



Sheetlines

The journal of
THE CHARLES CLOSE SOCIETY
for the Study of Ordnance Survey Maps

“Thomas Colby’s book collection”

Bill Hines

Sheetlines, 106 (August 2016, pp. 12-20)

Stable URL:

<http://www.charlesclosesociety.org/files/Issue106page12.pdf>

*This article is provided for personal, non-commercial use only.
Please contact the Society regarding any other use of this work.*

Published by
THE CHARLES CLOSE SOCIETY
for the Study of Ordnance Survey Maps
www.CharlesCloseSociety.org

The Charles Close Society was founded in 1980 to bring together all those with an interest in the maps and history of the Ordnance Survey of Great Britain and its counterparts in the island of Ireland. The Society takes its name from Colonel Sir Charles Arden-Close, OS Director General from 1911 to 1922, and initiator of many of the maps now sought after by collectors.

The Society publishes a wide range of books and booklets on historic OS map series and its journal, *Sheetlines*, is recognised internationally for its specialist articles on Ordnance Survey-related topics.

Thomas Colby's book collection

Bill Hines

Amongst the special collections held by Aberystwyth University Library are some 140 volumes from the library of Thomas Colby, one time Director of the Ordnance Survey, who was responsible for much of the initial survey work in Scotland and Ireland. Although the collection is fairly small, it nonetheless provides a fascinating insight into the working practices of the man, and also demonstrates the regard in which he was held by his contemporaries, many of them being eminent scientists and engineers of the day.

Thomas Colby was born in 1784, the son of an officer in the Royal Marines. He was brought up by his aunts in Pembrokeshire and later attended the Royal Military Academy at Woolwich, becoming a Second Lieutenant in the Royal Engineers in December 1801.¹ He came to the notice of Major William Mudge, the then Director of the Ordnance Survey, and was engaged on survey work in the south of England. In 1804 he suffered a bad accident from the bursting of a loaded pistol and lost his left hand. However, this did not affect his surveying activity and he became chief executive officer of the Survey in 1809 when Mudge was appointed as Lieutenant Governor at Woolwich. During the next decade he was responsible for extensive surveying work in Scotland and was also involved in troublesome collaboration with French colleagues after the end of the Napoleonic Wars, connecting up the meridian arcs of British and French surveys.

Colby was made head of the Ordnance Survey in 1820, after the death of Mudge, and became a Fellow of the Royal Society in the same year. In 1824 he was given the task of surveying Ireland and during this work developed a 'compensation bar', known as the 'Colby Bar', which became the standard for base measurement in surveys throughout the world.² The Irish maps were produced to a very high standard but appeared only slowly during the period 1833-1847, by which time Colby had just taken retirement, having been promoted to the rank of Major General. In the later part of his career he had returned to complete surveying work in Scotland and England, which had stalled in the 1820s. He was also involved in some geological survey work in the south west of England. Colby married Elizabeth Boyd of Londonderry in 1828 and there were seven children. After retirement Colby spent some years in Bonn with his family and finally died in New Brighton in 1852.³

Thomas Colby's book collection came to Aberystwyth University in 1912 as part of a gift from William Henry Colby, a member of the College Council. The majority of the volumes date from the eighteenth and nineteenth centuries and deal with mathematics and surveying, along with a number on other scientific

¹ Further information about Colby is available in JE Portlock, *Memoir of the life of Major-General Colby*, 1869. See also Rachel Hewitt, *Map of a nation: A biography of the Ordnance Survey*, 2010 and Richard Oliver, *The Ordnance Survey in the nineteenth century: Maps money and the growth of government*, 2014.

² For the Colby and Drummond compensation bar see Hewitt pp254-255.

³ Portlock p313 also mentions a period in Belgium.

subjects, but there are also several dictionaries and grammars covering Welsh, Irish etc, which must have been useful in determining names for geographical features. From later years we find a number of presentation volumes from noted scientists and it looks as though Colby dabbled in antiquarian book collection, perhaps as a retirement hobby.



