## HALL'S ILLUSTRATRD CATALOGUE

 OF
## magic Lanterns,

霜issolvining ipanterns, anu Stercopticons.

Manufactured and Imported by
IIIOMAS IEIATI, Optical, , Flectrical, and
PHILOSOPHICÁL INSTRUMENT MAKER,
No. 19 Bromfield street, BOSTON, MASS.

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## THE BOYS' AND GIRLS'

## Magic Lantern.

\begin{abstract}
"Who does not recall the mute wonder and delight with which.jn compans with other juveniles he witnessed for the first time the mysteries of the Magic Lantern! A darkened room, a sheet hung upon the wall, and a small tin box held in the hand of the Pater familias - the magician of the hour - such the scene and the accessories."

[The larger the Condensing Lenses, the "more light can be condensed from the Lamp, and the pictures more highly magnified.] Each Magic Lantern is in a black Japanned Case and Packing Box, and is accompanied with the following assortment of Views, brilliantly painted on glass slides, with covering glass to protect them from injury : 2 Revolving Views of Chinese Fireworks; 1 Mechanical View, with life-like motion to fignre. 6 Views, hmmorons, on long slides, 5 subjects on each slite.

## ADDITIONAL SLIDES FOR

## THE BOYS' AND GIRLS' MAGIC LANTERNS. <br> COMIC SUBJECTS, NUTRSERY TA工ES, \&\% IN SETS OF 12 SIIDES.

For Boys' and Girls' Magic Lantern No. 1, onglass plates, 9 in. long by $2 \frac{1}{2} \mathrm{in}$. wide " " " " "No. 2, on glass plates, 11 in. Jong ly 3in. wide No. 3, on glass plates, 12 in . long hy $3 \neq \mathrm{in}$. wide

## PFIOTOOFITICOIN OUTTHIT, <br> WITH 100 CHOICE VIEWS, 100.00 .

Consisting of 1 Japanned Photoopticon, 8a Woodburytype Transpanencies, 4 Artistically-Colored Photograrhic Views of Miscellaneous Subsects, Bible History, Holy Lands, \&c. 10 Comic

Views, with Life-Like Motions; 1 Chbomotipe, or Chinese Firework.
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## A PIIOTOOPTHCON AND

from our stock at our Low pusces, and organize
it series of Exhibitions in youz deighhorhood
-in the larlors, and Schools, and Churches.
With a Photoopticon you call make a gool living, as expenses are light, and you can always give an Entertainment that will he satisfactory.

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## INTRODUCTION.

Having lost all our electrotype plates, cuts, and eatalogues in the great fire, November 9, 1872, we are obliged to get out a new edition, and have taken the opportunity to enlarge and improve it.

Since the commencement of this establishment, in 1835, a constant effort has been made to perfect and simplify the construction of the various apparatus. That these efforts have been successful, may be inferred from the steady increase of business from that time to the present, and the general satisfaction expressed by customers in regard to the manner in which their orders have been executed.

The peculiar nature of the business, derived, as it is, from all sections of the country, and the consequent inability of the purehaser personally to inspect or select what he wishes, render a reliance upon the integrity of the dealer highly necessary. This having been the first establishment to publish a catalogue and list of prices, it has been our aim to furnish the purchaser the very best instruments and choicest pictures that our judgment and experience can procure, at the same time our object will be to sell them at the very lowest prices that we can afford.

We have carefully availed ourselves of every additional improvement to the Magic Lantern, and have always on hand a very large assortment of beautifully executed Slides, to which we invite the attention of teachers, superintendents of Sunday sehools, public lecturers, and exhibitions.

## TERMS CASH.

I wound recommend to my patrons to remit, in a registered letter, or by a draft payable to my order, or, as is generally done, have bills collected through an express company, on delivery of goods.

Persons, when ordering goods, or sending for Catalogues, will please write their names and places of residence, distinctly and fully.


Strangers ordering goods payable on delivery, must enclose five dollars with the order, which is to pay freight ont and back provided the parties do not take the goods. We do not require this of old customers, or parties we know. The amount received with the order will be credited on the bill and sent with the goods, by express, to any part of the Unitel States or Canadas.

All claims must be made a short time after receipt of the goods, otherwise no allowance will be made.

Not accountable for breakage.
The amount of bill may be remitted by sight drafts on Boston or New York.

Insurance against breakage in transportation, two and a half per cent. Marine insurance at current rates, from one to two and a half per cent.

All goods purchased will be packed with great care, with cost of box added to bill. As we always have a large stock of Instruments on hand, we cau fill orders immediately on reception. But it sometimes happens that we are out of some styles of Pictures; in that case, we are obliged to delay the order until we can make them, which is never over two or three days, as we have longexperienced workmen, and the best facilities for manufacturing.

Persons ordering Catalogues will please send stamps for postage.

## OUR OPTICAL AND SCIENTIFIC DEPARTMENT

Will be found replete with apparatus and appliances for the illustration of the leading phenomena in the following branches of Physical Science, also the best works in the different departments of science.

| PHOTOGRAPHY, | HYDRAULICS, | ELECTRICITY, |
| :--- | :--- | :--- |
| CHEMSTRY, | PNEUMATICS, | METEOROLOGY, |
| MINERALOGY, | ACOUSTICS, | ELECTRO-METALLURGY, |
| MECHANICS, | OPTICS, | MAGNETISM, |
| HYDROSTATICS, | ASTRONOMY, | LIGHT AND HEAT. |

The whole of this department is under my own personal direction, and my long experience in manufacturing instruments is a sufficient guaranty for the quality of the apparatus sold by me.

## THE NEW BOOK ON THE MAGIC LANTERN.

We have great pleasure in recommending to our friends and the public an able little work on the Lautern, entitled "The Magic Lantern : How to Buy it, and How to Use it, and How to Raise a Ghost by a 'Mere Phantom.' "' All the various articles necessary for showing the whole of the effects, either with one or two lanterns, and a minute description of the method of using them, with hints on the selection of slides, \&c., are fully set forth in it. We would earnestly beg our customers to purchase the book with the lantern. It will be sent post free on receipt of one dollar.


No. 1. First-class Oxy-Hydrogen Stereopticon for Dissolving Views, two japanned tin cases $10 \frac{1}{2}$ inches long by $8 \frac{1}{2}$ inches wide, and $16 \frac{1}{2}$ inches high, on raised walnut platform, brass rack adjustment for focusing, extra fine plano-convex condensing lenses $4!$ inches diameter, very finest achromatic magnifying lenses 2 inches diameter, giving high and low power. Hall's latest Improved Concentric Safety Jet Oxy-Hydrogen Blow Pipes, compound dissolving stop-cock, India-rubber gas bag 40 inches long by 30 inches wide, with press boards, and twelve feet of gum tubing for the oxygen gas copper retort and metal pipe for making the oxygen gas, glass wash bottle with brass screw top, tin spirit lamp for heating the retort, iron retort stand, copper gasometer and generator 11 inches diameter by 24 inches high, and 8 feet gum tubing for the hydrogen gas, 1 dozen lime cylinders, all packed in two neat wood boxes, with locks and keys, and handles. Price, $\$ 225$.

No. 2. Oxy-Hydrogen Stereopticon for Dissolving Views, same as No. 1595, but has highly-polished mahogany boxes, and clock for raising, lowering, and revolving the lime. Price, $\$ 325$.

The cost of the materials for making the oxygen and hydrogen gases, the alcohol and other incidentals attending the working of an Oxy-Hydrogen Stereopticon for dissolving views, is about $\$ 2.50$ for every two hours' exhibition.

## Stereopticons with Hydro-Oxygen or Drummond Light.

A first-class Stereopticon Apparatus, with 4-inch achromatic lenses, all the necessary gas apparatus, clock-work to move the lime, dissolving view cocks, \&c. Price, $\$ 250$ to $\$ 350$.

A cheaper apparatus, and without clock-work motion. Price, $\$ 125$ to $\$ 150$.

The Stereopticon is a new instrument for producing magnified pictures and scenes on a wall or screen, for the entertainment of a large audience. Any one who has seen an exhibition of this apparatus must have been struck with the wonderful relief given to a landscape view, or a piece of statuary magnified fifteen to thirty feet high and proportionally wide, having, indeed, almost as perfect a stereoscopic effect as is produced by the Stereoscope itself. The cause of this stereoscopic effect is due, first, to the scenes and pictures being photographs from nature and solid objects, thereby being strictly correct representations both as regards light and shade, and true perspective ; second, to the great intensity of the light, by which the darkest portions of the picture are strongly illuminated; and third, to the superior quality of the lenses with which the instrument is furnished. Any stereoscope picture on glass will answer for the Stereopticon, provided the ground or milky glass is removed from the back of the picture. These are equal to the English instruments in effect, and are furnished at a much lower price.

In the Dissolving Views the change seems almost miraculous, for whilst observing a view of a castle, abbey, or ruin, the operator has the facility of changing in so gradual a manner to an entirely different view, as from day to night, exterior to an interior, or from one city to another, that the audience is completely bewildered; and this is accomplished without leaving the room for one moment in darkness ; statuary is seen with remarkable effect, either upon a
blue or black ground, and seems to be in entire relief from the wall or screen. A more intellectual entertainment than that produced by this apparatus can scarcely be conceived. With the Stereopticon Dissolving View Apparatus this effect is produced to the greatest advantage.

All the lanterns are priced without any reference to slides whatever - that is, the prices are for the lanterns when complete and ready for use, with lamps and necessary appendages, including printed instructions; but no slides accompany any of the lanterns at the prices above mentioned.

## To make the Oxygen Gas.

Take 16 ounces of chlorate of potash and crush it so as to be like coarse sand, then mix thoroughly with it 3 ounces of black oxide of manganese ; put the misture into the retort, and put the retort on the wire stand; then examine all the tubes, to be sure they are not obstructed ; blow through them; fill the wash bottle with about one third water, and put the metal tube through the opening at the top into the water, and press it rather tightly; the other end of this tube is mited by an elastic tube to a metal tube, which you now put tightly into the opening of the retort; light the spirit lamp under the copper retort, and in a few minutes bubbles will begin to pass through the water; as soon as the bubbles come frecly, unite the wash bottle and the gas bag with the piece of elastic tubing. If the bubbles come over too violently, remove the lamp for a few minutes until they come more moderately; when the bubbles begin to come very slowly, it is a sign that the gas is all made ; you then quickly stop the cock at the bag, separate the wash bottle from the retort, and then remove the spirit lamp. The residuum in the retort should be washed out as soon as cool, and the retort well dried before it i:s used again. Care should be taken to have good chemicals, free from chips or pieces of paper, or any combustible substance. It generally takes half an hour to make the gas.

## Hall's Oxy-Calcium Stereopticons for Dissolving Views.

With a Stereopticon Dissolving. View Apparatus, the dissolving effect is produced by slowly turning the stop-cock in the middle of the arched tube, which supplies the oxygen to the two sides of the instrument.


No. 3.
No. 3. Oxy-Calcium Stereopticon for Dissolving Views, two japanned tin cases each $10 \frac{1}{2}$ inches long by $6 \frac{1}{2}$ inches wide and $16 \frac{1}{2}$ inches high, extra fine plano-convex condensing lenses 4 inches diameter, concavo-convex magnifying lenses 2 inches diameter, giving high and low power, brass rack adjustment for focusing, Hall's Improved Oxy-Calcium Lamp, brass dissolving stopcock for producing the dissolving effect, twelve feet gum tubing, India-rubber gas bag 40 inches long by 30 inches wide, with brass stop-cock, copper retort, and metal pipe for making oxygen gas, glass wash bottle with brass screw top, tin spirit lamp to heat retort, iron retort stand, one dozen lime cylinders, all packed in a neat wood box, with lock and key, and handles. Price, $\$ 100$.

We will recommend No. 3 to be the very best instrument that can be purchased for the price; they are perfectly safe ; can be operated in the parlor without the least danger.

## Oxy-Hydro-Calcium Stereopticons.

Owing to the present very high price of good alcohol, we have been induced to contrive a plan for burning house gas in place of that fluid, thereby diminishing the ruming expense very materially, and at the same time lessening the trouble of setting up and operating the Stereopticon, and producing a very much more brilliant illumination of the pictures. With this arrangement we have the very nearest approach to the oxy-hydrogen light that is possible short of the oxy-hydrogen apparatus itself.

## Setting up and Operating the Oxy-Calcium Stereopticon.

Having made the gas, filled the lamp in the Stereopticon with alcohol, and carefully cleansed all the lenses, put a cylinder of unslacked lime, one and a half inches long, and half of an inch in diameter, in the brass cup at the back of the wick, we are now ready to commence the exhibition. Place the bag on the floor in front of the instrument ; bring the gutta-percha tubing under the table, screw one end to the back of the lamp, the other being attached to the bag; or, in the dissolving view apparatus, instead of being attached to the lamp, that end is screwed to the middle of the arched pipe, which is attached to the lamp on each side of the instrument; lay the press board on the bag, and put on it about one hundred pounds of stones, bricks, or any other heavy articles, light the lamp or lamps, and open the stop-cocks between it or them. and the bag; the gas will then be forced through the small jet in front of the wick and drive the flame of the lamp against the lime, which must be brought as near as possible to the wick; the lamp should burn with a pretty large flame to produce the most brilliant effect. If the oxygen, in coning from the jet, should strike against the wick and not reach the lime, the wick must be spread apart to allow a free passage of the gas to the lime; the wick, however, should be kept in a body as much as possible, and should be pressed a little towards the jet. If the gas, as it comes from the jet, should make an umpleasant hissing noise, it will be owing to some of the little fibres of the wick obstructing the flow of the gas to the lime ; they should be removed at once.

The light now being brilliant, the screw which holds the lamp to the bottom of the instrument is loosened, and the lamp moved in or out until the proper distance from the lenses is found ; the circle on the screen will then be clear to the edge. Now place a
picture in the opening made for that purpose, and adjust the focus by turning the milled head on the side of the tube; this done, remove the picture, make the circle clear again by moving the lamp as before; now screw the lamp tightly down, and the instrument will need no further adjustment during the exhibition except altering the focus a little for different pictures.

## Oxy-Calcium Stereopticons. - Single Lantern.

The Oxy-Calcium, or Bude Light, is produced by a jet of oxygen gas forced through the flame of an alcohol lamp on to a piece of lime. This light is equal to the light of fifteen coal oil lamps, or ten solar lamps. This light will exhibit the usual paintings on a

screen 10 or 15 feet in diameter, with very brilliant effect. It is not so brilliant as the Hydro-Oxygen Light ; but it is much safer to manage. The apparatus is less bulky, less troublesome, and less expensive, and is very easily managed; a new hand can learn the method of operating these Stereopticons in half an hour.

The Stereopticons with Achromatic Lenses are much the best, the Achromatic Lenses producing the pictures without any prismatic colors, and more clearly defined than those with the plain lenses.

The large size gas bags will hold enough gas to last two hours if moderate pressure, say fifty pounds, is used.

No. 4. Oxy-Calcium Stereopticon, japanned tin case, or wood, $10 \frac{1}{2}$ inches long by $6 \frac{1}{2}$ inches wide, and $16 \frac{1}{2}$ inches high, brass rack adjustment for focusing, two extra fine plano-convex condensing lenses $3 \frac{5}{8}$ inches diameter, two concavo-convex magnifying lenses 2 inches diancter, giving high and low power. Hall's Inproved Oxy-Calcium Lamp, ten feet gum tubing, India-rubber gas bag 30 inches long by 24 inches wide, with brass stop-cock, copper retort with metal pipe for making oxygen gas, glass wash bottle with brass screw top, tin spirit lamp to heat retort, iron retort stand and one dozen lime cylinders, all packed in a neat box, with lock and key, and handles. Price, $\$ 65$.

