Bregtje Lameris

Pathécolor:
"Perfect in their rendition
of the colours of nature"

I know of nothing more artistic than
the colouring of Pathé Frères, it is
almost as if the pictures it decorates
are a true copy of nature, such care do
they take to ensure perfection.[1]

▢ This citation is part of an advertisement in
which Pathé Frères sings the praises of the
motion picture stencil colour system it had
developed. It highlights two particular
qualities. Firstly, the colours are artistic and
decorative; secondly, the colours are a reliable
copy of nature.

It was not just a case of Pathé singing
their own praises. Others viewed the Pathé
Frères stencil colours as being special. Its
reputation was based, amongst other things,
on the beauty of such colours. A Dutch
newspaper reported:

It is again thanks to the work of the
Pathé firm that, as to be expected, one
is entertained royally. Again it is a
picture with beautiful views of
Jerusalem, Bethlehem, Egypt and
finely coloured.[2]

Although much can be said about the beauty

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and attraction of such colours,[3] this article will
focus on that second quality of the pictures: to
what extent they are, as Pathé hoped, a "true
copy of nature". I will investigate whether
Pathé Frères did indeed take exceptional care
to ensure this so-called perfection, and
describe the perfecting of the colouring and
stencilling techniques, and the way in which
the colours were chosen and combined.
Finally, we shall see how Pathé advertised the
colour system, and their reaction to the
coming of Kinemacolor as a real competitor on
the colour film market.

Hand-colouring

The Cinematograph was a novelty which held
a considerable attraction for the public. It was
also introduced at a time when people had a
great interest in coloured images. Postcards,
catalogues, posters and book covers were all
offered in colour. This led to a certain spoiled
attitude, articulated by one New York
lithographer in 1894:

People in these days seem to have
gone picture-crazy. There never has
been such a demand as there is now.
They do not care so much for black-
and-white as they used to – they want
color.[4]

The new machine was able to bring movement
to photographs, but it offered these moving
images only in black and white. Not
surprisingly, a journalist commented on the
lack of colours (and sound) after seeing one of
the first motion picture shows in Montreal in
1896:

To make the illusion complete, only
the colours were missing, and the
phonograph reproducing the sounds.[5]

In order to offer coloured moving pictures,
businesses started to colour the images by
hand. This technique was already commonly

used for colouring lantern-slides. But since
film comprises a large number of small
frames, the work was time-consuming and
complicated, requiring a different technique.
The practice that developed was to divide the
work on one film among several workers. Each
worker was assigned one specific colour, for
which the chief colourist would determine its
shade and positioning.[6] One reason for such a
division of labour was a pragmatic one: it
made the colouring more consistent, so that it
became more believable. But there was also an
economic reason: the employees could work
faster this way. The company also made sure
that it engaged women who knew how to
draw.

However, hand-colouring did bring
disadvantages. There were complaints that the
colour did not always stay precisely within the
lines of objects. When the colour applied on
one frame overlapped the right hand edge of
an object, and in the next frame it overlapped
the left hand edge, on projection the image
became very unstable. Léopold Löbel says that
for this reason it became the practice that the
only images to be hand-coloured would be
those which showed figures

[T]hat were dressed clearly and that
played against a dark background.
This way, not only the tones of the
colour would be emphasized, but also
the slightest flooding of the colour
would become invisible because it
would be hidden by the black
background.[7]

This corresponds with what we see in some
dance films of that period. These are often
filmed against a dark background, so that the
figures attract our attention, and the fact that
the colours overlap the edges of figures
becomes less noticeable. Nevertheless, Löbel's
memory was selective, since there are many
examples of hand-colouring used on grey
figures against a grey, or even a white,
background. It is very noticeable in these that

the colours frequently overlap the edges, to rather disturbing effect. Another complaint was that the colour was not always applied evenly, despite the division of labour, causing differences in shading. In addition, despite the division of labour, hand-colouring remained a very time-consuming practice. The bigger companies that needed to produce a large number of coloured copies of one film were dissatisfied and sought a solution. One of these larger companies was Pathé Frères.

"Pochoir": stencil colour

The stencil method was already used in the postcard and wallpaper industries. In the film industry, stencils were made from positive prints of the subject to be coloured. For every colour, a different print was used. That is, if a film was to be coloured in blue, red and yellow, three prints were cut to form stencils: one for the blue, one for the red, and one for the yellow parts of the image. The areas of the image that were to be coloured blue, for example, would be cut out of the blue-stencil print. Subsequently, this cut-out print was placed on top of the final projection copy to be coloured, and the blue colouring applied by brush through the stencil. Therefore, only those parts of the image where the stencil was cut out would be coloured blue. The same procedure would be carried out for the application of the reds, and then the yellows.[8]

