



History of the Geological Society

Founded Nov 1807

11.30 hrs for 12.00 noon start
Thu 11 May 2023
Burlington House



JAMES HUTTON 1726 – 1797



Hutton



Farmer & chemist (sal ammoniac NH_4Cl - fertiliser)

Leading figure in Scottish Enlightenment

Vigorous, brilliant, sociable, travelled Scotland & England

Pioneering fieldwork

Explained the importance of his discoveries

Established Earth is immensely old

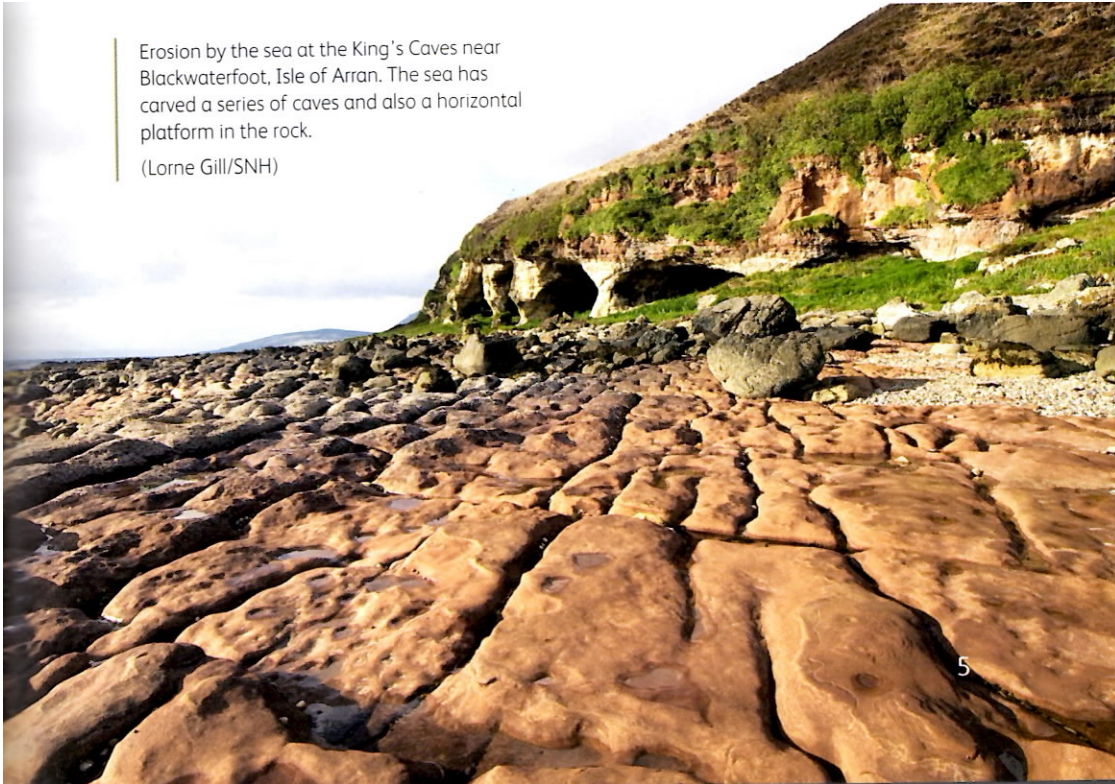
Laid the foundations of geological science

Deep sense of time

Arran



Erosion by the sea at the King's Caves near Blackwaterfoot, Isle of Arran. The sea has carved a series of caves and also a horizontal platform in the rock.
(Lorne Gill/SNH)