No. 5. Oxy-Calcium Stereopticons, same as No. 25, but with two achromatic magnifying lenses. Price, $\$ 70$.

No. 6. Oxy-Calcium Stereopticon, same as No. 26, but with two achromatic magnifying lenses, giving a high and low power. Price, $\$ 80$.

No. 7. Kaleidoscope $A$ ttachment supplied to either Nos. 1, 2, 3 , or 4 . Price, $\$ 25$.

No. 8. Kaleidoscope Chromatrope, with rack motion. Price, \$4.
Either of Nos. 1, 2, 3, or 4, with all its apparatus and pictures for one exhibition, can be packed in a box or trunk 17 inches long and 14 inches wide, and 14 inches deep, and will weigh, when thus packed, 50 pounds.


No. !.

## Hall's Educational Stereopticon.

No. 9 represents a Photograph of the Instrument. It is made of mahogany, beautifully constructed, and good proportions. The lantern case is twenty-five inches long (including the tongue for the front lens to slide on), twelve high, eight wide, fastened on the lever board with hinges, so it can be elevated to any desired point, and held there by means of the brass quadrants. The condensers consist of two lenses fitted in brass tubes; the front lenses consist of the very finest achromatic magnifying lenses, two inches diameter, fitted with coarse and fine adjustments. This lantern is so constructed that different pieces of apparatus can be interposed between the condenser in the front lens, such as Prisms, Polariscopes, Magnetic Needles, Decomposition Tubes, and Animalculæ Tanks; also Photographs of Maps and Drawings, \&c. These can be designated by means of a long needle, placed on the partition of the slide when in front of the condenser, and it will be shown on the screen. This saves the operator from going to the screen,
as he can remain at the lantern, and the pointer will be seen on the canvas. This instrument is especially adapted for schools and educational institutions, fitted with argand gas, or Hall's Imperial Romid Wick Coal Oil Burner. Price, $\$ 50$.

Sn. 9) can either be illuminated with argand burner, and with common house gas, or with Hall's Improved Coal Oil Burner.

No. 10. Educational Stereopticon, fitted with Hall's Latest Improved Concentrated Safety Jet Oxy-Hydrogen Blow Pipe, with Lime Holder. India-rubber gas bag 40 inches long loy 30 inches wide, with brass stop-cock, 12 feet gum tubing and press boards for the oxygen gas ; copper retort and metal pipe for making oxygen gas, tin spirit lamp for heating the retort, iron retort stand, glass wash bottle with brass serew top ; copper gasometer and generator 11 inches in diameter and 24 inches high, for making hydrogen gas ; 8 feet gum tubing, 1 dozen lime eylinders, all packed in neat wooden boxes, with lock and key, and handles. Price, $\$ 80.00$.

No. 11. Educational Stereopticon, without the India-rubber gas bag, gum tubing, press boards, copper retort and metal pipe, spirit lamp, wash bottle, retort stand, hydrogen gasometer and generator, dissolving. Price, $\$ 75$.

No. 12. Educational Stereopticon, oiled walnut case 12 inches long by 9 inches wide, and 12 inches high, extra tine condensing lenses $6 \frac{1}{2}$ inches in diameter, two very finest achromatic magnifying lenses 2 inches in diameter, giving high and low power, with brass rack adjustment for focusing ; latest improved concentric safety jet oxy-hydrogen blow pipe with lime holder; lndia-rubber gas bag 40 inches long by 30 inches wide, with brass stop-cock, 12 feet of grm tubing and press boards for the oxygen gas, copper retort amd metal pipe for making oxygen gas, tin spirit lamp for heating the retort, iron retort stand, glass wash bottle with brass screw top : copper gasometer and gencrator 11 inches in diameter by 24 inches high, for making the hydrogen gas, 8 feet gum tubing, 1 dozen lime cylinders, all packed in neat wooden boxes, with lock and key, and liaudles. Price, $\$ 150$.


## Hall's Photoopticon.

This is, without doubt, the most approved Lantern made. It is the result of a long course of experiments, both in regard to size and to lenses adapted to the effect that is wanted to be produced. First, the lamp is an improved double wick coal oil burner, which gives an intense light at a small point. Second, in the improved form of the lantern it is very compact ; is made of the best Russia iron ; it is very portable, and will give a good sharp picture from five to eight feet in diameter. The condensers are three and one half to four inches in diameter.

The front lenses are achromatic, fitted in double brass tubes, with rack and pinion adjustment. The top, front, lamp, and all belonging to the lantern, can be packed within the body of the lantern. We have made and sold a quantity of these lanterns, and they have always giren perfect satisfaction.

It is warranted to give better effect than any lantern of the same price made by any other maker in the world. It is especially adapted to Sabbath schools, families, and secret societies. Price, $\$ 35.00$.


No. 14.

## Hall's Improved Dissolving View Apparatus.

No. 14 represents our Improved Dissolving View Apparatus, for exhibitions or parlor use, fitted with argand burners. It consists of two lanterns, with rack-work adjustment, mounted on a stand, with dissolving apparatus. In this arrangement the views are exhibited with clearness and brilliancy on an opaque or transparent sereen, 8 feet in diameter, by inpreved fountain and argand lamps and reflectors. It is simple in use, and well adapted for private exhibitions. Priec, $\$ 50$.

We can confidently recommend the apparatus at $\$ 50$, as being of the most improved construction, and particularly adapted for the purposes of instruction or amusement where the expense of the oxy-hydrogen or oxy-calcium cannot be undertaken.

The enchanting optical effect, termed Dissolving Views, is produced by means of two phantasmagoria lanterns, so arranged on a stand that the centre of the disks or pictures projected by each are coincident, and the dissolving or blending of the pictures is effected by a contrivance in front of the two lanterns, which gradually shuts off the image thrown from one lantern, whilst the other becomes gradually clearer, until a perfect picture is seen on the disk. A fresh picture boing put into the darkened lantem, the action is reversed.


No. 15.

## The Magnesium Magic Lantern, complete.

No. 15 represents Single Tube Lantern, fitted with magnesium light. The case is made of black walnut, strong and well finished. The cone is made of brass, with Hall's Universal Slide Holder attached. The object-glasses are achromatic, with sliding tubes and rack adjustment, and will show a sharp picture twenty feet diameter. It is the best single lantern we make.

The above lantern is well adapted to use in Masonic and Templars of Honor initiations, as it can be ready for use at a moment's notice, and it will show a picture as brilliant as the oxycalcium light.

We have fitted several of the lanterns with prisms, so as to refiact the picture on the ceiling overhead, which is very desirable in some cases. Price, $\$ 100$.

## DIRECTIONS.

1. This lamp gives a much steadier light with two ribbons.
2. Put the reels in place on the top of the lamp; then pass the ribbon through the slit in the side of the chimney, and thence down through the guide and between the upper pair of rollers. To do this more conveniently, raise the chimney, by opening the lid of the lamp.
3. To light the lamp, open the door behind ; then set the works
in motion by a quarter turn of the key at the right, until about an inch of ribbon is run through ; then stop the movement, and light the end of the ribbon, through the opening in front, with a match held in the left hand, with the right hand hold of the key, in readiness to start the novement the instant it is lighted. Then close the door at the back.


No. 17.

## The Cover with Reflector.

4. The speed of the lamp is regulated by gently turning the wings of the fan, so as to increase or diminish the atmospheric resistance.
5. The full power and best effiect of the light are produced when the lamp is so regulated that the flame extends from three fourths of an inch to one inch below the upper pair of rollers. It must in no case be allowed to extend below the lower pair.
6. Keep the lamp well wound up, and frequently oil the bearings.
7. The smoke of the lamp may be conveyed away to a chimneyflue, or through an opening prepared at the top of a window, by an extension tubing, furnished in any required length, at a moderate price.
8. To fill the reels with ribbon, place the box of ribbon flat, and hold it firmly on a table ; then, with a sharp knife, carefully
remove the upper side of the box ; take the reel apart, and put the wooden core of the reel carefully in the centre of the coil of ribbon ; lay one of the brass sides of the reel on the box ; put the core through the hole in the centre; and then carefully turn the whole over above the box, and put on the other side of the reel.

| Magnesium | Ribbon for Lamps, | \$3.75 per oz. |
| :---: | :---: | :---: |
| ، | Wire. | "، ، ، |
|  | Photographic Tapers. | " |
| " P | Powder. | . "، ، " |
| " | Tableau Lights(12 in a box). $\$ 1.00$ per | ox. $\$ 10.00$ doz. |
| " Sp | Spiral Lights (10 in a box). 25 " | " |
| " | Magic Lantern, complete (No. 11). . | . \$100.00 |
| " | Lamp separate (No. 12). | 50.00 |
| Tin Reflector | rs for Photographic Tapers. | 5.00 each. |
| " " | for Tableau Lights. . | 2.00 |

Elastic Smoke Tubing, in lengths of 5 yards, at 50 cents per yard.
The Magnesium Lamp (No. 3) can be used with any lantern that is large enough to admit it in the focus of the condensing lens. Any lantern that is too small can be adapted to it at triffing expense.

No. 17. Tin Cover with Reflectors, for Tablean Lights. Price, $\$ 5$.


No. 1 s .

## Children's Toy Magic Lanterns.

Small, bright tin Magic Lanterns. Lenses one inch in diameter, with twelve slides one inch wide, having a large number of comi: paintings for the amusement of children, packed in two wood boxes.

Same, but with lenses $1 \frac{1}{2}$ inches in diameter, and slides $1 \frac{1}{2}$ inches in diameter.

Same, but has lenses 2 inches in diameter, and slides 2 inches wide.

Assorted sizes. Price according to size.


No. 19.

## Superior Toy Lanterns.

The following are superior toy lanterns with black japanned bodies, silvered reflectors, coal-oil lamps, polished brass fronts and smokestacks. Each lantern is accompanied by a box containing two revolving chromatropes, 1 slip slide, and 6 glass slides having 5 to 6 pictures on each, or 12 of the glass slides, in all about 50 pictures.


Extra slides, per box, half price of the lantern.
Lanterus 3 and 4 will show the regular photograph slides.

## General Directions for the Use of the Magic Lantern.

The following directions are intended merely as a guide to those unacquainted with the management of the Magic Lantern. Practice will soon suggest to the operator many methods of rendering the exhibition a pleasant and profitable amusement.

The lamp should be carefully trimmed, and filled with the best oil, the flame to stand as high as possible, so that it does not smoke. The greatest cleanliness should be obscrved with the lamp, and when not in use the oil should be drained ont.

All the lenses should be taken out previously to each exhibition, and carefully wiped out with a soft muslin or linen cloth.

The roon being fully darkened, the lantern should be placed upon a table, about six or eight feet from a white wall, or a white sheet suspended on a wall ; or it is frequently preferable to make use of a muslin screen stretched on a frame, the lantern being on one side and the spectators on the other ; and it is recommended to wet the screen, that it may be drawn tighter, and also rendered more transparent.

To make a waxed muslin screen, mix turpentine and white beeswax, in the proportion of two parts wax and one part turpentine; heat it over a fluid lamp until all is dissolved; then, in a warm room, apply it with a painter's brush over the screen, and afterwards smooth the screen with a common iron, heated a little. The screen should be stretched on a frame. This makes an excellent screen when you want to have your lantern behind the screen; the glare of the lamp does not come through ; but it cracks and becomes yellow if kept folded up, gets dirty very easily, and is troublesome to prepare.

The lamp having been lighted and placed in the lantern, close the door of the lantern, and move the lamp backwards or forwards, until a perfect circle is formed on the wall or screen; the lamp is then known to be in its proper position. Much depends upon this.

The sliders are placed in the slit in front of the lantern, with the picture inverted, where they will be firmly held and kept in the central line of the lenses by an :mproved slide spring and stop, and the focus adjusted by moving the front lenses. The farther
the lantern is from the wall or sereen the larger will be the image, but the illumination will not be so perfect as when closer.

## To Produco the Phantasmagoria Effect.

The operato: should be on one side of the screen, as already deseribed, and the spectators on the other. Taking the lantern under his; left arm, he should go up pretty close to the screen and adjust the focus with his right hand. The image, of course, will be very small ; he must then walk slowly backward, at the same time adjusting the focus. As the image increases in size, it wiil appear to the spectators to be coming towards them; and then again let him walk up towards the screen, thus diminishing the image, and it will appear to them as if receding. The screen not being seen, the image appears to be suspended in the air, and the deception is complete, even to those accustomed to the exhibition.

Slides producing the best phantasmagoria effect are those containing but one or two figures, and all the rest of the glass painted black; such, for instance, as some of the comic slip slides.

## Phantasmagoria Magic Lanterns for Public Exhibitions.

The Magic Lanterns, Stereopticons, and Dissolving View Apparatus, described in the foregoing pages, are all made in our own manufactory, and under our immediate supervision, and each instrument is carefully examined and thoroughly tried before leaving our premises.

The word phantasmagoria is derived from two Greek words, meaning a spectre and I meet, and has reference to the manmer in which the magic lantern can be used. The name is only applied to magic lanterns of a superior kind, where the condensing lens is composed of two plano-convex lenses, and the magnifying lens of two concavo-convex lenses.

Phantasmagoria Magic Lanterns, with achromatic leuses, produce the pictures on the screen as distinct around the edges as in the centre, and very sharply defined all over; those without achromatic lenses are as well made, except in this one particular.

The prices attached to the Phantasmagoria Magic Lanterns for Public Exhibitions do not include pictures of any kind.

We have the largest assortment of slides of every subject, and can fill orders for any number with despatch, at the lowest prices.

We make about twelve different styles of lanterns. Good tin japanned single lanterns, like No. 14, are rery good for parlor use, and cost $\$ 25$.

We also make wooden lanterns, with achromatic lenses, and rack tube.

We have always a large stock of French, English, and German lanterns, which we import direct. They cost, with twelve slides, from $\$ 4$ to $\$ 25$; this will include a box of twelve slides - some fifty or sixty figures in the twelve slides.

We cau furnish exhibitions, Sunday schools, parties, \&c., with lanterns and pictures for one evening, at a moderate price; also our best Double Dissolving Lanterns, with magnesium light, with a person to exhibit, who will take the whole charge of the lanter? and pictures, at a reasonable price.

We have the largest stock of lantern pictures, of all kinds, in the United States, and can paint any subject that is ordered.

We pay particular attention to pictures used in Masonic and other secret societies.

American Civil War: The important events, such as Battles, Skirmishes, Encampments, \&c., from the beginning up to the close, illustrated by a series of finely colored pictures on glass, for the Magic Lantern, Dissolving Views, or similar exhibitions, three inches clear in diameter, and set in wood complete.

Views in the Holy Layd.
Sacred History, Old Testament.
The Women of the Bible, From the Original Pictures.
Our Saviour, with Prophets and Apostles.
Sacred History, New Testament.
Pictures illustrating important events in the History of the United States; the Battles by Sea and Land during the Revolution ; the War with England, Algiers, Mexico, \&c., \&c.

Portraits of Distinguished Americans.
Pictures of the Great Masters.
Humorous and Miscellaneous Pictures.
Arctic Explorations, in the years 1852, '53, '54, and '55, by Elisha Kent Kane, M. D., U. S. N.


No. 21.

