Reign of the Beast

The Atheist World of W. D. Saull and his Museum of Evolution

Adrian Desmond

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Cover illustration: A spoof of the "Devil's Chaplain", the Rev. Robert Taylor (left, on the podium). His patron, the atheist Richard Carlile, is seen on the right, landing a punch. The wine merchant W. D. Saull funded both men and grounded his evolutionary talks in their dissident sciences. Such pastiches reinforced the prejudices of pious readers, by depicting the moral rot caused by irreligion. The wall posters on the left advertize contraception manuals and licentious memoirs, and a lecture by "Miss Sharples", Carlile's common-law "wife". Taylor's character is being impugned by portraying the mayhem caused by his infidel oratory. Beyond the brawling and debauchery, thieves are shown in the audience (bottom right) and a dagger-wielding agitator (centre). In reality, Taylor's congregations were respectable and attentive.
Etching, in the author's possession, entitled "The Triumph of Free Discussion" (the motto of Carlile's Fleet Street shop selling subversive prints). The caption reads, "A Sketch taken in the Westminster Cock Pit on Wednesday the 24th. of September 1834. Subject A Lecture by the Revd R. Taylor, A.B.M.R.C.S. 'On the importance of Character'."
Cover design by Jeevanjot Kaur Nagpal

1. Underground Evolution – Setting the Stage

Extreme Geopolitics

> Let it not be forgotten that all proceedings with which the socialists desecrate the sabbath and outrage revelation, invariably open with a lecture on geology.[1]

So warned the appalled editor of the *Church of England Magazine* in 1840, after leaving a talk in a socialist hall by the London wine merchant and museum owner William Devonshire Saull (1783–1855). It was a reminder that the new science of the earth was not only startling and fashionable, but dangerous in dirty hands. Dissidents were harnessing geological armaments for use against the biblical props of priestly power. They were making the age of rocks undermine the Rock of Ages. An infidel geology was even being used to attack the top-down power structure of society, which denied the activists what they demanded: democracy for the radicals, and an anti-capitalist economy for the co-operators. In the wrong hands, seditious hands, the re-manufactured science could even serve the Antichrist.

Step in Saull with his filthy heresy of a monkey origin for man. Saull came tainted, having made his public debut in court, indicted on blasphemy charges. He was the financial backer of the jailed blasphemer Richard Carlile in the 1820s and of the socialist Robert Owen thereafter. His heresy was worse for being taught publicly, in London's largest private geology museum—*his* museum, which was dedicated to the evolving history of life. Astonishingly, this museum was founded early,

1 *Church of England Magazine* 9 (15 Aug. 1840): 120; *NMW* 8 (5 Sept. 1840): 159.

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it was up and running in June 1831, only months after a young Charles Darwin had taken his degree at Cambridge.

How do we illuminate the back alleys where such strange views were fomenting? Trajectories are one way to throw light on mature views. The gentlemanly Darwin's path, his education, travels, materials, mentors, collections, political and religious convictions, have been meticulously dissected by scholars to plot his path to natural selection. Saull's background was the antithesis: untutored origins, trading status, socialist politics, atheism, and mentors whom Darwin would have detested. It is this peculiar set of circumstances that *Reign of the Beast* explores. With Saull leaving so little documentary evidence, we can only take a contextual approach, to show his very different trajectory through a series of underground dives. Where Secord's *Victorian Sensation* follows readers reacting to one pot-boiling book (the anonymous *Vestiges of the Natural History of Creation*), *Reign of the Beast* looks to a prior process in the making of knowledge: how the amalgam of plebeian science changed as it passed through successive blasphemous, radical, and co-operative furnaces.