By 1906, Pathé Frères had a workshop with some 600 women making stencils and applying colours. Both operations were still done by hand, however, which was common practice in the film industry of the period. Jacques Marette, Ingénieur des Arts et Manufactures, says the following on this stencil method used at Pathé:

At this time, the process is not very original; it is the utilisation of stencils for the colouring of film, which was already known in other industries and was also used by Méliès and Gaumont.[9]

But it was at Pathé Frères that they started to improve the stencil system. Henri Fourel, head of the colouring studio, initiated the mechanisation of the process. A colouring machine was patented on 22 October 1906. The engineers of Pathé Frères continued improving the machine until 1908, when the company invented a system based on the principle of a pantograph. This system allowed for a very precise working method. The image to be cut was enlarged on a screen, providing the women who had to cut the parts with a far better view of it. Through the pantograph arrangement, the movements traced over sections of the enlarged image were reduced in magnitude. The end of the pantograph arm in which this reduced movement was induced was fitted with a needle, which cut the corresponding area out of the stencil film copy.

Naturally, such inventions cost a great amount of money and energy. The reason for expending this effort and investment was clear: a large company such as Pathé Frères needed to increase the speed of the application of colours. Charles Pathé stated during a shareholders' meeting in 1907:

Note that the colouring studio in Vincennes continues to progress and soon we will be able to put to work all of our ingenious and perfect colouring machines, allowing us to produce a considerable amount of footage every day.[10]

But what is of particular interest is that, from this moment on, Pathé Frères could boast a system which would ensure that virtually no colour at all would overlap the edges of the selected parts of the image. The movements being traced on a larger scale led to a reduction in errors, and consequent increase in accuracy. In 1910, an advertisement appeared for "Cinématographies en couleurs Pathé Frères" in which praise was made of all the wonderful improvements of the previous year:

It was in June 1909, if we remember correctly, that the first cinematograph films in Pathé Frères colours were released; at that moment the undeniable progress that had been made became visible and has been proven ever since. The flooding of the colours, that was so characteristic of the process used until then, was replaced by an absolute neatness that did not degrade the 'vues panoramiques' [panoramic views], that had been impossible to colour previously because of the speed with which the landscape would fly past your eyes.[11]

This advertisement makes it clear that the new process that functioned with a pantograph was considered both a technical and an aesthetic improvement, making it possible to colour even "difficult" panoramic views. These views had to be shown in black and white previously, because the movement within the image, from frame to frame, was too rapid for the colourist to follow. After 1907, the "vues panoramiques" as a category died away. But the panoramic shot itself was still used within genres such as "scènes de plein air" and the "scènes d'industrie". Examination of the volumes of Henri Bousquet's *Catalogue Pathé des Années 1896 à 1914* reveals that, until 1909, the firm coloured only films catalogued as "trucs", "féeries et contes" and "dramatiques".[12] Films within these genres were filmed inside a studio and with a static camera. From 1909, the company began colouring substantial numbers of "scènes d'arts et d'industrie" and "scènes de plein air". The new technique with the pantograph which allowed dynamic scenes to be coloured thus made it possible to offer a greater variety of coloured non-fiction material.

Reflet de la nature

The advertisement quoted above goes on to say that, with the new pantograph system, not only was it possible to colour a wider variety of non-fiction images, but also Pathé Frères marketed these films as being perfect in their reproduction of lifelike colours:

The Pathé Frères cinématograph films in colour are perfect in their rendition of the colours of nature. The foliage possesses all the tones of green; the skies are rendered with an amazing accuracy; the sunsets are aflame as in absolute reality.[13]

Pathé tried very hard to convince people of the perfect nature of their colour system. But how can we discover whether Pathé really intended to make these colours an absolute imitation of reality? Seeing Pathé stencil films today certainly does give the impression that they were very close to imitating the colours of nature.[14] But we can only deduce so much from viewing the films, for realism always depends to some extent on conventions. For each period, each moment in time, there exist specific norms and rules on what can and cannot be considered realistic and true-to-nature.

Hence we need to return to period sources that give descriptions of how to use colour in a realistic way. Unfortunately, there seem to be no manuals extant for the colouring of black and white films.[15] But the colouring of photographic images was not an invention of the film industry. The hand-colouring technique had been in use for many years to colour photographs, postcards and lantern-slides. I have found sources describing the rules practised in the colouring of lantern-slides: the handbooks meant for lantern-slide amateurs with explanations and rules on when and where to use which colours in order to produce a close imitation of nature. Such rules can be an indication of how colours were considered in this period, and they can perhaps help us to understand more about the "realism" question of the colours in the

stencilled Pathé films. Besides these handbooks for the lantern-slide amateur, I have also examined books on painting that give instructions on the efficient use of colour.[16] In the following section I give examples of specific films that illustrate the extent to which Pathé Frères followed the rules found in the handbooks.[17]

