

British scriptural geologists in the first half of the nineteenth century: part 11. John Murray (1786?–1851)

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John Murray was a well-respected scientist and Christian who spent much of his career in geological investigations. His writing shows that he was competent in geology, widely read and had travelled extensively in his research work. While he held firmly to Scripture, a recent creation and a worldwide Flood, he did not have a blind faith that refused to look at challenging objections. From his knowledge of Scripture, he rejected the day-age, gap theory and framework hypotheses. He argued that geology requires a great deal of interpretation and time and again the Bible had been vindicated by those who questioned its history and truth.

Biographical sketch¹

John Murray is particularly significant for our consideration of the scriptural geologists because he has been completely overlooked by historians² and his works, related to the Genesis-geology debate, were ignored by his contemporaries.³

John Murray was born in Stranraer, Scotland, in 1786. Though he attained the M.A. and Ph.D. degrees, it was said by contemporaries who knew him that ‘he was literally self-taught’ and therefore was a great example to young people placed in disadvantageous circumstances.⁴ In 1815, at the age of 29, he published his first work, *The Elements of Chemical Science as applied to the arts and manufactures and natural phenomena*, in which he described himself as ‘lecturer on the philosophy of physics and chemistry’. For many years, starting in 1816, he gave an annual lecture course at the Surrey Institution and became well known through lectures (which generally included experiments) at mechanics’ institutes throughout the kingdom. Lord

Brougham described Murray as ‘one of the best lecturers in the world’.

With great industry, Murray developed an impressive breadth of knowledge in many subject areas of both science and literature and contributed much to chemistry and to geology, especially in mining. Between 1816 and 1835 he lectured, wrote several papers and conducted many experiments in relation to the safety lamps used by miners. In the process, he developed a theory on the efficiency of the safety lamp, which, in 1835, led to an invitation to testify on safety lamps and ventilation before the Select Committee (on accidents in mines) in the House of Commons.⁵

His breadth and depth of knowledge and experience qualified him to become a Fellow of the Linnaean Society in 1819, the Society of Antiquities in 1822, the London Geological Society in 1823 and the London Horticultural Society in 1824. He was an annual member of the British Association for the Advancement of Science (BAAS).⁶ His membership in the Geological Society continued throughout his career and his death was reported in the Society’s Council minutes in 1858.

Additionally, he was a member of the Meteorological Society of London, the Wernerian Natural History Society of Edinburgh (from 1819) and the mechanics’ institutes of Exeter, Devonport, Portsmouth and Bristol. He was also an honorary member of the Medico-chirurgical Society of Hull, the Medical Society of Inverness and the philosophical societies of Sheffield and Hull. Finally, he was a corresponding member of the Northern Institution, the Horticultural Society of Edinburgh and other societies.⁷

Besides lecturing and doing experimental research, he also travelled extensively to do his own first-hand geological and archaeological fieldwork. He was a prolific writer, publishing 28 books and at least 60 articles in scientific journals,⁸ plus frequent correspondence to the *Mechanic’s Magazine* (from 1831 to 1844) and the *Mining Journal* (from 1841 to 1851). He had nearly 20 inventions which came into practical use.⁹ His journal articles addressed subjects in chemistry, physics, medicine, geology, natural history and manufacturing. His books, some of which went through two or more editions, covered such diverse topics as the cultivation of the silkworm, illustrations of chemical experiments, modern paper, atmospheric electricity, pulmonary consumption (tuberculosis), hydrophobia (human rabies), plagues and quarantine, ventilation, disinfection and other sanitation measures, poisons, a shower bath and an artificial respirator (both of which he invented), diamonds, a method for forming an instantaneous contact with shore during a shipwreck, life boats, a lightning conductor, flax, glowworms, plant physiology and the Cow Tree. He also wrote a passionate pamphlet calling for the end of slavery in the colonies, a book of minor poems and a scientific/historical travel memoir of his three-month journey around Switzerland in 1825.

Probably the greatest commendation Murray received in his lifetime,¹⁰ from his scientific peers, came in the form

of personal testimonials in support of his unsuccessful candidacy for the chemistry chair at King's College, London, in 1831. In his book on diamonds he publicly thanked, by name, 43 of over 100 such people.¹¹ Most significant was the name of William Vernon Harcourt, president of the Yorkshire Philosophical Society, a leading founder of the BAAS and a strong opponent of the scriptural geologists.