Thus the following chapters show Saull moving from Richard Carlile's deistic clique with its eternalist geology, through the astro-theology of the "Devil's Chaplain",[2] the Rev. Robert Taylor, to the astro-geology of that "dirty little jacobin" Sir Richard Phillips.[3] Saull absorbed the new geology of fossil origins and progression along the way. It was a fit new science for a shadowy ideologue being watched by police spies as he moved to the centre of 'Social Father' Robert Owen's circle, with its emphasis on the perfectibility of man[4] (see Chapter 5). All this will help explain Saull's 'evolutionary' stance in the early 1830s—and his monkey-man, itself an outrageous provocation in a pulpit age.

Here, in the Introduction, I provide an overarching, non-chronological exploration of the historiographical conundrums of such a strange story.

Geology, the emerging account of the sequencing of the earth's strata and its fossil inhabitants, was the new flirtation of the emerging

2 Taylor's pride in the title can be seen in the police spy report, HO 40/25, f. 281 (15 Nov. 1830).

3 *Blackwood's Edinburgh Magazine*, 12 (Dec. 1822): 704.

4 The idea that, with right changed conditions—educational, religious, political—mankind could rise to moral heights in a socialist New Jerusalem.

British middle class through the 1830s, however troubling to the more conservative clergy. But it needed careful patrolling. This was a seething age of parliamentary and civic reform when young Turks "joined clubs of all sorts, heteroclitical [deviant], political, and Geological", as the *Herald to the Trades' Advocate* had it. Following the long Tory-dominated repression after the Napoleonic Wars, humble political activists now refused to be dismissed as "a grumbling swinish multitude", or to be cowed by "the haughty, domineering lordlings".[5] A burst of reformist activism in the 1820s led to a rise in deism, unionism, and co-operation, with screeching demands for democracy and disestablishment. This could be well served by a new offensive science. The placarding and posting, blasphemy dens and radical agitation, the burning of jails and firing of the bishop's palace in Bristol during the Reform Bill riots, made this an age of fear for pious folk. Many believed "that 'the masses' were their natural enemies, and that they might have to fight ... for the safety of their property and the honour of their sisters".[6]

The threat of geology being co-opted by Satan's agents was spelled out by an Oxford Professor. He warned in 1834 that:

> the people every where are learning, and will learn, Geology. The first rudiments of the science bring them to successions of primaeval aeras totally different from the six days (whether natural days or longer periods) of the Book of Genesis. Next comes the emissary of infidelity. He points out the contradictions: the hearers cannot deny it: therefore he says you must reject the whole Bible and the whole of Christianity.[7]

There's the nub, the great attraction to the freethinker, the deist, the anti-clerical socialist. Geology opened up the subject of the age and development of the Earth. A new breed of pauper 'infidel' was being taught to associate a literal reading of Genesis with a tithe-rich, state-sanctioned "Priestcraft". What better way than this new upstart science to subvert the Anglican authority in the land?

Our entrée into this deistic netherworld is provided by one particular courtyard, full of wine caskets and brandy crates, shire horses, and heavy carts. It was a warehouse in one of London's main thoroughfares,

5 *Herald to the Trades Advocate* (11 Dec. 1830): 187 (9 Apr. 1831): 452–53.
6 Kingsley 1910, 3; Young 1960, 24.
7 Baden Powell 1834, 18.

Aldersgate Street, run by the wholesaler William Devonshire Saull. He was a fascinating, enigmatic, little-known trader: a hard core ideologue with a soft centre, an affable merchant who was deeply irreligious. Self-taught, and sensitive about it, he saw socialist schooling for the ignored young of the 'industrious' masses as a way to tackle poverty and raise awareness of social injustice. And his museum of evolution was to be central to this.