Film analysis

The first comparison between the slide-colouring handbooks and film concerns the colouring of water. J W Neville tells the amateur colourist:

> Everyone who has used his eyes will have seen that water has no colour of its own, and that all the colours seen in the water are reflected tints of other objects. If a smooth lake, having no shadows on its surface, appears in a picture, the colour would be derived from the sky reflected in it, and coloured accordingly; but if shadows appear on the surface then the colours of the shadows would be the same as the objects making them, but a little less intense. For instance, a reflection of a mountain in a lake would be very near to the colour of the mountain itself.[18]

This we find in Pathé coloured films. For example, in the fourth shot of *Ronneby, Ville de la Suède Méridionale* (1912: **Illustration 12**), the green of the trees is reflected in the water. In the third shot of *Au bords de la Creuse* (1914), we see a similar effect. A very beautiful example of the reflection of a coloured object in water can be seen in *Kuala Lumpur – Capitale des États Féderés Malais* (1912: **Illustration 13**). The seventh shot is a slow pan to the left, along the "lake of the garden of plants". At a certain moment, the camera shows a small bridge. The bridge and its mirroring in the blue water are both pink.

There is also the white colour water shows when it is streaming or shaken up. This we see in the films where the parts with streaming or foaming water – which appear white on the black and white image – are left uncoloured and thus white. An example is the second shot in *Au bords de la Creuse*, where a mother and son pose next to a white waterfall. Because the water falls and is thus moving, it is shown white.

There are other subjects where Pathé would leave parts of the stencilled image black and white. Gaudreault and Sirois-Trahan have written that they are surprised by coloured and stencilled films often being praised for their natural and realistic effect. "When one considers, for example, that almost the totality of the animated visions coloured by hand or stencil, combined, in the same image, coloured and black and white beaches, one cannot be but surprised".[19] One of the handbooks teaches us, however:

> It is not always necessary to color every part of the slide. Very frequently the slide in some portions presents the natural appearance of the object, and color would only detract from the general effect.[20]

Apparently, this is something that could be considered realistic then, but not now. It is very possible that the sky is "black and white", as we are used to seeing on a cloudy day (especially in The Netherlands). To my eyes at least, these uncoloured parts of the image, although uncoloured, still appear realistic.

Concerning the colouring of human skin, and leaving parts of the image black and white, different assumptions have been made. Tom Gunning states:

> [I]n stencil or hand-coloured films, as a rule certain areas are left uncoloured, especially faces, acknowledging colour's role in highlighting elements and the limits of

its realistic effects (flesh tones being too difficult to replicate).[21]

So one could say that colouring the skin would make the image less realistic, because the flesh tones were too difficult to match with nature. This would be another example were parts of the image were left black and white to keep the overall effect realistic. There are indeed films in which the skin is left uncoloured, which confirms this assumption.

The difficulty of colouring flesh is also proven by the following quotation on the colouring of lantern-slides:

> Flesh needs most careful treatment, and careful and repeated application of very dilute colors, until the desired effect is gained, is the best method.[22]

But this quotation also demonstrates that even if it was considered natural to leave parts of the image black and white, they did colour the skin for lantern-slides. In the extant films in Pathé colours there are examples with coloured skin. The first examples are films with people from exotic countries, where their skin has been stencilled brown. There are many films where this has been done, including *Culture de manioc et fabrication du tapioca* (1911), *India* (c.1913) and *En Indochine – Consecration d'un Bonze* (1910: **Illustration 14**).

But sometimes Pathé also stencilled the skin pink. In the popular science subjects ["scènes de vulgarisation scientifique"] *Insectes imitateurs* (1914) and *La Chenille de la carotte* (1911), we see insects sitting on a finger, as they are presented to the camera. The fingers are stencilled pink. Also the farmer and his wife who appear in *Les Ennemies du Poulailler, Les Renards* (1914: **Illustration 15**) have pink faces and hands.[23] The reason Pathé sometimes coloured skin, and sometimes left it black and white, probably has something to do with a subject touched on by Gunning, "acknowledging colour's role in

highlighting elements". I agree that colour was used to highlight parts of the image, and I am of the opinion that the skin was probably left black and white at the moments where it was considered unnecessary for it to be highlighted. Both colouring the skin and leaving it uncoloured were considered a realistic use of colour: which option was adopted simply depended on the importance of the skin part in the overall image.