Murray expended considerable personal financial resources (sometimes to his own detriment) in his experimentation, especially related to human suffering and the improvement of life^{12,13} and some of his experiments involved personal risk, such as those he did on poisons and counter-poisons.¹⁴

Geological competence

It is worthwhile to draw out in more detail from some of Murray's own writings the extent of his scientific and (especially) geological qualifications, in light of the common characterization that scriptural geologists were poorly informed in these areas. Murray's up-to-date knowledge of mineralogy and geology is reflected in his description of the various rock types, definitions of geological terms and the names of formations (in English, French and German) associated with the work of Conybeare and Phillips, Murchison, De La Beche, Sedgwick, Lyell, etc. However, in his comments about the great 'Devonian Controversy',¹⁵ which was drawing to completion in the late 1830s, Murray expressed dissatisfaction with the use of local names for rock formations that may not be strictly local. He preferred instead a nomenclature of more universal application for the effective globalization of the study of geology.¹⁶

As noted earlier, in 1815 (in his first book) and in 1835 (before the parliamentary committee) he called himself a chemist. But judging from his writings in the latter part of his life, geology seems to have dominated his interests.¹⁷ In the late 1830s he referred to himself as 'a practical geologist'^{18,19} and endeavoured, generally, to stay out of the heated debates in theoretical geology, chiefly because it was his conviction that geology was still such a young science 'in a state of constant revolution and incessantly changing its aspect'.²⁰ Obviously, he did not stay out of the debate completely.

As he stated, his 'careful examination of geological phenomena and observation of the facts consequent on the study of geology for many years' took him to such places as Switzerland, Italy, Germany, the Lyme Cliffs of Dorset, the Walker mine near Newcastle and to the sites of erratic boulders all over the UK and Europe. He personally examined the immense collection of fossil bones in the possession of the man who diligently explored the cave near Torquay, called Kent's Hole. He had investigated 'with considerable attention' the rounded pebbles and bones of Kirkdale Cave, the analysis of which had greatly augmented William Buckland's fame in 1823.²¹

Murray understood, and apparently accepted, the use of fossils in the identification and correlation of strata. His extensive knowledge of conchology is reflected in his writings. However, he did not consider this a fool-proof method, because some lifeforms are found all through the formations, from the oldest to the most recent. And herein lay one of his objections to the catastrophism of Buckland, Cuvier and other leading geologists of his day.

'The prevalent views of Geologists seem to be to attach an overweening confidence and undue importance to the character and condition of the organic remains found in rocks, while others lean almost exclusively to their mineral structure. It is evident, however, that just geological inferences can only be found in a happy combination of both, and in a proper line of distinction between general and continuous strata, and local deposits, or formations, together with the circumstances which have concurred to break the line of continuity.'²²

Murray 'personally examined the subterranean recesses of Herculaneum²³ and its volcanic covering' and 'especially examined and with tolerable attention, the volcanic phenomena of the Neapolitan territory, in detail.'²⁴ In 1818, at the risk of suffocation, he made observations and carried out chemical experiments several hundred feet down in the crater of Mt Vesuvius.²⁵ This was evidently not a unique experience for Murray, because in 1840 he commented that 'I have been in both active and extinct volcanic craters.'²⁶ He apparently always had with him the means for doing chemical analysis. For example, he discovered in the waters of the Dead Sea several substances that had gone unnoticed by other investigators. He also visited Stonehenge in 1839 and chemically compared the stones there with marbles he had examined in Greece.²⁷ But he also relied on the work of other scientists. For example, in his discussion of mineral veins, he referred to R.W. Fox's laboratory and field work.²⁸ In his extensive 14-page discus-



John Murray carried out chemical experiments within the crater of Mt Vesuvius.

sion of what he believed was good evidence of antediluvian human fossils, he cited the analysis of some bones done by a surgeon and fossil collector, William Tyson.²⁹

Murray travelled widely in the UK and in Europe, in pursuit of geological and other scientific knowledge. Certainly in this regard he was more qualified as a geologist than either Hutton or Werner and, at the time, nearly as well-travelled as Buckland, Lyell, MacCulloch and other respected geologists.

He read widely and in several languages: Latin, Italian, French, German and some Hebrew. In addition to geological writers already mentioned, he indicated that he had read works by Cuvier, Buckland, Mantell, Hitchcock, Werner, Hutton, Playfair, Buffon, Demaillet, Lamarck, Burnet, Woodward and Whiston. He was conversant with the writings of leading eighteenth- and nineteenth-century philologists, physicians, explorers and travellers, antiquaries and Bible scholars. Additionally, Murray interacted with David Hume (*Enquiry concerning Human Understanding*, 1758), Charles Babbage (*Ninth Bridgewater Treatise*, 1837), Henry Milman (*History of the Jews*, 1829) and Sir Charles Bell.³⁰

He only referred to the writings of three other scriptural geologists: Andrew Ure, Granville Penn and George Young. He described Ure's book (*New System of Geology*) as betraying 'no very accurate knowledge of the principles of Geology'.

General view of geology

Murray loved geology for it 'charms and instructs the reflective mind' and 'has a very practical utility in wise and profitable mining, farming, well drilling and the construction of buildings, roads, canals and railways. Furthermore, it is an aid to natural theology in that it reveals aspects of God's creative power and wisdom, as well as serving as a support of scriptural revelation.'³¹

'My object in this little volume has been to consider geological phenomena as a collection of curious facts, at once novel and rare, and affording decisive proofs of wise and beneficent design. The interest of Geology is therefore of a sterling cast, as it ministers important aid to the student in natural theology. The science will also be found tributary, and that in no mystic or unintelligible form, to the cause of Revealed Truth, and thus "put to silence the ignorance of foolish men".'³²

But Murray also believed that geology poses dangers.

