

Sir Philip Rashleigh, Mineralogy, and the Cornish Industrial Revolution

One particularly rewarding part about working at New College Library is the sheer diversity of the collections that the college has accumulated over the centuries. As you browse the shelves, titles catch your attention, and—after just a little bit of further investigation—you quickly discover information about a whole host of different topics. One such example is the book discussed in this New College Note. Entitled *Specimens of British Minerals*, it was written by the mineralogist and antiquary, Sir Philip Rashleigh (1729–1811).¹ Published in two parts in 1797 and 1802, the New College Library copy contains both of these parts bound together to form one volume. Although in a relatively unassuming binding, its author, provenance, and contents are significant both historically and bibliographically.

Firstly, a study of Rashleigh's background for context: an interesting example of a wealthy New College student from the eighteenth century, Rashleigh's family was influential. Sir Philip's ancestors had been the owners of estates throughout Cornwall for centuries.² The family seat was Menabilly, near Fowey, and Rashleigh clearly had a passion for the area, apparently only reluctantly leaving the West Country. His first ever move, it seems, was to Oxford, as there is a record of him matriculating at New College on 15 July 1749, aged 19.³ Interestingly, though, there is no record of him actually completing his degree, or that he stayed for a long time. There is, for example, no mention of him in the College Long Books for 1749, 1750, or 1751, so he may not have incurred any battels, perhaps residing in Oxford only briefly.⁴ His rather relaxed approach to his studies is a far cry from students today, but was by no means unusual in this period—especially for a gentleman commoner set to inherit a substantial estate. This reluctance to leave Cornwall is then further supported by his attitude towards his later career. Like many members of his family, he represented the borough of Fowey in Parliament from 1765 until 1802. Despite this honour, though, his attendance was poor, and in 1796 he even wrote 'I have no inclination to fling away £50 on a journey to add one more to a majority'.⁵ Politics, like studying in Oxford, was clearly never Rashleigh's passion.

As the title of his *Specimens of British Minerals* suggests, Rashleigh was much more interested in mineralogy. Thanks in part to his background, he had gained an interest in Cornish geology from a young age, amassing a significant mineral collection. To begin with, this collection consisted of copper and tin from mines around the county, but he later added to it by exchange and purchase from British and European collectors. Always keen to share his knowledge with others, he opened up his collection to any visitors wishing to view it at Menabilly. Over time, the importance of his work was recognised, with Rashleigh's knowledge of mineralogy helping him to become a member of the fledgling Royal Society, an honorary member of the Geological Society of London, and a founder member of the Royal Geological Society of Cornwall.⁶ As Cornwall was remote, though, he decided to produce this book to showcase his collection to an even wider audience—a decision praised in reviews shortly after its publication.⁷ Rashleigh's only publication, it was clearly

¹ *Specimens of British Minerals, Selected from The Cabinet of Philip Rashleigh, of Menabilly, in the County of Cornwall . . . with General Descriptions of Each Article*, 2 vols (London: Printed by W. Bulmer and Co. and Sold by G. Nicol, 1797, 1802), New College Library, Oxford, NB.190.10(1,2).

² For more information, see R. J. Cleevely, 'Philip Rashleigh (1729–1811)', *Oxford Dictionary of National Biography* (5 January 2012) <<https://doi.org/10.1093/ref:odnb/23147>> (Accessed: 28 July 2023).

³ In the Archives of New College, there is a matriculation list written by Warden James Edward Sewell (1810–1903) that mentions Rashleigh's matriculation (NCA 3058).

⁴ Thanks must be given to the college archivist, Dr Michael Stansfield, for searching the archives for any mentions of Rashleigh.

⁵ Cleevely, 'Philip Rashleigh'.

⁶ P. G. Embrey and R. F. Symes, *Minerals of Cornwall and Devon* (London: British Museum (Natural History), 1987), p. 68.

⁷ The *Edinburgh Review* wrote that 'The remote situation of Menabilly prevents many mineralogists from availing themselves of the liberality with which Mr Rashleigh exhibits his collection', 'Rashleigh's *Specimens of British Minerals*', *The Edinburgh Review* 4 (7) (1804), 117–20, at p. 17.

important to him. Its significance can be seen in the provenance of this New College Library copy of the text, as he decided to donate it to the library shortly after its publication. On the verso of the front flyleaf facing the title-page, he wrote ‘To the Warden and Fellows of New College Oxford, from the Author’ in black ink. As he did not finish his studies at New College, this act of generosity suggests that New College had a clear influence on the lives of its eighteenth-century alumni—even on those students who did not even finish their studies. Rashleigh was clearly proud of his work, and may have thought that a copy in an Oxford library would help spread knowledge of his collection far from its physical location in Cornwall.