We can conclude that Pathé did try to apply stencil colours in a realistic way, particularly when one considers the general rules for colouring slides in a natural way that existed at the beginning of the 20th century.[24]

Scientific connotations

Pathé Frères invested greatly in developing a high-quality system for the colouring of their films. They tried everything to enhance the productions, to improve the quality of the image, to make the colours as natural as possible, and to develop the ability to colour different sorts of images. But there would always be one unresolvable problem: the colours were not a photographic reproduction of the colours of nature. The colours were artificially added to the photographic image as the "head colourist" directed. Despite the achieved "perfection", Pathé Frères was not capable of reproducing colours with photographic techniques; ultimately, the artificial colours of the Pathé system could not be anything more than a hypothesis or a suggestion of the colours which the filmed object had in the world in which we live.[25]

This would not have been a problem if Eclipse had not presented a bichromatic, indexical colour system invented by George Albert Smith, later to be named Kinemacolor, in the Salle des Ingénieurs Civils, rue Blanche, Paris, on 8 July 1908.[26] Since France was the centre of stencilled films, such as those produced by Pathé Frères, something in the presentation was needed that would prove that this time people were watching a

reproduction of true, natural colours. Eclipse and Smith therefore showed an actuality, the Grand Prix motor race, just one day after the race had taken place at Dieppe.[27] Since colouring films with the stencil system was very time-consuming, a company using the stencil system, like Pathé Frères, would never have been able to show a colour film of an event that happened the day before.[28]

Charles Pathé immediately reacted to the presentation by writing a letter to all his shareholders that reflected his opinion of Kinemacolor. Eclipse were not appreciative of his opinion and sued Pathé Frères. For the Pathé shareholders' meeting of 8 July 1909, a short summary of the proceedings was given:

It is necessary to tell you about our legal proceedings with the company 'Eclipse', who have summoned us to an amount of 50.000 francs in damages and interests, with the publication of the judgement in 50 journals, claiming that M. Charles Pathé, in his function as director of our company, had send a letter in a sealed envelope in July 1908...which had damaged their prestige. In this letter our director expressed his opinion on the system that had been bought by the company Eclipse.[29]

Eclipse lost the lawsuit and had to pay damages. Nevertheless, this did not reassure the shareholders and Charles Pathé still had to convince them that Eclipse and Kinemacolor were not a threat to their company. During that same shareholders' meeting, for example, one of them asked for an explanation of "cinematography in colour and specifically the technique recommended by another business".[30] Whereupon "M. Charles Pathé explains that, in his opinion, the technique as it is at this moment, does not have any commercial value, because of different reasons which he gives details of".[31] To prove the superiority of Pathé's colours, he

organised a special screening for the shareholders that same evening.[32]

The concern shown by the shareholders was not without reason. In the days following the presentation in Paris, at least five newspapers wrote on the new colour system. Quotations from these articles were printed in the Ciné-Journal on 25 August 1908. These quotations were all very laudatory towards the new invention, and they often compared it unfavourably to the artificial colouring of films. The Echo de Paris announced:

It was not the artificial colouring that has been obtained until now by 'illumination' [in the sense of colouring by hand], it was real tints and real directly cinematographed colours.[33]

Kinemacolor was considered superior to stencil colour because now real tints and colours were shown; the natural colour film had been invented, something which most certainly impressed the public. This was exactly the image the two men who were putting the system on the market, G A Smith and the British producer Charles Urban (owner of Eclipse), tried to construct. To have the invention taken seriously, from the start they presented the new colouring system in a scientific environment, combined with a scientific explanatory discourse.[34]

In France, the system was promoted as it had been in Britain. The first screening was located in the Salle des Ingénieurs Civils in Paris, and those present consisted of not only the press, but also scientists to whom Smith gave a technical lecture.[35] Smith presented the films himself, which had the effect that most of the newspapers mentioned him as the one and only inventor, who had been working for years on a major innovation of huge importance which was to change the cinematographic industry entirely.[36] The press also recorded that Kinemacolor differentiated itself clearly from the stencilled film which Pathé Frères marketed.

In 1910, soon after regular public screenings of Kinemacolor began in France, Pathé Frères initiated an action to change this discourse into one that was more positive for them. On 21 May, Pathé Frères inserted an advertisement in the Ciné-Journal. In this advertisement, "Les Cinématographies en couleurs" were praised, and the readers were told that the colours Pathé Frères delivered were unequalled by any competitor ever. On 2 July 1910, a two-page advertisement followed, mentioning that, in the course of time all kinds of colouring systems had been invented, demonstrating all kinds of shortcomings:

Since the moment of the cinematograph's birth, its inventors have been preoccupied with inventing colour cinema. Countless techniques have been imagined, but they have all, without exception, shown numerous inconveniences.[37]

Kinemacolor, in particular, came in for criticism:

One of those [colour systems], on behalf of which a big fuss has been made, has the great inconvenience of double film length and doubled prices.[38]