'Modern geology is the very *beau idéal* of romance; and it cannot be denied, that in many instances, bold assumptions and reckless speculation, have usurped the throne of reason and reality. No marvel indeed, for it must be candidly admitted, that it requires no slight effort of the mind to curb the reins of imagination, when wandering among



William Buckland (1784–1856). Buckland authored the Sixth Bridgewater Treatise, a publication that diminished the influence of the Noachian Flood on world geology.

the wonders of a world destroyed.'³³

He believed that 'geologists are generally a sceptical race; but whether such scepticism rests on a philosophical basis, we may well question.'³⁴ In comparing the geology of the past to that in his own times, he expressed his own attitudes to the dominant theories of the catastrophists and uniformitarians. While he disagreed with them at the theoretical level, he did not employ *ad hominem* attacks.

'Modern Geology differs materially from the speculative hypotheses which in former times amused the fancy and ministered to the imagination, while they left the mind as uninformed and uninstructed as it was before. It was formerly subordinated and tributary to mineralogy, though essentially distinct, and was thus defined, what Geology is *en masse*, mineralogy is in detail. The Geology of modern times, when *legitimately* engaged, is more busied in collecting and combining facts, than anxious to display its argumentative powers in rearing worlds, and bewildering its imagination, and beclouding its reason in labyrinths of perplexity and error. I do not say that all modern Geologists



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are free from the charge of rash, intemperate, and even presumptuous speculations: of clysmic action there is no lack, and of cataclysms and what may well suffice—much more we think, than the book of nature teaches, or the sister volume warrants. There is, it is but too true, much dogmatism in modern times, and many conclusions formed in defiance of the principles of inductive logic; assertions are made to supplant facts, and inferences formed unwarranted by the premises. This indeed is the great difficulty with which the student has to contend. The facts are of the most sterling and interesting kind, and at once novel and instructive; but to separate the chaff from the wheat, and the grain from the tares “hic labor—hoc opus”. While I therefore feel in common with all the students engaged in gleaning the fields of truth, the liveliest gratitude for the practical fruits developed in the assiduous researches of those excellent Geologists, Messrs. Buckland, Lyell, Sedgwick, De la Beche, Conybeare, and others, I cannot subscribe to many of their opinions, and must remain a conscientious dissident.³⁵

Murray then went on in the next fourteen pages to draw the reader’s attention to what he believed to be

some of the erroneous speculations of Kepler, Demaillet, Lamarck, Leibnitz, Hooke, Woodward, Burnet, Whiston, Buffon, Werner, Hutton,³⁶ Knight, Lyell,³⁷ Buckland,³⁸ Ure, Macculloch and Mantell.

On the laws of nature

Murray did not provide us with a sustained discussion of his view of the ‘laws of nature’. Regarding Lyell’s radical uniformitarianism, he wrote, ‘Mr. Lyell stands out in solitary relief from his fellows, and endeavours to explain the former changes which have supervened on the earth’s surface, by referring them to causes that are now in operation’.³⁹ In such a comment Murray was distancing himself from uniformitarianism while not denying the principle of uniformity (or actualism, as it was called on the continent), which is the principle that undergirds all modern scientific investigation.⁴⁰

Murray believed that there was a difference between the way God originally created the world and the way He now sustains it. In a brief section on miracles, Murray rejected both Hume’s definition (in his *Essay on Miracles*) of a miracle as a transgression of the laws of nature and Hume’s notion that miracles cannot be proven by testimony.⁴¹

Murray argued that the laws of nature are not so determinative that God cannot alter them if His purposes require it. The laws of nature are descriptive of God’s providential activity or customary behaviour, in the creation, not prescriptive of how God must act at all times. Miracles involve God’s uncustomary imposition of higher laws at particular points for particular reasons.

Murray viewed the ‘laws of nature’ to be valid generalizations of the way God providentially sustains his creation (with some of those laws instituted at the time of the Flood), but that they are not descriptive of the processes God used to bring into existence the original perfect and mature creation. Furthermore, God has suspended or overridden these laws to perform miracles, and the Noachian Flood was definitely an unparalleled disruption in the normal course of nature.

Creation and the age of the earth

Murray strongly believed that the accounts of creation, Noah’s Flood and the biblical chronology were/are written in clear, understandable language and were/are literally and historically accurate. He stated in the preface to his 1840 book:

‘I have also in these pages abandoned the geological argument, except in so far as geological monuments substantiate and confirm the doctrine of an UNIVERSAL DELUGE, entirely repudiated by modern geologists, though its summary rejection assails the authenticity of the Mosaic narrative in an essential point. If language has any meaning, its universality is clearly and unequivocally propounded for our belief, and no man may contravene

its high authority or challenge its testimony; and I trust I have clearly proven that the phenomena of geology corroborate the announcement of the catastrophe of the Hebrew prophet.