Glenfeshie braided river & Thorong La scree slopes

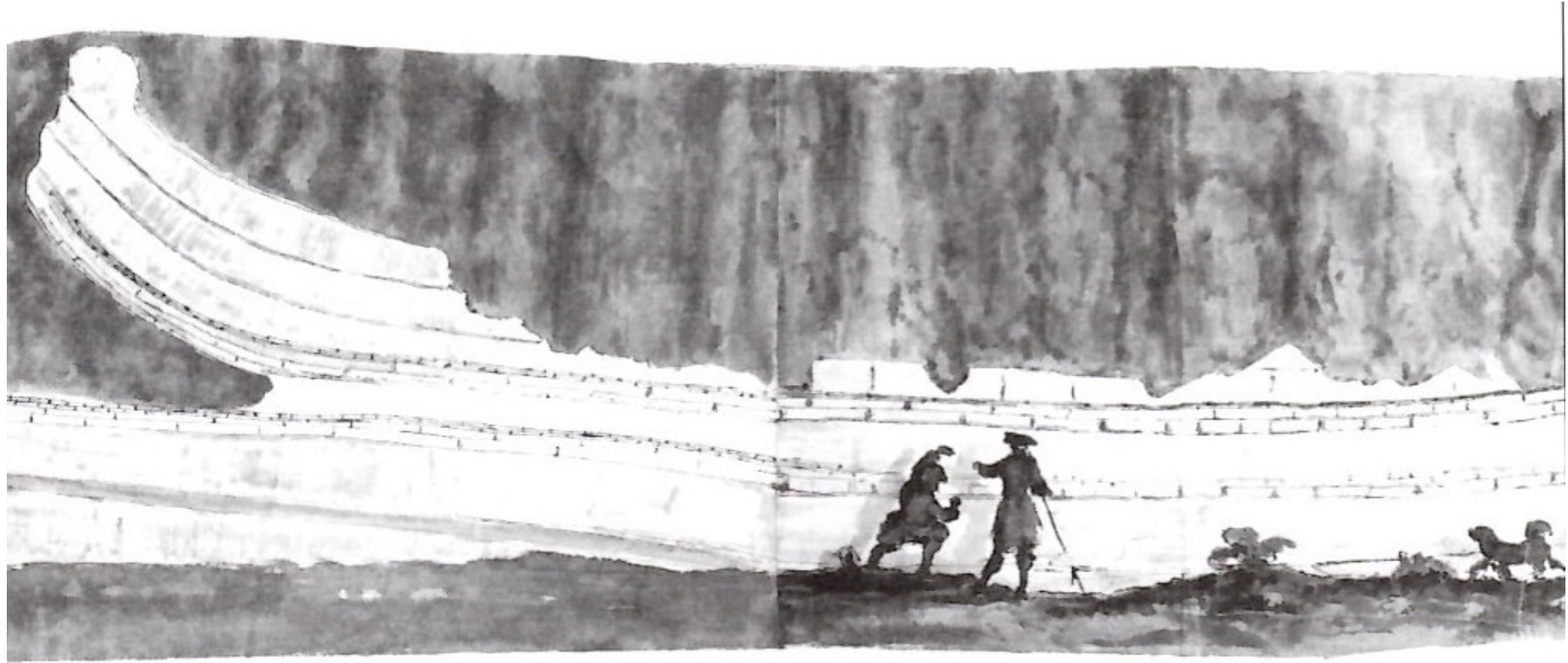


Stonehaven



Salisbury Crag sill





Siccar Point - Silurian & Devonian



GSL



1799 William Smith



Surveyor & canal engineer

Pioneering geo mapping

1799 – outlined succession of 23 strata

Coal to U Chalk using fossils & lithology

(~250 Ma time range)