## Hall's Improved Oxy-Hydrogen Reflectors,

For Brilliant Illmminations, adapted to Streets, Parks, Theatres, and stage use. It cousists of a large silver-plated reflector, so constructed that it can be turned in any direction where the rays of light are wanted. The burner is very simple, easily adjusted to the reflector, so that it can be used with or without the reflector. Burner with reflector, gas bay, retort stand, lamp, wash bottle, rubber tubing, and exerything necessary. Price, \$35.

## Premium Colored Fires,

For Tableaux, Theatres, Parties, and lluminations, manufactured by ourselves, and warranted to be superior. They give out no offensive odor, and can be used in a parlor. We can supply them by the pound or less. We put it up in boxes suitable for use. We have red, white, blue, green, and violet. Price, 25 cents per box. $\$ 3$ per pound.

Directions. - Lay the contents of the box loosely in a train, about half inch high, on a piece of tin, slate, or glass, or any noncombustible article; then ignite by applying a lighted match at one end. Keep dry, as it attracts moisture ; when damp is difficuit to ignite.


At the present time the most convenient and safe way of using the Oxygen and Hydrogen gasses, for reflectors or stereopticons, is by obtaining the gas from the New York Calsium Light Co., who furnish the gas in copper cylinders at so much per cubic foot.

In using Cylinder's, the loss of time and trouble of making gas is entirely dispensed with, as they are filled to last for several entertainments, can be placed in position and the light produced in a minute or two. There is always sufficient pressure to give a steady light thronghout the entertainment, more powerful than by the use of bags, and requiring but littte attention.

These cylinders are each tested to 600 ibs . to the square inch, and are guaranteed safe for five years.

Fig. A shows the manner of using the cylinders with a reflector, for use in theaters, tableanx, \&c.

Fig. B shows the manner of using the cylinder, with a stereopticon.
Parties wishing to own cylinders can obtain then as follows, and have them filled at the regular rates:
Cylinders, $8 \times 32$ in., holding 15 cubic feet, 225 lbs . pressure, weight 30 lbs. . . . . . . . . . . $\$ 50.00$ per pair. Cylinders, $11 \times 34$ in., holding 25 cubic feet, 225 lbs. pressure, weight 50 lbs. . . . . . . . . . $\$ 60.00$ per pair. Cylinders, 13 x 46 in., holding 50 cubic feet, 225 lbs. pressure, weight 80 lbs. . . . . . . . . . $\$ 100.00$ per pair.
Cylinders, $13 \times 56$ in., holding 60 cubic feet, 225 lbs. pressure, weight $90 \mathrm{lbs} . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \$ 120.00$ per pair. Wrench and Couplings for Cylinders . . . . . . . . $\$ 1.00$

## Miscellaneous Articles.

Coal Oil Lamb, with Reflector ..... $\$ 3.00$
Wicks for same, per doz. ..... 30
Chimmeys for same, each ..... 20
Hall's Ox-Hydrogen Iblowpipe (Fig. 45), each ..... 12.00
Ox-Calsium Lamp (Fig. 46), each ..... 6.00
". Dissolving Stop-cock, for high pressure, for use with eylinclers ..... 12.00
6. Dissolving Stop-cock, for low pressure, for use with loags ..... 12.00
Lime Cylinders, in air-tight boxes, per doz. ..... 1.50
Chlorate of Potash, per lb. ..... 30
Per-oxide of Manganese, per Ib. ..... 15
Muslin or cotton sereen, of very best quality, with strong loops : 9 feet square ..... 3.00
15 feet square ..... 10.00
18 feet square ..... 12.00
25 feet sunare ..... 22.00
India-Rubber Gas-Bag, 30x 24 in., 35 galls., with stop-cock ..... 13.25
.6 6 $\quad 6 \quad 40 \times 30$ in., 55 ..... 16.00
Iton Retort, for making oxygen gas ..... 3.00
stand for same ..... 50
Wash-Bottle of glass, with metal top and pipes ..... $-2.50$
Alcohol Lamp, large $\$ 1.00$; small ..... 50
Rubber tubing, per foot ..... 15
Brass Stop-cock, for gas and bags ..... 2.00
Plano-Conver Condensing Lenses, $3 \frac{1}{2}$ in. diameter, per pair, ..... 6.00
".. 6 $6 \quad 4$ ..... 8.00Pail of Plano-Convex Condensing Lenses, 3 inches diameter.monnted in donble hrass cell, ready for the Lantern800
Same. 4 inches diameter ..... 10.00
Same. $4 \frac{1}{2}$ inches diameter ..... 14.00
Aclromatic Ohjective monnted in brass, with rack-adjustment, No. 1, Diameter of Lense, 13 inches ..... 8.00
6 2. $6 \quad 23$ ..... 16.00
$\therefore \quad \therefore, 6$ $63 \frac{1}{1} 6$ ..... 32.00


No. $2 \%$.

## Apparatus to be Used with Hall's Educational Stereopticon.

## EXPERIMENTAT TANKS.

No. 22. Plain Tank with plate glass sides, strip of rubber between them, brass clamps, overflow and outlet tubes, to be placed in front of condensers, for illustrating the changes of color in chemical combinations, and to show cell structure, capillary attractions, \&c.; three assorted tubes to show the latter. Price, $\$ 3.50$.

No. 23. Similar tank, with coil of platinum wire and brass screw clamps to connect with battery, to show convection in fluids. Price, \$4.50.

No. 24. Similar tank, with leaf poles of platinum and brass screw clamps, for general galvanic decomposition. Price, \$4.50.

No. 25. Similar tank, with bar poles of platinum, pair of small glass tubes, with brass screw clamps, to show decomposition of water. Price, \$5.00.

No. 26. Half a dozen fine glass plates, four inches square, to show crystallization. Price, $\$ 1.50$.

No. 27. Pipette, with rubber bulb, to use with tanks. Price, \$1.25.

## OPTICS.

No. 28. Rood's apparatus to show progressive motion of a wave. Price, $\$ 3$.

No. 29. A series of the following diagrams, fifteen in number,
either light on opaque ground, or dark on light ground. Fer set, $\$ 25$.

1. Reflection from plane surfaces, laws of retlection.
2. Formation of imases by plane mirrors.
3. . 6 convex mirrors.
t. " " concare mirrors.
4. Refraction in a body with parallel sides.
5. Arrow of light on dark ground, with glass bar to break it.
6. Laws of refraction and total reflection.
7. Formation of images by lens.
8. Forms of lenses.
9. Spherical aberration.
10. Action of prism (chromatic dispersion).
11. Achromatic lens.
12. Donble refraction in Iceland Spar.
13. Analysis of ray in Nicol's prism.
14. Main fixed lines of solar spectrum, and those in spectra of iron, hydrogen, de., compared.


No. 30.


No. 31.


No. 3?.

No. 30. Brass Tube to fit rear end of magnifying glasses, having at the smaller end an adjustable slit for projections of spectrum, and a circular aperture to use in illuminating a small desk with a light of great intensity. Price, $\$ 5$.

No. 31. Single $60^{\circ}$ bi-sulphide of carbon prism, mounted so as to slide into front of magnifying glass mountings. Price, $\$ 10$.

No. 32. (ilass right angle prism, for directing the rays of lantern, and for dioptic lantern. Price, $\$ 15$.

## PICTUREs

FOR THE

## Oxy-Hydrogen, Oxy-Calcium Stereopticons, and Hall's Photoopticons.

Other subjects not named in this catalogue painted to order. The price in such cascs to be governed by the character of the picture and style of execution.

## Class I. - The Old Testament Illustrated.

Beautifully Colored Photographs of Fine Eygrayings. One Painting, three inches in diameter, on each slide.
Per Slude, \$1.50.

1. The Earth without Form, and Void.
2. The Waters gathered in one Place.
3. The Earth yields Grass and Trees.
4. God makes Sun, Moon, and Stars.
5. God creates the Fowl and Fisli.
6. God creates Cattle, creeping Things, and Beasts.
7. Creation of Adam.
8. Creation of Eve.
9. The Temptation.
10. "The Serpent beguiled me."
11. The Expulsion.
12. The First Human Family.
13. Cain's Offering rejected.
14. Death of Abel.
15. Cain cursed.
16. Cain builds the first City.
17. Family of Cain.
18. Wickedness of Man before the Flood.
19. Noah's Ark.
20. The Deluge.
21. Interior of the Ark.
22. Return of the Dove.
23. Noah's Sacrifice.
24. Babel.
25. Hagar.
26. Abraham and Hagar.
27. Abraham and the Three Angels.
28. Lot and his Daughters.
29. Destruction of Sodom and Gomorrah.
30. Hagar cast forth.
31. Hagar and Ishmael in the Desert.
32. Abraham offering Isaac.
33. Rebecea.

3!. Rebecea at the Well.
35. Departure of Rebecca.
36. Mecting of Isaac and Rebecca.
37. Jacob and Esau.
38. Jacob's Dream.
39. Rachel.
40. Jacob in the House of Laban.
41. Laban searching for the Images.
42. Meeting of Esau and Jacob.
43. Joseph thrown into the Well.
44. Joseph sold by his Brethren.
45. Joseph's Coat shown to his Father.
46. Potiphar's Wife.
47. Joseph and Potiphar's Wife.
48. Joseph interprets the Dreams of the Butler and the Baker
49. Joseph interprets Pharaoh's Dream.
50. Simon bound by Order of Joscph.
51. The Cup found in Benjamin's Sack.
52. Joseph makes himself known to his Brethren.
53. Joseph meeting his Father.
54. Joseph presenting his Father to Pharaoh.
55. Jacob blesses his Twelve Sons.
56. Moses in the Bulrushes.
57. Pharaoh's Danghter.
58. Moses found by Pharaoh's Daughter.
59. Angel appears to Moses in a Flaming Bush.
60. Destruction of Pharaoh's Host.
61. Moses smites the Rock in Horeb.
62. Moses receives the Tablet at Mount Sinai.
63. First Commandment. - Thou shalt have no other Gods before me.
61. Second Commandment. - Thou shalt not make unto thee any graven images.
65. Third Commandment. - Thou shalt not take the name of the Lord thy God in vain.
66. Fourth Commandment. - Remember the Sabbatli day, to keep it holy:
67. Fifth Commandment. - IIonor thy father and thy mother.
68. Sixth Commandment. - Thou shalt not kill.
69. Seventh Commandment. - Thou shalt not commit adultery.
70. Eighth Comnandment. - Thou shalt not steal.
71. Ninth Commandment. - Thou shalt not bear false witness against thy neighbor.
72. Tenth Commandment. - Thou shalt nut covet thy neighbor's house, \&c.
73. Moses delivering the Tables of the Law to the Pcople.
74. Deborah.
75. Jephthah's Daughter.
76. Jephthah's Rash Vow.
77. Samson.
78. Samson and the Lion.
79. Samson betrayed by Delilah.
80. Samson grinding Corn in the Prison.
81. Samson pulling down the Pillars of the Temple.
82. Delilah.
83. Ruth.
84. Boaz and Ruth.
85. Hannah.
86. The Infant Samuel.
87. Samuel and Eli.
88. David slaying the Lion.
89. David and Goliath.
90. Saul presenting his Daughter to David.
91. Abigail.
92. Raising of Samuel by the Witch of Endor.
93. Darid bringing the Ark from Kirjath-jearim.
94. Nathan reproving David.
95. Absalom entangled in the Oak.
96. The Judgment of Solomon.
97. The Queen of Sheba.
98. Jezebel.
99. The Ascent of Elijah.
100. Elisha causes the Iron to swim.
101. Athaliah.
102. Queen Esther.
103. Esther and Ahasuerus.
104. The Captives in Babylon.
105. Shadrach, Meshach, and Abednego in the Fiery Furnace.
106. Daniel in the Lion's Den.
107. Jonah cast into the Sea.
108. The Sacrifice of the King of Edom's Son.
109. Jeremiah on the Ruins of Jerusalem.
110. King David.
111. King Solomon.
112. Prophet Isaiah.
113. Prophet Ezekiel.
114. Prophet Malachi.

## Class II. - New Testament Illustrated.

Beautifully Colored Photographs of Fine Engrattigs.
One Painting, three inches in diameter, on each Slide.
Per Slude, $\$ 1.50$.

1. The Virgin Mary.
2. Our Saviour.
3. Annunciation of the Virgin.
4. Presentation of Christ in the Temple.
5. Star of Bethlehem.
6. Adoration of the Shepherds.
7. Flight into Egypt.
8. Christ Reasoning with the Pharisees.
9. John the Baptist Preaching in the Wilderness.
10. Christ and the Woman of Samaria.
11. The Sermon on the Mount.

1シ. Christ Stilling the Storm.
13. Christ Healing the Sick of the Palsy.
14. Touching the Hem of the Garment.
15. Mary Anointing the Feet of Christ.
16. Christ Walking on the Sea.
17. The Transfiguration.
18. Christ Blessing Children.
19. Christ Blessing Children.
20. The Raising of Lazarus.
21. Christ Giving Sight to the Blind.
22. Christ Driving out the Money-Changers.
23. The Tribute Money.
24. The Widow's Mite.
25. Christ Predicting the Destruction of Jerusalem.
26. Christ Washing the Apostles' Feet.
27. The Last Supper.
28. Christ Blessing the Bread.
29. Christ's Agony.
30. Christ in the Garden.
31. Christ Bearing the Cross.
32. The Crucifixion.
33. Christ Wounded.
34. The Descent from the Cross.
35. The Burial of Christ.
36. The Marys at the Sepulchre.
37. Christ Appearing to Peter.
38. Christ Rejected.
39. Christ Rejected.
40. Christus Consolator.
41. "It is Finished."
42. "By whose stripes ye were healed."
43. "Be not faithless, but believing."
44. "The glorious company of the apostles praise thee."
45. "Honor thy father and thy mother."
46. "Thine is the kingdom, and the power, and the glory."
47. Ministering Angels.
48. The Prodigal's Return.
49. Parable of the Ten Virgins.
50. Parable of the Good Samaritan.
51. Parable of the Prodigal Son.

52 . Parable of the Lord of the Vineyard.
53. Parable of the Unmerciful Servant.
54. Parable of the Laborers in the Vineyard.'
55. Parable of the Wicked Husbandman.
56. Parable of Lazarus at the Gate.
57. Peter and John at the Beantiful Gate of the Temple.
58. The Angels Releasing the Apostles in Prison.
59. Paul Preaching at Athens.
60. The Infant St. John.
61. St. Matthew.
62. St. Mark.
63. St. Luke.
64. St. John the Evangelist.
65. St. John the Baptist.
66. St. Peter.
67. St. Panl.
68. St. Ambrew.
69. St. Stephen.
70. St. Thomas.
71. St. Barnabas.
72. St. Simeon.
73. The Lom's Prayer. - "Our Father which art in heaven."
74. The Lord's Prayer. - "Thy will be done on earth as it is in hearen."
75. The Lord's Prayer. - "Give us this day our daily bread."
76. T'he Lord's Prayer. - "Forgive us our debts as we forgive our debtors."
77. The Lord's Prayer. - "Lead us not into temptation."
78. The Lord's Prayer. - "Deliver us from evil."
79. The Lord's Prayfr. - "Thine is the kingdom, and the power, and the glory, forever. Amen."