While I feel satisfied that in the facts revealed in modern geological research, startling and astonishing though they be, there is nothing to disturb the sacred history of creation, yet there are many difficulties and perplexities connected with arrangement and classification [of the geological phenomena]; and facts, on which there can be no misunderstanding, are better separated, in a work like the present, from conflicting speculations, and what is allowed by the dispassionate observer to be ad hoc subjudice.⁷⁴²

This biblical teaching, as he understood it, along with his geological knowledge, led him, as we would expect, to reject the catastrophist notion of many revolutions, each followed by new acts of creation.

Though he stressed the instantaneous nature of the original creative acts of God, he also made it clear that the days of creation were normal 24-hour days. He rejected the day-age theory because 1) the context of Genesis 1 ‘sufficiently defined’ the Hebrew word *yom* (day), 2) the Sabbath command of Exodus 20:11 ruled out any notion of an indefinite time period and 3) ancient heathen writers also believed in a six-day creation. He rejected the gap theory because, while the Hebrew word *bara* elsewhere in Scripture meant ‘adorn’, ‘array’ or ‘set in order’, the narrative of Genesis 1 demanded the highest meaning of ‘create out of nothing’, as Hebrews 11:3 indicated. And if it did not mean this in Genesis 1, then the Hebrews had no word to speak of creation out of nothing. ‘The use of the conjunction at the beginning of Genesis 1:2’, said Murray, ‘cannot be so flexible and elastic in meaning to imply millions of years, for this negates the continuity of the passage’.⁴³

Regarding the determination of the age of the earth by a study of the strata and fossils, he said,

‘To natural chronometers I shall again refer, as concurring to validate the date of the deluge. But to claim a high antiquity for our globe from the extraordinary premises which some have assumed, is quite sufficient to excite our astonishment. We particularly allude to an attempt to determine the age of the world from the process of petrification in the piles of Trajan’s Bridge, and Brydone’s story about the alternations of lava and earth on the flanks of Etna.’⁴⁴

Elsewhere he stated,

‘As for the *questio vexata* of systems antecedent to man, with “millions of ages”, and “creations and destructions innumerable”, I confess I have strong objections to these dogmas. The phenomena of geology do not, in my mind, warrant or require such deductions. There are difficulties, no doubt, but to

fly off from the orbit of induction to the eccentric regions of speculation, is not a procedure best calculated to solve them. ... Let it be remembered that there is no *absolute* CHRONOMETER in geology, and I very much doubt whether there yet be a fixed *relative* one among fossiliferous rocks, because there are FOSSIL REMAINS COMMON TO THEM ALL; and again, fossils innumerable are common both to *tertiary* and *secondary* strata; a fact that repudiates the assumed distinction.’⁴⁵

On Scripture

Regarding the interpretation and clarity of Scripture, he stated that ‘in beneficent condescension to our feeble intellect and limited reason, the Supreme Being has, in the Revelation he has sent us from heaven, used no unintelligible symbols. Deity speaks to us in our own tongue. ... It applies to all nations of the world alike.’⁴⁶ When discussing the Fall of man he was more explicit:

‘The fall of man is a terrible event in the history of the species. It is related with affecting brevity, and with all the simple emphasis of truth. ... I am perfectly aware that this fearful transaction has been considered *metaphorical* or figurative—a flourish of orientalism; but the Bible nowhere deceives us, and the event detailed is perspicuous and palpable. ... The Jews understood it as a literal event, do now receive it as such, and it was so understood in the apostolic age.’⁴⁷

After Buckland preached his sermon at the Cathedral of Christ Church in Oxford on 27 January 1839, in which he discussed several passages of Scripture to justify his view that there had been animal death and catastrophic extinctions before the Fall,⁴⁸ Murray voiced his objection of Buckland’s position in the *Christian Observer* magazine. He viewed Buckland’s interpretation of the biblical texts, which applied the Fall only to man, to be unique, and the idea that pain, suffering and death were a part of the original created order stripped them of any penal character.⁴⁹

In general, he viewed the relation between the interpretation of the geological record and the interpretation of scriptural record this way:

‘I may premise, however, that though creations antecedent to MAN may *possibly* not affect the philological argument and the language of scripture, yet, irrespective of its testimony, I confess, after a careful examination of geological phenomena, and observation of facts consequent on the study of geology for many years, I can find nothing to disturb the generally received recognition; and I confess, too, that my opinion can only be changed by a different class of facts to what has yet been adduced, and very different elements of reasoning to any I have yet met with. There cannot be a position more

fixed and determinate than this—namely, that the right meaning of a Hebrew word is to be determined by the canons of philology, and not by the elements of geology. The scripture narrative existed before the science of geology had an existence among men, and as geology is in a state of constant revolution, and incessantly changing its aspect, and moreover, is yet in an incipient state; if the scripture is to be determined by such a versatile and ever-changing reference, there can be no standard whatever, and the pillar of our security is shaken to its foundation. Geologists were wont to convert the demiurgic days into periods of indefinite and indeterminate length, but this untenable position is now abandoned by all geologists, and the mode or scene of attack is shifted, being transferred to the Hebrew word *BARA*, in the first paragraph of the Genesis [sic.], and the *conjunction* which links the first and second verses. ... As modern geologists have abandoned this error [day-age], I advert to it because, on a former occasion, I had already insisted that it could not be reasonably or consistently maintained; and it moreover proves how dangerous it is to tamper with sacred truth, which sooner or later must always triumph.⁵⁰

It is clear from Murray's defense of the historicity of Scripture in his *Truth of Revelation* that he believed that Scripture conveyed more than just religious and moral truth. He was convinced that the Bible is also completely accurate (though not exhaustively detailed) in its historical parts, which included the first eleven chapters of Genesis.