1800 Robert Jameson (Edinburgh & Freiburg)

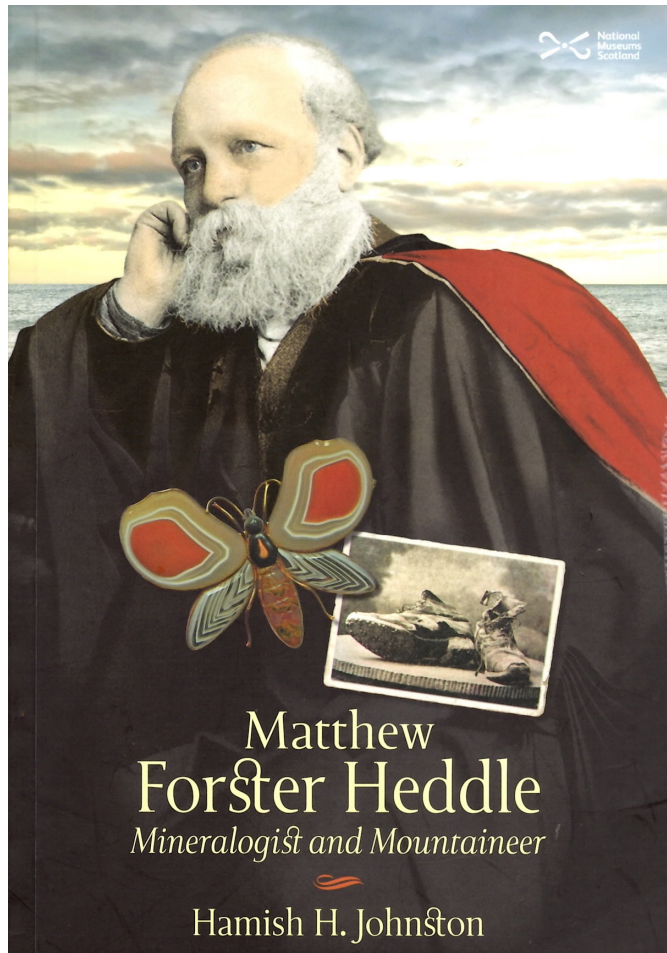


Professor of Nat. Hist. & Keeper
of Library at Edin. Uni. 50yrs

Mineralogy of the Scottish Isles

Mineral & fossil collection largest
in Europe during his long tenure

(1901 Heddle)



Doctor in Edin.

Prof. Chem. St A

Mineralogist – world authority

Explorationist of landscape

Munroist?

West Africa

S Africa goldfields

Champion of women's education

1802 John Playfair



John Playfair 1748 – 1819 FRS
Professor of Natural Philosophy
at Edinburgh

Published:

*Illustrations of the Huttonian
Theory of the Earth (1802)*

Early Founders



Jacques-Louis, Comte de Bournon FRS (1751 – 1825)

Émigré mineralogist from revolutionary France in London 1793, where mineralogy enjoyed unparalleled popularity.

1796 Fellow of Linnean Soc. Close friends with:

William Babington FRS: Physician & Mineralogist Guys Hosp.

William Allen: Pharm. Chemist, mineralogist, lecturer in chemistry

Richard Phillips FRS: deep interest in chemistry & mineralogy

William Phillips FRS – mineralogist, printer & publisher

27-56, av 37



Table 1. Birth and death dates for the 13 founder members of the Geological Society, showing their age on 13 November 1807, their age at death and the year they became FRS (shaded grey). Their lives spanned more than a century

Founders in chronological order	Born	Died	1750	1755	1760	1765	1770	1775	1780	1785	1790	1795	1800	1807	1810	1815	1820	1825	1830	1835	1840	1845	1850	1855				
J.L. de Bournon	21 Jan 1751	24 Aug 1825													56													74
James Parkinson	11 Apr 1755	21 Dec 1824													52													69
William Babington	21 May 1756	29 Apr 1833													51													76
James Franck	29 Jun 1768	27 Jan 1843													39													75
Richard Knight	26 May 1768	21 Feb 1844													39													75
William Allen	29 Aug 1770	30 Dec 1843													37													73
William Phillips	9 May 1773	2 Apr 1828													34													54
Arthur Aikin	19 May 1773	15 Apr 1854													34													80
William H. Pepys	23 Mar 1775	17 Aug 1856													32													81
George B. Greenough	18 Jan 1778	2 Apr 1855													29													77
Richard Phillips	21 Nov 1778	11 May 1851													28													73
Humphry Davy	17 Dec 1778	29 May 1829													28													51
James Laird	17 Dec 1779	3 Jan 1841													27													62

Babington age 51, Allen 37, W Phillips 34 & R Phillips 28



Members Askesian Soc – discussion & diffusion of knowledge

Br Min Soc 1799

Merged 1806 – year before GSL

A new science was stirring from mineralogical and chemical origins

A young science was stirring - geology



'Mineralogy supplies the alphabet' but what was the structure of mountain ranges?

