

A Brief Bibliography of
SIR CHARLES LYELL, FRS, Bt
Geologist

Frontispiece



Portrait of Charles Lyell by the Scottish artist Alexander Craig, painted in watercolour at the British Association meeting in Glasgow, in 1840 when Lyell was aged 43. From an original colour slide by the author. It also appears on the front covers of *Geology Today* (1998) **14**: 3, and The Geological Society of London, Special Publication **143** (1998): *Lyell: the Past is the Key to the Present*. Blundell, D. J. And Scott, A. C. (eds.). The original portrait may be seen in the Lyell Room at The Geological Society of London's premises, in Burlington House, Piccadilly.

CHARLES LYELL

A Brief Bibliography

Compiled and written by

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Also by the same author:

Dinosaurs and their Relatives Project Pack for Schools, 1983

The Cardioceratidae, with John Callomon, 1985

John Ray (1627-1705) Essex Naturalist, 1986

Dinosaur Stamps of the World, with Beverly Halstead, 1991

A Beginner's Guide to Secondhand Bookdealing, 1999

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Preface

Some 40 plus years ago, £10,000 was needed to help pay for a building extension to cope with an expanding small business - manufacturing fossil replicas, which was then being run from home. My bank was prepared to lend me half and to raise the other £5,000 I decided to sell some choice items from my science library. Notices of this were issued in newsletters of various Societies to which I belonged. Sales were brisk and the necessary money was raised in a remarkably short time. The thought that then occurred was that if selling books was that easy (it's not actually!), then buying in books for resale might be a good idea. Thus was started the worldwide business that is still running today.

One of the early problems encountered was with understanding the various combinations of editions and volumes of Lyell's *Principles of Geology* and the change of name of his *Elements of Geology* to *A Manual of Elementary Geology* and back again. I resolved to address this problem and to start collecting anything of Lyell's that was possible. The highlights in this were buying from Professor Hubert Skinner of Tulane University in New Orleans his magnificent library of Lyell material, and of acquiring at auction in the UK a few years ago signed presentation copies to his friend, the stockbroker and amateur geologist Charles Stokes (1783-1853) of volumes one & two of the first edition of *Principles*. This set was completed later with a volume three inscribed by Lyell to the French geologist and conchologist G. P. Deshayes (1795-1875), the man who produced the mollusc tables at the end of volume three and who was Lyell's conchological tutor, making it a highly-relevant association copy.

Many people over the years have entreated me to write a bibliography to help librarians, collector, researchers, bookdealers and others to gain an understanding of what exactly Lyell wrote, when and in what form. This is a first attempt and is concerned with the books and articles themselves, rather than a critical assessment of their content. There are many others such as Leonard Wilson of the University of Minnesota, USA, Martin Rudwick and Jim Secord of Cambridge University, England, who are far more competent than I in this respect, and to who's publications references should be made. This therefore has been written from the point of view of an antiquarian bookdealer rather than a historian.

By examining the archives of Murrays (Lyell's publisher) in Albemarle Street, London, it was possible to obtain some idea of the income that Lyell received from his publications – some £11,000, of which nearly half came from his *Principles*. Applying an inflation factor in 2013 of £1 = £415, this gives him a lifetime income of some £4.6 million, or an average of over £100,000 per year in today's terms. What a marvellous way of financing one's hobby! This was additional to his private means and earnings from lecturing. These same archives also contained a letter from Lyell recommending that Murrays publish a new book *On the Origin of Species* by a Mr Charles Darwin.

The word 'brief' in the title needs a little explaining; this first attempt at a bibliography has deliberately been limited to those of Lyell's works published in the UK up until 1911. Any other editions, whether simple reprints, edited reprints or translations are just variations on the basic thirty-three editions of all his works given here. Many of the variations are listed in the appendix, but this is obviously far from complete. This bibliography is being issued to coincide with the 24th International Congress of History of Science, Technology and Medicine (ICHSTM) in association with the International Commission on the History of Geological Sciences (INHIGEO), at Manchester, July 2013, to bring it to the attention of a wide scientific audience.

S A Baldwin, July 2013

Acknowledgements

In compiling this brief bibliography many people have helped me and to these is owed a great debt of gratitude.

In particular I would like to thank Professor Hugh Torrens of Keele University for considerable encouragement, advice and guidance; the late Professor Hubert Skinner of Tulane University, New Orleans for allowing me to acquire his magnificent and extensive Lyell library; Professor Leonard G. Wilson of the University of Minnesota and Professor Martin J. S. Rudwick of the University of Cambridge for help with references, Wendy Cawthorne from the library of the Geological Society of London for help with research and references; Virginia Murray of John Murrays publishers, London, for access to their archives and helpful discussions, and many others who have kindly sent me copies of title-pages and other details.

Particular thanks go to my business partner, adviser and computer expert – Sue, for all her input, data entry and other hard work, without which this would have been impossible. Finally, grateful thanks to my forbearing wife, Pam, for her understanding and for allowing me to escape from the household and gardening chores during the last few weeks.

Introduction

Charles Lyell is renowned as the premier geologist of the nineteenth century and for his major and most influential work, *Principles of Geology* in which he argued that the present is the key to the past, ie., that previously formed geological formations can be explained by uniformly-slowly-moving processes acting today, operating over very long periods of time. This became known as the principle of uniformitarianism, and greatly expanded the work of his predecessor, James Hutton. It shaped the mind of Charles Darwin, who said that new things could be seen partially as through Lyell's eyes. As Secord¹ says, Lyell did for the earth what Newton had done for astronomy and natural philosophy. His *Principles* and its revolutionary theory, not only greatly influenced science, but the arts and literature as well and firmly established geology as a scientific discipline.

Charles Lyell was born on the 14th November 1797, at Kinnordy House, Forfarshire in Scotland. He was the eldest of twelve children of Charles Lyell (1767-1849), the Laird of Kinnordy, who was known as a botanist and translator of poetry. Shortly after his birth, in 1798, the family moved to live at Bartley Lodge² (now a hotel) in the New Forest, Hampshire in the South of England. In 1808 he became seriously ill with pneumonia and spent the next four months convalescing. During this time he became interested in entomology through reading *The Natural History of British Insects* by Donovan. He used the fine coloured plates to identify local butterflies and moths and retained an interest in these throughout his life.

He went to Exeter College, Oxford in 1816, studying classics. Whilst browsing in his father's library the same year he came across and read *Introduction to Geology* (1815) by Robert Bakewell. He found this of great interest, particularly James Hutton's ideas about the great antiquity of the world. In the following two years at Oxford, he attended the lectures given by Dr. William Buckland on mineralogy and geology. Buckland was a catastrophist or diluvialist, whereby he believed that the world had been previously changed by abrupt catastrophic events, such as great floods, particularly that of the Biblical Noah. Buckland was a highly charismatic and entertaining lecturer who was instrumental in fostering Lyell's interest in geology.

In the summer of 1818 he toured the Continent with his family, where he saw fossil bones described by Cuvier in Paris, read about the geology of the Paris basin and saw the glacier at Chamonix in Switzerland, illustrating the principle of uniformitarianism. He graduated from Oxford with a BA in 1819, the same year that he was elected to membership of the Geological and Linnean Societies of London. He became an MA in 1821, though his eyes had become inflamed with constant reading.

In 1820 he began to study law at Lincoln's Inn in order to become a barrister, but continuing trouble with his eyes meant that he had to give up temporarily. He made a second trip to the Continent with his father in the summer. During part of his holiday in 1821 he rode on horseback to visit Gideon Mantell at Lewes in Sussex, where some of Mantell's discoveries confirmed Hutton's views that land could be elevated from below sea level and subsequently eroded, eg. the overlying Chalk being removed to reveal the underlying Wealden deposits. He also attended Robert Jameson's lectures in Edinburgh. In 1822 Lyell was called to the bar and whilst on the circuit he took the opportunity to begin his study of geology in the field when travelling in southeast England, visiting many places, including the Isle of Wight. In 1823 he was elected a joint secretary of the Geological Society, together with W. H. Fitton (1780-1861) a medical doctor and amateur geologist. He was made a Fellow of the Royal Society in 1826. His sight continued to deteriorate and he had to give up the legal profession in 1827. He then decided to devote himself entirely to geology.

In the nineteenth century, French was the international language of scientific communication and in the 1820s Lyell travelled in France, not only for the geology but also to improve his French. He mastered German and Italian as well and was familiar with some Spanish. This fully equipped him to read all the recent and relevant geological literature published in those languages. One of his French journeys was with the geologist Roderick Murchison (1792-1871) in 1828. Initially this was to examine the volcanic formations of the Auvergne in central France, his interest having been stimulated by G. P. Scrope's (1797-1876) book³ (1827), on the volcanic formations there, a book that he had just reviewed in the *Quarterly Review*.