The Flood

In *Portrait of Geology*, Murray addressed the relation of the Bible and geology primarily with reference to the Flood. He stressed several times that this unique Flood was 'penal' and not just one of many natural disasters in the normal course of nature.⁵¹ Unlike any other natural catastrophes, this Flood drastically changed the world.

Murray reasoned that there would have been no rain, clouds or rainbow before the deluge. Rather the earth was watered by very copious and uniform dew. And where did the waters of the Flood go? He answered that, 'For any thing we know to the contrary, the diluvial waters may have retreated into the profound abysses of the earth; besides, much would disappear as water of crystallization, in crystalline rocks and much, also, as water of composition, in sedimentary rocks.' Many who

rejected the notion of a global Flood asserted that the Flood was too brief to be able to account for the geological record. Murray, on the other hand, thought that although the Flood lasted only for a year, the earth did not reach a state anything like its present state of relative climatic and geological equilibrium until many years, or even centuries, later.

'Though the waters only "prevailed on the earth for one hundred and fifty days", it by no means follows, that when they were "assuaged", or began "to abate", they were so soon reduced to their present limits. Centuries might have rolled away before they had contracted their bounds to the dimensions that now restrain them.'⁵²

Murray acknowledged that the geological record is in many ways 'perplexing and complicated' to interpret properly. He took this as the expected result of the combined work of the normal course of nature both before and after the great singularly abnormal Deluge. He stated,

'No doubt there have been local catastrophes of greater or less extent, both in antediluvian and post-diluvian times, and these combined with a *universal deluge*, seem to me quite adequate to the solution of geological phenomena, without the assumption of "an age of reptiles and a reign of saurians".'⁵³

In discussing the biblical account of the Flood, Murray quoted Genesis 7:10–24 and italicized the following words to emphasize the violent and global nature of the Flood: '*were all the fountains of the great deep broken up and the windows (or floodgates) of heaven were opened (v. 11), all the high hills that were under the whole heaven were covered (v. 19), the mountains were covered (v. 20), all flesh died that moved upon the earth, both of fowl, and of cattle, and of beast, and of every creeping thing that creepeth upon the earth, and every man (v. 21), of all that was in the dry land, died (v. 22), every living substance was destroyed, both man and cattle, and the creeping things, and the fowl of heaven (v. 23)*'. He described this account as



John Murray argued against the consignment of Noah's Flood to a local event.

‘though brief, a very circumstantial and explicit account’.⁵⁴ Given his conviction that the account of the Flood, indeed the whole first 11 chapters of Genesis, could hardly be more perspicuous, Murray’s reaction to the interpretations of the Scriptures by De la Beche, Phillips, Lyell and others who denied the Flood, by reinterpreting it as a tranquil local affair, is understandable.

“If”, says Mr. De la Beche, “the existence of man and those extinct animals should ever be satisfactorily proved, it would become a curious question whether his so found remains are those of an extinct species!” How this speculation is to be reconciled with the Mosaic narrative I have yet to learn. . . . Mr. John Phillips has boldly, though I think indiscreetly, promulgated the following assumption and speculation;—“If it should be generally admitted by theologians that the Noachian flood, though general with respect to the area over which the early races of mankind had spread, was not an *universal* deluge, some one of the repeated geological deluges, which could not be universal, though some of them were very extensive, may perhaps be successfully compared with that event!”⁵⁵ If language has any meaning, this is a direct impeachment of the sacred records. This author [Phillips] elsewhere calls the “diluvial hypothesis”, “a seducing error”, “a monstrous violation of the laws of nature”, and “a narrow and unreasonable interpretation of the Mosaic narrative”: Weissenborn of Weimar, terms it “a short sighted interpretation of a symbolical tradition”. Mr. Lyell accounts for “an event related in scripture”, by the overflow of an inland lake elevated above the level of the sea, or the depression of the land below that plane! Some say, indeed, that the account of the deluge, though recorded as an historical event, is “metaphorical”—a mere oriental flourish of speech: others again, that it is “elliptical in the extreme”; and another party that a “moral” event was meant, and not a physical catastrophe. Most extraordinary assumptions and interpretations I must needs say.⁵⁶

In addition to the written and oral traditions of peoples around the world concerning a ‘universal and penal flood’,⁵⁷ Murray presented what he believed to be ‘conclusive and irresistible’ geological evidences for a global Flood. The most important line of evidences included the global distribution of erratic boulders, gravels, valleys of denudation and limestone caves, which he believed doubtlessly were contemporaneous in formation. Though some erratic boulders were the result of local causes, he reasoned, only a universal Flood could satisfactorily explain their global distribution.⁵⁸