How did tilting & contortion take place?

How to classify rocks?

What was the spatial variation?

i.e. how do you map the geology/landscape?

Meaning of fossils?

History of the Earth?

1805-6 Humphry Davy



1805 Delivered course of 10 lectures on geology

Collected mineral specimens for RI cabinets from Wales & Ireland

1806 2nd visit to Ireland, with Greenough & James Hutton
Future GSL Secr.

13 Founders – 6 chem, 4 min, 3 Dr



Jacques-Louis, **Comte de Bournon** (56)
FRS, FLS – mineralogist

James Parkinson – surgeon, apothecary,
3 books fossils 1804-1811 (52)

William **Babington** FRS – phys. & min. (51)

James Franck MD – physician (39)

Richard **Knight** – instruments/chemist (39)

William **Allen** FRS –chemist & mineral. (37)

Arthur **Aikin** FLS – chemist/ mineralogist (34)

William **Phillips** FRS – mineralogist (34)

William H **Pepys** FRS chemist (32)

George **Greenough** FRS mineral. (29)

Humphry **Davy** FRS – chemist (28)

Richard **Phillips** FRS – chemist (28)

James Laird MD – physician (27)

[8 FRS]

Early 1807 – ‘Geophilists’ convene



Babington et al convened a meeting at his home to consider the Comte de Bournon's monograph on mineralogy

Invited others from London's flourishing scientific scene

Babington's house became the 'centre of intellectual mineralogical development'

Needed a subscription list for the next step:

14 of de Bournon's friends paid £50 each!

Key decisions



1. To hold regular gatherings, shed domestic informality & become a formally constituted body
2. Dedicated to geology rather than mineralogy
3. Adopt Davy's proposal for evening meetings with dinner: "We are forming a little talking Geological Dinner Club" as he wrote to Pepys.