After journeying with Roderick Murchison in France he went to Italy to examine the marine Tertiary strata. There he felt that the deposits could be divided into several groups each with a different ratio of extinct and recent molluscs. After discussions with William Whewell (who had also coined the words catastrophism and uniformitarianism), he gave these groups the names we use today: Eocene, Miocene and Pliocene.

He had been planning *Principles of Geology*¹ since 1827 and volume one was issued in 1830. A copy of this was given to Charles Darwin by Captain Robert Fitzroy just before they set sail in the Beagle. Darwin and Lyell became great friends after Darwin's return from his Beagle voyage, and it was Lyell who suggested that Darwin and Wallace publish a joint paper on the Origin of Species.

Volumes two and three appeared in 1832 and 1833. *Principles* was not just a one-off publication; eleven modified and updated versions poured from his pen as new evidence and knowledge accumulated during his life. This also applies to his two other major works: *Elements of Geology* and the *Antiquity of Man*.

Principles generated much public interest and many reviews, such as those in the very widely read *Quarterly Review* which was also published by John Murray. Not all reviews were complimentary however and some cartoons were published ridiculing Lyell's ideas. The best-known of these is probably that by H. De la Beche (1796-1855) who became the first director of the Geological Survey of Great Britain in 1835. It was entitled "Awful Changes" and poked fun at Lyell's idea of continuous cyclic changes by featuring a Professor Ichthyosaurus lecturing to an audience of Mesozoic reptiles on a human skull and its deficiencies.

His second major book, *Elements of Geology* was published in 1838 and is described in chapter one. It is basically an extension of volume four of *Principles* and in it Lyell developed his metamorphic theory of how, with gradual mountain uplift, igneous and metamorphic rocks were formed. It was concerned with the measurements of ancient changes and was the text-book of the time.

Published in 1863, *The Geological Evidences of the Antiquity of Man* is his second most important work, and appeared in response to the great interest in human ancestry stimulated by Darwin's *Origin of Species* (1859) and the immense periods of geological time implied in *Principles*. In it Lyell provides in detail the various kinds of evidence that could support the contemporary nature of human artefacts and extinct animals. He was careful to present the considerable evidence without drawing conclusions from it.⁴ This was Lyell being canny; as there were no conclusions there could be no criticisms, and Lyell left it to the readers to examine the evidence for themselves and draw their own conclusions. As Cohen⁵ indicates, the *Antiquity of Man* contributed to the creation or foundation of both Prehistoric Archaeology and Palaeoanthropology.

He was appointed to the chair of Geology at King's College, London, in 1831 but did not stay long. The following year he married Mary Horner, daughter of the geologist Leonard Horner (1785-1864) and the happy couple spent their honeymoon on a geological tour of Switzerland and Italy. During the 1840s the Lyells made several visits to the United States and produced two geological and travelogue books as a result: *Travels in North America* in 1845, and *A Second Visit to the United States* in 1849. The Presidency of the Geological Society followed in 1836, again in 1850 and of the British Association in 1864. A knighthood was conferred in 1848 and he became a baronet in 1864 for his services to geological science. He received many honours during his lifetime, including the Copley Medal, the highest award of the Royal Society (1858), and the Wollaston Medal of the Geological Society, also its highest award (1866). Many geological features were named after him including craters on the Moon and Mars and a number of fossils such as *Cephalaspis lyelli*, a Palaeozoic fish. The Oxford English Dictionary contains many instances of words first used in Lyell's books. He is buried in Westminster Abbey.

For those with an interest in Charles Lyell from the perspective of a historian, the following are recommended: Wilson, L. G. 1970, 1972 & 1998 (details in chapter 2); Blundell, D. J. & Scott, A. C. (eds.), 1998; Rudwick, M. J. S, 1909-1991 and Secord, J. A, 1997. (details in chapter 3)

Notes. ¹ See Secord, 1997. ² See Clasby, 1997. ³ Scrope, G. P. 1827. *Memoir on the Geology of Central France.....*

⁴ See Wilson, L. G. 1998. ⁵ See Cohen, 1998.

Chapter 1

Principles of Geology, being an Attempt to Explain the Former Changes of the Earth's Surface, by reference to causes now in operation.

Introduction

This was originally planned by Lyell to be complete in two volumes; and the title page of volume one, which was published in July 1830, indicates that there were indeed to be two volumes. At that time it was usual for Murray's to print a maximum of 750 copies and the 1500 run of volume one (retailing at 15/-) was unprecedented for a new author and was probably partly due to John Murray's faith in Lyell based on his previous work for them and his scientific reputation and partly on Lyell's business acumen and his powers of persuasion derived from his legal training. Lyell received 12 personal copies, 19 were sent for review and an obligatory 11 went to Stationers Hall for national and other libraries. A particularly useful feature for the historian in the first edition of volume one is the inclusion in chapters 2-4 of the earliest history of geology in the English language. This is included in all subsequent editions and appears from the third edition onwards with the chapters headed Historical Sketch of the Progress of Geology. Some editions subsequent to the first give a description of principal additions, alterations and omissions relative to the previous one.

Volume two followed in January 1832, although with the expansion of Lyell's knowledge and ideas it was only the first half of what was meant to be volume two, with the same print quantity (retailing at 12/-) and in the preface to this, Lyell indicated the need for a third volume to explain his views fully. Before this could be produced, however, sales of volume one had been so brisk that a second edition was called for. Minor corrections and additions were made and the second edition of volume one (1000 copies retailing at 15/-) was issued in January 1832, the same month as the first edition of volume two. Volume two (second edition) followed in January 1833 and we then have the extraordinary situation of volume three (first edition), issued in May 1833, being common to both editions. A sufficient quantity (2500 copies retailing at 18/-) was issued to satisfy both editions. This still causes confusion today, e.g. among booksellers and collectors and, because of the time delay between start and finish, there is a considerable demand for odd volumes of both the first and second editions.

Lyell had proposed that the Tertiary era be divided into three periods, the Eocene, Miocene and Pliocene, based on the proportion of living and extinct mollusc species in each period. In the 1820s, in France, Lyell met Deshayes, (1797-1875), the primary European fossil conchologist. He was so impressed with him that he asked him to produce statistical tables of Tertiary molluscs to support his divisions of the three periods. These tables appeared in 1833 as a 46 page appendix to volume three of *Principles*.

Two letters from his sister-in-law's *Life and Letters* indicate his great interest in conchology and provide some background to the tables:

To his sister, 26th February 1829, Charles says "Deshayes is positively to give me tables of more than 2,000 species of Tertiary shells, from which I will build up a system on data never before obtained, by comparing the contents of the present with the more ancient seas, and the latter with each other. He is to name all my Scilian shells."

To Gideon Mantell, Esq., Paris, Oct. 10 1830. "I have now engaged three months of his time, to enable him to teach me conchology and to construct tables which I have planned for my second volume of Tertiary shells."

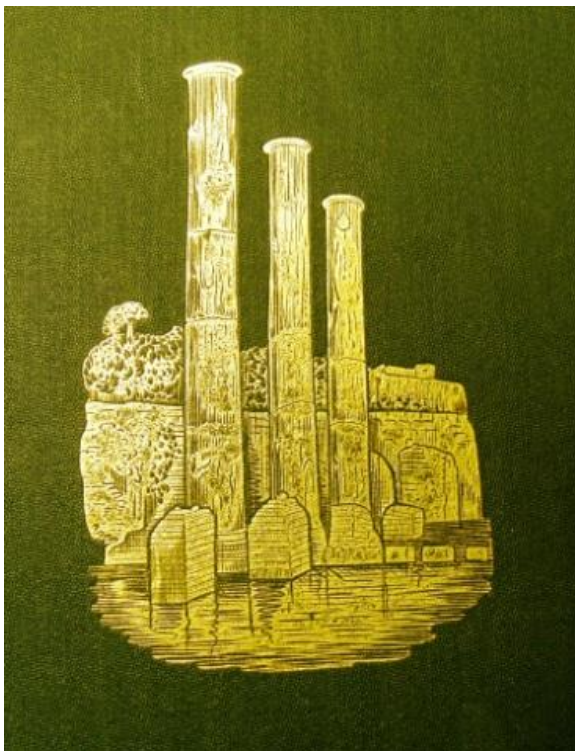
Ten subsequent editions were produced: the third to fifth in four volumes, the sixth in three volumes, the seventh to ninth in one volume and the last three in two volumes. The maximum print run was 5000 for the ninth edition and there were a total of 25,000 copies of all complete editions. An anomaly occurs with the eleventh edition as while 2000 copies were printed of volume one; only 1750 copies were printed of volume two. The reason for this is not known.