Murray also presented historic evidence of rapid mountain building to show that G. Poulett Scrope’s assumption of tens of thousands of years needed for the formation of the Auvergne region in France was illegitimate.⁵⁹ He answered

the alleged difficulty of harmonizing the great thickness of the stratified rocks with the scriptural narrative of the Flood by citing known examples of very rapid deposition of limestone.⁶⁰ Although he presumed that some coal was the product of lacustrine deposits of vegetable matter, such as possibly in his day in peat bogs in France, he also cited evidence for a marine origin, believing it to be the better explanation for the vast coal beds found throughout the world.⁶¹

From all these lines of evidence he concluded:

“The evidence in favour of a UNIVERSAL DELUGE, identical with that recorded in the inspired narrative, becomes thus as complete, when combined with the unequivocal traditional testimony of a world; on the aggregate principles of an inductive generalization, as any problem in Euclid. This general and universal testimony cannot be disturbed by any *apparent* partial and limited discrepancy, if that seeming exception can be explained by any local or casual circumstance that may have occurred subsequent to the event.”⁶²

Therefore, he considered as ‘rash’ Sedgwick’s statement in 1831 that there is no geological evidence of the Flood. To Dr Kidd’s remarks in his *Bridgewater Treatise* (1833) that any potential geological evidence for the Flood was obliterated by God so as to better try our faith, Murray replied, ‘I, on the contrary believe that we might reasonably expect the very reverse, in order that our faith might be strengthened and confirmed, and that a perennial monument of the penal infliction should remain till the end of time.’⁶³

Conclusion

Contrary to the general charges levelled against the nineteenth-century scriptural geologists, Murray was a highly qualified and respected scientist with a competent knowledge of geology, who believed, both because of biblical teaching and the geological evidence, that God created the world in six literal days a few thousand years ago and that He judged the world in a unique, global Flood. While his understanding of, and belief in, the Scriptures guided his interpretation of the rocks, he was not ignorant of the rock strata and fossils. He travelled widely to study geological formations, observed carefully the rocks and fossils, used chemical analysis and relied on the work of other experts as he interpreted the geological evidence from a broad and recognized knowledge of many scientific disciplines.

Murray never developed an ‘antigeology’ attitude. During his entire life he was enthusiastic about the practical benefits of geology and contributed constructively to this end. He did not make *ad hominem* attacks against those geologists with whom he disagreed, but showed respect for their knowledge and accomplishments in science and geology. Neither did he deny all geological facts, which the geologists had commendably gathered. Rather, he believed

that not everything the old-earth geologists called ‘facts’ were indeed facts. Many of them were, in his opinion, disputable speculative inferences from the indisputable facts and he gave his geological and biblical reasons for firmly rejecting those inferences.

While he held firmly to Scripture, he did not have a blind faith that refused to look at challenging objections. He admitted that there were, as yet, unsolved geological problems for his young-earth view. But because of what he believed to be the infant state of geology and the multifarious evidences that the Bible is the inspired and infallible Word of God, he was confident that these geological problems would eventually be solved and the literal historical accuracy of the early chapters of Genesis would be vindicated. Just as other criticized parts of the Scriptures had been previously substantiated.

Murray was driven by a keen interest in geology and in helping to establish and advance scientific truth, a genuine desire to improve the conditions of life for his fellowmen and an unswerving conviction about the truth of Scripture. The following is probably the best summary of his motivations and convictions.

‘The champions of truth are summoned to the field, and loftier ground must now be occupied than has ever yet been taken. The great *Armageddon* of infidelity seems rapidly to approach. The spirits of men are restless and convulsed. Thrones are tottering and empires are ruined—“men’s hearts failing them for fear”. This, however, saith the Spirit of Eternal Truth, “knowledge shall be the stability of thy times”. Yes! religious knowledge is the pillar of our security—our “mountain that standeth strong”. . . . We have, it has been noticed, visited the regions of science, studied in her schools, conversed with her philosophers, walked through her avenues, and cultivated her fields; we have interrogated the oracles of nature, and solicited a distinct and positive reply to the question, whether the elements of hostility to revealed Truth were contained in them? One and all returned a negative, and an amen to Lord Bacon’s maxim—“the books of Nature and Revelation mutually illustrate each other”. The root of the matter is to be sought for, therefore, in the *heart*, not in the head—the pride of humanity—the would-be interpreter of nature’s laws and phenomena. “Ye shall be as gods”, said the wily tempter to the too credulous pair in Eden’s Elysium—ambition kindled at the thought and the crown of innocence fell to the ground: the same seeds of disease still rankle in the moral frame.’⁶⁴

