

# THE HISTORY OF PROJECTION 2

HERMANN HECHT

For about 150 years little had changed since the first magic lantern pictures were painted; a narrative could only be told in a series of related still pictures, painted by hand and the quality depended very much on the skill of the slide painter. The subjects, too, remained very much the same – simple folk stories, sometimes derived from the classic tales like *Robinson Crusoe* and *Don Quixote*, or ghostly apparitions which remained the stock in trade of the slide-painters. For some years, in this country and in Germany, some individuals had seen the educational possibilities of using the magic lantern and complained bitterly about the wretched quality and content of the slides.

There was no reason why the quality of the illustration, in spite of the difficulties of painting in miniature, could not have been improved, but this had to wait until it became economically viable, that is to say, until there were enough owners of better lanterns with a good light-source, who could afford to pay for the slides. Before this happened, a mechanical means had to be found to reproduce good lantern slides fairly cheaply without having to rely on relatively unskilled illustrators.

The man who invented an entirely different way of producing slides was Philip Carpenter: he had the brilliant idea of engraving the outlines of illustrations on copper-plates and then transferring these engravings on to glass. They were then fired in a kiln, just like a pottery, and coloured – or rather ‘filled-in’ by hand. These so-called *copper-plate sliders* were the first slides where a manufacturing process was used and the first slides that were supplied with a reading or lecture, and, what is more important, the first slides that represented the objects accurately.

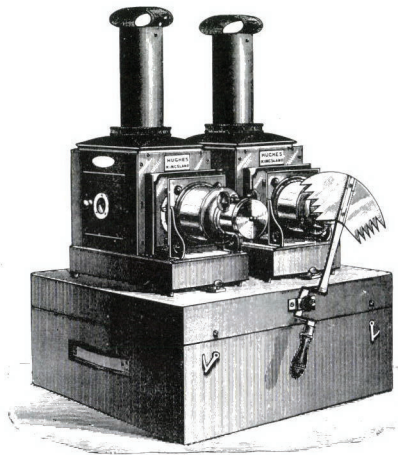
At the beginning of the nineteenth century, moving slides also began to come into use, although they had been invented much earlier, some time between 1710 and 1720, in Holland. Here we have to distinguish between slides that imitate natural movement, like a windmill rotating or a ship sailing by and slides where an attempt was made to show a continuous movement.

Most of these moving slides were made to be exhibited by the *pater familias* in the home as a rare treat during the winter months and even the phantasmagoria, this once frightening spectacle moved into the comfortable Victorian parlour. It was often a social occasion, friends were invited, refreshment was provided and everybody entered into the spirit of the entertainment. The mechanics of such a show, specially when you had to prepare your own limelight, were often difficult and it wasn't very long before the profession of lantern lecturer became both respectable and profitable.

These lecturers styled themselves ‘Professors of Natural Philosophy’ and this illustration<sup>1</sup> from the *Illustrated London News* of December 1858 shows such a professor giving an exhibition at Mrs Twittenham's Establishment for Young Ladies at Camden Town. Then as now, as we can see, it was the excuse for a quiet bit of snogging in the back row.

Gradually, as more and more people could afford decent lanterns, and a more sophisticated home-audience, spoiled by the professional lecturers, demanded a better lantern show, the quality of the slides also improved. Painting was now done by highly-paid professional slide painters who often painted miniature works of art where each picture was framed separately in its own mahogany frame.

The same quality of slide also survived in the many excellent dissolving view sets. Dissolving views were invented by Henry Langdon Childe in 1837, who started his career as a slide-



painter. Childe used two lanterns arranged like this, positioned side by side, both focused on the same place on the screen. By turning the handle, the comb-shutter moved away from one lens and covered up the other, so that the pictures could be faded in and out. This kind of double lantern was improved in the late 1860s by putting one lantern on top of another which made it easier for one man to work the lantern and to replace the slides. It also allowed superimposition effects to be produced where a background picture could be projected with one lantern and an effect faded in with the second.

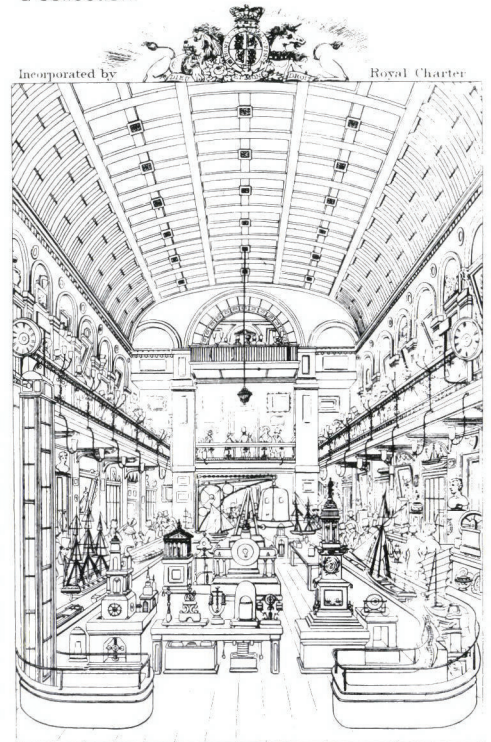
Out of this functional instrument grew this impressive monster of a lantern (see back page). It has three objectives, fitted to one upright body. Even at that time such a lantern could cost as much as 250 guineas. Only professional lantern showmen could hope to operate such a complex instrument (with the help of an assistant) and produce the beautiful fading and superimposition effects which a triple lantern made possible.

