NATIONAL MUSEUM PHOTOGRAPHY FILM & TELEVISION

Pioneers of Early Cinema: 4

William Kennedy Laurie Dickson (1860-1935)

Born of a French mother and Scottish father, William Kennedy Laurie Dickson moved to the USA in 1879 where, four years later, he obtained a job with Thomas Alva Edison. In his first years with Edison, Dickson worked on research projects in electrical engineering and iron-ore milling. He was also a skilled and keen photographer.

It is now known that in their accounts of the development of the Kinetoscope, Dickson and Edison falsified dates, possibly to safeguard patent claims. Recent research in the Edison archives reveals that in June 1889, Edison first asked Dickson to work on the project that Edison had been developing since the sequence photographer Eadweard Muybridge had suggested the idea of moving pictures to him in February 1888. Edison had already filed two patent caveats (a legal device preventing other inventors from submitting applications on similar inventions for a year) for a camera which produced microscopic pictures on an intermittently rotating drum, like that of the phonograph.

Dickson struggled for some time to coat drums with a photographic emulsion of sufficient sensitivity to produce twenty-five microscopic images a second. It was not until he obtained sheets of celluloid photographic film which were beginning to be introduced by the American plate-maker, John Carbutt, that Dickson achieved some success. He wrapped the sheets around the drum and managed to produce short sequences of images.

Dickson devised a way of illuminating the drum with a stroboscopic flash that was fired by pins at the end of the drum aligned with each picture. This was similar to the method used by the German Oscar Anschütz in his Tachyscope viewer of 1887. Edison filed a caveat on this in August 1889 and left for Europe, where he met the physiologist and chronophotographer Etienne Jules Marey and saw what Marey had achieved with his Chronophotographe films.

On his return to the USA, Edison filed another caveat which specified the intermittent movement of a band of film with a toothed sprocket wheel that engaged perforations on each side of the film. The perforations ensured that each and every picture on the film was spaced equally along its length, enabling them to be viewed or projected with absolute steadiness. For viewing, Edison suggested that the film was illuminated by light flashing though a rotating shutter.

However, due to his research on ore-milling, Dickson was unable to concentrate on the moving picture project until October 1890. Working with William Heise (who had experience of moving paper tape through the stock market telegraph, one of Edison's first inventions) Dickson devised a camera and viewing device that used ¾inch (19cm) width film with a single row of sprockets which, like Marey's Chronophotographe, moved horizontally through the apparatus. The prototype viewer was demonstrated in May 1891.

In June, Edison submitted patent applications for the Kinetograph camera and Kinetoscope peep-show viewer. Meanwhile, Dickson worked to improve the prototype. He changed to a film 35mm wide that was less prone to physical damage. In the final version of the Kinetograph, the film was transported vertically through the camera, producing individual frames 1 x ¾ inch (2.5 x 1.9cm). There were four rectangular perforations each side of the frame. This format became the one that

National Museum of Photography, Film & Television
BRADFORD West Yorkshire
BD1 1NQ

Telephone +44 (0) 1274 202030
Facsimile +44 (0) 1274 723155
World Wide Web http://www.nmpft.org.uk

was universally adopted by the film industry and, with slight modifications, is still used today. The Kinetograph was driven by an electric motor which drove both the rotating disc shutter and the intermittent sprocket wheel.

By October 1892, prototypes of the final versions of the camera and viewer were ready. Attention now turned to making films to show on the Kinetoscopes. Dickson designed the first-ever film studio at West Orange: a glass-roofed shack built on a turntable so that it could be turned to follow the sun. Known as the 'Black Maria' because of its resemblance to a police wagon, it was ready in May 1893. That same month, on 9 May, the first public demonstration of the Kinetoscope took place at the Brooklyn Institute of Arts and Sciences.

With the impending commercial release of the Kinetoscopes, Dickson concentrated on making films. Over 75 were made in 1894, each lasting about twenty seconds. These included 'The Barber Shop', Sandow (the strongman), 'The Boxing Cats', a 'Cock Fight', 'Buffalo Bill', 'Annie Oakley' and, more salaciously, 'Carmenchita' whose butterfly dance exposing her ankle provoked the first act of film censorship when shown in Newark, New Jersey.

The first ten Kinetoscopes were installed at the Holland brothers' Kinetoscope Parlour in Broadway, New York which opened on 14 April 1894. Over the next year, business boomed, though that was not to last, as people tired of the novelty of the peep-show viewer. Dickson himself was secretly involved with one of the Kinetoscope agents, Otway and Gray Latham, who were working on the invention of a projector. Their Eidoloscope projector gave the first public demonstration of projected moving pictures in the USA on 21 April 1895.

At the same time, Dickson was also in partnership with three other entrepreneurs, including Herman Casler, in a venture that became the American Mutoscope Company. Dickson provided the basic idea for the flip-card viewer that Casler developed into the Mutoscope, perhaps better-known as the 'What the Butler Saw' machine, and also for the large-format 70mm Biograph camera. In April 1895, Dickson left Edison and in December the Mutoscope Company was formed with Dickson as one of its four partners and in charge of film production.

In 1897, Dickson returned to Britain with a Biograph camera where he filmed the royal family and Queen Victoria's Diamond Jubilee procession. A British subsidiary, the British Mutoscope and Biograph Company, was formed with Dickson as chief cameraman. He travelled throughout Europe filming Kaiser Wilhelm, Emperor Franz Joseph and the Pope.

With the outbreak of the Boer War in 1899, Dickson sailed to South Africa with Sir Redvers Buller and spent several months documenting the war with the cumbrous Biograph camera. His account of his experiences - *The Biograph in Battle* (1901) - were the first memoirs of a film cameraman ever published. Dickson's film career came to an end in 1903 when he left British Biograph. From 1906 onwards he was established in London as an electrical engineer.

National Museum of
Photography, Film & Television
BRADFORD West Yorkshire
BD1 1NQ

Telephone +44 (0) 1274 202030
Facsimile +44 (0) 1274 723155
World Wide Web http://www.nmpft.org.uk

NATIONAL MUSEUM PHOTOGRAPHY FILM & TELEVISION

Further reading

Gordon Hendricks *The Edison Motion Picture Myth* (Arno Press, USA, 1972)
Ray Phillips *Edison's Kinetoscope and its Films - a History to 1896* (Flicks Books,UK, 1997)
Charles Musser *The Emergence of Cinema: the American Screen to 1907* (Charles Scribner's Sons, USA, 1990)
Charles Musser *Before the Nickelodeon: Edwin S Porter and the Edison Manufacturing Company* (University of California Press, USA, 1991)
Eileen Bowser *The Transformation of Cinema, 1907-1915* (Charles Scribner's Sons, USA, 1990)
John Barnes *Filming the Boer War* (Bishopsgate Press, UK,1992)
Richard Brown and Barry Anthony *A Victorian Film Enterprise:The History of the British Mutoscope and Biograph Company* (Flicks Books, UK,1997)
W K L Dickson *The Biograph in Battle* - reprint (Flicks Books, UK, 1995)
W K L Dickson *A Brief History of the Kinetograph, the Kinetoscope and the Kinetophonograph* (*SMPTE Journal,* Vol 21, December 1933)

National Museum of Photography, Film & Television
BRADFORD West Yorkshire
BD1 1NQ

Telephone +44 (0) 1274 202030
Facsimile +44 (0) 1274 723155
World Wide Web http://www.nmpft.org.uk