# JAMES CLERK MAXWELL FOUNDATION

14 India Street, Edinburgh EH3 6EZ
*The birthplace in 1831 of James Clerk Maxwell.*

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Scottish Charity: SC 015003

## Introduction

*James Clerk Maxwell as a child*

This house, 14 India Street, is the birthplace of James Clerk Maxwell. It was acquired by the Foundation in 1993 having previously been privately owned. The cost of refurbishment was met by grants and loans, some of them conditional on bringing the interior as close as possible to that of the late Georgian era, when the family lived here. James's father, John Clerk Maxwell, had inherited the estate of Glenlair in Galloway in southwest Scotland and divided his time between Glenlair and this town-house. James was born here in Edinburgh on 13 June 1831 and the Clerk Maxwell family moved back to Glenlair permanently when James was two years old.

His mother died when James was only eight years old and, two years later, he returned to Edinburgh to attend school at the Edinburgh Academy staying with his father's sister Isabella Wedderburn (neé Clerk) at her home at 31 Heriot Row, round the corner from India Street. James went on to study at the University of Edinburgh during the years 1847 – 1850.

## Exhibition Room

*Glenlair in Maxwell's time, before the 1920's fire*

This room, originally the Maxwell's dining room, is one of the best refurbished Georgian rooms in Edinburgh. The décor is characteristically subdued with most of the colour provided by carpet and curtains. The original structure of the room, including cornices, has survived although the chandelier is a recent replacement.

With the exception of Professor Tait, the portraits at eye level are of the family. The one above the fireplace is a copy of an original portrait (of James Clerk Maxwell) by Lowes Dickinson in Trinity College, Cambridge (Maxwell's College). Between it and the window is a portrait of James' father, John Clerk Maxwell. This is again a copy, the original being in the habitable part of the fire-damaged Penicuik House, home of the 'Clerks of Penicuik'. The present (11th) Baronet is Sir Robert Maxwell Clerk.

*Moving into the Wedderburn's at 31 Heriot Row, in 1841, to attend school and University*

Facing James and John are portraits of Maxwell's uncles, Robert and John, his aunt Jane on his mother's side and his mother Frances Cay; the older girl in the portrait nearest to the door. These portraits were done by their mother, Elizabeth, whose self portrait is between the windows. Facing the windows across the room is the portrait of her husband, Robert Hodshon Cay, Judge of the High Court of Admiralty. This is a copy of the original by the famous Scottish portrait painter Sir Henry Raeburn.

The exception is the portrait to the left of the fireplace, an original of Maxwell's lifelong friend and scientific colleague Peter Guthrie Tait, who was preferred to Maxwell when the chair of Natural Philosophy at The University of Edinburgh was filled in 1860. Maxwell and Tait were both born in 1831 and attended the same school, the Edinburgh Academy (a quarter of a mile down the hill from India Street), but in different school-years, Maxwell being one year ahead of Tait.

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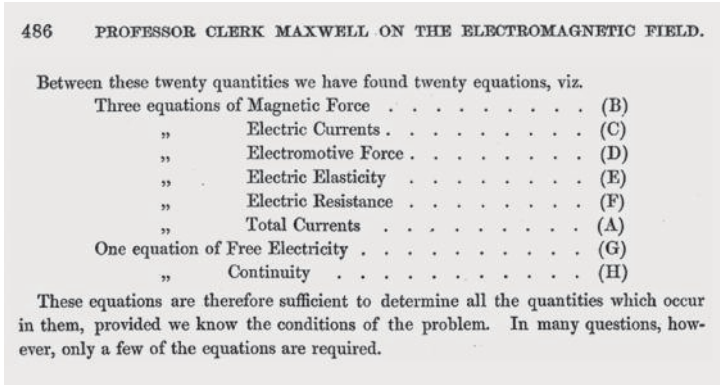
Here, there is a roller display summarising the first full colour projected image, famously demonstrated by Maxwell in 1861 at the Royal Institution in London. He achieved this by making three black and white photographic plates which were photographed through red, green and blue filters respectively. He then used three magic lanterns to superimpose these three black and white images, each projected through the same red, green and blue filters, to produce the above first colour image of the 'tartan ribbon'.