The oldest volume in the collection is a copy of Pliny's *Natural History*, with a commentary by Jacob Milich, dating from 1563. This was acquired in Bonn in 1849 and has Colby's signature on the title page (see left). The volume has an interesting early blind stamped pigskin binding showing the figure of justice. Further antiquarian acquisitions include a New Testament from 1623, a Sainte Bible from 1687, and a Greek testament from 1705 with extensive German annotation, presumably purchased during the Bonn period. Unusually there is also a copy of George Sale's early

translation of the Koran dating from 1734, still regarded as authoritative to this day. Colby's interest in matters both scientific and technical is displayed by his ownership of both volumes of the *Lexicon Technicum*, published by John Harris between 1704 and 1710. This is seen as the predecessor of many of the important eighteenth century dictionaries and encyclopaedias. There are a few important current publications amongst the collection. George Vancouver's *Voyage of Discovery to the North Pacific Ocean and Round the World*, published in three volumes plus maps by Robinson in 1798 would have been an expensive acquisition. Sadly the map volume is lacking in the Aberystwyth holding and seems not to have come to the University.

As one might expect the bulk of the working collection relates to mathematics and surveying. There are around fifty such volumes, ranging in dates from a

Commandinus *Euclid* of 1731 to Frederick Simms *Treatise on the Principal Mathematical Instruments Employed in Surveying, Levelling and Astronomy*, published in 1849. Many of the leading authors in the field are to be found, including Isaac Barrow, Augustus De Morgan and John Leslie. Particular mention should perhaps be made of William Wallace, one time Professor of Mathematics at Edinburgh University, and formerly a master at the Royal Military College at Marlow and Sandhurst. He dedicated his *Geometrical Theorems* of 1839 to Colby in print, 'in testimony of the respect and esteem of his sincere friend'. Two other articles from the Edinburgh Encyclopaedia, on Geometry and Fluxions, written by Wallace, were originally presented by him to William Mudge, Colby's predecessor at the Ordnance Survey. The 1815 article on Fluxions was notable as the first systematic presentation of continental calculus in the UK.⁴ There is also a Mudge autograph in an 1811 *Course of Mathematics* by Charles Hutton, Professor of Mathematics at the Royal Military Academy from 1773-1811. Interestingly William Mudge provides a direct link back to one of the great literary figures of the eighteenth century, since he was a godson of Dr. Samuel Johnson, and we have an account of Johnson visiting when he was a student at Woolwich in the 1770s and presenting him with a guinea and a book.⁵ Not all associations were as happy. The presence of an 1805 copy of *Essai de Geometrie analytique*, written by Jean-Baptiste Biot, the French physicist and mathematician, brings to mind the arguments he had with Colby when they were engaged on surveying work in the Shetland Isles in 1817.⁶ Colby seems to have acquired this volume from Lewis Evans, a noted mathematical lecturer at the Royal Military Academy in the first two decades of the century.

It is interesting to see a number of volumes presented to Colby by some of the leading scientific and scholarly figures of the period, reflecting his position as a Fellow of the Royal Society and supporter of many of the other learned societies which were springing up at that time. These include a copy of Thomas Young's *Elementary Illustrations of the Celestial Mechanics of Laplace* from 1821. Young was Secretary of the Board of Longitude on which Colby served during the 1820s, and was seen by contemporaries as something of a polymath, who also contributed to the decipherment of the Rosetta Stone, and was later praised by Herschel and Einstein. The Reverend William Buckland, one of the fathers of modern geology, presented a copy of his 1819 Oxford inaugural lecture *Vindiciae Geologicae*. Charles Babbage, one of the originators of computing, gave a copy of his *9th Bridgewater Treatise* and also visited Ireland with Colby⁷ and later worked with him on suggestions for the penny post. They were also both founders of the