These are certainly inconveniences from which Kinemacolor suffered.[39] The Ciné-Journal, subtitled "organe hebdomadaire de l'industrie cinématographique", was a means of communication for all active players in the cinematographic field. The target group of the advertisement therefore consisted of those who best knew about Kinemacolor and its disadvantages. The high price of films was an issue of particular concern to exhibitors. Having disposed of indexical colour systems – Kinemacolor in particular – as malfunctioning and of no use, the advertisement continued:

It is again the firm of Pathé Frères that has resolved the problem of colour cinematography, aiming for the needs of the exhibitors, and with a care towards art to which we would like to pay tribute...it is possible to see the undisputed progress that has been realised and since confirmed.[40]

Pathé Frères tried to convince the public that it alone had managed to capture the colours of nature on film. In the advertisement, it alleged that its system was technically more advanced than any natural colour system invented up to that time. It almost seems that the latest invention in the field of natural colour systems was being promoted, rather than merely an improved version of stencilling. By comparing itself with systems such as Kinemacolor and by declaring itself superior, Pathé Frères used the scientific connotation, which had been carefully built up by the competitor, for its own glory.

In 1911, the Eclipse-Kinemacolor combination collapsed, and the Kinemacolor rights were taken over by the French firm Raleigh et Robert. Despite the fact that the system appeared to be less than a great success, Pathé Frères considered Kinemacolor to be a major competitor in the field of colour films. In 1911, they even introduced a new name for their stencil system: Pathécolor.[41] This brand-new name resonates with the name "Kinemacolor", placing the Pathé system within the category of scientific inventions, and a known market.

On 2 December 1911, Raleigh et Robert organised their first official presentation of Kinemacolor films, in the new "American Biograph Theatre".[42] Pathé Frères continued their war against Kinemacolor: seven days later, another advertisement appeared in the Ciné-Journal, using their new name in capital letters:[43]

Do you want to present PATHÉCOLOR. This process that is

cinematography in colour. The latest progress in modern science, incomparable with any other system.[44]

The scientific connotation provoked by the name Pathécolor was embroidered into the rest of the advertisement: the Pathé Frères colours were to be the latest results of modern science, to which no other system could be compared. In the next part of the advertisement, these remarks were reinforced, revealing the reasons why Pathécolor was that much better than all the other processes and especially Kinemacolor: "PATHÉCOLOR is neither a process in black and white coloured by screens, nor a process in two colours, but a normal film-strip in natural colours";[45] "To present PATHÉCOLOR you don't need a special machine, with a higher speed which increases abrasion; it passes through all known projectors";[46] "PATHÉCOLOR does not force the exhibitor to show the same views for months, because four or five new scenes are released each week".[47] And last but not least, "PATHÉCOLOR is not extremely expensive, which would force the exhibitor to raise the prices of seats".[48] All the limitations of Kinemacolor are listed and stated not to be a problem with Pathécolor. The artificiality of an indexical system was stressed by accentuating the imperfect techniques used to produce the colours. Conversely, Pathécolor was presented as the latest progress in science, and as the only system that could really reproduce natural colours – a wonderful inversion.[49]

When Raleigh et Robert tried to extend their Kinemacolor operation they failed. Urban himself took over and opened a Kinemacolor theatre in Paris on 12 December 1913. Poor location, too small a theatre, high ticket prices, and a general waning of enthusiasm for Kinemacolor as its novelty wore off – all resulted in the early closure of the theatre on 30 May 1914.[50] This was the end of Kinemacolor in France. Pathé continued colouring its films until the beginning of the 1930s. This was the time, however, in which

indexical colours really broke through onto the market. Systems such as Technicolor surpassed Pathécolor's quality. During the 1920s, Pathé mostly coloured non-fiction films from the series Pathé-Revue, in particular those titles that showed exotic countries and fashion topics.[51] It would appear that they became increasingly more skilled at the colouring of films: the colours from the 1920s are beautifully executed with dazzling hues and exquisite detail.

Palimpsest

The artificially coloured images of the early years of cinema are still greatly appreciated in various non-commercial film archives, in commercial archives such as Pathé Télévision, and of course in the academic world. The interest of academics is something that began between ten and fifteen years ago. The reason has to be that it had not been common practice, for various reasons, to make colour preservations of these early coloured films. Following the FIAF Brighton Conference in 1978 – where early films were shown that had not been seen for decades – film history writing took a turn, as did archive practice. From that moment, archives changed their preservation priorities. Because new prints of films became available, old myths – which originated in the fact that people wrote about films which they could not view, or did not write about certain films because they could not see them – were dismissed. This happened to the myth that "old films" were black and white. Coloured nitrates were taken from the vaults and made available for new preservation prints on 35mm colour film stock. These films were shown in film museums, but also at film festivals such as Pordenone and Bologna. The Nederlands Filmmuseum has established a very good reputation for the preservation of coloured films. And today, many foreign archives still have colour preservations made at Haghefilm, the laboratory that developed colour preservation

techniques with the Nederlands Filmmuseum.