The third edition contains a four-page summary of the *Principles of Geology* which was expanded to seven pages by the fifth edition and then subsequently omitted.

The first four editions, 1830-1835, were issued in the then standard binding for the time, of buff coloured boards with paper spine-labels. This left it up to the choice of the buyer to get them rebound in calf, or other material as required. Editions five and six almost certainly were issued in a similar way, though these have not been seen other than in calf or cloth – the latter not by Murray but chosen by the purchaser from a book-binder.

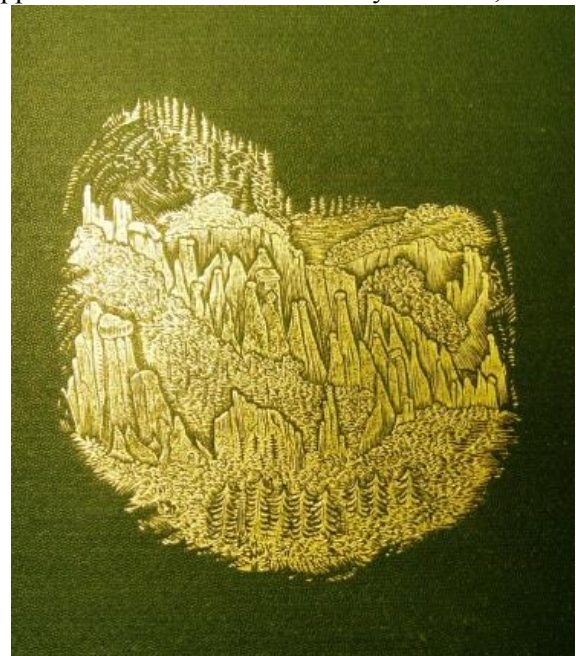
By the mid-1830s, a revolution occurred in the publishing industry in the availability of relatively inexpensive coloured cloth, suitable for covers for book-binding. This was much cheaper than calf and other materials such as morocco. Publishers took full advantage of this new material and started issuing books in cloth bindings. It was soon established that cloth was suitable for gilt embossing and Murray's was one of the earliest to produce books using green cloth with pictorial gilt-embossed covers, e.g., the seventh and subsequent editions not only of *Principles* but also of Lyell's other books published by John Murray, except for his *Visits and Travels in North America*, and the *Student's Lyell*.

In the first six editions of *Principles*, the frontispieces are of the Temple of Serapis at Puzzuoli, near Naples. From the seventh through the ninth single volume editions, the frontispiece was changed



to show a different view of the temple and part of this was reproduced on the front cover in the form of an attractive gilt-embossed illustration; if you look carefully you can see some small changes made by the embossing block maker to give clarity to the result; look near the base of the columns!

In the last three editions of two volumes each, tenth to twelfth, the same cover illustration is retained and used on volume two. A new gilt-embossed illustration appears on the front cover of volume one, showing part of plate 2 opposite page 336 – a view of the Earth-pillars of Ritten, on the Finsterbach, near Botzen, Tyrol. A new frontispiece also appears in volume two of the Bay of Baiae, near



Naples, after plate 26 in Sir W. Hamilton's *Campi Phlegraei*.

It was common for publishers to include advertisements for their other works bound in at the beginning or end of a volume. When editions issued in boards were rebound by the purchaser, these advertisements were often discarded.

PRINCIPLES OF GEOLOGY

Edition	Volumes	Issue date	Print Qty.	Comments
1 st	No. 1	July, 1830	1,500	
	No. 2	January, 1832	1,500*	
2 nd	No. 1	January, 1832	1,000	
	No. 2	January, 1833	1,000*	
1 st & 2 nd	No. 3	May, 1833	2,500*	
3 rd	4	May, 1834	1,750	
4 th	4	June, 1835	2,000	
5 th	4	March, 1837	2,000	Elements of Geology publ. in 1838. Travels in North America publ. in 1845. A Second Visit to the United States publ. in 1849. The Antiquity of Man publ. 1863 Students Elements of Geology publ. 1871.
6 th	3	June, 1840	1,500	
7 th	1	February, 1847	2,000	
8 th	1	May, 1850	2,500	
9 th	1	June, 1853	5,000	
10 th	No. 1.	November, 1866*	2,500	
10 th	No. 2	March 1868	2,500*	
11 th	No. 1	January, 1872	2,000*	
11 th	No. 2	January, 1872	1,750	
12 th (Last)	2	October, 1875	1,500	Posthumous.
		Complete Editions Total	25,000	*Excluding these.

All produced in Hardback and published by John Murray, Albemarle Street, London.

*1867 on title-page

Biblio.

Ref. Ed. Date Description

- 1a.** 1a. 1830 Issued in boards, half-title, frontispiece, pages: xv, 511, [i] – publisher's adverts., plates 2, woodcuts 33, 128mm x 21mm (5" x 8.25").
- 1b.** 1b. 1832 Issued in boards, no half-title, coloured frontispiece, pages: xii, 330, coloured folding map, woodcuts 9, 128mm x 21mm (5" x 8.25").
- 1c.** 1c. 1833 Issued in boards, half-title, coloured frontispiece, pages: xxxii, 109, [i] – publisher's adverts., plates 5 (including 1 coloured map), woodcuts 93, 128mm x 21mm (5" x 8.25").
- 2a.** 2a. 1832 Issued in boards, frontispiece, pages: xvi, 586, plates 2 (1 folding), woodcuts 34, 134mm x 215mm (5.25" x 8.5").
- 2b.** 2b. 1832 Issued in boards, coloured frontispiece, pages: xii, 338, coloured folding map, woodcuts 9, 134mm x 215mm (5.25" x 8.5").
- 2c.** 2c. 1833 As for 1c.
- 3.** 3 1835 In 4 volumes, issued in boards, frontispiece in vol. 1 only, pages: xxx, 420; 453; 426, [ii] – publisher's adverts., 393, [iii] – publisher's adverts., plates ii; iii-v; v.a.-vi; vii-xii, (many folding, some coloured), woodcuts 12; 13-42; 43-78; 79-147, 108mm x 190mm (4.25" x 7.5").

4. 4. 1835 In 4 volumes, issued in boards, frontispiece in vol. 1 only, pages: xviii, 406; 465, [vi] – publisher's adverts., 455; 456, plates ii; iii-vi; vii-ix; x-xv, (many folding, some coloured), woodcuts 10; 11-48; 49-85; 86-164, 108mm x 190mm (4.25" x 7.5").
5. 5. 1837 In 4 volumes, issued in boards, frontispiece in vol. 1 only, pages: xviii, 462; 442; 447; 448, plates ii; iii-vi; vii-ix; x-xv, (many folding, some coloured), woodcuts 21; 22-62; 63-108; 109-226, 108mm x 190mm (4.25" x 7.5").
6. 6. 1840 In 3 volumes, issued in boards, frontispiece in vol. 1 only, pages: xxi, [i] – errata, 442, [ii] – publisher's adverts.; xi, 479, [i] – publisher's adverts.; xii, 476, [iv] – publisher's adverts., plates iv; v-xi, (many folding, some coloured), woodcuts 16; 17-73; 74-101, 108mm x 190mm (4.25" x 7.5").
7. 7. 1847 In 1 volume, issued in green cloth with gilt embossed illustration of "View of the Temple of Serapis at Puzzuoli, in 1836" on front cover, blind embossed rules and ornament to covers and spine, gilt-embossed lettering on spine, frontispiece, pages: xvi, 810, 16 – publisher's catalogue, plates 11 (some folding), woodcuts 98, 140mm x 223mm (5.5" x 8.75").
8. 8. 1850 In 1 volume, issued in green cloth with gilt embossed illustration of "View of the Temple of Serapis at Puzzuoli, in 1836" on front cover, blind embossed rules and ornament to covers and spine, gilt-embossed lettering on spine, frontispiece, pages: xvi, 811, 16 – publisher's catalogue, plates 11 (some folding), woodcuts 100, 140mm x 223mm (5.5" x 8.75").
9. 9. 1853 In 1 volume, issued in green cloth with gilt embossed illustration of "View of the Temple of Serapis at Puzzuoli, in 1836" on front cover, blind embossed rules and ornament to covers and spine, gilt-embossed lettering on spine, frontispiece, pages: xii, 835, 32 – publisher's catalogue, plates 4 (one folding), woodcuts 100, 140mm x 223mm (5.5" x 8.75").
10. 10. 1867-1868
In 2 volumes, issued in green cloth with gilt embossed illustrations on the front covers; vol. 1 has "View of Earth-pillars of Ritten, on the Finsterbach, near Botzen, Tyrol" and vol. 2 has "View of the temple of Serapis at Puzzuoli, in 1836", blind embossed rules on covers and spines, gilt-embossed lettering on spines, frontispiece in vol. 1, pages: xvi, 671, 32 – publisher's catalogue; xvi, 649, [ii] – publisher's adverts., plates 4; 5-7 (1 folding), woodcuts 69; 70-158, 140mm x 223mm (5.5" x 8.75").
11. 11. 1872 In 2 volumes, issued in green cloth with gilt embossed illustrations on the front covers; vol. 1 has "View of Earth-pillars of Ritten, on the Finsterbach, near Botzen, Tyrol" and vol. 2 has "View of the Temple of Serapis at Puzzuoli, in 1836", blind embossed rules on covers and spines, gilt-embossed lettering on spines, frontispiece in both vols., pages: xx, 671; xviii, 652, plates 4; 5-7 (1 folding), woodcuts 75; 76-164, 140mm x 223mm (5.5" x 8.75").
12. 12. 1875 In 2 volumes, issued in green cloth with gilt embossed illustrations on the front covers; vol. 1 has "View of Earth-pillars of Ritten, on the Finsterbach, near Botzen, Tyrol" and vol. 2 has "View of the Temple of Serapis at Puzzuoli, in 1836", blind embossed rules on covers and spines, gilt-embossed lettering on spines, frontispiece in vol. 1, pages: xxii, 655; xviii, 652, 32 – publisher's adverts., plates 4; 5-7 (1 folding), woodcuts 75; 76-164, 140mm x 223mm (5.5" x 8.75").