If we look at this book in a wider context, though, it clearly has a historical importance greater than Sir Philip and the individual Rashleigh family. Firstly, it is an important text in the history of science—demonstrating the early development of mineralogy as a scientific discipline in the United Kingdom. Without doubt, the late eighteenth century was an important time of change in the development of science as a discipline. Following the first ‘scientific revolution’ of the sixteenth and seventeenth centuries,⁸ scientific knowledge—and a desire to explore the surrounding world—was firmly established as a new discipline in the seventeenth century, becoming ‘an integral part of Western culture’.⁹



A depiction of tin ore

In *Specimens of British Minerals*, Rashleigh started this process in the specific science of mineralogy, helping to embed it into wider culture. With this project, he deliberately laid the foundations for further research, highlighting his collection of minerals with the aid of beautifully detailed plates, such as the plate shown above depicting that most Cornish of minerals: tin. In the preface to the second volume, he even admits that this work is by no means complete, writing ‘the Editor of these Sheets does not profess to be well enough acquainted in chemical experiments, to give a complete Analysis of the subjects exhibited’. Indeed, this lack of explanatory context was remarked upon in reviews of the book upon its publication, with *The Edinburgh Review* commenting that Rashleigh’s ‘observations are so unobtrusive and unpretending, that they afford little room

⁸ Peter Hans Reil, ‘The Legacy of the Scientific Revolution’, *The Cambridge History of Science, Volume 4: Eighteenth-Century Science*, ed. Roy Porter (Cambridge: Cambridge University Press, 2003), pp. 23–43, at p. 23.

⁹ Margaret C. Jacob, *The Cultural Meaning of the Scientific Revolution* (New York: Knopf, 1988).

for remark.¹⁰ As a gentleman with an independent income, Rashleigh may not have felt the need to devote himself to the latest scientific theories—he was content to remain an amateur scientist. By commissioning this book, though, he helped to showcase his extensive collection to others, who could, in turn, build on his initial research in mineralogy without having to travel to Cornwall to study the physical collection itself.

Secondly, this book is clearly an important text for historians of the West Country and Cornwall in particular. From 1750 to 1850, all of the United Kingdom faced a period of ‘far reaching transformation’ as a result of the Industrial Revolution.¹¹ Cornwall, with its rich mineral deposits and poor agricultural land, was well-placed to embrace this new industry. Tin mining had long been associated with the county, with the first written evidence of mining activity recorded in the pipe rolls from 1156.¹² New technology, though, created deeper and larger mines, with Cornwall being an early adopter of the latest pumping technology—the first steam engine was used in mining in the county as early as 1742.¹³ Consequently, mining operations expanded from the traditional tin to new mineral deposits, most notably copper.¹⁴ This mining activity is documented in Rashleigh’s book. In the picture to the right, you can see a plate depicting a section of the stream work at Poth, in the Parish of St Blazey. This parish is only four miles from Menabilly, so may have been on Rashleigh land.



The strata present at a stream work, close to Menabilly

Estates throughout the country had started to become more involved with industrial activities during this period,¹⁵ and there is evidence that the Rashleigh family were no exception to this general rule.¹⁶ The plate depicts the various strata encountered in mining operations, starting at peat before heading through clay and sand to reach the all-important tin ground. This book, therefore, is an important piece of contemporary evidence for historians of the Industrial Revolution in Cornwall. By documenting the latest mineral discoveries and including information about particular mines in the county, it highlights the true scale of change in the county during an important part of British history.

¹⁰ ‘Rashleigh’s *Specimens of British Minerals*’, *Edinburgh Review*, 118.

¹¹ Robert C. Allen. *The Industrial Revolution: A Very Short Introduction* (Oxford: Oxford University Press, 2017), p. 2.

¹² The pipe rolls were the annual records of the British Exchequer from the twelfth to the nineteenth century. S. Baring-Gould. *Cornwall* (Cambridge: University Press, 1910), p. 80.

¹³ *ibid.*, p. 83.

¹⁴ Although scarcely existing before the beginning of the eighteenth century, copper mining dramatically expanded throughout this period, increasing from less than 43,000 tons in 1794 to about 76, 250 tons in 1809. For more information, see: John Rowe, *Cornwall in the Age of the Industrial Revolution*, 2nd edn (St Austell: Cornish Hillside, 1993), pp. 175–6.