Saull put his money where his mouth was. As a self-made City merchant, he used his wealth to finance the movement. In the 1820s, he poured large sums into freethought venues, bailed prosecuted blasphemers (blasphemy being a crime), and defrayed defence costs. A teetotal advocate with a Robin Hood air, he plied the gentry with their favourite tipple and funnelled the profits to the poor. There was never any lack of seeming contradictions in his life. Come the thirties, he was the 'Utopian'[8] socialist Robert Owen's financier, putting up the money for institutes and halls of science. He was even owner of Owen's town house and mortgagee of Owen's home on the experimental co-operative estate of Harmony. Saull was a wealthy commercial gentleman who, somewhat incongruously, bankrolled co-operative equality. Always he was a facilitator, and there was hardly an infidel, Owenite, or radical pump that was not primed by his cash.

The City trader became not only the banker, but, in a strangely related way, the geologist to the cause. Most of all, Saull poured money into his museum. This raised his fossil emporium into one of London's top attractions by the end of the 1830s. It was hailed in the press as among "the most interesting and extensive geological collections" in the city, even "the largest private Geological collection in the United Kingdom".[9] By the 1850s, it contained over 20,000 exhibits, the lot said to be worth £2,000, equivalent to perhaps £200–300,000 today.[10]

How this courtyard museum inside his brandy depot *functioned* is the important thing. Arguably it was a 'radical' museum. The evidence

8 Though derided by Marx as "Utopian", labour exchanges, mutuals, and building societies were hardly utopian, even if Owen's followers did expect capitalists to voluntarily relinquish the means of production.

9 *Courier*, 27 Dec. 1841, 1; *Morning Post*, 31 Dec. 1841; *NS*, 31 Oct. 1846, 3. Karkeek 1841a, 73; 1841b, 175, too, called it "the largest private collection of fossil remains in the kingdom".

10 *UR*, 15 Sept. 1847, 83; *Mining Manual and Almanack for 1851*, 136; Timbs 1855, 542.

for this comes partly from its content but largely from the way it was pressed into service. In some museums, incoming exhibits, being serendipitously acquired, drove the exhibitions astray from their original goals and "disciplinary norms".[11] But Saull's from first to last was *designed* as an infidel Owenite cabinet. Even if the fossils were like those found in conventional museums, he used them for socialist educational purposes. And while some other institutions arranged their fossils stratigraphically, Saull did likewise, but for specific 'evolutionary' ends.

Unlike, say, the suffrage campaigner Henry 'Orator' Hunt's intended "radical museum"[12]—which was to illustrate 'loom and shuttle' lives of hard-done-by spinners—Saull's took a different tack on working-class problems. It was the connotations and context of Saull's exhibition that made it radical. First, as William Makepeace Thackeray's appreciative *National Standard* said, "his museum would be a sealed book to the many, were it not for his lectures".[13] The public, given free and unrestricted access once a week, were treated to a talk in which Saull welded the collection into an 'evolutionary' whole, whose progressive message was made the legitimation of social action. Second, the content spoke volumes. Henry Hetherington knew the best use of museums: to house the stuffed remains of the few remaining kings (as he laughed in the wake of the 1830 French revolution).[14] Hunt himself went beyond artisan 'manufacts' and included *memento mori* of the peaceful suffrage demonstrators killed by the Huzzars at Peterloo (or at least bits of skull hewn out by a yeoman's sword). But Saull went one better and gruesomely included the radical leaders themselves. His was the stuff of radical icons in a real, corporeal sense. It was not only a museum for radicals, but *of* radicals, as we will see.

Reign of the Beast thus straddles the line between labour studies and the history of geological culture. Thanks to studies of the 'underclass' in the last few decades, we have the potential for locating Saull in a way that previous generations found difficult. Thus, this work owes a huge debt to those pioneering investigators of dissident street culture, particularly

11 D. Porter 2019.
12 Huish 1836, 439–40.
13 *National Standard* 3 (18 Jan. 1834): 44–45.
14 *Republican* (Hetherington), 11 June 1831, 7.