Elements of Geology and Manual of Elementary Geology.

Introduction

Between the fifth and sixth editions of *Principles*, the first edition of *Elements of Geology* was issued in 1838, with an amazingly large print run of 3,500 copies.

The first three volumes forming *Principles* were concerned with those recent changes of the earth and its inhabitants, illustrating geological phenomena. *Elements* was written as a supplement to *Principles* and was confined strictly to Geology proper, so that it was distinct in its subject matter from the three volumes of *Principles*.

It had however, some common ground with volume four of *Principles* and this was dropped from the sixth edition of *Principles*. *Elements* can still partly be regarded as an expansion of volume four of *Principles*. The title was changed to *A Manual of Elementary Geology* with the issue of the third edition in 1851 and the preface says that *Principles* is concerned with modern changes of the earth and its inhabitants, whereas *Manual* is concerned with the measurements of ancient changes.

A separate 16-page appendix to the third edition was issued on 10th December, 1851 and is now rare. The fifth edition had at least two different supplements as shown in the *Elements* table, these are seldom seen. Copies are occasionally found bound in with the book. With the sixth and last edition of 4,000 copies issued in January 1865, the title reverted to *Elements of Geology*. These changes can still be confusing today. In the 10 years since the fifth edition much new material had accumulated and Lyell gives this as his reason for the change as the volume had outgrown the dimensions usually assigned to a manual.



The first two editions were issued in boards with paper spine labels. The second, being the only two-volume edition, January 1851, of 2000 copies. The third, by then called a *Manual*, was issued in brown cloth, blind-embossed on the spine and covers, the front cover had a very fine gilt-embossed microconch ammonite with a long lappet, reproduced from fig. 278 on page 262; from the Oxford Clay of Christian Malford, Wiltshire. Its name is given as *Ammonites Jason*, Reinecke and it would be known today as *Kosmoceras jason* [m.] (Reincke). (m = microconch or male).

The fourth edition, January 1852 of 2,500 copies was similarly bound and also some copies of the fifth edition, February 1855, of 4,000 copies. It was usual at the time for publishers to get a certain number of covers (cases) blocked or embossed in advance and in this instance, Murrays had some ammonite covers left over from the third and fourth editions, but not enough to satisfy the whole printing. They, therefore, produced some new gilt-embossed images for the front cover, of three fossils representing the Tertiary, Secondary and Primary eras. These were respectively a Nummulite, an Ammonite and an enrolled Trilobite that appeared as vignettes on the title pages of editions three to six. The Nummulite appears on page 232 (fig. 243) as *Nummulites exponens*, Sowerby, the Ammonite on page 317 (fig. 395) as *Ammonites Brackenridgii*, Sowerby, (= *Stephanoceras brackenridgii* [m], Sowerby) and the enrolled Trilobite on page 440 (fig. 586) as *Sphaerexochus mirus*, Beyrich.



A single gilt-embossed ammonite on the front cover therefore indicates an early issue of the fifth edition and the set of three fossils indicates a later issue.



With the sixth edition, the binding changes to Murrays' favourite green cloth with blind-embossing. On the rear cover *Kosmoceras jason* re-appeared, un-gilt, rotated some 45° clockwise relative to the previous front cover position. On the front cover two new gilt-embossed fossils appear – an upper one of the tail with feathers of *Archaeopteryx macura*, Owen (page 394, fig. 390A) and a lower one of a cone of a fossil *Araucaria* from the Inferior Oolite of Bruton, Somersetshire (page 407, fig. 421).

ELEMENTS OF GEOLOGY

The name was changed to **Manual of Elementary Geology** with the third edition, and back to **Elements of Geology** with the sixth edition.

Edition	Volumes	Issue date	Print Qty.	Comments
1 st	1	July, 1838	3,500	
2 nd	2	July, 1841	2,000	
3 rd	1	January, 1851	2,000	
Appendix to the 3 rd edition		10 th December, 1851	n/a	London, pages: 16. Extremely rare.
4 th	1	January, 1852	2,500	
5 th	1	February, 1855	4,000	
5 th Supplement 1 st	1	1857	n/a = not available	Pages: 34 +[i] – errata, [i] – adverts.
5 th Supplement 2 nd	Variation 1	25th April, 1857	n/a	Pages: 38 / 37
	Variation 2	25th May, 1857	n/a	Pages: 40
6 th (Last)	1	January 1865	4,000	
		Total	18,000	Excludes supplements

All produced in Hardback and published by John Murray, Albemarle Street, London.

Biblio.

Ref. Ed. Date Description

13. 1. 1838 In 1 volume, issued in boards, coloured frontispiece – ‘Ideal Section of part of the Earth’s crust ...’, pages: 8 - publisher’s adverts., xix, 543, woodcuts 294, 108mm x 190mm (4.25” x 7.5”).
14. 2. 1841 In 2 volumes, issued in boards, coloured frontispiece in vol. 1 only – ‘Ideal Section of part of the Earth’s crust ...’, pages: xxiv, 437; xii, 460, plates 7 (some folding), woodcuts 439, 108mm x 190mm (4.25” x 7.5”).
15. 3. 1851 In 1 volume, issued in blind-embossed brown cloth with gilt-embossed ammonite on front, gilt lettering on spine, frontispiece - ‘Strata of Red Sandstone, slightly inclined, resting on’, pages: xvi, 512, 12 – publishers adverts., woodcuts 520, 140mm x 222mm (5.5” x 8.75”).
16. 4. 1852 In 1 volume, issued in blind-embossed brown cloth with gilt-embossed ammonite on front, gilt lettering on spine, frontispiece - ‘Strata of Red Sandstone, slightly inclined, resting on’, pages: xxxii, 512, 16 – publishers adverts., woodcuts 531, 140mm x 222mm (5.5” x 8.75”).
17. 5. 1855 In 1 volume, issued in blind-embossed brown cloth with gilt-embossed fossils on front, gilt lettering on spine, frontispiece - ‘Strata of Red Sandstone, slightly inclined, resting on’, vignette title-page, pages: xvi, 655, 16 – publishers adverts., woodcuts 717, 140mm x 222mm (5.5” x 8.75”).
18. 6. 1865 In 1 volume, issued in blind-embossed green cloth with gilt-embossed fossils on front, gilt lettering on spine, vignette title-page, pages: xvi, 794, [ii] – publishers adverts., woodcuts 769, 140mm x 222mm (5.5” x 8.75”).

Travels in North America with Geological Observations on the United States, Canada, and Nova Scotia.¹

Introduction

This was published in green blind-embossed cloth with gilt-lettering on the spine in 1845; in two volumes, as the first of Lyell's popular travel and geology books.