- Dissolving one picture into another. Pictures identical but painted to show different effects: summer/winter/day/night.
- Superimposition of an effect (fire burning – eruption/angel).
- Object moving across stationery scene (swan) or snow/rain effect.
- Combination of any of these.

The first photographic slides were produced in 1849 and invented by two brothers who had emigrated from Germany to America called

Langenheim who gave them the pompous name of *Hyalotypes*. They were first shown in this country at the Crystal Palace in 1851, but did not immediately catch on. At first photographs were simply used by slide painters to give them an accurate background on which to paint and it was not until the 1860s that photographic slides as such became acceptable, but even then they had to be tinted or coloured. It was not until the late 1870s that slide-making became easy for amateurs with the introduction of the gelatine dry plate.

Everything that caught the fancy of the photographers was made into lantern slides. Whatever man or nature created was for ever embalmed between two pieces of glass. We still suffer from this tradition by having to watch endless, often badly produced 35mm transparencies, which our ‘friends’ insist on showing us. In the old days manufacturers stocked hundreds of thousands of slides which they either sold or hired out for an evening. A large number of these plain and badly coloured slides have survived and you can still get them in junk-shops and there are some hardened collectors who buy them, just to have a collection.



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*Royal Polytechnic Institution*  
 309, REGENT STREET.

The old phantasmagoria and the dissolving views had already set a precedent for many people to see magic lantern shows, but it was not until the 1840s, with the opening of the Royal Polytechnic Institution in Regent Street, that going out to see a magic lantern show became a regular habit, very much as cinema going did many decades later. The Polytechnic was the first place of entertainment which specialised in magic lantern exhibitions, and thousands of Londoners made a regular pilgrimage there to be entertained. The admission was one shilling. Another bought a chop, potatoes and bread. Sixpence bought a pint of Guinness and 2/6d a quart of ‘good, sound claret’!

This is the auditorium of the Polytechnic and the view back-stage behind the huge screen where

the complex sound-effects were produced.<sup>2</sup> The entertainment, much like today, consisted of a main feature and a supporting programme. Stories from Dickens were the most popular, pantomime subjects like *Mother Goose*, *Harlequin* and *Bluebeard* were shown at Christmas time. *Alice's Adventures in Wonderland*, just like today, was followed by – you guessed it – *More Adventures in Wonderland*. The supporting programme consisted of dissolving views of topographical views or simple science subjects. It is perhaps difficult to realise now that before the invention of moving pictures, highly sophisticated magic lantern shows were as popular as the cinema was to become much later. Moving and superimposition effects produced with up to nine different lanterns and with

highly complex mechanical slides in glorious colour accompanied by carefully synchronised sound effects, were as much part of London's entertainment as the cinema.

Not only at the Polytechnic, but also at the Crystal Palace in Sydenham, at the Colloiseum (which was then in Regents Park), at the Albert Hall, even at the Zoological Gardens, magic lantern shows were a popular entertainment for decades.