*Maxwell's first colour photograph of the 'tartan ribbon'*



486 PROFESSOR CLERK MAXWELL ON THE ELECTROMAGNETIC FIELD.

Between these twenty quantities we have found twenty equations, viz.

| | | |
|---|---|---|
| Three equations of | Magnetic Force | (B) |
| „ | Electric Currents | (C) |
| „ | Electromotive Force | (D) |
| „ | Electric Elasticity | (E) |
| „ | Electric Resistance | (F) |
| „ | Total Currents | (A) |
| One equation of | Free Electricity | (G) |
| „ | Continuity | (H) |

These equations are therefore sufficient to determine all the quantities which occur in them, provided we know the conditions of the problem. In many questions, however, only a few of the equations are required.

*Extract from Maxwell's Phil. Trans. Roy. Soc. London, Vol. CLV, 1865 paper*

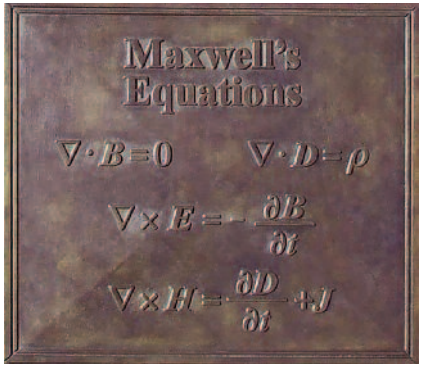
This major technical achievement, the production of colour images with three colour filters, is widely used today in printing and colour image capture (in digital still and video cameras), in televisions and computer screens. We display a replica of Maxwell's colour box which he used to analyse and synthesise light colours to underpin his observations on colour mixing and colour perception. The replicas were produced in the Cavendish Laboratory, Cambridge.

His most significant contribution, as regarded by electrical engineers, was in defining the equations governing electromagnetics ('Maxwell's Equations'), forming the foundation of today's radar, navigation (Global Positioning System, GPS), radio communication, and many other systems.

In his famous 1865 paper, Maxwell defined electromagnetics in terms of 20 equations, of which 13 may be regarded as the basis for the now familiar Heaviside-Lorentz form:

$$\nabla\cdot\mathbf{D}=\rho \qquad \nabla\cdot\mathbf{B}=0 \qquad \nabla\times\mathbf{E}=-\frac{\partial\mathbf{B}}{\partial t} \qquad \nabla\times\mathbf{H}=\frac{\partial\mathbf{D}}{\partial t}+\mathbf{J}$$

When, in 1873, he published his book *"Treatise on Electricity and Magnetism"*, Maxwell managed to compress his 20 original equations to eight by using the quaternions promoted by his school friend Professor Tait. In doing so he added one more important equation, $\mathfrak{F}=V.\mathfrak{CB}+e\mathfrak{E}-m\nabla\Omega$, which was a precursor of the Lorentz force.




*Maxwell's equations, as displayed below his Edinburgh statue*

*Maxwell, courtesy of Trinity College Cambridge*

While this was a great step forward, quaternions proved to be less than popular. Oliver Heaviside, who was a keen proponent of Maxwell's theory, saw the need to restate the equations and so in 1885, just a few years after Maxwell's death, he developed the now familiar vector form, simplifying some of them in the process. However, this was not quite the end of the story, for in the opening years of the 20th century Lorentz gave the equations a microscopic basis, highlighting the four equations on the statue, together with the Lorentz force, $\mathbf{F}=q(\mathbf{E}+\mathbf{v}\times\mathbf{B})$, as the fundamental equations of electrodynamics. The final touch was due to J. Willard Gibbs, for it is his notation that we generally use today. The publication of his 1902 book on *"Vector Analysis"* eventually led to Heaviside's 'div' and 'curl' being replaced by Gibbs' $\nabla\cdot$ and $\nabla\times$, but in all other respects the four equations we see on the statue are the direct result of Heaviside's tribute to Maxwell.