1807 Freemason's Tavern (Connaught Rooms today)



Whatever is under the Earth



13 Nov 1807 Freemasons' Tavern

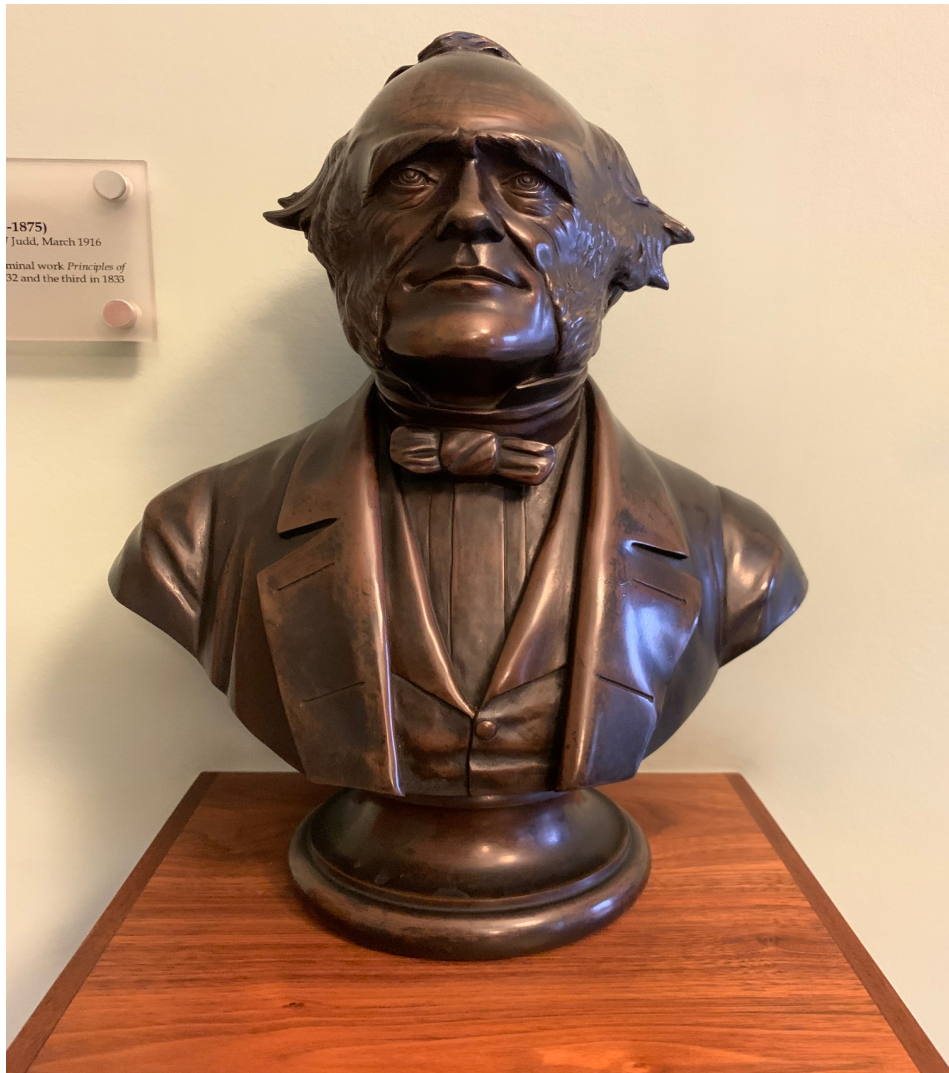
11 of 13 dined and:

Resolved that there be forthwith a Geological Society for the purpose of making geologists acquainted with each other, of stimulating their zeal, of inducing them to adopt one nomenclature, of facilitating the communication of new facts, and of ascertaining what is known in their science, and what yet remains to be discovered.

2007 bicentenary



Charles Lyell



Sir Charles Lyell 1797 – 1875

Building on the innovative work of Hutton, Playfair favoured an infinitely long age for the earth.

Contributed significantly to Darwin's thinking on the processes involved in evolution.

Principles of Geology (3 vol)



Being an Attempt to Explain the Former Changes of the Earth's Surface, by Reference to Causes Now in Operation

Climate change & plate tectonics too



Lyell's scientific contributions also included a pioneering explanation of climate change, in which shifting boundaries between oceans and continents could explain long-term variations in temperature and rainfall.

MAPS



Society for the Encouragement of Arts, Manufactures & Commerce (founded 1754)





