scientific work. One special feature he deprecated was the need that had been heretofore for having the room darkened in which the necessary demonstrations must be made and shown.

The lantern and other appliances and arrangements connected with it, the uses of which he was demonstrating, were capable of being used in a well-lighted room, thus obviating those difficulties caused by the lecturer and audience being in darkness, with the additional advantages of being thoroughly adapted not only for ordinary slides, but also for horizontal and vertical projections, specially suited for the class-room, although quite as much so for larger audiences.

The hall of the Philosophical Society, in which the lecture was delivered, was quite well lighted up, allowing the lecturer to see his hearers and himself to see and exhibit his experiments and diagrams simultaneously with the lantern projections. The speaker stated that there were two objections to the usual slides—their difficulty in making and consequent cost, and the need for special apparatus for the purpose. By apparatus which he exhibited the preparation of slides of any object could be very easily done, these costing not more than sevenpence for each slide. He illustrated the rapidity of the method by copying an engraving from a book, finishing and projecting it on the screen before the meeting separated. At the close he was cordially thanked for his contribution to the evening's proceedings.

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**Editorial Table.**

**Painting Lantern Slides.**—We have received from J. Barnard and Son, 19, Berners-street, W., a Manual of Painting on Glass for the Magic Lantern. It gives precise practical instructions, which will be found of great value to those who may wish to colour their own slides, either in oil or water colour. The book, which sells at one shilling, also contains a short treatise on the lantern and its management. We have much pleasure in recommending this work (62 pages) to our readers.

**The Optician.**—The first number of this weekly (3d.) journal appeared on April 2. It contains some good articles and newsy paragraphs. It is established with the intention of becoming the organ of the optical, mathematical, philosophical, electrical, and photographic instrument industries, and review of the jewellery and allied trades. With such a variety of topics it should be able to keep its 16 pages well filled with interesting news. This journal, which is conducted by Mr. Hayman (late of the Fry Manufacturing Company), is issued to the trade only. As a trade journal to be successful must be supplied to the trade only, by subscription, we presume this journal is issued on those lines, and that the introductory article addressed to the public has reference to trade public.

**Photography in a Nutshell.**—Mr. William Tylar, of Birmingham, has brought out a new edition of this interesting "Enquire Within." To enumerate the subjects pertaining to the photographic art upon which it treats would occupy several pages, as they include upwards of 300 items. In compiling this work Mr. Tylar has neither left undone those things which he ought to have done, nor done those things which he ought not to have done, unless it is that there is no new page; but there is a good index, some fine illustrations, and a blank page appended for the use of any printed matter for making notes upon. Iliffe and Son are the publishers, and the price is 2s. 6d. (cloth bound), and, we may add, it is good value for the money.

"Adams and Co.'s Photographic Annual and Price List" is to hand; it is a tremendous sixpenny worth (post-free, 9d.). The first 100 pages are devoted to articles by well-known writers; then come 26 pages of useful matter, such as formulae; and last, but
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not least, a very complete catalogue (about 170 pages) of goods in which this firm deals. Photographs of Messrs. J. Traill Taylor, W. H. Harrison and Henry Sturme y embellish the book.

"AFRICA."—This descriptive pamphlet is issued in the interests of the Blair Camera Co., and is illustrated from photographs taken with their Hawk-Eye Hand Camera, the English agents for which are Messrs. Taylor, Taylor, and Hobson, of Leicester, and Southampton-street, W.C.

Society Meetings.

TRINITY MUTUAL IMPROVEMENT SOCIETY.—On the 21st ult., the usual weekly meeting of the above was held in the minor hall of Trinity Schools, Poplar, when Mr. T. Smith gave a photological lecture, entitled, "A Scientific Evening with the Magic Lantern," illustrating the use of lenses, cameras, prisms, &c., and various effects produced by the treatment of light. The lecturer, who was evi-
dently quite at home with his subject, handled it in a very interesting style, which was highly appreciated.