Between 1841 and 1853 the Lyells went to North America four times, on their first three visits they travelled widely and Lyell had great success in lecturing, despite, as Dott² points out, his lack of elocutionary skills. They travelled by various means, including horseback, stagecoach, rail and steamboat, journeying from the Atlantic coast to the Ohio and Mississippi Rivers, and from the St Lawrence Valley to the Gulf Coast, including Massachusetts, Connecticut, New York, Virginia, Georgia, the Midwest and Nova Scotia.

As Lyell says in the preface, this work “embraces a great variety of subjects to which my thoughts were turned during my travels in North America”. He limits the scientific content to that which would be of interest to the general reader, for a more detailed account of his geological observations please see his North American papers, which appear here in chapter 2.

Lyell received substantial fees for his lectures², which entirely financed his travels. Despite making fascinating reading, this work of Lyell's was the least popular. Murrays had printed 1,750 copies of the first edition, but sales were poor and an examination of Murrays' archives (whilst they were still in London – they are now in Edinburgh) in ledger D217, shows that 250 copies of a separate title-page dated 1855, printed with “Second edition”, were used to replace the first edition title-page in their remaining copies, this therefore means that the so-called second edition was nothing of the sort. Do not think badly of Murrays for this, it was common practice at the time for publishers to do this as a means of stimulating sales. This accounts for the (250) against the second editions in the *Travels in North America* table below.

TRAVELS IN NORTH AMERICA

Edition	Volumes	Issue date	Print Qty.	Comments
1 st	2	1845	1,750	
2 nd	2	1855	(250)	1st ed. with new title-page saying “2nd ed.”
		Total	1,750	

All produced in Hardback and published by John Murray, Albemarle Street, London.

Biblio.

Ref.	Ed.	Date	Description
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19.	1.	1845	In 2 volumes, issued in blind-embossed green cloth with gilt lettering on spines, coloured folding frontispieces; vol. 1 - ‘Birds-eye view of the Falls of Niagara & Adjacent Country. Coloured Geologically’, (= plate 1); vol. 2 – ‘Geological Map of the United States Canada & c. Compiled from the State Surveys of the U.S. and other sources’ (= plate 2), pages: xii, [i], 316; viii, 272, [xvi] – publishers adverts., plates vii (some folding), text-figures 18, 120mm x 202mm (4.75” x 8”).
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20.	2.	1855	As the first edition.
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Notes: ¹ In the American editions of this work (which will be covered in detail in the second edition of this Bibliography), the title was re-cast as: *Travels in North America in the years 1841-2*. ² For a splendid overall view of his visits, readers are recommended to Dott, R. H. 1996 & 1998, in Chapter 4.

A Second Visit to the United States of North America.

(in the years 1845-6)

Introduction

This was published in 1849 in two volumes in brown blind-embossed cloth with gilt-lettering on the spines. Murrays were a little more cautious in their print quantity of only 1,250 copies, after their experiences with Lyell's *Travels*.

A second edition appeared in 1850 with 'revised and corrected' on the title-page, with a print quantity of 750 given in the Murray archive. Many pages in each edition have been checked and it has yet to be determined what these revisions and corrections were.

According to Murrays' adverts. and the known existence of at least two copies, a third edition was 'issued' in 1855 with an unknown print quantity. The third edition, which must have sold only a very few copies, is almost certainly, as with *Travels* second edition, a re-issue of the second edition with a change of title-page only. The pagination of all three editions is identical except for slight differences in the spacing in the indices.

As with *Travels* this was also one of Lyell's least successful publications.

A SECOND VISIT TO THE UNITED STATES OF NORTH AMERICA

Edition	Volumes	Issue date	Print Qty.	Comments
1 st	2	1849	1,250	
2 nd	2	1850	750	
3 rd	2	1855	n/a	Rare, few issued.
		Known Total	2,000	

All produced in Hardback and published by John Murray, Albemarle Street, London.

Biblio.

Ref. Ed. Date Description

- | | | | |
|-----|----|------|---|
| 21. | 1. | 1845 | In 2 volumes, issued in blind-embossed brown cloth with gilt lettering on spines, pages: xii, 368; xii, 385, text-figures 14, 120mm x 202mm (4.75" x 8"). |
| 22. | 2. | 1850 | As the first edition. |
| 23. | 3. | 1855 | As the first edition. |

The Geological Evidences of the Antiquity of Man with remarks on theories of The Origin of Species by Variation.

Introduction

This, Lyell's third most important book, was first published in 1863 just four years after Charles Darwin's *Origin of Species*. Lyell spent much time travelling to important sites in Europe in 1860 and 1861 in order to study the relationship between the fauna and geology of the Pleistocene and evidence for the existence of early man in Europe and the work of those such as Boucher de Perthes.

In it Lyell sets out the evidence then available relating to man in prehistoric times taking some nineteen chapters to do so, covering peat, the stone, bronze and iron ages, alluvial deposits, fossil human remains and related works of art found in caves, such as at Neanderthal, Brixham and Aurignac and the glacial period in Europe and North America. He summarised current knowledge on human prehistory with particular reference to flint implements, the stone and bronze ages, shell mounds in Denmark and Swiss lake dwellings, the frontispiece is of the latter, and Pleistocene mammals. He produced a synthesis aimed at both lay and scientific readers.

Lyell originally believed that species of animals and plants had remained the same since they were created, though initially he did not commit himself to agreeing with Darwin's theory of the origin of species, he did provide evidence that supported it. He also provided evidence for the evolution of man from the lower animals over a great period of time, with species modification probably being produced by natural selection. Darwin was disappointed that Lyell did not make specific comments of his own opinion on the origin of species, but during his lifetime Lyell was converted to Darwin's views.

The first edition of 4,000 copies issued in February 1863, met with immediate success and sales were so brisk that a second edition of 2,000 copies was issued two months later with some corrections and factual changes, followed by a third edition of 1,750 copies in November of the same year. This was an unprecedented publishing event for three editions of a scientific book to be produced in ten months. The fourth and last Murray edition came ten years later. For a detailed comparison of the editions, the 1980 article in Chapter 4, by Grayson, is recommended.

All four volumes were issued in a blind-embossed greyish/blue cloth with gilt spine lettering and two new gilt-embossed illustrations on the front cover. The upper is of a flint implement from St.



Acheul near Amiens, the site that gives its name to the Acheulian. It is described in fig. 8 on page 114 as a spear-head shape and it would be called a hand-axe today. The lower illustration is of the occlusal surface of a tooth from the lower jaw of an extinct fossil elephant *Elephas primigenius* of post-Pliocene date. It is taken from fig. 18 on page 133 and is of a Woolly Mammoth, which would be now known as *Mammuthus primigenius*. Its closest relative today is the Asian elephant.

In 1914, a shortened and simplified edition was issued by J. M. Dent of London and A. P. Dutton of New York in their Everymans Library Series, with a new introduction by the geologist R. H. Rastall (1871-1950). As usual with Dent at the time this was available in four separate bindings. It was reprinted and issued with a dust-jacket in 1927.

THE GEOLOGICAL EVIDENCES OF THE ANTIQUITY OF MAN WITH REMARKS ON THEORIES OF THE ORIGIN OF SPECIES BY VARIATION

Edition	Volumes	Issue date	Print Qty.	Comments
1 st	1	February, 1863	4,000	
2 nd	1	April, 1863	2,000	
3 rd	1	November, 1863	1,750	
4 th (last Murray)	1	May 1873	2,500	
		Total	10,250	

All produced in Hardback and published by John Murray, Albemarle Street, London.

Biblio.

Ref. Ed. Date Description

- 24.** 1. 1863 In 1 volume, issued in blind-embossed green cloth, gilt-embossed hand-axe and fossil tooth on front cover, gilt-lettering on spine, frontispiece - 'A village built on piles in a Swiss lake' (= plate 1), pages: xii, 520, 32 - publisher's adverts., plates 2, woodcuts 58, 140mm x 222mm (5.5" x 9").
- 25.** 2. 1863 In 1 volume, issued in blind-embossed green cloth, gilt-embossed hand-axe and fossil tooth on front cover, gilt-lettering on spine, frontispiece - 'A village built on piles in a Swiss lake' (= plate 1), pages: [ii] – publisher's adverts., xvi, 528, plates 2, woodcuts 58, 140mm x 222mm (5.5" x 9").
With the second edition a small appendix was added (pages: 507-513). This was also issued separately at no charge by the publishers and this separate issue contained a page of corrections and additions to the first edition. This is now extremely rare.
- 26.** 3. 1863 In 1 volume, issued in blind-embossed green cloth, gilt-embossed hand-axe and fossil tooth on front cover, gilt-lettering on spine, frontispiece - 'A village built on piles in a Swiss lake' (= plate 1), pages: xvi, 551, 32 - publisher's adverts., plates 2, woodcuts 58, 140mm x 222mm (5.5" x 9").
- 27.** 4. 1873 In 1 volume, issued in blind-embossed green cloth, gilt-embossed hand-axe and fossil tooth on front cover, gilt-lettering on spine, frontispiece - 'A village built on piles in a Swiss lake' (= plate 1), pages: xix, 572, 32 - publisher's adverts., plates 2, woodcuts 53, 140mm x 222mm (5.5" x 9").