As the archives started to show preservations of these films in colour, so academic research in the subject was initiated. Of course there is still much work to be done on early colour. For example: questions on the use of Pathécolor in the 1920s, the differences in the use of (stencil) colour in fiction and non-fiction, and the differences in the appreciation of colour in the United States and in Europe would be interesting areas of research. And I believe that research on colour is to be encouraged since, as Cézanne says, "[t]here is only one way to render everything, translate everything; colour. Colour is biological, if I may say so. Colour is alive, it is the only thing that makes things [a]live".[52]

Notes

This essay was written under the auspices of the Onderzoekinstituut voor Geschiedenis en Cultuur (OGC; Research Institute History and Culture), Utrecht University. I wish to thank the Nederlands Filmmuseum for the stills, and Thierry Rolland at Pathé Télévision for permission to reproduce these.

[1] Translated from the French: "Je ne connais rien de plus artistique que ce coloris Pathé Frères, on croirait que les tableaux qu'il décore sont un calque fidèle de la nature, tant est poussé loin le souci de sa perfection". *Ciné-Journal* 4 March 1911: 15. The advertisement's text is signed "Oliver Twist".

[2] Translated from the Dutch: "Het is weder het werk van de firma Pathé, en dat weet men, dat men op iets buitengewoons onthaald wordt. Zoo weder is 't hier een film met prachtige gezichten op Jeruzalem, Bethlehem, Egypte en overschoon gekleurd." *Nieuws van de Dag* 30 March 1912, 6e blad: 22. For this quotation from the Dutch press I wish to thank Rommy Albers and Dorette Schootemeyer from the Nederlands Filmmuseum in Amsterdam.

[3] See, for example, Tom Gunning, "Colourful Metaphors: The Attraction of Colour in Early Silent Cinema", published in this volume.

[4] Quoted in Richard Abel, *The Red Rooster Scare: Making Cinema American, 1900-1910* (Berkeley; Los Angeles; London: University of California Press, 1999): 41.

[5] Translated from the French: "Pour rendre l'illusion complète il ne manquait que les couleurs et le phonographe reproduisant les sons". André Gaudreault and J P Sirois-Trahan, "A Montréal, des sujets hauts en couleurs, dès 1897", in André Gaudreault (ed), *Au Pays des ennemis du cinéma* (Quebec: Nuit Blanche, 1996): 156.

[6] Ernest Coustet, *Traité pratique de la cinématographie, tome 1: Productions des images cinématographiques* (Paris: Comptoir d'Edition de 'Cinéma Revue' Charles Mendel, 1913): 122.

[7] Translated from the French: "où les personnages, habillés de clair, jouaient sur des fonds noirs. De cette façon, non seulement les tonalités du coloris ressortaient davantage, mais encore un léger débordement du coloris n'était pas visible, car il était caché par le fond noir." Léopold Löbel, *La technique cinématographique* (Paris: Projection fabrication des films, Dunod éditeur, 1922): 312.

[8] Paolo Cherchi Usai, "The Color of Nitrate: Some factual observations on tinting and toning manuals for silent films", in Richard Abel (ed), *Silent Film* (New Brunswick, NJ: Rutgers University Press, 1996): 24.

[9] Translated from the French: "Jusqu'à présent ce procédé n'est pas original; c'est l'application au cinéma du coloriage par pochoir connu déjà dans d'autres industries et qui est d'ailleurs utilisé également par Méliès et Gaumont". Jacques Marette, "Les procédés de coloriage mécanique des films", in *Bulletin de l'AFITEC* 7 (1950): 3.

[10] Translated from the French: "Notons que l'atelier de coloris à Vincennes continue à progresser et bientôt la mise en marche définitive de l'ensemble de nos si ingénieuses et si parfaites machines à colorier permettra de fournir journellement un métrage considérable". *Livres des Assemblées* 28 May 1907.

[11] Translated from the French: "C'est en juin 1909 que sortirent, si nos souvenirs sont exacts, les premières cinématographies en couleurs de *Pathé Frères*; on put se rendre compte, à cette époque, du progrès indiscutable qui avait été réalisé et s'est affirmé depuis. Le flottement des couleurs, caractéristique du procédé employé jusqu'alors, faisait place à une netteté absolue que ne parvenaient pas à diminuer les vues dites panoramiques, impossibles autrefois à rendre en couleurs par suite de la vitesse avec laquelle le paysage fuit sous les yeux." *Ciné-Journal* 2 July 1910: 16-17.

[12] Henri Bousquet, *Catalogue Pathé des Années 1896 à 1914* (Bures sur Yvette: Henri Bousquet, 1994).