Edward Royle's *Victorian Infidels*, I. J. Prothero's *Artisans and Politics*, and Iain McCalman's *Radical Underworld* on the blasphemy chapels and pornographic dives of Grub Street. (So named because it was "famed in former times/For half-starved poets and their doggrel [*sic*] rhymes".[15]) This ill-famed London road is more than a metaphorical reference point. Saull was financing a chapel-turned-infidel-forum on the actual Grub Street itself in 1828. This was to go "to further lengths in the abuse of Christianity" than any previous venue, as a police spy reported.[16] A generation of historians has built on these pioneering works, and they give us a framework to locate Saull, even if they themselves scarcely touch the man, except as a footnote.

Saull is equally a footnote in geological history, despite pioneering works such as Simon Knell's *Culture of English Geology*. Given Knell's sub-title, *A Science Revealed Through its Collecting*, the fact that Saull only figures tangentially in one note proves that his collecting spree is as little known as his cabinet, even though it was the "principal museum of geology in London", according to the press.[17] Nor, therefore, has there been any study of the ideology behind it. This is despite the fact that private museums and trading in natural-history artefacts have been studied from most sides, but rarely the political.[18] Here, then, we will see for the first time how differently structured a museum can appear when it was designed to fit an Owenite socialist agenda.

New Sources

This fractured footnote approach in studies of radical freethinkers and the material culture of geology adds to the difficulty of recovering the whole man. Indeed, the two camps have mutually exclusive toe-holds on Saull. Clearly, to break into the subject, we need new sources, in fact, new types of sources.

We can build on the "penny trash" literature familiar to labour historians—from Carlile's deist-cum-atheist rags in the 1820s to Owenite organs in the 1830s, and the plethora of illegal, unstamped weeklies,

15 *Lion* 2 (10 Oct. 1828): 471.
16 HO 64/11, ff. 43, 75, 77–78.
17 *Courier*, 12 Apr. 1841, 3.
18 Ville, Wright, and Philp 2020.

heroically churned out on hand presses by sharp compositors.[19] But there is an extra resource we have to examine more fully in Saull's case—the Home Office spy reports. These are essential, because Saull was the kingmaker who stood behind the scenes, and only these expose this shadowy activity. Police spies insinuated themselves into the infidel cadres, and the infiltration was deep: one agent even became Carlile's wife's confidant, allowing him to read personal letters. These surveillance snitches were thus privy to secret meetings. Their reports, however untrustworthy and hyperbolic, and full of garbled whispers of blasphemies and conspiracies, provide sensitive information available nowhere else.[20]

Why were spies tasked with tracking "blasphemous" outlets so assiduously? In the 1820s, blasphemy and sedition were often seen as two sides of the same coin. Christianity was routinely said by judges handing down harsh sentences to be the law of the land, although atheists in the dock disputed the legal basis for this.[21] Many deists in the Carlile camp were republicans; the King was head of the Anglican Church, so the lot was expected to topple as one. And with the exclusive Oxford and Cambridge seminaries catering largely to wealthy Anglicans, their ordinands often acted with magistrate and squire as policing agents in rural villages. These priests were paid out of state coffers, and this was the other major gripe of 'infidels', indeed of Dissenters generally: the huge sums raised in tithes and church rates to support the Anglican establishment. With the rising radical movement and working class warfare in the years around the Reform Bill (1832), this anti-clericalism became associated with democratic demands, linking still more closely blasphemy and sedition. Thus secret agents kept a close eye on the infidels, and these Home Office reports are a vital resource.

At the other end of the press spectrum, the respectable (that is, legally 'stamped' or taxed) London newspapers are equally little tapped. This is understandable, looking at the statistics. In 1837, the modern Babylon had fifty-one dailies. The papers catered to every party,

19 Hollis 1970; Wiener 1969.

20 Parsinnen and Prothero 1977 considered the spy reports under-used, and they remain so today. For a cautionary note on using Home Office spy material, see E. P. Thompson 1980, 532–38.