Sought to offer premiums for the completion of set projects

1802 it was interested in geological cartography

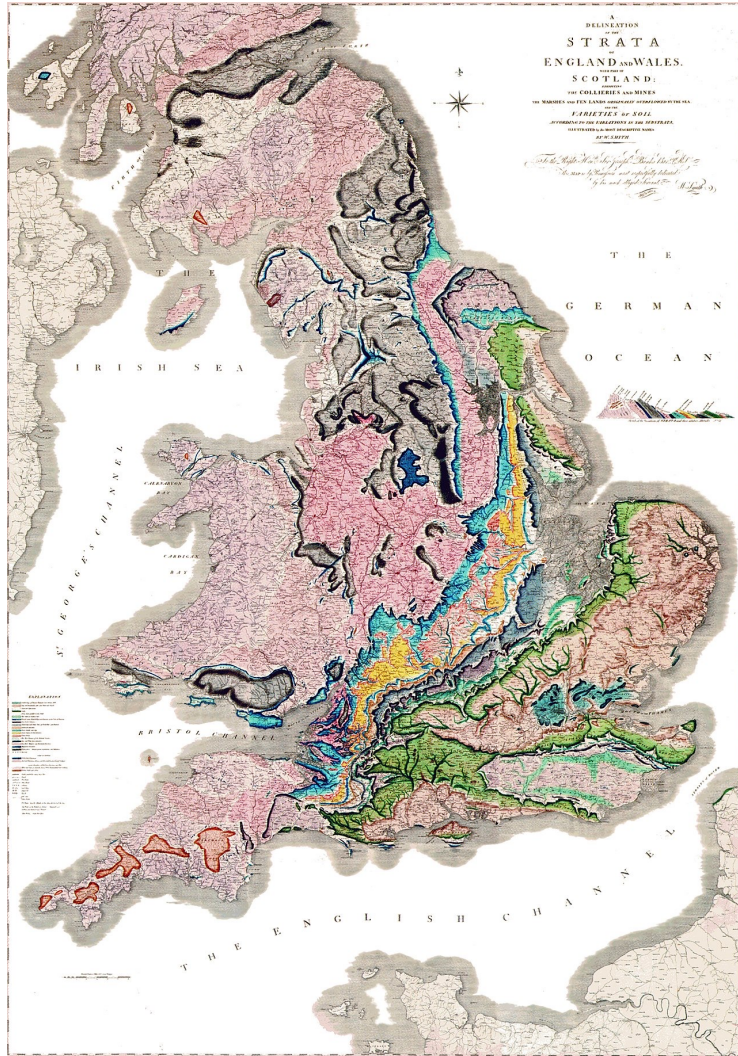
Offered 50 guineas for a “mineralogical map of Eng & Wales’

Parallel offers for either Scotland or Ireland

1815 William Smith claimed it.

Geology of great popularity: encouraged people into the landscape, part of prevailing Romantic Movement

William Smith 1769 - 1839



1815 First detailed, nationwide geological map of any country.

Overlooked by the scientific community until 1831 Wollaston medal.

Sedgwick: Father of English Geology

1815 William Smith on R





William Smith BBC4

Canals: the making of a nation 4. Geology

<https://www.bbc.co.uk/iplayer/episode/b06823cv/canals-the-making-of-a-nation-4-geology>

Kennet & Avon 1790s London to Bath



- John Rennie MICE
- Geo knowledge v limited
- Smith: 22 strata coal to Chalk
- World's first Geo map
- Great influence on the science
- Profound understanding how planet works
- Belatedly 1831 GSL highest award - Wollaston