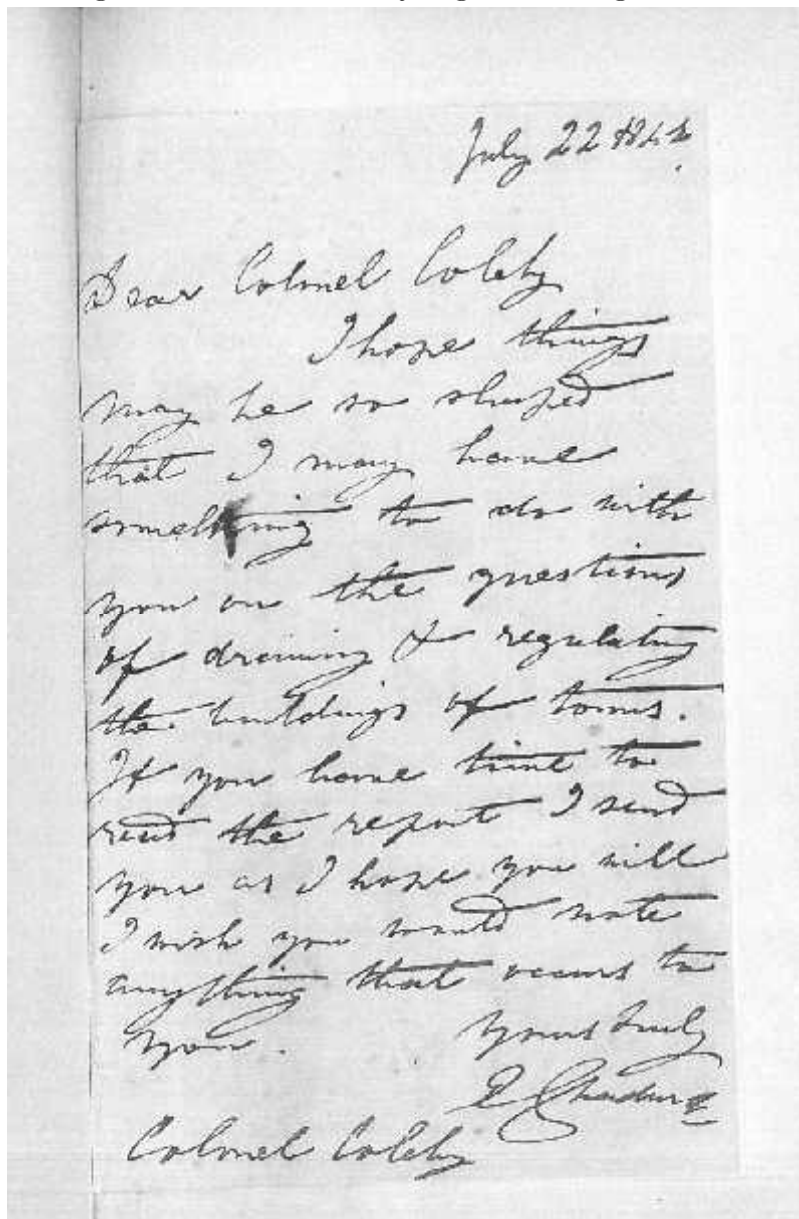
⁴ For William Wallace (1768-1843) see George Stronach, Maria Panteki article in *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/28545>

⁵ For William Mudge (1762-1820) see Elizabeth Baigent article in *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/19488/?back=,19489> and see also Oliver p64 etc. For Johnson anecdote see Hewitt p122.

⁶ See David L Walker, 'Balta Sound and the figure of the earth'. *Sheetlines*, 99, 5-14. See also Hewitt pp226-232.

⁷ See Hewitt p257, 285.