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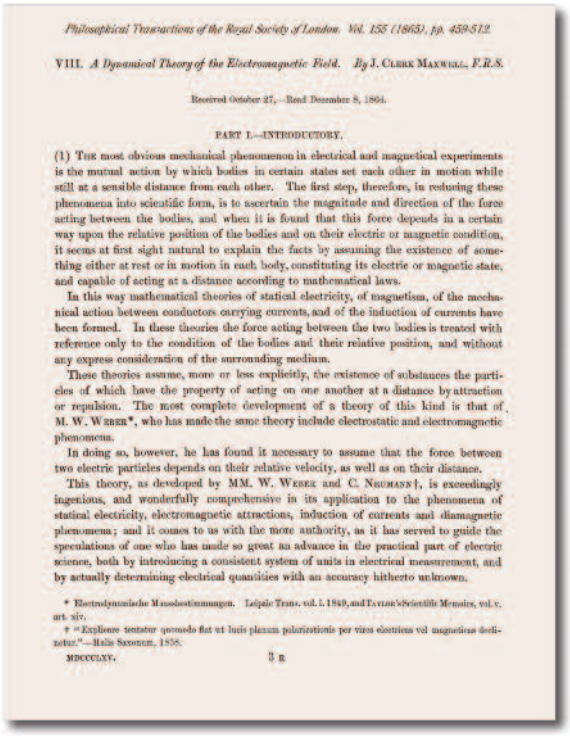
Next are shown the basics of a balance arm, being the design of Maxwell's apparatus to measure the ratio of electromagnetic to electrostatic units of electrical charge. Maxwell showed mathematically that the numerical value of this ratio was equal to the speed of electromagnetic waves. Maxwell recognised that the speed of electromagnetic waves was equal to the speed of light. Thus Maxwell stated in his 1865 paper *"…it seems we have strong reason to conclude that light itself (including radiant heat and other radiations if any) is an electromagnetic disturbance in the form of waves propagated … according the electromagnetic laws"*. This was the most stunning conclusion of 19th century theoretical physics.



*Philosophical Transactions of the Royal Society of London. Vol. 155 (1865), pp. 459-512.*

VIII. *A Dynamical Theory of the Electromagnetic Field.* By J. Clerk Maxwell, F.R.S.

Received October 27,—Read December 8, 1864.

PART I.—INTRODUCTORY.

(1) The most obvious mechanical phenomenon in electrical and magnetical experiments is the mutual action by which bodies in certain states set each other in motion while still at a sensible distance from each other. The first step, therefore, in reducing these phenomena into scientific form, is to ascertain the magnitude and direction of the force acting between the bodies, and when it is found that this force depends in a certain way upon the relative position of the bodies and on their electric or magnetic condition, it seems at first sight natural to explain the facts by assuming the existence of something either at rest or in motion in each body, constituting its electric or magnetic state, and capable of acting at a distance according to mathematical laws.

In this way mathematical theories of statical electricity, of magnetism, of the mechanical action between conductors carrying currents, and of the induction of currents have been formed. In these theories the force acting between the two bodies is treated with reference only to the condition of the bodies and their relative position, and without any express consideration of the surrounding medium.

These theories assume, more or less explicitly, the existence of substances the particles of which have the property of acting on one another at a distance by attraction or repulsion. The most complete development of a theory of this kind is that of M. W. Weber*, who has made the same theory include electrostatic and electromagnetic phenomena.

In doing so, however, he has found it necessary to assume that the force between two electric particles depends on their relative velocity, as well as on their distance.

This theory, as developed by MM. W. Weber and C. Neumann†, is exceedingly ingenious, and wonderfully comprehensive in its application to the phenomena of statical electricity, electromagnetic attractions, induction of currents and diamagnetic phenomena; and it comes to us with the more authority, as it has served to guide the speculations of one who has made so great an advance in the practical part of electric science, both by introducing a consistent system of units in electrical measurement, and by actually determining electrical quantities with an accuracy hitherto unknown.

* Elektrodynamische Maassbestimmungen. Leipsic Trans. vol. i. 1849, and Taylor's Scientific Memoirs, vol. v. art. xiv.

† "Explicare tentatur quomodo fiat ut lucis planum polarizationis per vires electricas vel magneticas declinetur."—Halis Saxonum, 1858.