References

1. Unless otherwise noted, this is based on the article on Murray in: Stephen L. and Lee, S. (Eds.), *Dictionary of National Biography (DNB)*, Vol. 13 Oxford Univ. Press, 1917.
2. None of the leading historians on this subject (e.g. Gillispie, Yule, Millhauser, Rupke, Roberts) mention him.
3. Neither his 1838 nor 1840 books, which deal with geology, received a review in the scientific journals or in the Christian periodicals, except for one positive review of Murray’s *The Truth of Revelation* in: *Evangelical Magazine N.S.* vol. XVIII, pp. 486, 487, 1840. His anonymously published *Portrait of Geology* was mentioned in one letter to the editor of *Christian Observer*. See: A Scriptural Geologist, ‘No “More Last Words” on Geology’, *Christian Observer*, vol. XXXIX, p. 471, 1839.
4. *DNB* on Murray; obituaries in the *Galloway Advertiser and Wigtownshire Free Press*, 3 July 1851 and *The Mining Journal*, pp. 336–337, 12 July 1851.
5. *Report from the Select Committee on Accidents in Mines*, p. 237–238, 4 September 1835. In spite of his much greater scientific accomplishments, particularly in chemistry and in this problem of safety lamps, Partington’s definitive work on the history of chemistry gives Murray only a passing comment in comparison to much more about another John Murray (d. 1820). See Partington, J.R., *A History of Chemistry* IV:65–66, 1961, 1970.
6. *Report of the BAAS*, Appendix, p. 34, 1837.
7. Murray, J., *A Treatise on Pulmonary Consumption; its prevention and remedy*, title page, 1830.
8. *Catalogue of the Royal Society (CRS)*. Four works listed in the CRS under the name of John Murray (d. 1820) were actually written by John Murray (1786?–1851). See *DNB* on John Murray (d. 1820).
9. *The Mining Journal*, p. 288, 14 June 1851.
10. *The Mining Journal*, p. 288, 14 June 1851, wrote just before he died: ‘He has devoted the greater portion of his life in the ardent pursuit of science and in an almost unexampled earnestness to devising schemes for the safety and welfare of his fellow-creatures, without, we regret to add, any corresponding reward.’
11. Murray, J., *A Memoir on the Diamond*, postscript, 1831. In the end, the only reason he was not elected was that he was unwilling to leave his beloved Church of Scotland to become an Anglican, the denominational affiliation required of all professors by the new university’s regulations.
12. Murray, ref. 7, pp. vi, ix–x.
13. Murray, J., *Descriptive Account of a New Shower Bath, constructed on a principle not hitherto applied to that machine; also, an apparatus for restoring suspended animation*, pp. 3, 5, 1831.
14. Murray, J., *Researches on Hydrocyanic Acid and Opium, with reference to their Counter-poisons*, *Edinburgh Philosophical Journal* VII(13):124–127, 1822.
15. As Murray noted, this controversy, which started a few years before his book, involved primarily De La Beche, Murchison and Sedgwick. It resulted in the classification of the Silurian and Cambrian rock systems. See: Rudwick, M.J.S., *The Great Devonian Controversy*, University of Chicago Press, 1985.
16. Murray, J., *Portrait of Geology*, pp. 26, 52, 150–151, 1838.
17. Murray, J., *Practical Observations on the Phenomena of Flame and Safety Lamps*, p. vii, 1833. Murray stated that due to the treatment he received from some influential fellow chemists to his work on safety lamps, ‘I have abandoned the field [of chemistry] in disgust and thenceforth confined my exertions to the application of facts and principles to useful purposes in the economy of life—a task more pleasing to me than to be compelled to surrender the convictions of truth as the price of admission into the coteries of sect and party.
18. Murray, J., Dr Buckland’s Geological Sermon, *Christian Observer*, vol. XXXIX, p. 401, 1839.
19. Murray, J., *Truth of Revelation*, p. 143, 1840.
20. Murray, ref. 19, pp. 137–138, 142.
21. Murray, ref. 16, pp. 70–71. Murray concluded, on the basis of his own inspection of the bones and from the writings of other investigators (including George Young, another scriptural geologist), that Buckland’s ‘extremely ingenious and interesting’ theory faced ‘many and serious objections’.