Astronomical Society, and in passing it is worth noting that Colby's 1810 copy of Samuel Vince's *Elements of Astronomy* had previously belonged to Alexander D'Arblay, student at Christ's College Cambridge, friend of Babbage, and son of the author Fanny Burney! Henry Raper, Secretary to the Royal Astronomical Society, presented a copy of his 1840 book on *Navigation and Nautical Astronomy* which won him the Founder's Medal of the Royal Geographical Society in 1841. A fellow military officer, Charles William Pasley, a leading expert on military fortification and demolition, presented a copy of his 1834 book on standards for weights and measures.⁸ The impact of Colby's work on developing areas like new railways is shown by William Galbraith's gift of his 1842 *Trigonometrical Surveying, Levelling and Railway Engineering*.



July 22 1842

Dear Colonel Colby

Those things
may be so shaped
that I may have
something to do with
you on the questions
of draining & regulating
the buildings of towns.
If you have time to
read the report I send
you as I hope you will
I wish you would note
anything that occurs to
you.

Yours truly
E. Chadwick

Colonel Colby

Also in 1842 Colby was approached by Edwin Chadwick, the social reformer, with a suggestion that he might support the work on sanitation and building in towns. An autograph letter from Chadwick to Colby (see left) survives as an insert into a *Report on the Sanitary Condition of the Labouring Population of Great Britain*.⁹ Later reports of the Metropolitan Sanitary Commission for 1848 and the Commissioners for Large Towns and Populous Districts 1844 are also present in the collection along with a few reports of the Poor Law Commissioners. Undoubtedly Colby's work in the 1840s on large scale mapping in the industrial north will have contributed to these efforts. On occasion Colby also worked with notable figures from the arts. Between 1833-1843 George Petrie, the Irish artist and antiquary, was employed as head of the topographical department

⁸ For Colby's earlier links with Pasley in the 1820s see Hewitt pp243-245. Hewitt provides an interesting anecdote about Jane Austen's enthusiasm for Pasley's work.

⁹ For Edwin Chadwick (1800-1890) see Peter Mandler article in *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/5013?docPos=1> and also see references in Oliver eg pp164, 184-5.

of the Irish survey, and two of his monographs from this period, on Tara hill and an ancient reliquary were presented to Colby.¹⁰

In terms of presentation volumes undoubtedly the prize example is Robert Stevenson's 1824 *Account of the Bell Rock Lighthouse*. This is a splendid quarto volume published by Constable with twenty three engravings and comes with a four page letter written by Stevenson to Colby in October 1824. Robert Stevenson was engineer to the Northern Lighthouse Board for fifty years and responsible for the construction of lights all along the coast.¹¹ This letter has not been published elsewhere and does provide some interesting material. Stevenson gives an account of his recent visit to France to visit lighthouses there. He also met up with the engineer Augustin-Jean Fresnel who had developed the Fresnel lens, widely used in lighthouses of the period. Fresnel had demonstrated his experimental apparatus in Montmartre and Stevenson observes that he has been granted £1100 by the Lighthouse Board to purchase a lens and conduct further experiments in Britain. Sadly Colby's response is very brief, merely acknowledging the interesting book, which he had found on his table when he returned from Ireland.

Indeed it is fair to comment that Colby made very little annotation in the books that he owned. The earliest signature appears to be 'Lieutenant Colby – February 19th, 1805' in his copy of Robert Simson's *Elements of the Conic Sections*, and the latest around 1850 in Bonn. Some of the more expensive volumes, such as *Lexicon Technicum*, seem to have been purchased after he acquired the rank of Major and presumably had more money to spare for his antiquarian interests. There are a few annotations in some of the mathematical volumes acquired from William Mudge, but these seem to relate to workings made by Mudge or the author William Wallace.