The Students Elements of Geology.

Introduction

This was first published in 1871 in green cloth with gilt lettering on the spine and a gilt-embossed starfish on the front cover, of *Palaeaster asperimus*, Salter, an Ordovician echinoderm from Welshpool, taken from fig. 554 on page 456.



In the preface, Lyell mentions that the sixth edition of his *Elements of Geology* was already out of print before the end of 1868, the same year in which the tenth edition of *Principles of Geology* appeared. In this latter, he had included details of the rapid advances in geology and he was urged to dispense with these theoretical discussions and produce a new edition of *Elements* containing just the parts which were indispensable to a beginner, using examples of British rocks where possible.

After omitting some subjects, updating and recasting some, abbreviating others and finding better illustrations of fossils, he found that the form of the book was so different from the sixth edition of *Elements* that he decided to issue it under a new title of *Student's Elements of Geology*. This was a concise manual intended for the beginner in geology, at a price a student could afford.

The very large print run of 6,000 copies was sold out in three years and three subsequent revised and updated editions in 1874, 1878 and 1885 all sold well.

The fourth and last edition was produced by Dr. P. Martin Duncan following Lyell's plan for the earlier editions and contained new data from the previous seven years.

THE STUDENT'S ELEMENTS OF GEOLOGY

Edition	Volumes	Issue date	Print Qty.	Comments
1 st	1	1871	6,000	
2 nd	1	1874	5,000	
3 rd	1	1878	5,000	Posthumous
4 th (last)	1	1885	5,000	Updated by Martin Duncan
		Total	21,000	

All produced in Hardback and published by John Murray, Albemarle Street, London.

Biblio.

Ref.	Ed.	Date	Description
28.	1.	1871	In 1 volume, issued in green cloth, gilt-embossed starfish on front cover, gilt-lettering on spine, frontispiece - a fossil from each of the Tertiary, Secondary and Primary, vignette title-page (<i>Thecosmilia annularis</i>), pages: xix, 624, text-figures 636, 122mm x 190mm (4.75" x 7.5").
29.	2.	1874	As first edition, except pages: xix, 672, text-figures 645, tables 1 (of British fossils), 122mm x 190mm (4.75" x 7.5").
30.	3.	1878	As first edition, except pages: xx, 672, [8] – publisher's adverts., text-figures 641, tables 1 (of British fossils), 122mm x 190mm (4.75" x 7.5").
31.	4.	1885	As first edition, except pages: xx, 621, [ii] & 32 – publisher's adverts., text-figures 636, tables 1 (of British fossils), 122mm x 190mm (4.75" x 7.5").

The Student's Lyell. A Manual of Elementary Geology.

Edited by John W. Judd, formerly Professor at the Royal College of Science, London. (= Imperial College today).

Introduction

This was produced at the request of Sir Leonard Lyell, the nephew of Charles Lyell. Using the *Student's Elements* as a basis, the text was expanded and updated, over one hundred new illustrations added, yet by using a smaller typeface for some parts, increases in bulk and cost were avoided. It was recommended to readers that the larger typeface parts were read first.

It was issued in a blue/green cloth with blind-embossed cover panels and gilt spine lettering. The frontispiece being a coloured geological map of most of the UK. With the second edition in 1911, the sub-title was changed to *The Principles and Methods of Geology, as Applied to the Investigation of the Past History of the Earth and its Inhabitants*. The frontispiece was replaced by an early photographic portrait of Charles Lyell and, naturally, the book was revised and enlarged.

The most significant addition, however, is a new introduction, with the reasons for it explained in the Preface: By 1911 the doctrine of Evolution as applied to both the Inorganic and Organic world had been almost universally accepted. Lyell's writings were the logical precursor to Darwin's *Origin of Species* and had thereby acquired a new and greater interest. It was therefore fitting that a new Historical Introduction be added to give a history of the events leading up to the publication of *Principles of Geology*. This in itself makes fascinating reading and is a little-known contribution to the history of geology. The 1911 edition remained in print until the end of 1958.

THE STUDENT'S LYELL. A MANUAL OF ELEMENTARY GEOLOGY

Edited by John W. Judd

Edition	Volumes	Issue date	Print Qty.	Comments
1 st	1	1896	5,000	
2 nd (last)	1	1911	2012	Historical introduction
		Total	6,012	

ENGLISH

All produced in Hardback and published by John Murray, Albemarle Street, London.

Biblio.

Ref.	Ed.	Date	Description
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- | | | | |
|-----|----|------|---|
| 32. | 1. | 1896 | In 1 volume, issued in blind-embossed green cloth, gilt-lettering on spine, frontispiece - coloured Geological map of Great Britain, vignette title-page (small profile of Charles Lyell), pages: 23, [i], 635, text-figures 736, 128mm x 196mm (5" x 7.75"). |
| 33. | 2. | 1911 | In 1 volume, issued in blind-embossed green cloth, gilt-lettering on spine, frontispiece - portrait of Charles Lyell, pages: 56, 645, text-figures 736, 128mm x 196mm (5" x 7.75"). |

Note: The descriptions of thirty-one of Lyell's thirty-three editions are from copies in the author's library.

Chapter 2

Articles written by Lyell in serial and other publications.

Initially taken from the *Catalogue of Scientific Papers* (1800-1863) Vol. 4, compiled and published by the Royal Society of London, 1870, pages 138-141, with many additions.

In the nineteenth century it was common for the same article to be published in more than one journal at the same time, or within a month or so. This accounts for multiple entries under a particular title. The initial publication details are given in full and subsequent ones may be abbreviated.

Lyell, Charles. 1825. On a dike of serpentine cutting through sandstone in the county of Forfar. *Edinburgh Journal of Science*. **3**: 112-126.

— 1826. [Review of the publications of six provincial English scientific institutions.]¹ *Quarterly Review*, **34**: 153-179.

— 1826. [Review of] *Transactions of the Geological Society of London*. **1**: 2nd series, 1824. *Quarterly Review*, **34**: 507-540.

— 1827. On the strata of the plastic clay formation exhibited in the cliffs between Christchurch Head, Hampshire, and Studland Bay, Dorsetshire. *Transactions of the Geological Society of London*. **2**: 2nd series, 279-286.

— 1827. On the freshwater strata at Hordwell Cliff, Beacon Cliff, and Barton Cliff, Hampshire. *Transactions of the Geological Society of London*. **2**: 2nd series, 287-292.

— 1827. On some fossil bones and teeth of the elephant and other animals found near Salisbury. *Proceedings of the Geological Society of London*. **1**: no. 3. 25-26.

— 1827. [Review of] Memoir on the geology of central France, including the volcanic formations of Auvergne, the Velay, and the Vivarais, with a volume of maps and plates. By G. P. Scrope, F.R.S., F.G.S. *Quarterly Review* **36**: 437-483.

— 1829. On a recent formation of freshwater limestone in Forfarshire, and on some recent deposits of freshwater marl; with a comparison of recent with ancient freshwater formations; and an appendix on the Gyrogonite or seed vessel of the Chara. *Transactions of the Geological Society of London*. **2**: 73-96, pls. 10-13.

— 1833. On a fresh-water formation containing lignite in Cerdagne in the Pyrenees. *Proceedings of the Geological Society of London*. **2**: no. 34, 21-22.

— 1833. Observations on the loamy deposit called “loess” in the valley of the Rhine. *Proceedings of the Geological Society*, (London), **2**: no. 36, 83-85; 1834. *Edinburgh New Philosophical Journal* **17**: 110-122.

— 1835. On the Cretaceous and Tertiary strata of the Danish islands of Seeland and Möen. *Proceedings of the Geological Society of London*. **2**: no. 41, 191-192; 1840. *Transactions of the Geological Society of London*. **2**: 243-258.

— 1835. On the occurrence of fossil vertebrae of fish of the shark family in the “loess” of the Rhine, near Basle. *Proceedings of the Geological Society of London*. **2**: no. 43, 221-222.