21 *Investigator* (1843): 71.

sect, class, and trade. There were morning and evening papers, papers published on two or three days a week, and, by 1831, nineteen 'Sunday Papers' alone.[22] To these could be added the fifty weekly periodicals on sale at news-stands. By the time of the first *Newspaper Press Directory* in 1846, well over 120 dailies and weeklies were for sale in London.[23] It was impossible in the past for historians to gain traction. But since the newspaper digitization projects of the early 2000s, access to this resource has become easier. It means we can not only trawl the ultra-radical *True Sun* but assess the reaction from *The Age*, *Atlas*, *Albion*, *Argus* (and that is just the *A*s) plus a dozen others as they frightened their gentle readers about 'geological infidelity' and the trampling of taboos by artisan demagogues. Now we can gauge the panoply of perspectives. No longer are we reliant on polished publications. We can read speeches, discussions, letters, and comments, all of which enable us to flesh out venues, audiences, and reactions.[24]

The dailies not only ensure immediacy but can provide the finer-grained sequence of events more commonly found in social than science history. Shorthand press reports, being the first draft of history, with their breathless on-the-spot coverage, can reveal the nuances of the moment. These get lost in the rose-tinted reminiscences written late in life, and in the romantic, filial, and often bowdlerized lives and letters so beloved of Victorians, the usual source of so much older history of science. Moreover, the built-in biases of partisan newspapers, rather than being a hindrance, can be a plus, helping us to understand the viewpoints of different sections of society. Their very diversity is an asset.

This leads us to our third new resource, one sort of press publication in particular. Satirical "mags", by the late thirties, were a news stand feature, putting the guffaws into working-class 'instruction'.[25] Nothing

22 *Penny Magazine* 6 (31 Dec. 1837): 507; *Political Magazine* (Carpenter), Nov. 1831, 98–101.

23 *Newspaper Press Directory* 1847, 63–74.

24 The value of such digitization has been well demonstrated by Pietro Corsi (2021). He has used mass scanning techniques to crack the Continental sources of anonymous (and long-disputed) snippets discussing faunal and geological change which appeared as cuttings in the *Edinburgh New Philosophical Journal* in the later 1820s, thus locating the original contexts and cultural meanings of these supposedly Lamarckian fragments.

25 J. F. C. Harrison 1961, 30; Maidment 2013 reappraises the visual comic caricature of the period. "Mags" was already contemporary slang, e.g. *Shepherd* 1 (11 July

escaped pastiche in the age of *Punch*. Later it would be Darwin who took the brunt of it (even his *Beagle* voyage was lampooned[26]). But a generation earlier it was Saull who was burlesqued. The working classes particularly came in for brutal mockery. And, since 'evolution' in the 1830s was a fringe obscenity promulgated by street radicals, socialists, and medical democrats,[27] which risked infecting the poor, we can appreciate why it was targeted too. Materialists were especially susceptible to satire, which always represented the cutting edge of conflict. The reductive power of caricature was used to laugh this disreputable ideology out of court (and, against infidels, it was often used *in* court as well). James Paradis describes it as an indispensable strategy to censor and ridicule, to prick the vanity of overblown, self-aggrandizing, materialist know-it-alls for their rigid and mechanical world lacking spirit and spontaneity.[28]

Satire runs close to abuse and exposes anxiety, and one sees it in attacks on Saull. In his case, it was inevitably a skit, as incredulous critics struggled with his "shaven ape". He was made a laughingstock to alert genteel readers about bestial transmutation long before Darwin was sketched as a hairy old ape, or the *Vestiges of Creation* (1844) was made the butt of jokes.[29] Most of the sarcasm on Saull's monkey-origin notion ironically came from a deviant Universalist preacher within the socialist movement itself, Saull's confidant, the Rev. J. E. Smith. Later, Smith took his pastiches out to new amusement-orientated middle-class weeklies, in particular to the *Penny Satirist*. The frequent foolery at the expense of Saull's "shaven ape" in the huge-circulation parlour publications of 1830s and 1840s brought Saull unexpectedly before a huge readership. Such drollery, in effect, took him mainstream. These weeklies ironically spread his name far beyond the confines of the back-street halls. Such mockery allows marvellous scope to follow Saull's trail from the tittering journalism of middle-class voyeurism right through to the mass-selling *Family Herald*.