22. Murray, ref. 16, p. 22.
23. This was a city buried along with Pompeii by the eruption of Mt Vesuvius in AD 79.
24. Murray, ref. 19, pp. 136–137.
25. Murray, ref. 16, pp. 173–174.
26. Murray, ref. 19, pp. 77–79.
27. Murray, ref. 19, pp. 77–79, 234.
28. *Proceedings of the Geological Society*, vol. III, p. 95, 1838–1842. Robert Were Fox's research received positive comment by William Whewell in his February 1839 presidential address to the Geological Society.
29. Ref. 28, pp. 90–93.
30. Murray, ref. 19, pp. 145, 262–263, 274, 308–309.
31. Murray, ref. 16, pp. 4–7.
32. Murray, ref. 16, p. vii. Similar remarks on the value of geology to natural theology, showing 'the beneficence of a prospective Providence', appear on pages 192 and 201–203.
33. Murray, ref. 16, p. v.
34. Murray, *The Truth of Revelation*, p. 21, 1831.
35. Murray, ref. 16, pp. 8–9.
36. Murray, ref. 16, p. 16. Though not rejecting all aspects of Hutton's theory, Murray criticized Hutton for being 'more a cabinet or a closet Geologist than a practical student of the great mountain features of the globe'. This was similar to Buckland's criticism of Hutton. See Buckland, W., *Vindiciae Diluvianae*, p. 22, 1820. Murray, ref. 16, pp. 16–18. Murray called Werner an 'eloquent and eminent teacher', who 'raised up a multitude of zealous cultivators in the field of Geology', and 'a genius of no ordinary stamp', but, 'Werner had not visited distant countries and he was no peripatetic' and so erred as he 'generalised from his own little Saxon "Goshen".' This assessment of these two geologists has been confirmed by: Ospovat, A.M., *The Distortion of Werner in Lyell's Principles of Geology*, *British Journal for the History of Science*, vol. IX, no. 32, pt. 2, pp. 191–192, 1976.
37. Murray, ref. 16, p. 20. While criticizing Lyell's extreme uniformitarianism, 'self-contradictions', 'gratuitous assumptions', 'obvious low regard for Scripture' and 'compromised theism', Murray nevertheless acknowledged Lyell's 'multitudinous mass of valuable and truly interesting facts, collected with much industry and the fruits of considerable research'.
38. Murray, ref. 16. Although Murray regretted Buckland's recantation of his previous belief in the global Noachian Flood, Murray nevertheless considered Buckland 'an eminent geologist' (p. 60) 'of high character' (p. 199), 'whose opinions must ever claim deference and respect' (p. 62), because his investigations were conducted 'with great industry and indefatigable assiduity' and were described 'with remarkable precision' (p. 68).
39. Murray, ref. 16, p. 19.
40. In modern parlance, Murray was distinguishing between methodological uniformity and substantive uniformity. Compare Hooykaas, R., *Catastrophism in Geology, its Scientific Character in Relation to Actualism and Uniformitarianism*, *Meded. Kon. Nederl. Akad. Wetenschappen, Afd. Let., Nieuwe Reeks*, Deel 33, no. 7, 271–316, 1970 and Gould, S.J., *Catastrophes and Steady State Earth*, *Natural History*, vol. 84, no. 2, pp. 14–18, 1975.
41. Murray, ref. 19, pp. 310–311.
42. Murray, ref. 19, p. xxii.
43. Murray, ref. 19, pp. 138–140. The ancients he referred to were Ovid and Lucretius (whom he cited on pages 119–120). To support his view of the Hebrew conjunction *waw*, he noted the work of Professor M. Steuart, whom he did not identify clearly. He may have been an American Old Testament scholar.
44. Murray, ref. 19, pp. 130–132. In the next five pages, Murray gave his geological reasons for rejecting these two dating methods. Later, on page 218, he stated, 'It must never be forgotten, that geology can lay claim to no positive chronometer in its chronology.'
45. Murray, ref. 19, pp. 141–142. After a discussion of some of the fossils found associated with Murchison's 'Silurian rocks', Murray similarly remarked in ref. 16, p. 150: 'From the preceding summary it must, I think, be sufficiently obvious that the predilection for subdivision tends very much to fetter the science and perplex the student. It is, in fact, making a distinction without a difference: for neither in mineralogical character, nor in that of their organic remains, can some of the 'Silurian rocks' be disassociated from their congeners grauwacke, and clay slate.'
46. Murray, ref. 19, p. 37.
47. Murray, ref. 19, pp. 175–178.
48. Buckland, W., *An Inquiry whether the Sentence of Death pronounced at the Fall of Man included the whole Animal Creation or was restricted to the Human Race*, 1839. The passages Buckland analyzed were: Romans 5:12, 17–18 and 8:19–23; I Corinthians 15:21; Colossians 1:23; Mark 16:15; Genesis 3:17–19; Isaiah 11:6–9. Buckland's conclusion was that the Fall only affected man.
49. Murray, J., Dr. Buckland's Geological Sermon, *Christian Observer*, vol. XXXIX, p. 401, 1839.
50. Murray, ref. 19, pp. 137–139.
51. Murray, ref. 16, pp. 81, 97–98.
52. Murray, ref. 19, pp. 216–217.
53. Murray, ref. 19, p. 144; Murray, ref. 16, pp. 81–82.
54. Murray, ref. 19, pp. 214–215.
55. The local-flood view was not the dominant view among the most respected Bible commentators at the time Phillips wrote this statement. Even in 1840, when Murray wrote his criticism, the highly and broadly respected commentators like Home, Scott and Clarke were still arguing that Genesis was describing a global Flood.
56. Murray, ref. 16, pp. 96–98.
57. Murray, ref. 16, p. 98; Murray, ref. 19, pp. 203–215. Murray emphasized the penal nature of the Flood; i.e. that it was not an accidental event in the natural course of the world.
58. Murray, ref. 16, pp. 56–81, 199 201; Murray, ref. 19, pp. 218–222.
59. Murray, ref. 16, pp. 176–177.
60. Murray, ref. 16, pp. 195–198.
61. Murray, ref. 16, pp. 140–142.
62. Murray, ref. 16, p. 201.
63. Murray, ref. 16, pp. 96–97.
64. Murray, ref. 34, pp. xv–vi.

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