## Class III. - Bible Illustrations.

## Per Slide, \$1.j0

1. Adam and Ere in Paradise.
2. The Deluge.
3. Noah's Sacrifice.
4. Joseph's Coat brought to Jacob.
5. The Song of Mirianı.
6. Moses with the Tables of the Law.
7. David Weeping over, Absalom.
8. Daniel in the Lion's Den.
9. The Captives in Babylon.
10. Infant Samuel.
11. Timothy.
12. The Annunciation.
13. The Star of Bethlehem.
14. The Nativity.
15. Adoration of Wise Men.
16. The Flight into Egypt.
17. Christ Disputing with the Doctors.
18. The Good Shepherd.
19. The Bread of Heaven.
20. Madonna of Cypriana.
21. Madonna Della Sedia.
22. Madonna St. Sisto.
23. Angels from Same.
24. The Holy Family.
25. "Suffer little Children."
26. "Consider the Lilies."
27. The Good Samaritan.
28. Christ Weeping over Jerusalem.
29. The Agony in the Garden.
30. Ecce Homo.
31. Mater Dolorosa.
32. The Crucifixion.
33. Incredulity of Thomas.
34. The Asceusion.
35. Christus Consolator.
36. Christus Remunerator.

## Class IV. - Views in the Holy Land.

One Painting, three inches in diameter, on each Slide.

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\text { Per Slide, } \$ 1.50 .
$$

1. Plan of Jerusalem.
2. Interior of a House of a Christian Family in Jerusalem.
3. Sidon and Mount Lebanon.
4. Baths, and City of Tiberias.
5. Arab Camp near Mount Tabor.
6. Colonnade at Sebasté, Samaria.
7. Wells, and Remains of the Pool at Bethel.
8. Church at Shiloh.
9. Tomb of the Virgin.
10. Mount of Olives and Jerusalem.
11. Arch in the Via Dolorosa.
12. Lower Pool of Gihon.
13. Exterior View of the Church of the Holy Sepulchre.
14. Interior View of the Church of the Holy Sepulchre.
15. Bethlehem.
16. Convent of Santa Laba.
17. Pool at Hebron.
18. Harem at Mebron.
19. Shrine of the Nativity.
20. Well at Nazareth.
21. Fair at Khan-et-Tujjar.
$\because 2$. Cesarea.
22. Harbor of Rhodes.

24 . The Parthenon at Athens.
25. Scene near Ramlah.
26. Map of Palestine.
27. Mount Tabor.
28. Well near Emmaus.
29. Sarepta and Coast of Sidon.
30. Mount Carmel.
31. Vale of Nazareth.
32. Well of the Virgin.
33. Nazareth, looking towards Esdraelon.
34. Nain.
35. Plain of Esdraelon.
36. Jezreel, Mount Gilboa, and Beth-shan.
37. Tiberias.
38. The Lake of Tiberias.
39. Valley of Sichem and Nablons.
40. Mount Hermon.
41. Lake of Tiberias from the Castle of Saphet.
42. The Hill of Samaria.
13. Samaritans Showing the Book of the Law.
44. Jacob's Well at Sychar.
45. Mount Gerizim and Valley of Nablous.
46. Seilun, Site of Shiloh.
17. Gibeah, from Michmah.
48. Ramlah, from the Ilills of Judea.
49. Gibeah, from Neby Samwil.
50. Anata (hill country), Judea.
51. Cavern where the IIoly Cross was formed.
52. Pool of Hezekiah, Jerusalem.
53. The Garden of Getlisemane.
54. Tombs in the Valley of Jehoshaphat.
55. Jews' Place of Wailing, Jerusalem.
56. Pool of Siloam.
57. Mount of Olives.
58. Mount Zion, from Hill of Evil Counsel.
j9. Roman and Mediæval Masonry, Jerusalem.
60. Façade of the Tombs of the Kings.
61. Tower of Hippicus.
62. Enclosure of the Harem, Jerusalem.
63. The Golden Gate.
64. Rachel's Tomb.
65. Greek Church at Bethlehem.
66. Basilica, at Bethlehem.
67. Etham, near Bethlehem.
68. Fields of Bethany.
69. Solomon's Pools, near Bethlehem.
70. Zekoa and the Herodion.
71. Greek Bathing Place, near Jordan.
72. Halt above the north end of Dead Sea.
73. Hebron.
74. Ancient Masomy near Hebron.
75. Plain El-Rahan, Mount Sinai.
76. Suez, from the Mouth of the Ancient Canal.
77. Samur.
78. Mars Hill, at Athens.
79. Ruins of the City of Samaria.
80. Church and Sheik's House, at Eden.
81. Ancient Rome, from
82. Jerusalem, from the Mount of Olives.
83. The River Jordan.
84. Jerusalem, as besieged by Titus.
85. Mount of Olives and Jerusalem, from N. E.
86. Mount Zion, Jerusalem, from the Hill of Evil Connsel.
87. Scene on the River Nile, at Philoe.
88. Map of Canaan as divided among the Tribes, illustrating the Period from Joshua to the Death of Saul.
89. Map of Palestine at the Commencement of the Christian Era, illustrating the Gospel, Acts of the Apostles.
90. Ground Plan of Jerusalem.
91. View of Tyre.
92. Tarsus.
93. Tarsus, with Mount Taurus.
94. Falls of the Cydnus.
95. Damascus.
96. Antioch.
97. Mount Casius, from Seleucia.
98. Larneca.
99. Antioch, in Pisidia.
100. Konieh, Iconium.
101. Wall of Perga.
102. Arches in Alexandria, Troas.
103. Philippi.
104. Athens.
105. The Pireus.
106. Isthmus of Corinth.
107. Corinth.
108. Ephesus.
109. Wall of Damascus.
110. The Acropolis Restored.

## Class V.-Egyptian Views

Per Slide, \$1.50.

1. Grand Hall of Karnac.
2. The Nile Boat.
3. Map of Egypt.
4. Street in Cairo.
5. The Bazaar.
6. View from the Citadel.
7. Mosque of Sultan Hassan.
8. Mosque of El-Azar.
9. Tombs of Memlook Sultans.
10. Tomb of Sultan Kaitray.
11. Interior of a House in Cairo.
12. Ferry at Old Cairo.
13. The Sphynx.
14. The Pyramids.
15. The Slave Boat.
16. The Shadoof.
17. Valley of the Tombs of the Kings.
18. Hall of Beauty.
19. Plain of Thebes.
20. Medeenet Habou.
21. Colossal Statue of Memnonium.
22. The Colossi.
23. Luxor, from the Water.
24. Propylon of Luxor.
25. Approach to Thebes.
26. Karnac.
27. Approach to Karnac.
28. Temple of Edfou.
29. Frontier of Egypt.
30. Approach to Philoe.
31. Pharaoh's Bed, Philoe.
32. View from Philoe.
33. Temple of Abusimbal.
34. Section of Abusimbal.
35. The Date Palm.
36. Monument at Heliopolis.
37. Portico of Kalabshe-Nubia.
38. Pyramids and Sphynx.
39. The Simoon.
40. Fortress of Ibrim and Nile Boat.
41. Colossal Statues on Plain of Thebes.
42. Colossal Statues during Inundation.
43. Ferry at Ghizeh.
44. Sanctuary of Ipsambul.
45. Colossi of Ipsambul.
46. Interior of Ipsambul.
47. The Pyramids of Ghizeh.

## Class VI. - Egyptian Antiquities.

$P_{\text {er }}$ Slide, $\$ 1.50$.

1. The Ring of Suphis.
2. Egyptian Wine Press.
3. Egyptian Capitals.
4. Egyptian Royal Boat.
5. Egyptian Ancient Armor.

6 Egyptian Harper, from Belzoni's Tomb.
7. Egyptian Chair, from Tomb of Rameses.
๑. Egyptian Brick Making.
9. Egyptian Ark.
10. Golden Ewers and Basins, from Tomb of Rameses.
11. Cups and Vases from Thebes.
12. Royal Princes in Cliariots.
13. The Mummied Bull Apis.
14. Typical head of Greek, Assyrian, and Egyptian.
15. Necklace and Earrings of Menes, the first Pharaoh of Egypt, 2750 B. C.
16. Judgment of the Dead.
17. Judgment Scene, from Walls of Thebes.
18. Mummy Cases.
19. Mummy in the form of Osiris.
20. Cooking Scene.
21. Egyptian Couch.

2\%. Egyptian Granary.
23. Moumers from Tomb of Gornou.
24. Signet Rings of Ancient Egypt.
25. Gentlemen Fishing.
26. Egyptian Chariots.
27. Fowling and Fishing.
28. Ferguerson's Restoration of the Great Rock Temple at Karnac.
29. Working in Metals.
30. Egyptian Wine Making.

## Class VII. - Assyrian Antiquities and Views.

Per Slide, s1.50.

1. Nisroch.
2. The Great King.
3. Nimroud.
4. Expulsion of Evil by Good Spirit.
5. Plan of Babylon.
6. King putting out Eyes of Captive.
7. Sardanapalus and Altar.
8. Statue of Cyrus.
9. King seated on Throne with Attendants.
10. Sennacherib.
11. Ruins of Babylon.
12. Ruins of Sus.
13. Mount Ararat.
14. Birs Nimroud.
15. Source of Tigris.
16. Urfah.
17. Hamadan and Ruins of Castle Darius.
18. Ruins of Persepolis.
19. Interior of a Caravansera.

20 . Great Mosque of Urfah.

## Class VIII. - Views in Petra and the Desert.

Per Slide, $\$ 1.50$.

1. Ground Plan of Petra.
2. Approach to Petra.
3. Ayun, Masa.
4. Encampment at Ain Hawara.
5. Spring at Wady Ghurundel.
6. Tablet in Wady Maghara.
7. Encampment in Wady Feiran.
8. The Ruins of Feiran.
9. The Serbal.
10. Plain Er Rahah, Mount Sinai.
11. Convent of St. Catherine.
12. Refectory of the Convent.
13. Castle of El-Kureiyen.
14. Encampment at Akaba.
15. Mount Hor.
16. View from Mount Hor.
17. The Arch, Petra.
18. The Ravine.
19. The Khusne.
20. The Theatre.
21. Principal Range of Tombs
22. El-Deir.
23. The Mecca Caravan
24. El-Khasne.
25. Rock of Moses.
26. Arab of the Desert

## Class IX. - Interesting Views in various Parts of the World.

$$
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6. Scene on Lake George.
7. Niagara Falls.
8. Hudson Highlands.
9. Bamborough, Ireland.
10. Ruins at Cashel, Ireland.
11. Carrickfergus Castle, Ireland.
12. Lower and Torce Lakes, Killarney; Ireland.
13. Inisfallen, Ireland.
14. Queenstown Harbor, Ireland.
15. Fingal's Cave, Ireland.
16. Cape Wraith, Scotland.
17. Lake Keswick, Cumberland, England.
18. The Bastile, France.
19. Castle Reinstien, Germany.
20. Ruins at Balbec, Syria.
21. Walls of Pekin, China.
22. View of Thun, Switzerland.
23. Mount Olympus, Greece.

24 Mount Vesurius, Italy.
25. Mount Etna, Sicily.
26. St. Peter's Church, Rome
27. Castle of St. Angelo, Rome.
28. Trajan's Arch, Rome.

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3. Elizabeth.
4. Miriam.
5. Anna the Prophetess.
6. Rahab.
7. Herodias.
8. The Wife of the Levite.
9. Zipporah.
10. The Women of Canaan.
11. The Witch of Endor.
12. Daughter of Jairus.
13. Widow of Nain.
14. Michal.
15. Martha.
16. Mary Magdalene.
17. Bathsheba.
18. Woman of Samaria.

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9. Hon. Schuyler Colfax.
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12. Michael Faraday.
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2. Morning. Thorwaldsen.
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5. Autumn. The Four Seasons. Thorwaldsen.
6. Winter. The Four Seasons. Thorwaldsen.
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8. The Fairy's Whisper. Roger Statuette.
9. Taking the Oath. Roger Statuette.
10. Union Refugees. Roger Statuette.
11. The Home Guard. Roger Statuette.
12. The Charity Patient. Roger Statuette.
13. The Returned Volunteer. Roger Statuette.
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16. The School Examination. Roger Statuette.
17. The Picket Guard. Roger Statuette.
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23. The Checker Players. Roger Statuette.
24. Uncle Ned's School. Roger Statuette.

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26. The Three Graces.
27. The Greek Slare.
28. Eve before the Fall.
29. Night. Copeland.
30. Morning. Copeland.
31. The Serenade.
32. The Courtship.
33. The Minstrel.
34. Dog Group.
35. The Sentry Box.
36. The Three Companions.

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4. The Shooting Pony.
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6. Joy.
7. Sorrow.
8. Alexander and Diogenes.
9. Jack in Office.
10. The Evening Prayer.
11. The Morning Kiss.
12. High Life.
13. Low Life.
14. Looking in!

10̌. Looking out!
16. The Joys of Home.
17. The Explanation of the Bible.
18. Fondly Gazing.
19. The Empty Cradle.
20. Overtasked.
21. Reading the Psalms.
22. Blessings of the House and of the Field.
23. The Bird is Flown Away.
24. The Farmer's Daughter.
25. The Mitherless Bairns.
26. Grandpa's Siesta.

27 . The Shepherd's Daughter and her Pet Lamb.
28. The Jewsharp Lesson.
29. Feeding the Young Bird.
30. Family Happiness.
31. Sunday Afternoon.
32. The Harvest Field.
33. Impudence.
34. The Silesian Weavers.
35. Susannah Watched.
36. The Shepherd's Bible.
37. Village School in an Uproar.
38. After Dinner.
39. The Boy with Many Friends.
40. The Return of the Swallows.
41. The Rent Day.
42. The Blind Fiddler.
43. Blind Man's Buff.
44. Village Politicians.
45. The Village Recruit.
46. Reading a Will.
47. Study.
48. Queen Victoria.
49. Prince Albert.
50. The Flute Lesson.
51. Politeness and Haughtiness.
52. Native Attractions.
53. The Kuitting Lesson.
54. Deceiving Granny.
55. The Forester's Family.
56. Guttemberg Reading the First Proof of his Invention, A. D. 1400 .
57. The Wife's Prayer.
58. The Christian Maiden.
59. The Offering.
60. The Young Companions and their Hungry Friends
61. Children making Wreaths of Flowers.
62. Prize for Laziness.
63. The New Scholar.
64. Whittington Listening to the Sounds
65. Momentous Question.
66. Persuasion.
67. The Gardener's Daughter.
68. The Slave Market in Constantinople.
69. Highłaud Hospitality.
70. The Gamekeeper's Return.
71. Village Church on Sunday Morning.
72. Young Foxes Receiving their Breakfast.

7:3. The Old Fox in a Tight Place.
74. Gretchen and her Pet Lamb.
75. The Life-Boat.
76. Age and Infancy.
77. The Straw Yard.
78. English Merrymaking in the Olden Time.
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80. The Past and Present.
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82. Every Beginning is Difficult. (Comic.)
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84. The Travelled Monkey's Return. (Comic.)
85. The Onconvanience of Single Life. (Comic.)
86. The Irish Flute Player ; "The Melody."
87. The Irish Flute Player; "The Jig."
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89. Will he take the Rose?
90. The Naughty Boy. (Comic.)
91. Amor Sharpening his Arrows.
92. L'amour Vainqueur.
93. Madonna in the Chair.
94. Jesus Christ Teaching his Doctrine.
95. The Birth of Jesus Christ.
96. The Holy Family.
97. Christ the Consolator.
98. Christ the Remunerator.
99. Christ on the Cross.
100. The Great Day of His Wrath.
101. The Last Judgment.
102. The Judas Kiss.
103. The Great Teacher.
104. Joseph Sold by his Brethren.
105. Christ Crowned. Antique, Bas-relief.
106. The Burial of Christ. Antique, Bas-relief.
107. The Ascension of Christ. Antique; Bas-relief.
108. Christopher Columbus seeing the First Land.
109. Napoleon I. at the Bridge of Lodi. -
110. Napoleon I. at the Battle of Waterloo.
111. The Snow-fields near the Berezina.
112. Napoleon at St. Helena.
113. Death-bed of Napoleon I.
114. Acquittal of the Seven Bishops, 1688.
115. Martin Luther Burning the Pope's Bull of Excommunication, December 12, 1520.
116. Cinderella - Her Sisters' Toilet.
117. Cinderella - Her Godinother appears.
118. Cinderella - At the Ball.
119. Cinderella - The Slipper Fitted.
120. Beatrice Cenci.
121. Uranie.