MDCCCLXV. 3 B

*Maxwell's famous paper (Phil. Trans. Roy. Soc. London, Vol. CLV, 1865)*

The display cabinet contains items which are unique or very rare. These include Maxwell's three black and white magic lantern slides, which Maxwell used to make the first colour projection and also his medals. A few pages, on loan from The Edinburgh Academy, display his first scientific paper *"On Oval Curves"*, written at age 14, while at school.

The copy of his 1865 paper, *"A dynamical theory of the electromagnetic field"*, where marked in the margin, shows his speculation that electromagnetic waves would embrace not just light and radiant heat (i.e. near infra-red light) but "other radiations, if any", pointing to the whole electromagnetic spectrum. It also includes (a few lines down the page) an acknowledgement to Michael Faraday whose pioneering researches inspired Maxwell. The Faraday theme continues with, on display, the IEE Faraday Medal awarded in 2004 to one of our Trustees, Peter Grant. Professor Tait's school medals, gifted to the Foundation by his great grandson Murray Tait, show that Tait was top of his class (dux) throughout his school career at the Edinburgh Academy.

Below the paintings is a display of a spark generator and wireless receiver on loan from the Museum of Communication, in Burntisland in Fife. These link to the foyer poster 'Maxwell to Marconi', which commemorates the centenary of the first cross-channel wireless signal in 1899 followed by the first transatlantic signal in 1901. The receivers are displayed on the base of a bookcase gifted by the Cavendish Laboratory together with the writing desk below the Robert Hodshon Cay portrait. Both items had been in the first Cavendish Laboratory, designed by Maxwell when he came out of retirement to return to Cambridge as its first director and Professor of Experimental Physics from 1871 – 1879.


*Photo montage from Marconi's wireless telegraphy station, Wellfleet, Cape Cod, USA*

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The photo montage shows the former Marconi installation at Cape Cod, USA. Here Marconi built on the pioneering work of Maxwell to construct his first wireless telegraphy station and, in particular, he designed the important 200 m diameter conical antenna which coupled the transmitter into radio transmissions.
In 1903 President Theodore Roosevelt sent his famous Morse coded message to King Edward VII using a 20,000 V condenser-based spark transmitter, powered by a 45 hp generator.

*JCM and his cousin Jemima paddling in washtubs on the river Urr*

Our sister charity, the Clerk Maxwell Cancer Research Fund, actively supports the use of electromagnetic radiations in the treatment of cancer. Maxwell died from stomach cancer at the early age of 48, his mother died from the same illness and at the same age.

# Library

Here we have several wall panels celebrating Maxwell's other major scientific achievements: his work on governors for machine speed control; the Maxwell-Boltzmann distribution and his contribution to statistical physics; discovery of the form of Saturn's Rings; his contribution to the committee that defined the Ohm; his contribution to Recriprocal Figures for the design of structures such roofs and bridges. The final set of wall panels describes the friezes on his (George Street) statue designed to set Maxwell in context between Newton and Einstein. These posters can all be downloaded at **www.clerkmaxwellfoundation.org/html/media_library.html**

The bookcase features books by and reflections on the life of Newton, Kelvin, Faraday, Maxwell etc. The 9th Edition of the 1886 Encyclopaedia Britannica, in the lower right hand corner, features Maxwell's scientific contributions in 15 of the 33 volumes: Electricity – Vol. 8, p 40; colour printing Vol. 32, p 16, etc

*Restored porch at Glenlair in 2000*

On the wall opposite the window is an electronic display which provides a slide show of key highlights from Maxwell's life including two Jemima paintings, Maxwell's publications, the coloured tartan ribbon and bonnet, Marconi's US Cape Cod radio transmission station, the restored porch at Glenlair, the Edinburgh statue etc.