1835): 366.

26 K. Anderson 2018; Browne 2001. Curtis 1997, on the development of ape satire later in the century, with different cultural targets.

27 Desmond 1987, 1989.

28 Paradis 1997.

29 J. A. Secord 2000, 318, 456.

If Saull's emporium is unplumbed by historians, Saull the collector is no better known.[30] Part of the reason is plain. Saull was a 'failure' because he had little presence in the gentlemanly journals and because he refused to obey the norms of elite society. The older histories of geology were compiled from these expensive journals and books, but we now see they only provided one class perspective. And Saull was ill-served after his death by gentlemen historians and professionalizing scientists, who had no interest in context and took their dismissive cue from high-brow reviews of his works. These had expressed shock at Saull's "peculiarities" (meaning atheistic politics). The trashing of his reputation left an image of an ignorant dilettante. We see it in the *Literary Gazette* obituary, which was perplexed by "this kind but crotchety philosopher". Here was "a man of excellent heart, and a great enthusiast in his pursuits, but his knowledge was rather superficial, and his views, in regard to politics and religion as well as science, were anything but orthodox".[31] Kindly but bizarre were the operatives. He was recollected as an oddball, always courteous, seemingly unruffled by the slings and arrows of outraged critics, hurled at him because of the "peculiarity" of his views.[32] Never were the 'peculiarities' explained, nor the politics, for they were too horrifying to be discussed. Saull's embarrassing socialist and blasphemous views were avoided, the context was stripped away and the museum's function was ignored in these obituaries.

The antagonistic anti-socialist, anti-infidel reviews and obituaries set the tone for his *Dictionary of National Biography* entry, which wildly missed the mark. This treated him as a "geologist" and "more enthusiastic than learned" (that is, a failure according to late nineteenth-century canons). In a positivist age, paying homage to professional science while reinforcing late Victorian conformity, such unrespectables from the radical thirties fared ill. Saull was branded a failed geologist,

30 Confusion compounds Saull's obscurity. He is often referred to as "Saul" or "Mr. Saul" in the press, even though he always signed himself "W. D. Saull" and his import company was "W. D. Saull & Co." To make matters worse, there was an unrelated shell collector, Miss Jane Saul (1807–1895), whose name was immortalized in G. B. Sowerby I's designation of a Pacific conch *Murex Saulii* (now *Chicoreus saulii*). Since Saull had bought Sowerby's father James' collection, all of this makes for laborious disentangling.

31 *Literary Gazette* 1998 (May 1855): 284.

32 *JBAA* 1st ser. 12 (1856), 186–87.

not a successful museum operator and deist, blasphemous, and socialist facilitator.

Saull spoke for the marginalized, and was himself marginalized from official history. Even would-be sympathizers misunderstood him. The 'official' scientific line rubbed off on the radical Joseph McCabe, in his biographical dictionary of freethinkers: Saull, the "Owenite Rationalist", was a "geologist" and "keen astronomer" (!) "though attached to somewhat fantastic theories".[33] The final indignity came at the hands of Saull's comrade-in-arms, that great survivor into the twentieth century, the secularist George Jacob Holyoake. The raconteur of early co-operation succumbed to the scientific put-down: praise for Saull's backing of the Harmony experiment was offset by his "enthusiasm for the suspected science", which he promoted "according to his knowledge".[34] With radical friends damning him with such faint praise, no wonder history took the dim view.