Duncan Hawley 9 Mar 2023



1815, 1820, 1845, 1865



George Ballas Greenough FRS



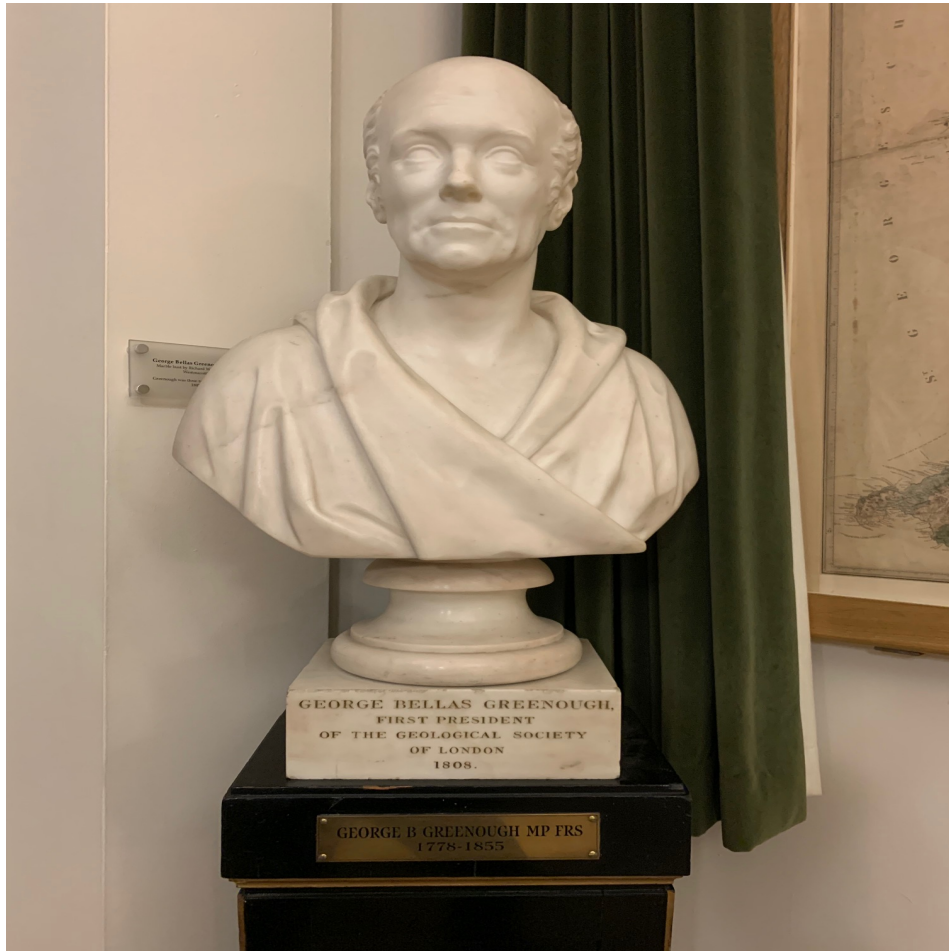
1795 Law at Pembroke

1805 Scot. 5 mths

1806 Ireland with Davy “...
studying Nature on a grand scale”

Gottingen to improve German
then Freiburg as student of
Werner

1778 - 1855



1807-1820 compiled a geological map of England and Wales

Major revisions in 1845 & 1860

Also produced first geological map of British India.

First President of GSL

1st edition 1820



- Meticulous & driven
- Initiated Society project for improved map in 1808
- Collaborative project although he edited it personally
- Costly but co-funded with Henry Warborton
- Asked people to send in information; collated and edited personally
- occasional tours to verify material received

2nd edition 1845



- Base map differed from Smith
- Engraved with the topography, especially in Wales
- Test of relationship between the underlying geology & topography - better understanding of the science
- Draft 1840 map was brought to the GSL council for approval but further 5 yrs for more detail and editing
- Masterminded project for 20 years