Although there are around 120 titles identified as part of the 1912 Colby donation in the old library accession lists there are several examples where pamphlets or works by the same author have been bound together into a single book. There are also a few multi volume works. A few items have been rebound over the years after normal wear and tear. Some half dozen volumes seem to have gone missing over the past century. These include Hugh Blair, *Lectures on Rhetoric*, 1801, a couple of Irish bibles and Sir Everard Home *Lectures on Comparative Anatomy*, 1814, where the library took the inexplicable decision to dispose of volume 2 while retaining volume 1! The most regrettable loss is Charles Babbage's *Observations on the Temple of Serapis*, privately printed in 1847, which currently commands high prices from antiquarian booksellers. It is possible that further volumes may yet come to light in the library store, since there are a few books which have the Colby ownership signature without the later Aberystwyth University bookplate or note in the accession lists.

¹⁰ See Hewitt pp274-276.

¹¹ For Robert Stevenson (1772-1850) see Roland Paxton article in *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/26436?docPos=2> . Reference to Colby, Stevenson and Fresnel is found in Theresa Levitt, *A short bright flash: Augustin Fresnel and the birth of the modern lighthouse*, 2013.

Colby must have owned a large map collection but we have little evidence of this. Pleasingly there is a full set of George Bellas Greenough *Geological Map of England and Wales*, published in 1820, although with a date of 1819. The only other possible item in the collection is a set of William Mudge's 1805 maps for Essex, with a dealer's label from William Faden 'Geographer to His Majesty and to His Royal Highness the Prince of Wales' of 5 Charing Cross. However, there is nothing in the accession file to tie this item specifically to Colby, although it occurs next to several books from the bequest.¹²

Although the books were marked with a donation label recording them as ex-libris volumes from the collection of Major-General TF Colby, when they arrived at the University in December 1912 they were scattered amongst the general collections with no indication of provenance being given in the catalogue. Only now has the opportunity been taken to bring the items together and analyse the collection, and it is hoped that they will form a useful resource for future research into the early days of the Ordnance Survey and Colby's activities.

Thomas Colby Bequest – Aberystwyth University. Short Title List.

Full bibliographical information for most of the titles in this list is available through the Aberystwyth University library catalogue.

George Adams. *A treatise describing and explaining the construction and use of new celestial and terrestrial globes*. 1766

Robert Ainsworth. *Thesaurus linguae latinae*. New edition. 1796

George Biddell Airy. *Gravitation*. 1834

Francesco d'Alberti di Villanova. *Grand dictionnaire francais-italien*. 3rd edition. 1811

Samuel Angell. *Sculptured metopes discovered amongst the ruins of the temples of the ancient city of Selinus in Sicily*. 1826

Francois Arago. *Historical elege of James Watt*. 1839

George Atwood. *A dissertation on the construction and properties of arches*. 1801

Charles Babbage. *Examples of the solutions of functional equations*. 1820

Charles Babbage. *The ninth Bridgewater treatise*. 2nd edition. 1839

Charles Babbage. *Observations on the temple of Serapis*. 1847. Item not located

Francis Baily. *On a method of fixing a transit instrument exactly in the meridian*. 1821

Peter Barlow. *An elementary investigation of the theory of numbers*. 1811

Peter Barlow. *An essay on magnetic attractions*. 1823

Peter Barlow. *New mathematical tables*. 1814

Peter Barlow. A table of hyperbolic logarithms. N.d.

Isaac Barrow. *Geometrical lectures*. 1735

Isaac Barrow. *The usefulness of mathematical learning*. 1734

Jacob Berzelius. *Die anwendung des lothrohrs in der chemie und mineralogie*. 1828

An Biobla naomhtha. 1830. Item not located

Jean-Baptiste Biot. *Essai de geometrie analytique*. 2nd edition. 1805

William Blackstone. *Commentaries on the laws of England*. 15th edition. 1809

¹² Portlock p313 mentions Colby's generosity in presenting many Ordnance Survey maps to the Institution of Civil Engineers as soon as they were published