1:2. Sweet Eighteen.
123. The Coquette.
124. My Wife.
125. My Sweetheart.
126. Mavourneen.
127. The Pride of Kildare.
128. The last Toilet of Charlotte Corday.
129. Pirates playing Dice for Prisoners.
130. In the Pasture.
131. Jack in Office.
132. A Flower of Heaven.
133. Family Pets.
134. From Shore to Shore.
135. The Eve of the Flight.

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4. Christian reaches the Cross.
5. The Three Shining Ones.
6. The Hill of Difficulty.
7. Christian passes the Lions.
8. He arrives at Palace Beautiful.
9. Christian converses with Prudence and Sisters.
10. Christian arming.
11. He goes down the Valley of Humiliation.
12. The Fight with Apollyon.
13. A Hand from Heaven heals Christian's Wounds.
14. The Valley of the Shadow of Death.
15. The Pilgrims at Vanity Fair.
16. They are made a Derision at Vanity Fair.
17. Giant Despair finds the Pilgrims asleep.
18. They escape from Doubting Castle.
19. The Pilgrims received by the Shepherds.
20. Passing through the Waters.

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2. Christiana dreams again.
3. She prepares to go.
4. Mercy left without the Gate.
5. The Man with the Muck Rake.
6. After the Bath of Sanctification.
7. Greatheart and Pilgrims ascend Litl of Difficulty
8. Prudence catechizes the Boys.
9. The Shepherd Boy in Valley of Humiliatiou.
10. They visit the spot where Christian fought hpollyon.
11. The Pilgrims at the House of Gaius.
12. Greatheart rescues Feeblemind from Giant Slaygood.
13. Giant Despair aroused by knocking at his rate.
14. They vanquish Giant Despair.
15. Triumph over Giant Despair.
16. Mercy listens at By-way to Hell.
17. The Enchanted Land.
18. The Land of Beulah.
19. Christiana receives the Summons.
20. Christiana reunited to Christian.

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4. On the Mountains.
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5. Chinese Cat Merchants.
6. Temple of Buddha, Canton.
7. Marriage Procession.
8. The Great Wall of China.
9. Puuishment of the Bastinade.
10. Scene from Play of Sun and Moon.
11. A Street in Canton.
12. Great Temple at Honan, Canton.
13. Kite Flying at Hae-Kuan.
14. Chinese Cemetery.
15. Porcelain Tower, Nanking.
16. Mouth of the River Chin-Keang.
17. Chinese Opium Smokers.
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19. An Itinerant Barber.

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8. The Atmeidan, or Hippodrome.
9. Court of the Mosque of Sultan Achmet.
10. View from the Ocmeidan
11. Fountain and Square of St. Sophia.
12. Fourth Court of the Serai Bournou.
13. Mosque of Suleimanie.
14. Entrance to the Black Sea.
15. Palace of Belisarius.
16. Yenikeuij, on the Bosphorus.
17. The Sea of Marmora.
18. View from the Ferry of Scutari.
19. The Maiden's Tower.
20. A Coffee Kiosque, on the Port.

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8. Steamboat Race on the Mississippi.
9. Nothing Venture, Nothing Have.
10. Winter in New England.
11. The Unconscious Sleeper.
12. Three Members of Temperance Society.
13. Fondly Gazing.
14. The Empty Cradle.
15. The Wife's Prayer.
16. The Angel of Peace.
17. War.
18. Peace.
19. The Toilet.
20. Little Mischief.
21. Piper and Pair of Nut Crackers.
22. Glimpse of an English Homestead.

23 . Fetching the Doctor.
24. Cinderella.
25. The Schoolmaster in Love.
26. The Donkey Race.
27. God's Acre.
28. Bargaining for a Horse.
29. The May Pole.
30. Othello relating his Story.
31. Red Riding Hood.
32. Pride and Humility.
33. Consider the Lilies.
34. Rose and Buds.
35. Wreath of Flowers.
$: 36$. Bunch of Dahlias.
37. Eagle and Shield.
38. Star-Spangled Banner.
34. George Washington.
10. Martha Washington.

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3. Londonderry.
4. Abbey of Sligo.
5. Clew Bay, from Westport.
6. Garromin Lake.
7. Ruins at Cashel.
8. Kilkenny Castle.
9. Dunluce Castle.
10. Glengariff Inn.
11. Inisfallen, Lake of 'Killarney.
12. Upper Lake of Killarney.
13. Old Weir Bridge, Killarney.
14. Lower and Torc Lakes, Killarney.
15. Core Harbor, Queenstown.
16. Kilkee, County Clare.
17. Ballyhinch Lake.
18. Dublin Bay.

20 . Carrigogumnell Castle, Limerick.

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2. Abbotsford.
3. Dryburgh Abber.
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5. Dumblane Cathedral.
6. Inverary Cathedral.
7. Bothwell Castle on the Clyde.
8. Port Glasgow.
9. Dunottar Castle, near Stonehaven.
10. Alloway Kirk, with Burns' Monument.
11. Dundee.
12. Loch Lomond.
13. The Twa Brigs, Ayr.
14. Bridge of Doon.

## Class XXIII. - Interesting Views. <br> Price, 50 ets. each.

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2. Saw Mill, Lake Winnipiseogee, New Hampshire.
3. Lake George.
4. Hudson Highlands.
5. Niagara Falls.
6. Harper's Ferry.
7. Washington's Mansion, Mount Vernon.
8. Tomb of Washington, Mount Vernon.
9. Bamborough Castle, England.
10. Lake Keswick, Cumberland, England
11. Fingal's Cave, Isle of Staffa.
12. The Bastile, France.
13. Castle Reinstein, Germany.
14. Thun, Switzerland.
15. Ruins of $\Lambda$ thens.
16. Mars Hill at Atheus.
17. The Piraeus, Athens.
18. Ruins of the Parthenon, Athens.
19. Ancient Rome.
20. The Coliseum, Rome.
21. St. Peter's Church, Rome.
22. Castle St. Angelo, Rome.
23. Trajan's Areh, Italy.
24. Amalfi, Italy.
25. Mount Vesuvius, Italy.
26. Mount Atna, Sicily.
27. Mount Olympus, Greece.
28. Ruins at Balbec.
29. Plain Er Rahah, Mount Sinai.
30. The Theatre, Petra:

## Class XXIV. - Tam O'Shanter,

1. "Gathering her brows like gathering storm, Nursing her wrath to keep it warm."
2. "The Souter tauld his queerest stories; The landlord's laugh was ready chorus."
3. "Nae man can tether time or tide; The hour approaches Tam maun ride."
4. "And, vow! Tam saw an unco sight!

Warlocks and witches in a dance."
5. "And scarcely had he Maggie rallied, When out the hellish legion sallied."
6. "Ae spring brought off her master hale, But left behind her ain gray tail."

## Class XXV. - Cottar's Price, \$1.50 each.

1. "The miry beasts retreating from the pleugh."
2. "The toil-worn cottar frae his labor goes, This night his weekly moil is at an end."
3. "The expectant wee things, toddlin' stacher thro', To meet their dad, wi' flichterin' noise and glee."
4. "The lisping infant prattling on his knee, Does a' his weary kiaugh an' care beguile."
5. "Their eldest hope, their Jenny, woman grown, Comes hame, perhaps to show a braw new gown."
6. "Wi' kindly welcome, Jenny brings him ben; A strappin' youth; he takes the mother's eye ;"
7. "'Tis when a youthful, loving, modest pair, In other's arms breathe out the tender tale."
8. "The priest-like father reads the sacred page."

## Class XXVI, - The Bottle. <br> Price, $\$ 1.50$ each.

1. The bottle is brought out for the first time. The husband induces his wife "just to take a drop."
2. He is discharged from his employment for drumkoness. "They pawn their clothes to supply the bottle."
3. An execution sweeps off the greater part of their furniture. "They comfort themselves with the bottle."
4. Unable to obtain employment, they are driven by poverty into the streets to beg, and by this means still supply the bottle.
5. Cold, misery, and want destroy their youngest child. "They console themselves with the bottle."
6. Fearful quarrels and brutal violence are the natural consequences of the frequent use of the bottle.
7. The husband, in a state of furious drunkenness, kills his wife with the instrument of all their misery.
8. The bottle has done its work - destroyed infant and mother, brought son and daughter to vice, and left the father a hopeless maniac.

## Class XXVII. - Life's Day, <br> Price, $\$ 1.50$ each.

1. Morning.
2. Noon.
3. Night.

## Class XXVIII. - United States History. Price, $\$ 1.50$ each.

1. Landing of Columbus, 1492.
2. Smith Rescued by Pocahontas, 1607.
3. Landing of the Pilgrims, 1620.
4. Roger Williams sheltered by Indians, 1638.
5. Penn's Treaty with the Indians, 1682.
6. Boston Massacre, 1770.
7. Struggle on Concord Bridge, 1775 .
8. Putnam leaving the Plough, 1775.
9. Battle of Bunker's Hill, 1775 .
10. Capture of Fort Ticonderoga, 1775.
11. Washington taking Command of the Army, 1775.

1•. Declaration of Independence, 1776 .
13. Washington Crossing the Delaware, 1776.
14. Washington at Valley Forge, 1777.
15. Surrender of Burgoyne, 1777 .
16. Moll Pitcher at Monmouth, 1778.
17. General Marion and British Officer, 1780.
18. Surrender of Cornwallis, 1781.
19. Commodore Perry at Lake Erie, 1813.
20. General Scott entering Mexico, 1848.

## Class XXIX. - Seven Ages of Man.

Price, $\$ 1.00$ each.

1. The Infant
2. The School Boy.
3. The Lover.
4. The Soldier.
5. The Justice.
6. The Lean and Slippered Pantaloon.
7. 'ihe Last Scene.

## Class XXX. - Statuary

Per Sude, 1.00 .

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2. Morning. Thorwaldsen.
3. The Four Seasons. Spring.
4. The Four Seasons. Summer.
5. The Four Seasons. Autumn.
6. The Four Seasons. Winter.
7. The Council of War.
8. The Fairy's Whisper.
9. Taking the Oath.
10. Union Refugees.
11. The Home Guard.
12. The Charity Patient.
13. The Returned Volunteer
14. The Wounded Scout.
15. The Country Post Office.
16. The School Examination.
17. The Picket Guard.
18. The Village Schoolmaster.
19. The Town Pump.
20. Mail Day.
21. The Bushwhacker.

22 . Courtship in Sleepy Hollow.
23 . The Checker Players.
$\because 4$. Uncle Ned's School.
25. Apollo Belvidere.
26. The Three Graces.
27. The Greek Slave.
28. Eve, before the Fall.
29. Night. Copeland.
30. Morning. Copeland.
31. The Serenade.
32. The Courtship.
33. Ariadne and the Tiger.
34. Una and the Lion.
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36. Flora.

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4. Musquito and Egg Boat.
5. Bed Bug.
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7. Portion of Wing of House Fly
8. Scales from Wing of Moth.
9. Wool Fibres.
10. Section of Wheat Straw.
11. Heliopeltea.
12. Saws of Saw Fly.

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$\therefore$ Form of Lotige.
t. Jacoh's Ladder.
$\therefore$ Furniture of Lodire.
2. Ormantents of Lodgr.
3. Lights of Lodge.
s. Jewels of Lodge.
:. Tabernacle in Wikerness.
4. St. John the Baptist and St. Johm the Evangelist.
5. Masonic Tenets.
6. Points of Entralice.

SECOND DEGREE.
13. Three Orders of Arehitecture.

THIRD DEGREE.
14. Marble Monument.
I.). Ancient Three Grand Masters.
16. Three Steps.
17. Pot of Incense.
18. Bee-hive.

1\%. Book of Institutions guarded by Tyler"s Sworel.
$\because \because$. Sword pointing to naked Heart and Al-secing Eye.
21. Anchor and Ark.
22. Forty-seventh Problem of Euclid.
23. Hour-Glass and Scythe.

24 , Einblems of Mortality.
ROYAL ARCH CHAPTER.
25. The Burning Bush.

COMMANDERY OF KNIGHTS TEMPLARS.
26. Angel at Sepulcher.
27. Three Marys at Tonls.
28. Ascension of Christ.

## PRELATE.

29. Valley of Dry Bones.
30. The Crucifixion.
31. Body of Christ in the Tomb.
32. Resurrection of Chuist.
33. The Cross.
34. The Pilgrim.
35. The Knight.
36. The Penitent.
37. Christ on the Cross.
38. Denth on the Pale Horse.
39. Human Skull.
40. John at Patmos.
41. Faith at the Cross.
42. Cross and Crown of Glory.
with motto Crown of Life.

## ODD FELLOWS.

1. All-seeing Eye, Bible, Altar of Incense. Heart and Hand, Scales and Sword, Bow and Arrows, Bundle of Sticks with 3 Links, Skulf and Cross, Bones, Tent, Sun, Moon and Stars, 3 Pillars, Lamb, Dove. Serpent, Globe, Ark, Beehive, Hour-Glass, Coffin, Surthe.
2. All-seeing Eye, Bible, Altar of Incense.
3. All-sering Eye.
4. Bible.
$\tilde{F}$. Altar of Incense.
5. Heartand Hand, Scales and Sword, Bow and Arrows, Bundle of Sticks with 3 Links, Skull aml Cross, Bones, Tent.
6. Heart and Hand.
s. Saber and sword.
7. Bow and Arrows.
8. Bundle of Sticks with 3 Liuks.
9. Skull and Cross Bones.
10. Tent.
11. Sum, Moon and 7 Stars, 3 Pillars, Lamb, Dove. Serpent, Globe. Ark, Bee-Hive, Holn-Glass. Scythe, Coffin.
12. Sun, Moon, and 7 stars.
13. Three Pillars.
14. Lamb.
15. Dove.
16. Serpent.
17. Glolse.
18. Ark.
19. Bee-Hire.
20. Hour-Glass.
21. Scythe.
22. Colfin.

## TEMPLE OF HONOR.

1. Five-Pointed Star.
2. Six-Pointed Star.
3. Triangle and Six-Pointed Star.
4. Temple of Honor.
5. Rainhow.
6. Open Grave.
7. Closed Grave.
8. Flash of Liglitning.

## Class XXXIV. - Babes in the Wood.

Beautifuliy Colored Photographs.
One Painting, three inches in diameter, on each Slide.
Per Set, \$12.00.

1. The Dying Father taking Leave of his Children.
2. He implores lis Brother to take good Care of them.
3. His Brother bargains with two Ruffians.
4. Who take them into the Woods.
5. One of the Ruffians relenting, they fight.
6. The Children left to die in the Woods.
7. The Ruffian arrested.
8. The Uncle's Dying Bed.

## Class XXXV. - Additional Natural History.

Per Slide, \$1.50.

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8. Red and Blue Nacaw and Toucan.
9. European Owls.
10. European Hawks.
11. Lapwing and Young.
12. Rattlesnake from Oregon.
13. Rattlesnake from Kern River
14. Rattlesnake from Nebraska.
15. Eutænia Vagrans, from Utah.
16. San Francisco Perch.
17. Vancouver Chub.
18. Sea Dragon.
19. Four-horned Salarias.
20. Parts of an Insect.
21. Nervous System of Larva of Honey Bee.
22. Nervous System of Honey Bee.