[13] Translated from the French: "Les cinématographies en couleurs de *Pathé Frères* sont l'absolu rendement des couleurs de la nature...Les feuillages possèdent toutes les tonalités du vert; les 'ciels' sont rendus avec une fidélité déconcertante; les couchers de soleil flamboient comme dans l'absolue réalité". *Ciné-Journal* 2 July 1910: 17.

[14] Paolo Cherchi Usai, for example, agrees with the firm's claims for the stencils in depicting nature: "the patented Pathécolour [sic] – also known as 'au pochoir' in France and 'stencil' in English-speaking countries – justified its owners' claims to supremacy in the colour reproduction of reality". Paolo Cherchi Usai, *Silent Cinema: An Introduction* (London: British Film Institute, 2000): 22.

[15] A possible reason for this may be that films were coloured on a professional basis. The only sources I was able to trace were meant for amateurs.

[16] A problem in using these sources to investigate colouring of films is a difference in shading. Colouring lantern-slides and paintings involved far more detail than colouring film allowed. Furthermore, many more images had to be coloured, which forced a certain economical use of colours, in order to save time. For example, in colouring a film, it was impossible to use different green tones when depicting foliage. This was one of the recommendations given to a lantern-slide amateur: "Nothing is less pleasing to the eye than a picture in which foliage predominates which is coloured with a few tints of green". J W Neville, *The Photographic Colourist: A Manual for the Use of Amateurs* (Birmingham: B W Tylar, 1903): 20-21.

[17] The films analysed are all from the collection of the Nederlands Filmmuseum.

[18] Neville: 29-30.

[19] Translated from the French: "Quand on pense, par exemple, que la presque totalité des vues animées coloriées à la main ou au pochoir faisaient se côtoyer, dans la même image, des plages coloriées et des plages *en noir et blanc*, on ne peut que s'en étonner". Gaudreault and Sirois-Trahan: 162.

[20] D Elmendorf, *Lantern Slides: How to make and color them* (New York: E & H T Anthony, 1895): 67.

[21] Gunning: in this volume: 12.

[22] Elmendorf: 67.

[23] The confusion as to whether or not the skin was coloured is probably caused by the fact that it is rather difficult to make a modern preservation print that shows the pinks in a satisfactory way.

[24] However, there are also examples of films where colours are used in a complete unnatural way. This has to do with the fact that attention has to be drawn to certain objects in the image. An example for this is the blue of the chickens in *Les Ennemies du Poulailler, Les Renards*.

[25] The idea of a hypothesis is more likely, because the head colourist, who decided on what colours to use, worked at the workshop and not in the field.

[26] Kinemacolor was not so named until February 1909. See note 4 to Charles Urban's *Terse History of Natural Colour Kinematography*, page 67 in this volume.

[27] D B Thomas, *The First Colour Motion Pictures* (London: HMSO, 1969): 29.

[28] When one examines the genres mentioned in Bousquet, one sees that Pathé Frères never coloured *actualités* or newsfilms. It is only in 1909 that two coloured newsfilms appear: *Indes: Mariage du neveu du Maharadjah de Tagore* and *Grande fête du cinquantenaire de Yokohama*. Both films could not possibly have been shown in Paris the day after the events, and, in any case, by the time they arrived in France their "news value" was lost.

[29] Translated from the French: "Il est nécessaire de vous mettre au courant de notre procès avec la société 'Eclipse', laquelle nous avait assignés en 50.000 francs de dommages et intérêts avec publication du jugement à intervenir dans 50 journaux, en prétendant que Monsieur Charles Pathé, en sa qualité de Directeur de notre Compagnie, avait adressé à nos actionnaires au mois de juillet 1908, une lettre sous enveloppe fermée, qui...avait nui à son crédit. Notre directeur émettait dans cette lettre son opinion sur le procédé qui avait été acheté par la société 'Eclipse'". *Livres des Assemblées* 8 June 1909.

[30] Translated from the French: "[C]inématographie en couleurs et particulièrement sur le procédé préconisé par une maison concurrente". *Livres des Assemblées* 8 June 1909.

[31] Translated from the French: "M. Charles Pathé explique que, à son avis, ce procédé tel qu'il existe actuellement, n'a pas de valeur commerciale, pour

divers motifs qu'il développe". *Livres des Assemblées* 8 June 1909.

[32] Translated from the French: "Séance dans laquelle la supériorité de notre système de films en couleurs sera démontrée par la projection d'un certain nombre de bandes". *Livres des Assemblées* 8 June 1909.

[33] Translated from the French: "Ce n'était plus les coloris factices obtenus jusqu'ici par enluminure, c'était les vraies teintes et les vraies couleurs cinématographiées directement". *Ciné-Journal* 25 August 1908: 8.

[34] Thomas: 15.

[35] I would like to thank Laurent Mannoni for information on the lecture.