DIORAMIC ENTERTAINMENT.—On Wednesday, the 11th ult., at the Lecture Hall, Shoreditch Tabernacle, Hackney-road, London, a dioramic entertainment was given which deserves more than a passing notice. The first part consisted of "Picturesque Scotland," and the second part of some views taken in the Channel Islands, statuary, effects, &c. The lecture had been prepared expressly, and was delivered by Mr. F. A. Bridge, a gentleman whose name is well known in connection with this class of entertainment. The views had been selected from upwards of 2,000, and exquisitely coloured regardless of expense. The lantern used was the "Dowra" triple which gained the gold medal at the Crystal Palace Photographic Exhibition, 1858. Since that time, however, several improvements have been added by Mr. Coln Dowra, a gentleman who has done much to perfect the triple lantern, and whose ability as a thorough master of this instrument was again proved on this occasion. Mr. W. C. Hughes' patent curtain arrangement and registering rods, &c., by which at any time during an exhibition the rolling curtain can be applied to either lantern at pleasure, is one of the improvements alluded to; also an arrangement by which the limes can be adjusted in any direction without opening the doors, and the top and bottom lanterns lowered or raised for centreing purposes by means of milled headed screws at the back of instrument; a new arrangement for ensuring the pictures coming over each other in perfect register; the automatic covering of the objective on the withdrawal of the picture, and thus doing away with the objectionable flare spot, should also be mentioned. But the greatest novelty was perhaps the use of small bags of about one foot capacity, which were kept automatically filled and thus avoided the sudden lowering of the light when using the third lantern, so noticeable with some forms of regulators. This defect has been overcome by Mr. Dowra by the use of the two small wedge-shaped bags just mentioned. They are each in a separate pair of miniature pressure boxes, weighted in the ordinary way, and are placed on the floor. Attached to the upper end of the board is a rod: this is fastened to a lever acting on the tap of the regulator. Thus as the gas is used from the bag a fresh supply is obtained from the cylinder through the regulator and an even supply maintained. This arrangement has also been patented. In the course of the evening Mr. Bridge sang several songs, and introduced suitable incidental music. Mr. Hughes occupied the chair. Notwith standing the inclemency of the weather the room was filled, and resulted in a profit of nearly £50, which was handed to the Shoreditch Young Men's Christian Association.

GLOUCESTERSHIRE PHOTOGRAPHIC SOCIETY.—The second triennial exhibition was held from April 20 to 29. Six interesting lectures were given, and lantern exhibitions held each evening. The limelight demonstrations were the most complete ever held in Gloucester.

CAMERA CLUB.—On March 23 Mr. Howard gave a paper, "Photography in By-e-lanes and Field Lanes," illustrated with the lantern. On April 2 Mr. Henry Sturme y gave an address upon "Norway as a Photographic Field." The lecture consisted of a description of his tour with the Verey Club in Norway, and the narrative was illustrated throughout by a large number of lantern slides. On April 13 there was a special lantern evening at the club, and a large and interesting collection of slides were shown. The extra meeting was appointed for the purpose of working off the arrears into which the lantern exhibition had fallen, owing to the period of removal into the new premises. Over four hundred slides were shown (almost all new at the club), the work of members.

HACKNEY PHOTOGRAPHIC SOCIETY.—On April 16 about two hundred slides were projected with the lantern. These were made from negatives taken with hand cameras by Mr. Welford, who gave a description of the different uses to which a hand camera could be put.

BRECHEL PHOTOGRAPHIC ASSOCIATION.—On the 4th ult. the Amateur Photographer prize slides (1890) were exhibited to a large audience at the Episcopal School-room. They were divided into four classes—figure subjects, landscapes, animals and instantaneous, and architecture.

NORTH MIDDLESEX PHOTOGRAPHIC SOCIETY.—On the 4th ult. a well-attended meeting of the members and friends of the society was held at Beale's Restaurant to bid farewell to the president, Mr. J. Humphries, F.S.A., who was about to leave London for Glasgaw, where he will in future reside. A smoking concert was organised. The event of the evening was the presentation of an illuminated address to Mr. Humphries bearing the signatures of the members.

LEEDS PHOTOGRAPHIC SOCIETY.—On the 2nd ult., Professor E. H. Jacob, M.A., M.D., read a paper on "Winter Photography," in the course of his remarks, Mr. Jacob said that photography in the winter, that is when trees had lost their leaves, was far too much neglected by amateurs.

NORTH LONDON PHOTOGRAPHIC SOCIETY.—April 7, Rev. C. Healy in the chair, Mr. A. P. Weir, hon. librarian to the Essex Field Club, gave his new and interesting lecture upon the great road from Aldgate to Colcheste r, illustrated by views in the optical lantern, many of them being copies of very rare prints.

Correspondence.

EXCHANGE OF LANTERN SLIDES,
[To the Editor.]

SIR,—It is a pleasure to observe that the lantern is becoming increasingly useful and popular, but could not some means be adopted for a satisfactory interchange of good slides? Of course, one can get a considerable variety of slides by hiring them, but then the hiring is subject to certain drawbacks, e. g., this has been my experience: Having ordered a set of slides and received an intimation that they would be forthcoming on a certain day, I prepared a lecture. The day arrived, and I sent a trusty messenger to the station early (as I understood that
the slides were to be sent off the day before, with instructions to bring them as soon as possible after their arrival. Hour after hour passing by, and no sign of my messenger returning, I sent off a second messenger, who reported that his predecessor was diligently watching the arrival of each passenger train, but that there was no parcel or box. Quickly a telegram was despatched, with answer prepaid; this elicited a tardy intimation that the slides had just been, or were about to be, sent off. This was late in the afternoon, and finally my first messenger brought the precious box to me in breathless haste in the evening, when my audience was already assembled, and the time had come for the commencement of the lecture. He had waited at the station the whole day, and I had to put up with the difficulty of lecturing upon slides which I had never seen, and the mortification of committing in consequence one or two ludicrous blunders. Next time I applied to another dealer, and asked whether I could have a certain set on a certain day. He replied that he was sorry that they were already engaged, but that I could have a set which I was not at all in want of. In the case of a third dealer, who advertises largely, I received no reply whatever; it was the busy season, and so I suppose he had no time to reply. In the case of a fourth, who has generally served me well, I engaged a new and special set for a special occasion, and being informed that it should be punctually despatched, I prepared an extempore lecture with extra care, founding it upon a published reading and list of the slides sent to me beforehand. The slides duly arrived on the day appointed, but, alas! they greatly differed from the published list, the most interesting points of my lecture could scarcely be touched upon, and a hoped for success was turned into a comparative failure. Writing afterwards for an explanation, I was informed that the person who had previously hired the slides had failed to return them at the proper time, and consequently a scratch set was made up for my benefit, or rather for the benefit of — should I say? — my disappointed audience. Is not this provoking to one who has lectured with the lantern for many years, and tried to popularise it and make it really useful? I suppose that I am in the same position as many others, viz., the owner of a fair number of superior slides arranged in lecture sets, who does not wish to walk up and down the room or care to invest extra care in acquisition and soon lie by in uselessness, but who would gladly exchange them temporarily or periodically for others. Could not a "Slide Circulating Club," or something like it, be got up through the medium of your columns, including some guarantee that the slides circulated were really good and effective ones, not rubbish? —I am, yours truly, St. Helen's, Hastings. D. A. Doudney.