23 . Spiracles and Air-vessels of Honey Bee.
$\because 4$. Eyes of a Honey Bee.
25 . Carolina Sphynx.
26. Scales from Wing of Butterfly.
27. Urania Sloanus and Castinia Licus.
28. Larva of Thyreus Abbotii.
29. Argonaut Spider.
30. Mygale Pionnerea, Spider.
31. Vinegar Eels.
32. Synapta Duvernæa.
33. Thread-tailed Manikin and Blue-hooded Tangara.
34. Calves.
35. Crocodile seizing Negro Child.
36. Boa Constrictor and Leopard.
37. The Arabian Horse.
38. The Trained Horse.
39. The Carriage Horse.
40. The Cart Horse.
41. The Race Horse.
42. The IIunter.
43. Plant Lice and Ants.
4.t. Mygale Spider killing a Humming Bird.
45. Nymphalis Arthemis.

## Class XXXVI. - Set of Twenty Illustrations of Anatomy and Physiology.

Per Set, $\$ 30.00$.

1. *Human Skeleton.
2. Human Skull.
3. Section of the Spine, \&c.
4. *Teeth, and structure of same
5. *Muscles, front view.
6. *Muscles, back view.
7. Muscles of the Head, Neck, and Face.
8. *General View of the Digestive Organs in place.
9. The Digestive Organs.
10. *The Stomach, Liver, and Pancreas.
11. The Thoracic Duct.
12. *Heart and Lungs.
13. *Diagram of Circulation.
14. Skin, and structure of same.
15. *Brain and Spinal Cord.
16. *General View of the Nerves.
17. Fifth Pair of Nerves.
18. Facial Nerves.
19. *Diagram of the Eye.
20. *Anatomy of the Ear.

Those marked with a star are included in a Set of Twelve. Price, $\$ 18.00$.

## Class XXXVII. - Excelsior Magic Lantern Slides, made by the Woodbury Process.

New Subjects will be continually added to the List.
Per Slide, 50 cts. Per Dozen, $\$ 6.00$.

FOREIGN SFRIES.
Statuary from the Marbles in Kensington Museum, London.

1. Ino and Bacchus.
2. Queen of the May.
3. Maid and Mischievous Boy.
4. Pandora.
5. The Water Carrier.
6. Justice.
7. Horticultural Gardens, London.
8. Old English Homestead.
9. On the Thames, Richmond.
10. Abergeldie Castle.
11. Sir Walter Scott's Tomb.
12. Street in Venice.
13. Grand Canal, Venice.
14. St. Mark's, Tenice.
15. Gorge of Pfieffers, Switzerland.
16. Maison Batelier, Ghent.
17. Lion of Lucerne.
18. View in the Grisons, Switzerland.
19. Lake of Lucerne.
20. Falkness, Tyrol.

21 . The Matterhorn.
22. Kappel Bridge, Lucerne.
23. Island of Iona.
24. East End of Cathedral at Caen.
25. Hotel de Ville, Brussels.
26. The Three Porches at Bayeaux.

27 . St. Owen's Cathedral at Rouen.
$\because 8$. Panorama.
29. Yillage of Wesseu, Switzerland.
30. Thun, Switzerland.
31. Lake Weggis.
32. Village of Weggis.
33. Cascades, Canton Tessin.
34. Bridge on the Mayenbach Pass of St. Gothard.

## NIAGARA SERIES.

Per Slide, 50 cts. Negatives by Charles Bierstadt.

1. Point View, American and Horse Shoe Falls.
2. Terrapin Tower, Winter.
3. Ice Mound and American Falls.
4. Terrapin Tower, Winter.
5. American Falls, from Point View.
6. Horse Shoe Falls and Tower from Goat Island.
7. Ice Bridge, Tower in the distance.
8. Winter View from Luma Island.
9. American Falls from Luna Island.
10. Ice Bridge and Horse Shoe Falls.
11. Winter View from Prospect Point.
12. Horse Shoe Falls from below.
13. Terrapin Tower from above.
14. Ice Cave under the Banks.
15. American Falls from Luna Island.
16. IIermit's Cascade and first Sister Island Bridge.
17. Horse Shoe Falls from Goat Island, Winter.
18. Under the Banks, Niagara.
19. Terrapin Tower, from below.
20. Horse Shoe Falls and Rapids.

## Class XXXVIII. - Comic Paintings, with Movable Slips, giving Laughable Motion to Figures.

Per Slide, 75 cts

1. Skipping Rope.
2. Roman Nose.
3. Tailor.
4. Hark!
5. Rat Eater.
6. Good Night.
7. How d'ye do ?
8. Expanding Carnation.
9. Mischievous Monkey.
10. Death in the Cup.
11. Clown Performing.
12. Barber.
13. Parson and Punch.
14. Artist.
15. Skull.
16. Death on the Pale Horse.
17. Dentist.
18. Cupid and Rose.
19. Nightmare.
20. Jim Crow (No. 1).
21. Blacksmith.
22. Turk's Head.
23. Acrobats Performing.
24. Clown Falling to Pieces.
25. Bleeding Nun.
26. Pickwick and the Widow Bardell.
27. Bottled Porter.
28. Cook and Boar's Head Changing.
29. Clown Dancing.
30. Jim Crow (No. 2).
31. Combing a Bald Head ; or, Hone Delights.
32. Scene on the Rind.
33. Rats and Candle.
34. Sailor and Pig.
35. Old Woman Smoking Pipe.
36. Goose and Tailor.
37. Saracen's Head.
38. Pine Apple.
39. Cauliflower.
40. Chameleon.
41. Fisherman and Frog.
42. Anti-Teetotaler.
43. Dentistry Improved.
44. Stuck Fast.
45. Old Woman Snuffing.
46. Cupid with Bow (moving eyes).
47. Growing Nose (No. 2).
48. Boy Drawing Portrait.
49. Farmer and Dog (changing heads).
50. Drawing Boot.
51. Insect Changes.
52. Miser.
53. French Rarebit (Rabbit).
54. Rum Punch.
55. Bachelor's Dream.
56. Punch (No. 2).
57. Turning Somersaults.
58. Espy's Chimney.
59. Kriskringle.
60. Pumpkin Head.
61. Tailor and Cabbage.
62. Old Man and Death.
63. Bachelor's Button.
64. Honeysuckle.
65. Burgundy Rose.
66. Cupid and Rose.
67. Tulip and Fairy.
68. Snow-drop.
69. Elopement Prevented.
70. Happiness and Despair.
71. The Serenade.
72. Tax Collector.
73. Naval Combat.
74. A Pear (pair).
75. Acrobat Tossing Ball.
76. Man Fishing and Bul'
77. Circus Performance.
78. Bottled Porter.
79. Boy and Donkey.
80. Turk's Head (Biue Beard).
81. Attempted Elopement.
82. Rat Catcher.
83. Good Night (Wreath).
84. Some Pumpkins, Esq.
85. Tailor and Cabbage.
86. Old Man and Death.
87. Bachelor's Button.
88. Honeysuckle.
89. Burguady Rose.
90. Snow-Drop.
91. Attempted Elopement.
92. Happiness and Despair.
93. Cupid and Rose.
94. Tulip and Fairy.
95. The Serenade.
96. Tax Collector.
97. A Pear (pair).
98. Acrobat and Ball.
99. Man Fishing and Bull.
100. Circus Performer.
101. Bottled Porter.
102. 'Turk's Head.
103. Good Night.

## Class XXXIX. - Paintings with Levers, giving Laughable Motion to the Figures.

Per Slide, \$2.50.

1. Lady Riding.
2. Stag.
3. Woodman.
4. Moving Chin.
5. Cobbler at Work.
6. Bill Sticker.
7. Man's Face.
8. Horse Drinking.
9. Sambo Lecturing.
10. Stone Breaker.
11. Large Ship by Night.
12. Small Ship and Lighthouse.
13. Boy on Donkey.
14. Swan Drinking.
15. Stag Drinking.
16. Cow Drinking.
17. Beggar.
18. See-Saw.
19. Boy Stealing Apples.
20. Gout.
21. Digger.
22. Monk Praying.
23. Boy cleaning Boots.
24. Reaper.
25. Fractions Child.
26. Monkey Dipping Cat.

## Class XL. - Chromatropes, or Artificial Fireworks.

Beautifully Colored Photographs.
One Painting, three inches in diameter, on each Slide.
These slides are singularly curious, the effect being rery similar to that of the Kaleidoscope. The pictures are produced by brilliant designs, being painted on two circular glasses, and the glasses being made to rotate in different directions.

1. The "National Flag" Chromatrope, each $\$ 5.00$. From designs expressly made to introduce the colors of our glorious National Flag.
2. The Geometrical Chromatrope, each $\$ 5.00$. A large varicty of entirely new and original patterns of superior chromatic and geometrical effects.
3. The "Washington" Chromatrope, each $\$ 5.00$. A new and beautiful design, with head of Washington in the centre, with wreath revolving around it, and rays of light shooting in all directions.
4. The "Lincoln" Chromatrope, each $\$ 5.00$. Head of Lincoln in centre, with surroundings similar to Washington Chromatrope.
5. The "Eagle" Chromatrope, each $\$ 5.00$. The American Eagle on Shield, with motto, and the colors of our National Flag revolving around it.
6. The "Good Night" Chromatrope, each $\$ 5.00$. The words "Good Night" encircled by a wreath of flowers, in the centre of a revolving Chromatrope. Very appropriate as a closing piece of an exhibition.

## Class XLI. - The Bible lillustrated.

In 12 Slides, containing 39 Paintings, on Glasses $2 \frac{1}{2}$ inches in diameter, packed in a box.

Per Set, $\$ 50.00$.

1. Adam and Eve driven out of Paradise.
2. Hagar and Ishmael.
3. Abraham offering Isaac.
4. Rebekah at the Well.
5. Joseph sold into Egypt.
6. Joseph meeting his Father.
7. The Finding of Moses.
8. The Ark of the Covenant.
9. The Dress of the High Priest.
10. The Altar of Incense.
11. David and Goliath.
12. David Dancing before the Ark.
13. Nathan Reproving David.
14. The Altar of Burnt Offering.
15. An Aaronite or Scribe.
16. The Golden Candlestick.
17. Return of the Spies.
18. The Brazen Serpent.
19. Balaam and his Ass.
20. Samson and the Lion.
21. Esther before Ahasuerus.
22. The Infant Samuel.
23. Elijah Fed by Ravens.
24. The Good Samaritan.
25. The Annunciation.
26. The Birth of Christ.
27. Christ brought to the Temple.
28. The Flight into Egypt.
29. The Holy Family.
30. Christ and the Woman of Samaria.
31. Christ Stilling the Tempest.
32. The Lord of the Vineyard and Laborer.
33. The Return of the Prodigal Son.
34. Trial of Peter's Fuith.

35 . Herodias with Head of John the Baptist.
36. The Crucilixion.
37. The Women at the Sepulchre.
38. The Resurrection.
39. The Disciples at Emmaus.

## Class XLII, - The Bible Illustrated.

Iil 12 Stides, containing 36 Paintings, not so finely executed as Class ILL .

Per siet, $\$ 30.00$.

There is no business that will give as large returns for the money invested as the Magic Lantern or Stereopticon exhibition. In every city, town, or hamlet there is a chance for a man to . lo an excellent business with a Magic Lantern or Sterespticon, with an assortment of interesting views, suitable for Sunday schools, academies, lyceums, or private families. The apparatus is very simple, and inexpensive to run, and by following the printed directions in this Catalogive a person cannot foil to give a successful exhibition.


## Directions how to Operate Hall's Photo-opicon.

Owing to the high cost of the Photo-opticon, slides, \&c., we frequently let them to Societies, Sabbath Schools, \&c., and also for Private Exhibition.

We ordinarily send from fifty to sixty slides, selected from our Catalogue by the party hiring. If the exact subjects are not at the moment procurable, we then snbstitute others answering as nearly as possible to the description given, it being impracticable to always keep all of the required pictures on hand.

This number of pictures affords a good hour and a hatf's entertainment, and more than this when accompanied by a descriptive lecture.

The instrument, together with sheet, rope, and all necessary apparatus, we f:rward securely packed in a trunk, so as to be safely sent by express.

We wonld wish to impress upon all parties using one of these instruments the necessity of carefully repacking. The cost of expressage, both ways, is, of course, payable by the party hiring.

We always recommend using the instrument behind the screen, as it then only requires placing at a few feet distance, and the operator
and his instrument are entirely away from the audience. By wetting the screen it is rendered transparent, and the picture shows equally as well on both sides.

In giving an exhibition, the first thing is, to properly fix the screen. Fasten the rope across the hall, to the walls if possible; but, if the hall be too wide, affix to two wooden standards, placed from eight to ten feet from end of hall. Then dip the sereen in water, thoroughly wetting it, suspend it by rings with the rope, drawn tightly as possible, fastening it to the floor - as all depends upon its being tightly stretched. In case of the instrument being used in front of the screen, place the latter directly against the wall.

The size of the picture depends upon the distance the instrument is placed from the screen. The proper size is from five to seven feet.

Use the best of kerosene oil in the lamp. See that the wicks are both evenly cut and roll up together, and the chimney and reflector are perfectly clean, \&c.

Place the lamp in the instrument before lighting it - the chimney is so constructed as to enable it to be lifted from the wicks in order to light them. Then turn up the wicks so as to get as much light as possible, without smoking. Move the lamp inside the lantern, to and fro, until the brightest circle is obtained. If the light is too near the condenser, or inner lens, a dark shadow is produced at the top of the circle, and if too far off, a dark shadow is produced at the lower part. By moving the lamp between the two a bright circle is obtainable, thus indicating that the lamp is in proper focus with the lenses.

Place the pictures in the order you wish to show them, as near at hand as possible. The pictures are to be put in the slide, between the lenses, in an inverted position. With a little practice any person can so place the picture as to insure its properly showing in the centre of the circle.

We have spent a long time, and had much experience in perfecting this instrument. The lenses, mounting, and whole finish of the instrument are as perfect as can be made, and we challenge any other instrument to competition.

Our reason for naming it the Photo-opticon is its special adaptability for showing photographic pictures, which an ordinary magic lantern will not do.


No. 33.

## The Universal Oil Lantern

Represented above, is the most complete, compact and serviceable oil lantern in the market. It is thoroughly made in every particular. The body is of Russia perforated sheet-iron, combining lightness and strength. The condensers are 4 inches in diameter. The projecting tube is of brass. nickel-plated; achromatic lenses with rack-adjustment. The Lamp, which is of great importance in an oil lantern, has 3 wicks, giving the most powerful light which can be obtained from an oil lamp, suitable for lantern use. This lantern is without doubt the most perfect oil lantern made, as on account of the 3 -wick lamp it will project a larger and clearer picture than any other lantern of its kind.

Accompanying each lanteru is a sheet-iron carrying-case, $15 \frac{1}{2}$ inches long, 7 inches wide by $14 \frac{1}{2}$ inches high, with lock, key, and strap. When packed, the weight of the whole is 12 to 15 lbs.

Price of the Lantern, with extra glasses for protecting the conlensers, extr:i wicks, oil-can, funnel, and carrying-case, $\$ 40.00$.

Owing to the superior brilliancy of the light in the above lantern, it may be used with an arrangement for projecting Photographs, Cabinets, or other opaque objects, such as designs for embroidery, \&c.