Verner colour system



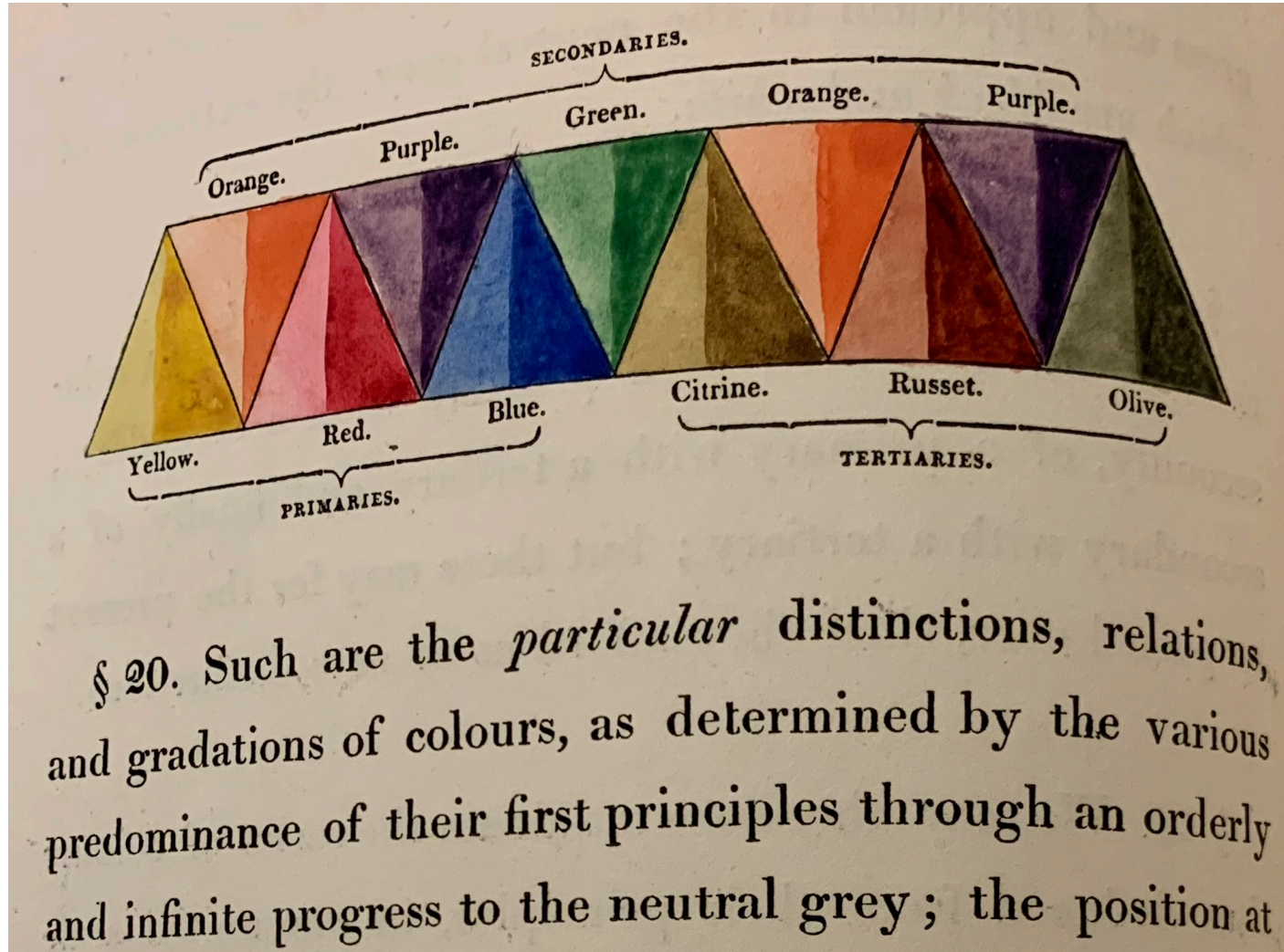
- Colour theory for mineralogical illustrations as close to reality as possible.
- Aesthetics and art of that period tended to have muted colours, ochres, duns & browns
- Greensand, Gault and Old Red Sandstone were given naturalistic colour,
- Granite is red or pink, etc
- as close as if been stripped of vegetation:
- “The colours should stick to the mind as well as to the eye.”

3rd edition 1865



- OS - more accurate topography
- Sheets 5 & 6 re-engraved
- Parts Scot. and Ire. included
- Colours previous maps not correlate with same rock in Eur
- So, very different colour scheme used (Verner)

Verner



DINING CLUB



Tavern life



- *The GSL was born in a tavern.*
- *By 1810 Society mtgs held at 3 Holborn Row*
- *Dinners still part of the programme*
- *Out of these a formally constituted club developed – the **Geological Society Club** – on 5 Nov 1824 at the*
- *Thatched House Tavern, St James's St 30 founding members incl. Aikin, Greenough & Pepys*
- *40 members max.*
- *Emulated the R Soc whose club founded in 1743.*

Discussion Groups established



1964 – Specialist Group

1977 – Inst. Of Geologists

1991 – IoG / GSL

2016 - Dining Club / GSL merge:

GS Discussion Group

President Ruth Allington, Engineering geologist