# Hall and Staircase

The entrance has been carefully restored with the hall containing three commemorative features. The bust of Maxwell (by Pilkington Jackson) is a copy of the one originally at Marischal College Aberdeen, where Maxwell had his first professorial appointment (1856 – 1860). Above the settle is the plaque commemorating the opening, in 1993, of 14 India Street as the home of the James Clerk Maxwell Foundation. On the opposite wall is the 'Milestone in Electrical Engineering and Computing' plaque of the American Institute of Electrical and Electronics Engineers (IEEE). This commemorates Maxwell's electromagnetic theory. It is one of three identical plaques, the other two being in the restored entrance porch of Glenlair House, and in King's College, London where Maxwell was Professor of Natural Philosophy from 1860 to 1865. By the entrance door is a poster displaying the complete range of the electromagnetic spectrum and representative applications. The vast range of this spectrum attests to the prescient 1865 comment by Maxwell *"…radiant heat (and other radiations, if any)…"*.

*Statue in George Street, Edinburgh, by the sculptor, Alexander Stoddart*

The engravings on the staircase walls are from the Herschel Collection purchased by the Foundation's Founder, Professor Sydney Ross. They sample the history of science and mathematics from Copernicus onwards, arriving at Maxwell's contemporaries Michael Faraday and Lord Kelvin near the landing. There is the painting of Maxwell and his wife Katherine and, inevitably, their dog Toby. Continuing upstairs, sketches and photographs (various donors) include the Maxwellians (G F Fitzgerald, Sir Oliver Lodge and Oliver Heaviside), Heinrich Hertz and, significantly, Albert Einstein.

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# Conference Room

This, originally the Drawing Room, is now also multipurpose and used for receptions, seminars and other functions. Echoing the epigram on the plaque in the Hall is a Latin epigram by the late John M Paxton, brother of Trustee Roland Paxton. The translation reads as:

*From this house of his birth,*
*his name is now widespread*
*– across the entire terrestrial globe*
*and even to the stars.*

The painting by Lucinda Mackay above the fireplace is of a near neighbour, Nobel laureate and our Honorary Patron, Professor Peter Higgs, whose research at the University of Edinburgh in the 1960's led to the ongoing search, in the Large Hadron Collider at CERN in Geneva, seeking and finding confirmation of the existence of the 'Higgs boson'.

The portraits on the window wall are of the late Professor Sydney Ross, the originator of the Foundation and Professor David Ritchie, senior trustee and Honorary President who was one of the trustees responsible for our acquisition of this house in India Street in 1993 and for 2 decades, as the primary host for visitors.

# Exhibition Room II

This was the room in which James Clerk Maxwell was born in 1831. This contains a set of wall panels on Maxwell's childhood, early life and career(including his poetry).

The Fireplace wall has (in the middle) a copy of the portrait of James and his mother from the Birmingham art galleries. The main display here is of remarkable watercolours by Maxwell's cousin Jemima Blackburn (née Wedderburn), daughter of Maxwell's aunt, Isabella, on his father's side. Jemima later married Hugh Blackburn, Professor of Mathematics at Glasgow University and a colleague of Lord Kelvin.

These watercolours, painted while Jemima was in her teens, are snapshots of the Clerk Maxwell family life. They include one of Maxwell arriving in 1841 at 31 Heriot Row prior to starting school. This was several weeks into term and Maxwell's intended class was full, which is why he was moved to the class above.

The Jemima paintings displayed in here are:

- Wedderburn's arriving at Glenlair by night – 13 Oct 1841
- JCM and his father at Newton en route to Glenlair – 15 November 1841
- JCM and his father arriving by horse drawn coach at 31 Heriot Row, to stay with the Wedderburn's when returning to Edinburgh to study at The Academy – 18 Nov 1841
- Two family plays featuring JCM and the Wedderburn children – around 9 Oct 1843
- JCM paddling in a washtub on the river Urr – Sept 1843
- JCM and his father at highland cattle show – 21 August 1842
- Family picnic on the shore, Roshven, Lochailort, Professor Blackburn's home – 18 Sep 1851

The other paintings here are of Maxwell as a child and Maxwell's aunt Jane's two paintings of a room in her house, at 6 Great Stuart Street. The divided room has its partition drawn back and Jane is shown sitting at one of her tables in the actual chair you saw in the exhibition room downstairs. JCM is in the other painting, doing his school homework before having his tea.