It will project a card photograph to three feet in size, and is a very useful thing for crayon artists, designers, \&c.

Price of the Opaque Attachment, \$3.00.


No. 34.

## The Improved Oxy-Hydrogen Dissolving Stereopticon.

FOR PUBLIC EXHIBITIONS.

No. 34 rejuesents the Dissolving Lantern, which for leauty of design and finish. and convenience in operating. camot be excelled. The special features are first, a single back walmut or mahogany case, lined with sheet-iron, containing two oxr-hydrogen Blowpipes, two sets Condensers, two revolving aljustable Slide Molders. and the dissolving Stop-eock. 'The frames holling the front tubes have horizontal and pe:pemilenher aljustments.

The case has a door on each sivle, so that each blow-pipe can be conveniently adjusted or examined. The top of the ease raises to allow the heat to escape.

The revolving slite holders are of the most inproved pattern, and will hold either the phan hotorraph slides or monnted slides $4 x 7$ in.. and will allow the slifes to be showa in ay position, horizontal, upright, or at ang atyh.

By the use of separate upright sliding boarls, in which the projecting tubes are hold. either of the three sizes of tubes mity be used.

No. 34. Dissolving Lantern, with two oxy-hydrogen Blowpipes, two sets $4 \frac{1}{2}$-inch. condensers, two achromatic objective tubes, $2 \frac{3}{8}$ diameter, two revolving Slide Holders, and one high-pressure dissolving Stopcock, in black walnut case, $\$ 150.00$.

No. 35. Same as No. 34, with $3 \frac{1}{4}$-inch. tubes, $\$ 184.00$.
No. 36. Same as No. 34, vith two black walnut cases, $\$ 125.00$.
No. 37. Single Lantern, same as 36, containing same apparatus, except Stop-cock, $\$ 65.00$.


## Hall's Educational Lantern.

No. 38. The Educational Lantern, which is of a later style than No. 9 , is designed specially for schools, colleges, seminaries, \&c.

The vertical attachment is for projecting chemical reactions, objects in fluids, movements of the magnetic needle, and various other experiments.

It is so arranged that by slipping out the tube-holder, taking out the tube and putting it into the vertical board, and slipping the board into the place of tube-holder, the Lantern is ready for nse. It ciu be used with either the oil lamp, or oxy-calsium, or oxy-hydrogen burners.

No. 38. Educational Lantern, with $1: 3$ in. tube and oil hamp, $\$ 43.00$
No. 39. .. .. .. $23 .{ }_{8}^{3}$.. .. .. .. .. 50.00
No. 40 . . .. .. 238 .. .. .. Calsium
Lamp, 30x40 gas bag. Retort wash-hottle, Lamp' and Stand . . . . . . . . . . . . . 80.00

No. 41. Educational Lanteru, with oxy-hydrogen Blowpipe. 65.00
No. 42. The Vertieal Attachment for Educational Lantern, 15.00
The price of No. 42 includes splitting the condenser and fitting the attachment to the lantern.
Flat Test Tubes, of thin glass, for projecting chemical reactions:

$$
\begin{aligned}
& \text { 4x } 2 \times 1-16 \text {, per doz. . . . . . . . . . } 0.60 \\
& 5 \times \frac{5}{8} \times \frac{1}{8} \text {.. . . . . . . . . . . . } 80 \\
& 6 x_{4}^{3} x_{8}^{1} \quad \text {. . . . . . . . . . . } 1.25
\end{aligned}
$$

The size of Pietures obtained with the different Tubes and Lights are mearly as follows:
At 10 to 15 feet distance, Oil Lamp, with $1 \frac{3}{4} \mathrm{in}$. tube, will make picture 6 to 9 feet.
At 20 feet distance, the Calsium Burner, with 13 in. tube. will make picture about 12 feet.
At 30 feet distance, the Oxy-Hydrogen Burner, with $2: 3$ in. tube, will make picture about 10 feet.
At 50 feet distance, the Oxy-Hydrogen Burner, with $2 \frac{3}{8}$ in. tube, will make picture about 16 feet.
At 60 feet distance, the Oxy-Hydrogen Burner, with $3 \frac{1}{4} \mathrm{in}$. tube, will make picture about 15 feet.
At 150 feet distance, the Oxy-Hydrogen Burner, with $3 \frac{1}{4} \mathrm{in}$. tube, will make picture about 25 feet.
From the above table may be ascertained the size of tube and light required to obtain the pieture desired.

The relative illuminating power of the various lights, which has been determined by the Photometer, is given below in what is called caudle power.

Illuminating gas . . . . . . . . . . . 15
Coal Oil in Argand's Burner . . . . . . . 20
Coal Oil in No. 33 Burner ..... 25
Maguesium ..... 40
The lime light with oxygen and alcohol ..... 50
" ${ }^{6}$ " 6 ". $\quad$ common gas ..... 75
125
The electric light ..... 500 to 10,000

These figures are approximate, as the light depends on the quality of the material used.

## Hall's Oxy-Hydrogen Dissolving Cocks.



No. 43.
No. 43. Hall's high-pressure Dissolving Cock, for use with cylinders. Of improved pattern, very simple in construction and can be used with absolute safety with cylinders and rubber connectors. Price, $\$ 12.00$.

No. 44. Hall's low-pressure Dissolving Cock of same pattern as No. 43 , but for use with bags. Price, 12.00 .


No. 45.
No. 45. Hall's Oxy-Hydrogen Blowpipe for lantern use. This form of a Blowpipe is at present acknowledged by all exhibitors as the most practical for lantern use, on account of its reduced size, convenience in adjusting, perfect safety and great brilliancy. It is substantially and thoronghly made and fiuely finished and will give better satisfaction than any other form of blowpipe. Price, 12.00 .

## Hall's Improved 0xy-Calsium Burner. <br> 

No. 45.
No. 46. Where the oxygen and hydrogen gases cannot be obtained the above form of Burner is very convenient, as it is used with oxygen, which is very easily made, and alcohol which can be obtained anywhere, and will give a much brighter and more beantiful light than oil. The light is obtained by blowing a jet of oxygen through an alcohol flame onto a lime cylinder. It is well made in every particular and may be used with perfect safety, with the photoopticon or No. 33 Lantern. It may be also used as a Hydrogen Burner by using the hydrogen flame in place of the alcohol. Price, 6.00.

Directions for making oxygen gas may be found on page 6 .

## Hall's Oxy-Hydrogen Microscope.



No. 47.
No. 47. The Oxy-Hydrogen Microscope is of the latest and most improved style, having the coarse, fine and center adjustments and revolving diaphram. It can be used with the Photoopticon, Lantern No. 33, the Educational Lantern No. 9, the Educational Lantern No. 38, or the Ox-Hydrogen Lantern No. 37. Price withont objective. $\$ 35.00$.


## LANTERNS FOR SPECIAL PURPOSES.

## THE ILLURINATING SIGN LANTERN.

The Illuminating Sign Lantern can he placed over the door of a store and will project a picture or illumnated advertisement on the sidewalk in front of the door.

It is a novel, attracfive and cheap way of advertising. The pictures can be changed as often as necessary. Price, $\$ 25.00$

## THE ADVERTISING LANTERN.

One of the most popular methods of advertising at present is by projecting the various trade marks and Lithographic cards across a square or wide street through which thousands of persons pass during the evening. The pictures are thrown unto a screen or wall opposite the lantern.

The lanterns best suited for this purpose are No. 35 or No. 37 , with the proper projecting tubes, making the price from $\$ 84.00$ to 200.00 . The lantern can also be used in a store, throwing a picture unto a twansparent curtain in the window.

## THE ARTISTS' LANTRRN.

There are two methods of using lanterns, by which artists, designers, \&c., may save considerable time and labor.

The first is by making a photographic negative or positive of the object, and by means of the artist's lantern throwing the picture on a screen. A portrait painter may obtain at one sitting one half dozen or more negatives of his subject in different positions, and by using the lantern (which will make a life-size picture), he may study at his leisure the different poses of the head, body or limbs, and can easily determine the most desirable.

Price of the lantern for transparent pictures, $\$ 25.00$.
The second method is by throwing the reflection of an opaque picture or design on ground glass, from which it may be transferred to canvass or paper.

Price of the Opaque Lantern, ${ }^{\text {, 2 } 25.00 . ~}$
The second method is less convenient, as it will enlarge on'y a head to life size, and not the whole figure.

The particular attention of Artists or Portrait Painters is called to the first method of using Artist's Lanterns. I will operate a lantern for any artist who wishes to test the value of this method as a labor-saving device.

## NEW SCIENTIFIC SLIDES.

Finely colored Views. $\$ 1.50$ each. Mounted in slider.

## SPECTRUM ANALYSIS.

1. Decomposition of Light by Prism. SOLAR SPECTRUM.
$\because$. Comparative intensity of heating luminous and chemically active rays in spectrum.
2. Fraunhofer's Map of Solar Spectrim.
3. The Spectroscope.

万. Spectra of the Sun, Beta Cygni and Hydrogen.
6. Spectra of Potassium, Rubidium, Sodium, and Lithıum.
7. Spectra of Carbon, Comet II. (1868), Spark and Nebulac.

8 Spectra of Aldebaran and Alpha Orionis.
9. Kirchoff's Map of (from 194 to 220) and Rutherford's Map of same.
10. Spectra of chlorophyll, chlorite of Uranium, Magenta and Blood.
11. Gassiot's Spectroscope, made by Browning.
12. Huggins' Map of Metallic lines, from 320 to 2790 .
13. Huggins' Map of Metallic lines, from 2790 to 5250 .
14. Huggins' Star Spectroscope.
15. Map of Solar Spectrum, 38 to 163. 16. " " "6 " 162 " 287.
17. " " " $6 \quad 283$ " 406.
18. Coincidence of Spectrum of iron, with 65 of the Fraunhofer lines.
19. Spectra of the Sun, Chromosphere, Prominences and Corona.
20. The Atmospheric Lines.

## ASTRONOMY.- Set No. i. <br> Movable Astronomical Diagrams, by rack-work motion.

1. The Solar System, showing the revolution of all the Planets with their Satellites, round the Sun.
2. The Earth's annual motion round the Sun, showing the Parallelisms of its axis, thus producing the seasons.
3. The cause of Spring and Neap Tides, and the Moon's phases during ats revolintiou.
4. The apparent Direct and Retrograde Motions of Ventis or Mercury, and its stationary appearance.
5. Proving the rodundity of the Earth by a ship sailing round
the Globe, and a line drawn from the Eye of an Observer.
6. The Eccentric Revolution of a Comet round the Sun, and the appearance of its tail at different points of its orbit.
7. The Diurnal motion of the Earth, showing rising and setting of the Sun, and the cause of Day and Night.
8. The Annual motion of the Earth round the Sun, with the monthly lunations of the Moon.
9. The various Eclipses of the Sun, with the Transit of Venus.
10. The various Eclipses of the Moon.

Price in box, with Lantern, $\$ 40.00$.

## Set No. 2.

A set of 38 finely colored Astronomical Diagrams, in box, with Lecture, $\$ 20.00$.

## Set No. 3.

15 Photograph Slides from Asa Smith's Atlas. 50 cents cach.
Set Nc. 4.
35 Photograph Slides from Steel Engravings published by Harvard University. 乞0 cents each.

Set of 20 Illustrations of Anatomy and Physiology. Price, $\$ 30.00$. See page 58, Clase xxxvi.
Set of 45 Natural History Slides. Price, $\$ 1.50$ each. See page 57, Class xxxv.
Set of 20 colored Slides on Microscopic Anatomy. Price, $\$ 1.50$ each.

1. Tesselated \& Ciliated Epithelial Cells.
2. Human Blood Discs, and Blood Discs of Frog.
3. Longitudinal and Transverse Sections of Bone, Lacunæ and Canaliculi, highly magnified.
4. Muscular Fibres, Fasciculus and Sarcolemma.
5. Vertical and Horizontal Section of Stomach Follices and Tubes.
6. (A) Capillary Circulation of Frog's Foot; (B) Capillaries of Air Cells of Human Lungs; (C) ditto of Villi of the Jejunum.
7. Origin Hepatic Veins and Bile Ducts on the Liver Lobules.
8. A human Malpighian Corpuscle and Transverse Section of Supra-renal Capsule.
9. Nerve Tubes, Cells, and Ganglia.
10. Tansverse Section of Human Spinal Cord, close to the third and fourth Cervical Nerves.
11 Pus; (A) from abcess; (B) Mncus Corpuscles from Schneideiran membrane; (C) ditto, speckled with pigment granules from Larynx.
11. Urinary Deposits; (A) Uric Acid; (B) Oxalate of Lime; (C) Triple Phosphate.
12. Fatty Degeneration of the Liver.
13. Tubercle; (A) in Air Cells of Lungs; (B) Miliary.
14. Schirrous growth from Mammary Gland.
15. Tænia Solium.
16. Oxyuris Solium.
17. Trichina Spiralis, mature and in cyst.
18. Liver Fluke, Distoma hepaticum.
19. Thrush Fungus, Oidium albicans.

## GEOLOGICAL ILLUSTRATIONS.

Colored. \$1.50 each.

1. The Geological Record.
2. Ideal Section of the Earth's Crust.
3. Thickness of
4. Section of a Volcano in action.
5. Fingal's Cave.
6. Grotto of Autiparos.
7. Glacier - Mt. Rose.
8. Glacier Tables.
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10. Corals.
11. Rain Drop Marks.
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13. Ammonites.
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32. Lava Arch, Iceland.
33. Section of the Cavern of Gailenreuth, (Hartz).
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60. Piper and Pair of Nut

Crackers, Lantsio.
61. Babes in the Wood, Chamt
62. The Siesta,

Wintcrhulte:
63. Family Cares,

Barmes
64. Lovers on the Lake, Rambery
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73. Forgotten,
74. Remembered,
75. The Life-boat,

Noble
76. Tolling the Bell,
77. The Rose of Destiny,

Brook
O'Neil Pott
78. Puins of Persapolis,
79. Cireee and Companions of Ulysses, Riviere
80. Lueretia and her Maidens, Coomans
81. The Dance of the Veil, Richteir 82. Toilet of a Favorite,
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9c. No Cross, No Crown - The Dream.
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21a. Birth of Venus - The Sea.
22b. Birth of Venus - Venus and Cupids.
23a. Flight of Aurora - Rosy clouds.
241. Flight of Aurora - Aurora and train.

25a. Wood Nymph's Bath — Lake in Forest.
26b. Wood Nymph's Bath - The Wood Nymph.
27a. Shipwrecked Mariner's Hope The Survivors.
38b. Shipwrecked Mariner's Hope The Ship.
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30b. Dream of Immortality - The Vision.
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32b. Bachelor's Reverie - The Country Girl.
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34b. Little Foxes - The Foxes' Heads
B5a. Good Morning - The Closed Shutters.
36b. Good Morning - The Salutation.
37a. The Sculptor's Dream - The Sculptor's Studio.
38b. The Sculptor's Dream - Apollo.
39c. The Sculptor's Dream - Flora.
40d. The Sculptor's Dream - Cymbai Player.
41e. The Sculptor's Dream - Mercury.
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43b. Way of Salvation - Knocking at the Door.
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Sacarmento City.
Stockton.

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Metropolitan Hotel.
Windsor Hotel.
Steven's Apartment Hotel.
Arm of Liberty.
View of Wall Street. " Broad Street.
South Ferry and Elevated R. R. The Battery.
Castle Garden.
Ferryboat in East River. Steamer Bristol, North River. Interior of Steamer Bristol. Instantaneous View on River. Oeean Steamer, N. Y. Bay. Five Points FIouse of Industry. View of Chatham Square.
Union Square and 4 th Avenuc. Obelisk, Central Park.
Susp. Bridge from N. Y.
" " " Broadway.
N. Y. Harbor " Brooklyn.