— 1835. On the change of level of the land and sea in Scandinavia. *Report of the fourth meeting of British Association for the Advancement of Science*. **4**: 652-654.

— 1835. On the proofs of a gradual rising of the land in certain parts of Sweden. (Bakerian Lecture). *Philosophical Transactions of the Royal Society of London*. **125**: 1, 1-38, pls. 1, 2; 1837. *Liebig. Annal.* **21**: 97-105; 1835. *Neuchatel, Mem.* **1**: 1-35 (Bull. Bibl.); 1836. *Poggend. Annal.* **38**: 64-117; 1835. *American Journal of Science and Arts*. **28**: 387-388.

- 1837. Address to the Geological Society, delivered at the anniversary, on the 17th of February, 1837. *Proceedings of the Geological Society of London*. **2**: no. 49, 479-523.
- 1837. On certain phenomena connected with the junction of granitic and transition rocks, near Christiania, in Norway. *Report of the British Association for the Advancement of Science*. **2**: 67-69.
- 1838. On vertical lines of Flint, traversing horizontal strata of Chalk near Norwich. *Report of the British Association for the Advancement of Science*, **2**: 87-88.
- 1838-9. Lettre à M. Desnoyers sur le Crag du Norfolk et du Suffolk. *Bulletin de la Société Géologique de France* (Paris). **10**: 321.
- 1839. On the occurrence of Graptolites in the slate of Galloway, in Scotland. *Proceedings of the Geological Society of London*. **3**: no. 60, 28-29.
- 1839. Remarks on some fossil and recent shells, collected by Capt. Bayfield, R.N., in Canada. *Proceedings of the Geological Society of London*. **3**: no. 63, 119-120; 1842. *Transactions of the Geological Society of London*. **6**: 135-142.
- 1839. On the relative ages of the Tertiary deposits commonly called Crag, in Norfolk and Suffolk. *Proceedings of the Geological Society of London*. **3**: no. 63, 126-130; *Annals and Magazine of Natural History* **3**: 313-330.
- 1839. On the origin of the tubular cavities filled with gravel and sand, called Sandpipes in the chalk near Norwich, with additional facts by T. B. Wigham. *Report of the British Association for the Advancement of Science*. **2**: 65-66; *Philosophical Magazine* (London). **15**: 259-266.
- 1839. On remains of Mammalia in the Crag and London Clay of Suffolk. *Report of the British Association for the Advancement of Science*. **2**: 69-70.
- 1840. On the discovery of fossil teeth of a Leopard, Bear, and other animals in a Crag Pit at Newbourn in Suffolk. *Annals and Magazine of Natural History*. **4**: 186-189.
- 1840. On the occurrence of fossil quadrumanous, marsupial, and other mammalia in the London Clay, near Woodbridge, in Suffolk. *Annals and Magazine of Natural History*. **4**: 189-196.
- 1840. On the occurrence of two species of shells of the genus *Conus* (*C. concavus* and *C. cadonensis*) in the Lias or Inferior Oolite near Caen in Normandy. *Report of the British Association for the Advancement of Science*. **2**: 110-111; *Annals and Magazine of Natural History*. **4**: 292-296.
- 1840. On ancient sea-cliffs and needles in the chalk of the valley of the Seine in Normandy. *Report of the British Association for the Advancement of Science*. **2**: 111-113.
- 1840. On the boulder formation or Drift, and associated freshwater deposits composing the mud cliffs of eastern Norfolk. *Proceedings of the Geological Society of London*. **3**: no. 67, 171-179; 1840. *Philosophical Magazine* (London). **16**: 345-380.
- 1840. On the geological evidence of the former existence of glaciers in Forfarshire. *Proceedings of the Geological Society of London*. **3**: no. 72, 337-345; 1841. *Edinburgh New Philosophical Journal*. **30**: 199-202.
- 1841. On the Faluns of the Loire, and a comparison of their fossils with those of the newer Tertiary strata in the Cotentin, and on the relative age of the Faluns and the Crag of Suffolk. *Proceedings of the Geological Society of London*. **3**: 2, no. 79, 437-444.
- 1841. On the freshwater fossil fishes of Mundesley as determined by M. Agassiz. *Proceedings of the Geological Society of London*. **3**: 2, no. 80, 362-363.
- 1841. Some remarks on the Silurian strata between Aymestry and Wenlock. *Proceedings of the Geological Society of London*. **3**: 2, no. 80, 463-465.
- 1841. Notes on the Silurian strata in the neighbourhood of Christiania in Norway. *Proceedings of the Geological Society of London*. **3**: 2, no. 80, 465-467.

— 1841. [Letter to Dr. Fitton on the Carboniferous and older rocks of Pennsylvania]¹. *Proceedings of the Geological Society of London*. **3**: 2, no. 82, 554-558. *The Geologist*. **1**: 25-27.

— 1842-43. Memoir on the recession of the Falls of Niagara. *Proceedings of the Geological Society of London*. **3**: 2, no. 85, 595-602; **4**: 1, no. 92, 19-22.

— 1842. On the Tertiary formations and their connexion with the chalk in Virginia and other parts of the United States. *Proceedings of the Geological Society of London*. **3**: 2, no. 89, 735-742.

— 1842. On the fossil foot-prints of birds and impressions of rain-drops in the valley of the Connecticut. *Proceedings of the Geological Society of London*. **3**: 2, no. 91, 793-796; 1843. *American Journal of Science and Arts*. **45**: 394-397.

— 1842. On the ridges, elevated beaches, inland cliffs and boulder formation of the Canadian lakes and valley of St. Lawrence. *Proceedings of the Geological Society of London*. **4**: 1, no. 92, 19.

— 1842. [On the Cause of dip of New Red Sandstone in the eastern United States]. *American Journal of Science*. **43**: 170-172.

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1. Freshwater Formations of Auvergne ; Extinct Volcanoes of the Successive Periods.
2. Structure of Aetna ; Origin of Granitic Rocks ; Changes in the Organic World.
3. Upheaval and Subsidence of the Earth’s Crust; Submergence and Re-elevation of the Temple of Serapis.
4. Origin of Coral Reefs, and theory of their circular form ; Coralline Limestone of Various Geological ages.
5. Nature and origin of coal ; Period of its Formation.
6. Foot-marks of Fossil Animals ; The Niagara District. *Chirotherium*. Organic Remains of the most ancient rocks.
7. Recession of the Falls of Niagara.
8. Boulder Formation ; Transporting Power of Ice ; Action of Glaciers and Icebergs.

A second edition was issued in yellow paper covers, January 1843. The word “Eight” was dropped from the title and the following added: “With a general introduction to which is added a Sketch of a Lecture on the Different Races of Men, by J. Augustine Smith, M. D.” Reported for the New-York Tribune. Price 25 Cents. With 9 errata on the verso of the front cover, frontispiece “Ideal section of part of the earth’s crust.” with explanation opposite. The title-page has an advertisement for the eight lectures on its verso, pages: viii, 55.

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- 1846. Observations on the fossil plants of the Coal-field of Tuscaloosa, Alabama; with descriptions of some species (*Sphenopteris latifolia*, *S. dubuissoni*, *Neuropteris tenuifolia*, *N. gigantea*, *Stigmaria ficoides*, etc) by C. F. Bunbury. *American Journal of Science and Arts*. **2**: 228-233.
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Chapter 3

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Chapter 4

A selection of articles written partly or entirely on Lyell and his ideas, in serial publications; plus other works with a substantial Lyell content.

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Chapter 5

Arabella Burton Buckley (1840-1929). Secretary to Charles Lyell from 1864-1875.

Arabella Buckley¹, born in Brighton on October 24th, 1840, the youngest daughter of the Rev. J. W. Buckley, moved with her family to the parish of St Mary's, Paddington, London, in 1844. Twenty years later, in June 1864, she heard that Sir Charles Lyell needed a lady secretary and literary assistant. She applied and her excellent handwriting was instrumental in her obtaining the position.

From that date on, she worked for Lyell, until his death on February 22nd 1875, for four hours per day, except for when he was out of London. When Arabella went to Italy for six months in 1869, Lyell tried other secretaries, but Arabella had proved to be so useful to him that others could not match her, so he gave up working and travelled until she returned.

Buckley wrote his letters by instruction, sorted his large scientific correspondence and when new editions of any of his works were required, she drew the illustrations, re-wrote passages, compiled indices and tables, made précis of data in new works and corrected proofs.

Though the written content of his books was by Lyell, Buckley was obviously of enormous help to him in their production and it is this alone that justifies her inclusion in this Bibliography.