- Hugh Blair. *Lectures on rhetoric and belles lettres*. 1801. Item not located
- Miles Bland. *Algebraical problems, producing simple and quadratic equations, with their solutions*. 6th edition 1832
- William Buckland. *Geology and mineralogy considered with reference to natural theology*. 1836
- William Buckland. *Reliquae diluvianae*. 1823
- William Buckland. *Vindiciae geologicae*. 1820
- Oliver Byrne. *New and improved system of logarithms*. 1838
- Antoine Cagnoli. *Trigonometrie rectiligne et spherique*. 2nd edition. 1808
- John Campbell. *A political survey of Britain*. 1774
- Samuel Hunter Christie. *On the laws according to which masses of iron influence magnetic needles*. 1821
- Federicus Commandinus. *Euclidis elementorum*. 1731
- John Davies. *Antiquae linguae Britannicae*. New edition. 1809
- Humphry Davy. *Elements of agricultural chemistry*. 2nd edition. 1814
- Augustus de Morgan. *The differential and integral calculus*. 1842
- Augustus de Morgan. *The elements of algebra preliminary to the differential calculus*. 1837
- George Dickie. *Flora abredonensis*. 1838
- William Emerson. *The art of surveying or measuring land*. 1770
- William Emerson. *Calculation, libration, and mensuration*. 1770
- William Emerson. *Chronology, or, the art of reckoning time*. 1770
- William Emerson. *The doctrine of combinations, permutations and combinations of quantities*. 1770
- Thomas Evans. *An English and Welsh vocabulary*. 1804
- A few minutes advice to gentlemen of landed property*. 1800
- William Galbraith. *A comprehensive treatise on land surveying*. 1842
- James Glenie. *The antecedental calculus*. 1793
- James Glenie. *The doctrine of universal comparison, or general proportion*. 1789
- Willem Jacob's Gravesande. *The elements of universal mathematics, or algebra*. 2nd edition. 1752.
- George Bellough Greenough. *A geological map of England and Wales*. 1819
- Olinthus Gregory. *Elements of plane and spherical trigonometry*. 1816
- Olinthus Gregory. *Mathematics for practical men*. 3rd edition. 1848
- Stephen Groombridge. *Comparison of the North Polar distances of thirty eight principal fixed stars*. 1812
- Hugh Hamilton. *A geometrical treatise of the conic sections*. 1773
- G. Hamoniere. *Grammaire Francoise a l'usage des Russes*. 1816
- James Harris. *Hermes*. 2nd edition. 1765
- James Harris. *Three treatises: the first concerning art, the second music, painting, and poetry, the third concerning happiness*. 2nd edition. 1765
- John Harris. *Lexicon technicum: or an universal English dictionary of arts and sciences*. 1704-10