[36] *Ciné-Journal* 25 August 1908: 8-9.

[37] Translated from the French: "Depuis que le cinématographe existe, les inventeurs se sont attachés à découvrir la cinématographie des couleurs. Différents procédés, qu'il serait trop long de rappeler ici, ont été imaginés, mais tous sans exception présentaient de...multiples inconvénients." *Ciné-Journal* 2 July 1910: 17.

[38] Translated from the French: "L'un d'eux, autour duquel on mena jadis grand tapage, avait l'énorme inconvénient de nécessiter double métrage et celui de doubler le prix de la bande". *Ciné-Journal* 2 July 1910: 16-17.

[39] Thomas: 27: "As Kinemacolor film was run at twice the normal speed through both camera and projector, the cost of filming was at least twice that of filming in black and white".

[40] Translated from the French: "Ce sont encore les Etablissements *Pathé Frères* qui ont résolu le problème de la cinématographie en couleurs dans le sens des besoins des exploitants, et avec un souci d'art auquel nous nous plaisons à rendre hommage... on put se rendre compte du progrès indiscutable qui avait été réalisé et s'est affirmé depuis". *Ciné-Journal* 2 July 1910: 17. A salient detail is that with the Kinemacolor system it was difficult to make fiction films in a studio. As Luke McKernan informs me, the additive nature of the system, which absorbed so much light, made filming fiction films in the open air virtually a necessity.

[41] Maurice Gianati, "...Les couleurs et les sons se répondent...", in *1895 ·, l'année 1913 en France* (Paris: AFRHC, 1993): 284.

[42] Ibid: 282.

[43] The name Pathécolor did provoke protests from Raleigh et Robert, and in January 1912 they sued Pathé Frères (Gianati: 284). In January 1913, they lost the case and Pathé started advertising with the following text: "Pathécolor est le reflet impartial des couleurs de la nature. Les grands films Pathécolor sont incomparables." (*Pathé-Journal*, 1913.) ("Pathécolor is the impartial reflection of natural colours. The great Pathécolor films are without comparison.") They repeated this in combination with photos of the "atelier de coloris" in Vincennes: pictures of women in long lines sitting next to each other and working on Pathécolor films.

[44] Translated from the French: "Voulez-vous présenter à votre public PATHÉCOLOR. Cette application de la Cinématographie en couleurs. Le dernier progrès de la science moderne, auquel aucun autre procédé ne peut être comparé." *Ciné-Journal* 9 December 1911: 36-37.

[45] Translated from the French: "PATHÉCOLOR n'est ni un procédé en noir coloré par des écrans ni un procédé en deux couleurs, mais une bande normale en couleurs naturelles." Ibid.

[46] Translated from the French: "Pour présenter PATHÉCOLOR il ne faut pas de Machine spéciale, à vitesse multipliée augmentant l'usure; il passe sur tous les Appareils connus". Ibid.

[47] Translated from the French: "PATHÉCOLOR n'oblige pas l'exploitant à passer pendant des mois les mêmes vues, car il sort trois ou quatre scènes nouvelles par semaine". Ibid.

[48] Translated from the French: "PATHÉCOLOR n'exige pas de frais considérables qui forcent l'exploitant à augmenter le prix de ses places." Ibid.

[49] Kinemacolor was not simply a threat to stencil-coloured films, for, according to *The Bioscope*, it made coloured films in general more popular: "Colour has become a sine qua non of the picture theatre programme, and one cannot pass along the streets without seeing from the announcements of exhibitors that they are fully alive to this, and, if they have not a Kinemacolor licence, they are making a special feature of tinted or coloured films, in order to cope with the public demand". *The Bioscope* October 1911, quoted in Thomas: 18.

[50] Information from Luke McKernan.

[51] For more information on these series and for some stills, see www.pathearchives.com/FR/

300_Editorial/actcinmat/patherevue.asp.

[52] Translated from the French: "Il n'y a qu'une route pour tout rendre, tout traduire, la couleur. La couleur est biologique, si je puis dire. La couleur est vivante, rend seule les choses vivantes." Paul Cézanne, quoted by Kandinsky in Jacques Aumont (ed), *Introduction à la couleur: ces discours aux images* (Paris: Armand Colin Éditeur, 1994): 119.

From the Archive:
Terse History of Natural Colour Kinematography
by Charles Urban

Introduced by Luke McKernan

Kinemacolor trade mark. (Luke McKernan)

□ Charles Urban (1867-1942) was the producer and entrepreneur behind the world's first natural colour motion picture system, Kinemacolor. The system was patented in 1906 by Urban's close associate George Albert Smith, the pioneer filmmaker and film processor from Brighton, but it was Urban who marketed and developed Kinemacolor, making it one of the sensations of the pre-First World War period of cinema.

When Urban wrote this essay in 1921,