EXPERIENCES WITH THE ETHOXO LIGHT.

[To the Editor.]

Sir,—In reply to Mr. Pumphrey, the saturator I have used for the last two years is described in all London dealers' catalogues as "The Patent Safety Porous Ether Saturator," and consists of two tubes lying side by side, and joined at the end by a small U tube. The reverse ends are fitted with nozzles to take 3½ in. india-rubber tube, but no taps. Each tube is 12½ in. long, and 2½ in. in diameter. Both tubes are fitted with flannel wound round small spiral springs running their whole length, to secure passage for the oxygen. Mr. W. King accounts for the explosion, when no one was near, by saying the jet was out of order. I send it herewith exactly as the explosion occurred, but the effect is quite lost, as I sent it off a second messenger, who re-

The Optical Magic-Lantern Journal and Photographic Enlarger.

Notes and Queries.

Gauge.—We cannot furnish any particulars about the explosion you speak of, except that the wrong gauge was used on the bottle. Why not address your questions to the firm?

S. J.—(1) The 1-plate negative is under-exposed, but the ½-plate one good. (2) Yes; a good lantern transparency can be made from the ½-plate by contact.

Cook.—"I am about to take a trip and will expose some dozens of plates during the time, but I wish to mark each plate in some way so that I may know the subject, for I do not intend developing until I return." Answer.—A number can be written upon the corner of the film with an ordinary lead pencil, and in a note book the desired particulars can be recorded against a similar number. The pencil marks will not wash off during development.

R. M.—We do not give opinions respecting the standing of different firms.

T. A. F.—Forwarded as requested.

J. Stewart.—Thanks for paper. We had no room in last issue for the account, and it is rather too old for this. Shall be pleased to hear from you at any time.

J. R. Black writes: "I consider the series of articles which you are publishing on Hand Cameras for Obtaining Slides for the Lantern invaluable for the guidance of one wishing to invest in one. I lately spent some time in going over each article carefully, and the result was I fixed upon the camera; this I sent for, and have had two or three outings. After comparing it with your article on page — I find it is very truthfully described, and as soon as I got the camera felt quite at home with it, and shall recommend it to my friends."

Radial says he was at an exhibition of slides when the operator coloured several of the slides—foreground dark and the sky blue,—after the pictures were on the screen, and asks how this can be done. Answer.—By what is known as a tinter, which is hinged on the end of the lens, and provided with coloured plates, which hinge at the top and bottom of the tube.

Effect writes: "I have just got a set of slides representing a real explosion, but the effect is quite lost, as I cannot get the change made quick enough; the best I can get is a gradual dissolving, however quickly I turn the tap. Can you tell me how this can be done?" Answer.—Such effects are best produced by the aid of a flasher, of which there are different kinds. Place both slides in their respective lanterns, both lights must be turned on, but the lens of one lantern covered with a flasher, or even the hand. To effect the sudden change, quickly uncover the one lens and cover the other; after one or two trials you will be able to do this with nicety.

R. Jamieson.—You will find the electric rap much better than a bell at your desk for communicating with the lantern operator.

Register.—Shall be pleased to forward as requested. We will give a description of regulator in an early issue.

Miller Bros. (Chicago) write to say that they employ ether-oxygen light with their triple lantern, and find it better than oxy-hydrogen, and that to prevent the saturator from getting cold, they place upon it a hot brick wrapped in cloth.

Jad. More.—A letter from Rev. R. A. Doudney appears in this issue upon the subject mentioned.

Wm. Carly writes: "Can you give me any information about how I can bring up ½-plate dry plates two years old. They come up very foggy and very dense." Replied: "Steam the plates for a little time in a solution of bichromate of potash, then wash well and dry; this will probably remove any fogging propensity, but they will be a little slower."
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