- John Herschel. *A Collection of examples of the applications of the calculus of finite differences*. 1820
- Theophilus Holdred. *A new method of solving equations*. 1820
- Everard Home. *Lectures on comparative anatomy*. 1814. Lacks volume 2.
- David Hume. *Essays and treatises on several subjects*. New edition. 1777
- Charles Hutton. *A course of mathematics*. 6th edition. 1811
- Charles Hutton. *A mathematical and philosophical dictionary*. 1796
- Gustav Adolph Jahn. *Tafeln der sechstelligen logarithmen*. 1844
- James Johnston. *Lectures on agricultural chemistry and geology*. 1844
- Isaac Jones. *Grammadeg Cymreig*. 1832
- Sylvestre Francois Lacroix. *Traite de calcul differentiel et de calcul integral*. 1806. Item not located
- Adrien Marie Legendre. *Elements de geometrie*. 9th edition 1812
- John Leslie. *Elements of geometry, geometrical analysis, and plane trigonometry*. 2nd edition. 1811.
- John Leslie. *Elements of geometry, and plane trigonometry*. 4th edition. 1820
- John Leslie. *Geometrical analysis and geometry of curve lines*. 1821
- Humphrey Lloyd. *Six lectures on the wave theory of light*. 1836
- Peter Macfarlane. *A new and copious vocabulary, in two parts... English and Gaelic*. 1815
- Colin Maclaurin. *A treatise of algebra in three parts*. 2nd edition. 1756
- General de Malortie. *A treatise on topography*. 1825
- Lorenzo Mascheroni. *Geometrie du compas*. 1798
- Metropolitan Sanitary Commission. *1st and 2nd Report of the Commissioners*. 1848
- Robert Mushet. *A series of tables, exhibiting the gain and loss to the fundholder arising from the fluctuations in the value of the currency*. 1821
- Peter Nicholson. *The principles of architecture*. 4th edition. 1836
- Novum testamentum Graecum*. 1705
- Charles William Pasley. *Observations on the expediency and practicability of simplifying and improving the measures, weights, and money used in this country*. 1834
- George Peacock. *A collection of examples of the applications of the differential and integral calculus*. 1820
- George Petrie. *An account of the ancient Irish reliquary called the Domnach-Airgid*. 1838
- George Petrie. *On the history and antiquities of Tara Hill*. N.d.
- Philo of Alexandria. *Philonis judaei opera omnia*. 1828-1830
- John Playfair. *Dissertation on the progress of mathematical and physical science, since the revival of letters in Europe*. [From the Encyclopedia Britannica.]
- John Playfair. *Elements of geometry, containing the first six books of Euclid*. 4th edition. 1814
- Plinius Secundus. *Liber secundus, de mundi historia*. 1563
- William Owen Pughe. *A grammar of the Welsh language*. 2nd edition. 1832
- Pythias. *A vindication of Mr. Lancaster's system of education*. 1812

- Henry Raper. *The practice of navigation and nautical astronomy*. 1840
Report...into the sanitary condition of the labouring population of Great Britain. 1842/3
Report of the Commissioners for inquiring into the state of large towns and populous districts. 1844
Reports of the Poor Law Commission. 1836-1848. incomplete
Thomas Richards. *A Welsh grammar*. 1804
Abram Robertson. *A geometrical treatise of conic sections*. 1802
La Sainte Bible. 1687
George Sale. *The Koran*. 1734
Nicholas Salmon. *Apxai; or, the evenings of Southill*. 1806
Nicholas Saunderson. *The method of fluxions applied to a select number of useful problems*. 1756
William Siborn. *A practical treatise on topographical surveying and drawing*. 1827.
Item not located
Frederick Simms. *A treatise on the principal mathematical instruments employed in surveying, levelling and astronomy*. 7th edition. 1849
Robert Simson. *Elements of the conic sections*. 1814
Robert Stevenson. *An account of the Bell Rock lighthouse*. 1824
Michael Taylor. *Tables of logarithms of all numbers from 1 to 101000*. 1792
Testamentum novum. 1623
Benjamin Thompson, Count Rumford. *Philosophical papers*. 1802
Tiomuadh nuadh. N.d. Item not located
Sharon Turner. *The history of the reign of Henry the Eighth*. 1826
George Vancouver. *A voyage of discovery to the North Pacific Ocean, and round the world*. 1798.
Samuel Vince. *Elements of astronomy*. 3rd edition. 1810
Samuel Vince. *The principles of fluxions*. 4th edition. 1812
Thomas Wallace. *An essay on the manufactures of Ireland*. 1798
William Wallace. *Geometrical theorems and analytical formulae*. 1839
William Wallace. *Geometry*. [From the Edinburgh Encyclopedia]
William Wallace. *A treatise on fluxions*. [From the Edinburgh Encyclopedia]
John Wallis. *Grammatica linguae Anglicanae*. 6th edition 1765
Julius Ludwig Weisbach. *Lehrbuch der ingenieur und maschinen mechanik*. 1850-1852
Robert Willis. *Principles of mechanism*. 1841
James Wood. *The elements of algebra*. 9th edition. 1830
Thomas Young. *Elementary illustrations of the celestial mechanics of Laplace*. 1821