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# References


1 Documents on the Foundation's website, see, **http://www.clerkmaxwellfoundation.org/html/html/further_documents.html**

2 Mahon B, *"The Man Who Changed Everything: the Life of James Clerk Maxwell"* John Wiley & Sons, 2003.

3 Tolstoy I, *"James Clerk Maxwell, a Biography"*, Canongate, Edinburgh, 1981.

4 Everitt C W F, *"James Clerk Maxwell, Physicist and Natural Philosopher"*, Charles Scribner's Sons, NewYork, 1974.

5 Campbell L and Garnett W, *"The Life of James Clerk Maxwell"*, Macmillan, London, 1882. (James Rautio has put the above complete text on his company's website, Sonnet Software, see **www.sonnetsoftware.com/bio/maxbio.pdf**

6 The University of Toronto, gives access to the collection of Maxwell's papers by W D Niven (ed.) *"The Scientific Papers of James Clerk Maxwell"*, Cambridge University Press 1890:
**www.archive.org/details/scientificpapers01maxwuoft**
**www.archive.org/details/scientificpapers02maxwuoft**

7 *"Celebration of Achievements & Legacy of James Clerk Maxwell"*, ISBN: 978 0 902198 852, Royal Society of Edinburgh 2008, on the occasion of the statue unveiling

8 Flood R, McCarthy M & Whitaker A, *"James Clerk Maxwell: Perspectives on his Life and Work"*, Oxford University Press, 2014.

9 Arthur J W, *"Brilliant Lives: The Clerk Maxwell's and the Scottish Enlightenment"*, Birlinn, 2016.


All the above books can be found in the James Clerk Maxwell Foundation Library.

# Key dates in the life of Maxwell

| | |
|---|---|
| 1831 | Born 13 June, 14 India Street. |
| 1833 | Moved to Glenlair. |
| 1841 | Enrolled at Edinburgh Academy. |
| 1846 | Maxwell's first paper *"On the description of oval curves and those having a plurality of foci"*, Proc. Roy. Soc. Edinburgh, Vol. II. |
| 1847 – 50 | Studied, University of Edinburgh. |
| 1850 | Entered Peterhouse College, Cambridge – after one term migrated to Trinity College. |
| 1854 | Mathematical Tripos – 2nd Wrangler and First (Equal) Smith's Prizeman. |
| 1856 – 60 | Professor of Physics at Marischal College, Aberdeen. |
| 1856 | Elected Fellow Royal Society Edinburgh (FRSE) aged 24. |
| 1857 | Essay on *"The Stability of Saturn's Rings"* won the Adams Prize, University of Cambridge. |
| 1858 | Married Katherine Mary Dewar, daughter of the Reverend Daniel Dewar, principal of Marischal College, Aberdeen. |
| 1860 | Paper *"Illustrations of the Dynamical Theory of Gases"*, in which the Maxwell-Bolzmann distribution for molecular velocities in a gas is derived. |
| 1860 – 65 | Professor at King's College, London. |
| 1860 | Awarded Rumford Medal, Royal Society, for work on colour. |
| 1861 | Royal Institution, first demonstration of colour reproduction. |
| 1861 | Elected Fellow Royal Society (FRS) shortly before his 30th birthday. |
| 1861/2 | *"On physical lines of force"*, Phil. Mag., Vols. 21 & 23. Calculates that electric and magnetic effects travel at speed of light and states "…we can scarcely avoid the inference that light consists in the transverse undulations of the same medium which is the cause of electric and magnetic phenomena." |
| 1864 | *"On reciprocal figures and diagrams of forces"*, Phil. Mag., Vol. 27. First paper showing how to calculate stresses in multi-strut bridge frames. Later effort led to 1869 award of the RSE Keith Medal (see below). |
| 1864 | Famous oral presentation: *"Dynamical theory of the electromagnetic field"* to the Royal Society. First appearance of 'Maxwell's Equations' and the assertion that "…it seems we have strong reason to conclude that light itself (including radiant heat and other radiations if any) is an electromagnetic disturbance in the form of waves propagated …according the electromagnetic laws." |
| 1865 | Above paper, *"Dynamical theory of the electromagnetic field"*, formally published in Phil. Trans. Roy. Soc. London, Vol. CLV |
| 1866 | Bakerian Lecture of the Royal Society: *"On the viscosity or internal friction of air and other gases"*, Phil. Trans. Roy. Soc. London, Vol. CLVI. Includes measurements made in his London attic. |