Bridge.

## Niagara.

General View.
Horse Shoe Falls from C. S.
American Falls from Goat I.

Horse Shoe Falls.
Sunset at Niagara.
View from Prospeet Niagara. Profile Roek.
Horse Shoe Falls from below. Ameriean Falls from Canada. Horse Shoe Falls from Canada. Falls above Canada Side. View of Suspension Bridge. Tower of the Bridge.
Ice Bridge.
Ice Bridge by Moonlight.
Ice Mounds in Horse Shoc Falls. Horse Shoe Falls in Winter. American Falls in Winter. Cave of the Winds in Winter. Frost Work on Luna Island. American Falls from Luna I. The Old Terrapin Tower.
Terrapin Tower in Winter. Bridge to 3 Sisters in Winter. Rapids above American Falls. Ice Mound below
American Falls from below. Cave of the Winds from below. Rapids below the Falls.
Sister Island from Goat I.
R. R. Suspension Bridge.

Beautifal Snow.
Interior of Susp. Bridge.

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Venus rising trom the Se:t, Public Garden.
boston Harbor.
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Lambessa,
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## Greece.

General view of the Acropohs.
'lyibune of Demosthenes
'The Parthenon.
'Iemple of Minerva.
Jupiter.
Fortune.
Victory.
Cariatides.
Theseus.
locks of the Areopagus
lantern of Diogenes.
Ruins of the three Temples.
Ruins of the Theatre of Herod Atticus.

## Rome.

Entry into the Forum by Via Sacra.
Interior Forum, Temple of Saturn and Vespasian.
General view of Colisenm.
Interior view of Coliseum.
Areh of Titus.
Bas Reliefs on Arch of Titus.
Arch of Constanine.
Arch of Septimus Severus.
Column ot Trajin.
The Appian Way.
Pyramid of Cains Sextus.
Subterranean rialleries and Locul. of the Catacomb of St. Agnes.
Painting of the Tablinum of Livia.
View of the Tiber, in front of the Colaca Maxima.
Temple of Antoninus.
The Forum.
Aveutine Mount and St. Sabina.
View from the Palatine.
Gate of St. Pau!, or Ostiensis.
The Fountain of the Trevi.

Portngal. The Market of the Piazzo Navona.
Piazza Nasona and the Chureh ot St. Agnes.
Women of the Roman Campagna.
'The Beatrice di Cenci, by Guido Reni.
Family of Beggars.
Caldarium of the Baths of Caracalla.
View from the Portico of the Academy.
Interior of St. Pauls.
St. Peters.
Interior of St. Peters.
Interior of St. Clements.
Mausoleum of Julius II.
The Great Steps of Santa Maria.

## London.

Map of London.
Panorama of the City.
Trafalgar Square.
Buckingham Palace.
Hampton Court Palace.
Kensington Palace
Somerset Honse.
Lambeth Palace.
Lord Mayor's Mansion House. St. James Palace.
Greenwich Hospital.
Entrance to liegent's Park.
The Serpentine.
Albert ILall.
Cremorne Gardens.
Alhambra.
Newgate Prison.
Thames Embankment.
London Docks.
Pall Mall on Drawing-Room Day.
St. James Street, DrawingRoom Day.
Duke of York's Statue.
Statue of Charles I., Charing Cross.
The Peabody Statue.
Statue of James II., Whitehall. Lord Clyde's Statue.
Duke of Wel:ington Statue. Kew Gardens.
Kensington Gardens.
Zoological Gardens.
Hyde Park, Narble Arch.
Park Lane.
Hall of irts and Eciences.
British Museum.
Frogmore Fonse.
Strawberry Hill, Walpole's Re. sidence.
The Charter Honse.
Bunyan's Tomb, Bunbill Field Cemetery.
Windsor Castle, Front. Round Tower St Geo's Chap.
State Entrance Statuary.
House of Parliament, Clock Tower.
House of Parliament, Full View.
Statue of Coeur de Lion.
House of Parliament, the Clois-

Interior of Cloisters' House of Parliament.
Peer's Entrance Honse ot Lords,
Interior of the Honse of Peers.
The Throne, llouse of Peers
Interior of the llouse of Commons.
Temple Bar.
Horse Guards.
The Treasury.
Custom House.
New foreign Office.
Bank of England.
Royal Exchange.
l'he National Gallery.
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Landseer's Lion, 'rafalgar Sq. London Bridge.
sonthwark Bridge.
Blackfiriars' Bridge.
Waterloo
Westminster "
Lambeth
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Charing Cross Railway Station.
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Urystal Palace. Sydenham.
Smithtield Market.
Tower of London, Gen. View.
". $\quad . \quad$ Middle T" Fr
" ". Byward
Traitors
Bloody
White
Bell
Jewel "
salt
Beauchamp
Tower.
Tower of Sondon, Deverenx Tower,
Tower ot London, Bowyer 'l'ower
'Tower of London, Traitors' Gate
Towe of London, St. Jolm. Chapel.
Tower of Iondon, St. Peter's Chureh.
Tower of London, the Governor's House.
Tower of London, Horse Ar mory.
Tower of London, Queen Elizabeth's Armory.
Tower of Loadon, Effigy of Queen Elizabeth.
Tower of London, Effigy of Henry VIll.
Tower of London, Crown Jewels.
Albert Memorial - Monument,
Europe.
Asia.
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Commerce.

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Lomelore. - Continued.

- Abert Memorial, Entrineering.
" Agricultural.
Gug Cross Hotel
Eleanor ('ross.
Westminster lalace Hotel.
Langhan Hotel.
Moriey": Hotel, Trafalgar Sq.
$G$ Grat Westem Itotel.
Et. Paul's Monument to Nelson. Harrow (hurein.
Spurgeon's Tabernacle.
Dalchet Chureh.
St. Paul's Cathedral.
" Interior, West Front.
". Interior, the Nave.
" The Transept
. The Choir.
Momment to Cornwallis.
Westminster Abbey
Exterior North Side.
from Dean's Yard.
Went Towers.
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Henry V'II.'s Chapel. Jerusalem Chamb'rs. Flying Lattresses, of Chapter House.
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lonterior, Nave,
" Choir from the West.
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Reredos, Perspective.
Reredos, Front View.
Vorth Aisle.
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The Pulpit.
Chapel of St. Kiammus. Edward the Contessor.
The Shrine of Edward the Confessor.
The Cloisters, East and West. North and South
Dicken's Grave, loets Corner.
Pocts Corner, Shakespeare's Monument.
Pocts Corner, Campbell, Southey and Thomson.
Ports Cormer, Milton, Ben Johuson and Speneer.
Lord I'amerston's Monument.
Henry V!ĺs Chapel and Stalls
IIenry VII.'s Tomb, End View.
Tomb of Quen Elizabeth.
" Mary Eucen of cots.
Monument to sir Robert Pecl.
"" Francis Vere. of James I.
Tomb of Herry III
Chapel ot'st. Wohn.
Crusader s Tombs.
Tomb of Kiner Fidward III.
Poets' Corner.
Monument ol' James Watt.
Fohn Wesley's Monument.
Dr. W:att's Monmment.
Fomb of Dr. Livingstone.
The Coronation Cbalr.

The Nightingale Tomb. Wilberforce Monument.
Tomb of Major Andre.
". Charles James Fox.
". Admiral Holmes.
" Sir Eyre Coote.

* Earl Cbatham.
" Boyne, Blair and Manners.


## Paris.

Map of Paris.
Panorama of Paris, North.

$$
\begin{array}{lll}
" & " & \text { South. } \\
\text { " } & \text { " } & \text { East. }
\end{array}
$$

Eight Bridges.
Triumphal $A$ reb, St. Dennis. $\begin{array}{ll}\text { " } & \text { St. Martin. } \\ \text { " } & \text { du Carrousel. }\end{array}$
" de l'Etoile.
Sculpture on Arch de l'Etoile -
The Deparature.
Sculpture on Arch de l'Etoile -
Glery.
Sculptive on Arch de l'Etoile -
War.
Sculpture on Arch de l'Etoile Peace.
Cathedral, Notre Dame.
Church of Madelaine.
Interior
Pantheon.
St. Germaine l'Auxerrois.
St. Etienne du Mont.
St. Augustine.
Trinity.
St. Surplice.
St. Gervaise.
Palace, Tuileries.
" " Cardens.
" Louvre.
Interior.
© Luxenbourg.
"

- Chapel
*R Royal.
، Sloude.
of Justice.
Column in the Place Vendome.
" " " de la Bas. tile.
Grand Hotel Perspective.
Dining Saloon.
Llotel des Invalides.
Napolean I.
Hotel de Ville.
The Louvre, Antique Statuary. Lall of Venus de Milo.
" Hall of the Em. perors.
" Hall of Diana.
. Hall of the Gladi. ator.
Jall of Egypt.
Gallery of Apollo.
Academy of Fine Arts.
Imperial Library.
Boulevard du Sceastopol. du Temple. de Srasbourg. Montmartre. des Itaiteus.

Port St. Denis.
" St. Martin.
Rue de la Jaix.
" Royale.
" Rivoli.
Avenue du Jardin des Thillerics
" des Champ-Elysecs.
de Victoria.
Pont Neuf.
" " et Tours de St. Sur.
plice.

* des Arts et Tacord du Louvre.
" et Palais de Justicc.
d'Arcole.
de l'Institute.
d'Lena.
" Royale.
" de I'Arehevechi.
* de la Cencorde.
" de St. Pierre.
The Mint.
Tower of St. Jaeques.
Statue of Napoleon III.
of Marshall Ney.
The Obelisk of Lmxor:
Column Vendome.
Column of Iuly.
Bois de Boulogne - Cascade do
Longehamps.
Bois de Boulogne - Generai
view of the Jake.
Bois de Bonlogne - Entritnce
to the Grotto.
Bois de Boulogne - Aquarium.
Opera House - Fracade.
$\begin{array}{lll}\text { " } & \text { Stairease. } \\ \text { " } & \text { Vestibulc. }\end{array}$


## Versailles.

Panorama.
Gencral view of the Palace.
Entrance to the
Facade of the
Bed Chamber of Lonis XIV.
Bed of
Interior of the Chapel.
The 3 Graces.
Statue Joanne d'Are.
" Duke of Orleans.
Gallery of Sculptures - south.
Basin of Neptune.
Group in Basin of Nepturle.
Billiard Halt of Louis XIV.
Bed ot Josephine.
Bed of Victoria.

## India.

Map of Europe, showing routes Serapis.
Gibraltar.
Malta.
Castellamara, Brindisi.
Acropolis, Athens.
Port Said.
El Kantara.
Sphinx and Great Pyramld.
Aden.
Somala Boys diving.
Bombay - the Mazagon IRo:d.
Bombay - Fort and Esplanado
Suake Charmers.

## FOREIGN PHOTOGRAPHIC VIEWS. - Continued.

India. - Contimued.
Caves of Elephanta.
Poonah.
Parbutta, Poonah.
Tower of Silence.
Baroda.
Baroda - State Elephants drawn up at the Arena.
Baroda-Elephant Fight.
Baroda-- Hunting with Cheetahs.
Colombo.
Kandy - Old Palace of Sacted Tooth.
Devils' Dance at the Private Perehara.
Elepbant Hunting, Ceylon.
Madras.
Tank and Temple, Conjeveram.
Temple at Bailoor.
Great Temple at Bobeneswar.
Juggernaut.
Calcutia-Government House.
Portrait of Nawab, or Mahommedan Prince.
Reception of Native Princes.
Nautch Girl.
Benares - Ghat.
Benares - Group of Priests, taken on steps of Temple.
Portrait of Hindoo Rajah.
Cawnpore - Ghat.
Cawnpore - Memorial Well.
Bithoor - Nana Sahib's Home.
Lucknow - Bird's.eye View.
The Imambara.
Taboot.
Palace of Akbar.
Taj Mahal.
Chandi Chuck, Prineipal Street in Delhi.
Dethi - Gate of the Fort
Jumma Musjeed.
Kootub Minar.
Unritzer.
Marble Pavilion, Fort Guin.
ores, Lahore.
Runjeet Sing's Tomb.

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Alexandria - We land.
Alexandria - Pompey's Pillar. "Cleopatra's Needle
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Lattice Windows.
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" Tomb of the Caliphs.
Mosque of Mobammed Ali.
Cairo - Fountain in the Mosque " Heliopolis.
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Cairo - Vjew of the Pyramid and Sphinx.
Cairo - Section of Pyramid.
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" A Cor interior.
"، A Cargo Boat.
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Beni Hiassan
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Karnac, Central Ave.
Karnac, Hall of Columns.
Thebes - South Wall of Court of Sheshonk.
Thebes - Cartouche of Reho. boam.
Esneh.
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Assouan - Isle of Elpbantine.
Philæ - Pharaoh's Bed.
" Great Propylon and Outer Court.
Philæ - Colonnade of Temple of Isis.
Philæ-Vlew of footof Cataract
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Nubia-Roek Temple at Kalabsee.
Nubia - Ipsamboul, Small Temple.
Nubia - Ipsamboul, Great Temple.

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View from Fortifications ... Ireland Island.
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Hanilton from Harbor.
Hamilton Hotel, Hamilton.
Navy Yard, Ireland Island. Street View, Hamilton.
Papaw and Banana Grove, Hamilton.
Trinity Church, Hamilton. View from Fort Hamilton.
Interior Floating Dock, Ireland Island.
Coral Caves, North Shore.
" Cliffs, Hungry Bay.
Governoı's Residence, Mount Langton.
Governor's Garden, Mt. Lang. ton.
Croquet Grounds, Mt. Langton. Cocoanut Tree.
Orange Tree.
Pitts Bay.
View from Lighthouse, fiibb's

Onion Garden.
Heron Bay.
Fairyland.
View from Honeymoun Cotage, Fairylaud.
Home of the Bermudians.
Fisherman's Home.

## Mexico.

City of Mexico.
"Market Seenc.
" Cathedral.
" Palace.
" Grand Plaza.
" Floating Gardens
‘‘ Milk Carrier.
"، U.S. Consulate.
" Inquisiton of San Domingo.
City of Mexico, Termination of the Aqueduct
City of Mexico, Fountain of Sall Domingo.
City of Mexico, First Protestant Chureh:
City of Mexico, A Missionary's Home.
City of Mexico, Interior of a Convent.
Interior of Mexican Honse.
Finnily Groupe.
Mexiean Women Grinding Corn.
Aztec Idols and Gods.
" Sacrificial Stone
" Calender Stone.
Tree of Noche Christe.
Mexien Flower Girl.
" Beggar.
View in Tacuba.
Indian Village.
Chuich built by Cortez.
Chapultepee.
" Aqueduct.
" Tree of Montezuma
View in Park.
Baths of Mantezuma.
Pulque Plant.
View of Guadaloupe.
Making Adobe Bricks.
Mexican Gentleman's Home.
Popocatapel, $1788 . t \mathrm{ft}$. high.
Woman in White, 15705 ft . high.
View in Ameca Mecea.
View at Pinyon.
View at Puebla.
West Wing of the Inquisition, Puebla.
Cholula Pyramid.
". Yiewe from Pyramid.
" Old Chureh.
Cordova Orange Grores.
Orizabu.
Vera Cruz, City Gate.
" Plaza.
" The Broadway of Atuyac.
Mettac.
" R.R.View.

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