Buckley had obviously been well-educated in the sciences and at Lyell's house she met many eminent visiting scientists, such as The Duke of Argyll, Darwin, Hershel, Hooker, Huxley, Tyndall and Wheatstone. Buckley was always invited to conversations between these and Lyell and she is recorded as supplying observations to Darwin² which he used in his publications.

During her time with Lyell she gathered an enormous amount of scientific information and, after his death, she became well-known as a science writer and populariser. Her first work, which was published in 1875, was titled *A Short History of Natural Science and the Progress of Discovery from the Time of the Greeks to the Present Day for the Use of Schools and Young Persons*, in some 500 pages. This still forms an excellent introduction to the history of science, and of course comes with an excellent section on Charles Lyell in chapter 40. She also was in demand as a lecturer on science and wrote several more books aimed at educating children, e.g. *The Fairy Land of Science*, *Life and Her Children* and *Winners in Life's Race or the Great Backboned Family*. She is also recorded as contributing an article on Lyell to the *Encyclopaedia Britannica*.

Her last work for Lyell was reading to him, two days before he died, part of the eleventh and penultimate edition of *Principles*.

In 1876 it was suggested by several influential friends that she apply for the Headship of Girton College, Cambridge, but she declined and then devoted her time to lecturing and authorship. In 1884 she married a Dr. T. Fisher, moved to Devon and wrote *A Short History of England*, published in 1887. After marriage she continued to use her maiden name in her publications

Author's Note.

In 1945, at the age of 15, some birthday present money enabled me to buy my first serious book, which became the start of what is now a large library on the History of the Sciences. That book was *A Short History of Natural Science*, third edition, 1883, by Arabella B. Buckley with a fine gilt-embossed cover and spine. The printed dedication from the authoress was to "Sir Charles and Lady Lyell." Now 68 years later I appreciate more than ever what I had then bought.

Notes: 1. For much of the material in this short chapter I am indebted to R. G. (Anon) Our Portrait Gallery – no. viii. Arabella Burton Buckley (Mrs Fisher). Research: A Monthly Illustrated Journal of Science, February 1st, 1908, 130-131 with a whole-page portrait. 2. Darwin Correspondence Project: <https://www.webarchive.org.uk/wayback/archive/20130508022041/http://www.darwinproject.ac.uk/person/namedef-710>

Appendix:

Proposals for an enlarged second edition

This will include:

- Details of later reprints, American and foreign language editions. A summary table is given below of those already in the author's library and of others known. ('Print on demand' and e-books are not being considered).
- Details of Obituaries.
- Details of reviews of Lyell's works and of writings about him and his works.

Other topics under consideration:

- Annotations to the Book and Journal References.
- Other dissertations or theses not already mentioned.
- Places, geological features and fossils named after Lyell.
- Words introduced into the Oxford English Dictionary from Lyell's books.
- Location and content of Lyell archival material.
- Portraits of Lyell.
- Lyell's Will and the Lyell Medal.
- The Lyell Room and Collections at the Geological Society of London.

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Date	Country of issue	No. of vols.	London ed. from which taken	Edition on title-page / verso	Comments
PRINCIPLES					
1843/45	France	2 (of 3?)	6		
1873	France	2	11	1	
1837	USA	2	5	1	
1853	USA	1	9		
1859	USA	1	9	New & revised	
1860	USA	1	9	New & revised	
1872	USA	2	11		
1870	USA	3	1		
1877	USA	2	11		
1889	USA	2	11		
1889	USA	3	1		
1970	USA	3	1		Intro. by M. Rudwick
1989	USA	3	1		Intro. by M. Rudwick
1990	UK/USA	3	1		Intro. by M. Rudwick
1997	USA	3	1		Intro. by M. Rudwick
1997	UK/USA	1	1		Penguin ed. J. Secord
ELEMENTS					
1839	France	1	1	1	
1867	France	2	6	6	
1839	Germany	1	1	1	
1847	Spain	1	?	1	
1839	USA	1	1	1	
1841	USA	2	2	2	
1860	USA	1	6	6	
1866	USA	1	6	6	

MANUAL					
1856	France	2	1	5	
1857	France	1		2	Supplement of pages [ii], 60.
1863	France	2		6	
1957	Germany	2	5		
1853	USA	1	4	4	
1854	USA	1	4	4	
1858	USA	1	'6'		
1859	USA	1	'6'		
TRAVELS IN NORTH AMERICA					
1846	Germany	1	1		
1851	Germany	1			
1845	USA	2	1	1	
1845	USA	2 in 1		3	
1856	USA	2	2?		
1978	USA	1		1	ARNO reprint of 1 st USA ed.
SECOND VISIT TO U.S.					
1851	Germany	2			
1850	USA	2			
1868	USA	2			
ANTIQUITY OF MAN					
1864	France	1	1 or 2		
1864	France	1		1	Appendix in L'Homme Fossil en France
1878	France	1	3?	2	
1891	France	1	3		
1864	Germany	1	3		
1867	Germany	1	3		
1874	Germany	1	4		
1863	USA	1		1	
1863	USA	1		2	
1870	USA	1	3	2	
1873	USA	1	4	4	
STUDENT'S ELEMENTS					
1871	USA	1	1		

OTHERS KNOWN

PRINCIPLES					
1859	Russia	1	5		177 pages - Russian translation
1866	Russia	2	Prob. 10		562 pages - Russian translation
ELEMENTS					
1866-78	Russia	2	6		Russian translation
MANUAL					
1866	Russia	1	6	1	
1878	Russia	1	6	2	
ANTIQUITY OF MAN					
*****	Russia	1	1-3		Russian translation
2003	UK	1	1	Reprint of 1	Part of a 9 vol. reference set on The Evolution Debate 1813-1817 (ed.) D. Knight.
SECOND VISIT TO U.S.					
*****	USA	2	1	(1)	New York, Harpers & London, Murray.

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CARTOGRAPHY	HOAXES / FAKES	BOTANY
CATASTROPHISM	HYDROLOGY / HYDROGEOLOGY	INVERTEBRATES
COLLECTING	INHIGEO	VERTEBRATES
CONTROVERSIES/FEUDS	INSTITUTIONS	MICRO-
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DESERTS	MAPS / MAPPING	PHYSICAL GEOLOGY
DILUVIALISM	MARINE GEOLOGY	PICTORIAL REPRESENTATIONS
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EARTHQUAKES/SEISMOLOGY	METEOROLOGY	PRE-MEDIEVAL PERIOD
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ECONOMIC GEOLOGY	MINING	SIXTEENTH – EIGHTEENTH
ENGINEERING GEOLOGY	MUSEUMS	CENTURIES
EVOLUTION	MYTHS & LEGENDS	SOIL MECHANICS
EXTINCTIONS	NEPTUNISM	STRATIGRAPHY
FIELD WORK	NINETEENTH CENTURY	STRUCTURAL GEOLOGY /
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GEOCHEMISTRY	ORES	SYSTEMATICS
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The Author



Stuart Baldwin was given the first Rupert Bear Annual in 1936, at the age of six and has been an avid book collector ever since. He started his first business during the war years whilst still a schoolboy, manufacturing wooden toys from scrap timber, using his father's lathe.

After a five year electrical engineering apprenticeship with Crompton Parkinsons at Chelmsford, and two years National Service, he qualified as a pharmacist in Bristol, spending some time in hospital and retail pharmacy, followed by seven years with Burroughs Wellcome as a medical representative. The next fifteen years were spent marketing computers for IBM.

Whilst with IBM he converted a fossil collecting hobby into a major international business, manufacturing replicas of fossils for use in education and museums. To help finance this he sold some of his own library, which started him in bookdealing.

Two years as the Small Firms Adviser at the London Enterprise Agency followed, on secondment from IBM, where he organised and ran courses for small business start-ups, and subsequently spent sixteen years as visiting lecturer in small business planning and marketing at the University of East London.

He enjoys studying and in 1996, after taking 28 years, obtained a BSc through the Open University, resulting in a Guinness World Record as the *slowest student in the world!*

Though well past his 'sell-by date', he and his business partner (and step-daughter), Sue Lyman, currently run a family bookdealership specialising in secondhand and antiquarian science, with beekeeping, geology, palaeontology and science being the main subjects. He is a very happy man, having converted his book-collecting hobby into a flourishing world-wide business via the Internet and has no plans to retire.

He is a member of several scientific societies and his hobbies include beekeeping and collecting books on the history of geology. He is proud and delighted to have recently been elected to the INHIGEO network on the history of the geological sciences.