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Key dates in the life of Maxwell

| | |
|---|---|
| 1868 | *"On a method of making a direct comparison of electrostatic with electromagnetic force; with a note on the electromagnetic theory of light"*, Phil. Trans. Roy. Soc. London, Vol. CLVIII. Includes consequence of definitions of electromagnetic and electrostatic units of electric charge which makes their ratio equal to the speed of light. |
| 1868 | *"On governors"*, Proc. Roy. Soc. London, Vol. XVI. First mathematical treatment of feedback leading to control theory and cybernetics. |
| 1869 | Awarded Keith Medal, Royal Society of Edinburgh. |
| 1870 | *"On reciprocal figures, frames and diagrams of forces"*, Trans. Roy. Soc. Edinburgh, Vol. 26. This follow-up to a paper by G B Airy on elasticity led to award (see above) of RSE Keith Medal. |
| 1870 | *"On hills and dales"*, Phil. Mag., Vol. 40. An early contribution to the mathematics of topology. |
| 1870 | Awarded Doctor of Laws (LLD), University of Edinburgh. |
| 1870 | Awarded Hopkins Prize, University of Cambridge. |
| 1870 | Published his textbook *"Theory of Heat"*. |
| 1871 | Established and directed Cavendish Laboratory, Cambridge, as First Professor of Experimental Physics. |
| 1871 | Second lecture on colour at Royal Institution *"On colour vision"*. |
| 1873 | Publication of his *"Treatise on Electricity and Magnetism"*, Oxford University Press. |
| 1874 | Elected Foreign Honorary Member, American Academy of Arts and Sciences, Boston. |
| 1875 | Elected Member of American Philosophical Society of Philadelphia. |
| 1875 | Elected Corresponding Member, Royal Society of Sciences of Göttingen. |
| 1876 | Awarded Doctor of Civil Law (DCL), University of Oxford. |
| 1876 | Elected Honorary Member, New York Academy of Sciences. |
| 1877 | Published his book *"Matter and Motion"*. |
| 1877 | Elected Member, Royal Academy of Sciences of Amsterdam. |
| 1877 | Elected Foreign Corresponding Member, Mathematico-Natural-Science Class of the Imperial Academy of Sciences of Vienna. |
| 1878 | Delivers Rede Lecture at Cambridge *"The Telephone"*. |
| 1878 | Volta Medal, Doctor of Sciences honoris causa, University of Pavia. |
| 1879 | Dies of stomach cancer on 5 November. Buried in the family vault at Parton, Castle Douglas (not far from Glenlair). |
| 2008 | Edinburgh statue unveiled. |

The James Clerk Maxwell Foundation was created in 1977 on the initiative and generosity of the late Sydney Ross, former Professor of Chemistry at Rensselaer Polytechnic Institute, Troy, New York, USA.

The James Clerk Maxwell Foundation's objectives are:

- To display the history of Maxwell's family and his many technical advances, in a simple museum, within his birthplace.
- To provide, in his birthplace, an attractive and stimulating environment for mathematicians, scientists and engineers from all over the world to meet in seminars, symposia, workshops and courses.
- To encourage young students to become mathematicians, scientists and engineers through educational support grants and James Clerk Maxwell Foundation prize awards.
- To increase public awareness of the foundations laid by James Clerk Maxwell for the increasingly pervasive technologies of today, e.g. through meetings, exhibitions, lectures, and cultural events.

*Donations will be gratefully received by the Foundation to continue maintaining this house in Maxwell's memory and in supporting our university scholarships, prizes, lectures and other activities which encourage the continuation of Maxwell's legacy.*

JAMES CLERK MAXWELL FOUNDATION

*Library wall panels on Maxwell's many scientific achievements*

*Exhibition room II wall panels on Maxwell's childhood, career and poetry*

This brochure is provided as a reminder of your visit to 14 India Street by the James Clerk Maxwell Foundation

**www.clerkmaxwellfoundation.org**




*This brochure is printed courtesy Selex, Crew Toll, Edinburgh.*