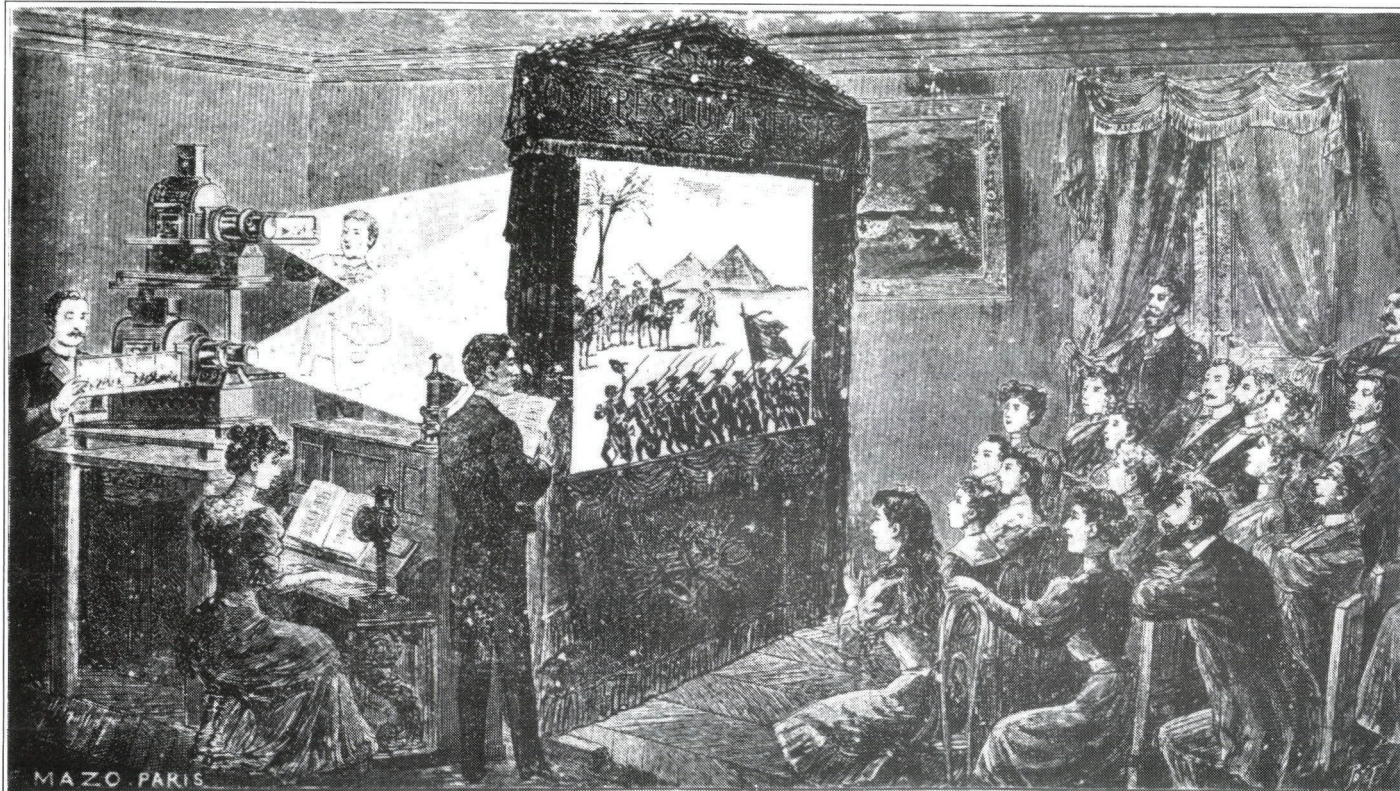
Professional showmen like the brothers Skladanowsky, who performed under their assumed name of Hamilton Brothers, travelled all over Europe mixing their sophisticated slide-shows with a demonstration of the latest scientific discoveries.

In Germany, the Urania theatres made people familiar with the same mixture – the wonders of nature – consisting of dissolving views and showing scientific experiments.

Even the smaller demonstrations in the home or in small halls increased in sophistication, usually produced by a troupe of travelling showmen and actors: somebody to give a recitation or sing a ballad, somebody to play the piano and a couple of people to work the lanterns and to back-project the pictures on to a screen which spanned a transportable fancy proscenium.

#### Notes

1. See *MLJ* vol 5, no 2, p10.
2. See *MLJ* vol 4, p50.



## LIMELIGHT IN A MAGIC LANTERN, 1825

M. LINDSAY LAMBERT

The earliest reference to date of the use of limelight as a magic lantern illuminant is found in Goring and Pritchard's *Micrographia*, published in 1837, as follows:

In the year 1824, Dr Birkbeck delivered two lectures on optical instruments at the London Mechanics' Institution; in one of which he took occasion to delineate on a screen, by means of a large magic lantern, representations of magnified objects intensely illuminated by the light emitted during the combustion of lime by hydrogen and oxygen gases.<sup>1</sup>

It is also noted that a Mr Cooper assisted Dr Birkbeck, and that about the same time, Mr Woodward instituted some experiments with the phantasmagoria, where the light was obtained in the same way.<sup>2</sup>

No documentation is offered to substantiate these statements, and the date of 1824 is certainly questionable: Lieutenant Thomas Drummond, who is credited with devising the

first practical application for limelight as a means of making distant survey stations visible, only completed his first successful trials on 9th and 10th November 1825.<sup>3</sup> He communicated the particulars to the Royal Society on 14th April 1826.<sup>4</sup> As the only certain fact behind the *Micrographia* account is that limelight was indeed used in a magic lantern some time prior to the printing of the book, the author of this article resolved to determine the truth of the matter.

Correspondence with the Librarian of the Royal Society confirmed that Dr George Birkbeck (1776–1841) lectured at the London Mechanics' Institution and, in fact, founded it. (It subsequently became Birkbeck College, University of London.)<sup>5</sup> He also suggested that the biography *George Birkbeck. A Pioneer of Adult Education* might prove useful.<sup>6</sup> More intriguing information was provided on Mr Charles Woodward (1789 (or 1790) – 1877): He was elected a

Fellow of the Society on 29th April 1841, and his certificate of election states that he had **invented several pieces of philosophical apparatus especially the oxyhydrogen polariscope.**<sup>7</sup> This, at least established that he used limelight.

According to Dr Birkbeck's biography, many of his lectures were printed in *The London Mechanics' Register*.<sup>8</sup> An examination of the periodical yielded an account of his discourse on telescopes and microscopes of 16th November 1825, which included two novel experiments. The first of these was the production of a spectrum by means of a prism, using limelight in place of the sun's rays, and Dr Birkbeck describes the apparatus as having been **made known to me . . . by our excellent Chemical Lecturer, Mr Cooper, and brought before you by it's ingenious inventor, Mr Woodward.**<sup>9</sup> The description is as follows:

The Theatre was now completely darkened, to give effect to the beautiful experiment about to be