¹⁵ In the nineteenth century, a handbook published for estate agents began to mention the profits that could be made from mining and urban real estate for the first time. See David Spring, ‘The English Landed Estate in the Age of Coal and Iron: 1830’, *The Journal of Economic History* 11 (1951), 3–24, at p. 23.

¹⁶ The title deeds and leases—held at the Archives and Cornish Studies Service—mention that mining was part of the estate administration: <<https://discovery.nationalarchives.gov.uk/details/r/2b7f8c1e-e5eb-4ced-918c-9fc35a0d547f>> (Accessed: 28 July 2023).

Finally, further investigation of the design of this book reveals it to be bibliographically important, with Rashleigh's work representative of new bibliographical features. The first one is by far its most notable feature—the beautifully decorated plates that it contains. Indeed, we have already seen two examples above. Another fine example is shown below, this time depicting copper ore in exquisite detail.



A depiction of copper ore

As the country changed due to the Industrial Revolution, there were consequently many new developments in book production, particularly concerning illustration. Indeed, in this work Rashleigh was attempting to depict minerals that, up to then, had only been depicted using ‘the naked outlines of mathematical diagrams’.¹⁷ The illustrations in this book greatly improved these depictions, especially in the second volume. The work of T. Medland and T. R Underwood,¹⁸ they were created using aquatint engravings. Engraving as a form of illustration was already well established at this time—it had even been favoured by printers from the later sixteenth century as engravings allowed the very fine lines and cross-hatched tones required for detailed illustration.¹⁹ Aquatint, though, was a relatively new technique when these plates were created. Dating from 1768, this technique utilised a resin solution to create even greater gradations of tone.²⁰ For this book, the aquatints were then coloured by hand after printing. The plates in this volume, therefore, perfectly represent a new technology in book design—becoming the key selling point of the entire text.

Secondly, Rashleigh's work was pioneering in terms of its typography and page design. Although the memorable feature of the text will always be its plates, it is interesting that this work was printed by W. Bulmer and Co. in London—a print shop that was constantly developing new ways of printing in this period. Indeed, both of these volumes were printed using a new font,

¹⁷ Tobias George Smollett, ‘*Specimens of British Minerals, selected from the Cabinet of Philip Rashleigh, of Menabilly, in the County of Cornwall, Esq.*’, *The Critical Review, Or, Annals of Literature* 22, 67–9, at p. 68.

¹⁸ David Bethel, ‘Mr Rashleigh's Cabinet of Minerals and William Martin's Great Primer’, *Antiquarian Book Monthly* 21 (1994), 20–21, at p. 20.

¹⁹ Philip Gaskell, *A New Introduction to Bibliography* (Winchester: St Paul's Bibliographies, 1995), p. 156.

²⁰ *ibid.*, p. 158.

Bulmer's typeface. Created by the type founder William Martin at the Bulmer Press,²¹ it is perhaps most famous for its use in printing John Boydell's famous folio edition of Shakespeare's work.²² Thanks in part to the success of this edition, the Bulmer typeface became increasingly popular. In this volume, as David Bethel points out, it is used to its full effect, combined with a 'simplicity of arrangement, well-leaded lines, careful letter and word spacing, and a consistent use of italics' throughout.²³ Together, these features became an established 'Bulmer style'. They may seem obvious to the modern reader, but it is important to note that a standardization of elements, a clear, easy-to-read font, and clear line spacing were far from the norm in this period. Indeed, the typography and arrangement in volumes such as this one greatly influenced book design, helping to establish norms that continue to exist today.²⁴

To conclude, this short investigation of *Specimens of British Minerals* reveals it to be an interesting text on many levels. Its provenance reflects the strong relationship between New College and its alumni; its contents are historically important for the history of science and Cornwall; and its plates, typography, and page design reflect the latest bibliographical developments of the period. Indeed, it is indicative of the true strength of the collections here at New College, revealing that even some of the Library's most inconspicuous items are important links to the past. There are, no doubt, many other items on the shelves in our collections awaiting further investigation—some of them certain to become New College Notes of the future.

William Shire
Deputy Librarian
New College, Oxford

²¹ Neil Macmillan, *An A-Z of Type Designers* (London: Laurence King, 2006), p. 132.

²² For more information about this edition of Shakespeare, see Anna Nadine-Pike, "["The living Arts appear'd": Shakespearean Ekphrasis in New College, MS 367"](#)", *New College Notes* 15 (2021), no. 11.

²³ David Bethel, 'Mr Rashleigh's Cabinet of Minerals and William Martin's Great Primer', *Antiquarian Book Monthly* 21 (1994), 20–21, at p. 21.

²⁴ *ibid*, 21.