If ever there was an activist who has slipped through the historical net, it is Saull. This despite past attempts at resuscitation. Aleck Abrahams in *Notes and Queries* in 1922 pointed out the total disappearance of Saull's museum, both from the historical record and in real terms. Saull's bequest of his exhibition to a working man's institution after his death resulted in a complete shambles and its breakup and loss.[35] But nothing came of the query. As a result, Saull's fossil depository and its socialist *raison d'être*, his freethought financing and king-making are hardly known, never mind their inextricable relationship.

Thus Saull remains elusive, even though in his day he was a central figure in Robert Owen's circle. He was no less a prominent atheist, whose dissident activities led to public infamy. He was, after all, indicted for blasphemy, vilified in the *Times*, and lampooned by satirists. Yet within Owenite circles, he was ubiquitous in the 1830s: wherever a radical meeting needed a Chair or Treasurer, wherever a cause needed backing, a victim fund need financing or a radical institute funding, there he was. Like another pilloried atheist, the wealthy wag Julian Hibbert, a friend and fellow financier of radical causes (who became a 'donor' to the museum in a more ghoulish sense), Saull was a money man.

33 McCabe 1920, 708–709.
34 Holyoake 1906, 1: 190.
35 Abrahams 1922, s12–xi: 230.

The upshot is that the pitiably few secondary sources give little hint of Saull's freethought views, Owenite activity, or financing of dissident venues, or that his science and museum catered to an angry clientele after the disappointments following the Reform Bill. So, *Reign of the Beast* is an attempt to recover the radical milieus and rehabilitate Saull by taking him seriously. We have to 'de-peculiarize' his science by putting it back into context and to understand its propagation for contemporary ends.

Reconstructing his life is instructive, not merely as a pedantic exercise in recovery, but to illustrate a specific class activity in science. Working peoples' voices, excluded from science and politics in their own day, should not be silenced from histories of geology today. We need to spotlight them, not only, as Knell has done, as collectors, swappers, rock hunters, and fossil entrepreneurs,[36] but as participators in those vast political and social movements which rocked the 1830s and 1840s.

The advantage now is that we have modern digital resources in addition to traditional archival ones. With the scanning of more ephemeral literature, the daily papers, radical periodicals, street tracts and so on, a new contextual world for Saull is opening up. Indeed, a new arena for science is coming into view, populated by an unfamiliar cast. Given the growing availability of this esoteric literature, we can at last make strides in reconstructing the freethinking socialist sympathetically. We can shift the focus away from the failed 'professional' geologist. In its place comes an activist who ploughed his wine profits into a didactic museum for the masses—a facility for the propagation of a wilfully disruptive sort of fossil geology.

So much excellent work at the moment is devoted to science at the 'margins' (a term which needs total deconstruction). Science was made to fit needs, and needs varied across classes and cultures. As Prothero puts it, "The artisans were not passive recipients of ideas; they were a social group with certain ideals and interests according to which they moulded the ideas they met."[37] Reconstructing these unfamiliar milieus in science is finally showing up the vacuity of an older historiography which dismissed them and buried the clues, as not leading to "proper" science—that is, judged by a gentlemanly yardstick. Just how much the historical axis has shifted towards inclusivity is shown by Aileen Fyfe

36 Knell 2000.
37 Prothero 1979, 246.

and Bernard Lightman's *Science in the Marketplace*, as well as works on mesmerism, phrenology, electricity, and especially Anne Secord's study of artisan botanists clubbing together in the pub.[38]

Reign of the Beast is not so much science in the pub or market, as down the Labour Exchange—almost literally. One of the first such institutions of its kind Saull helped to set up in 1832, a co-operative exchange bazaar outside of the capitalist economy. The book's target is the ideologues here, agitators who thought science could supply republican and anti-clerical ammunition and underscore Robert Owen's perfectibilist and environmentalist socialism.

This is not to suggest that all Owenites used geology or astronomy or used them in this way. Some studiously avoided all science as politically and socially irrelevant or considered it suspect as an avocation of the rich. Others bought into the prevailing propaganda of its social neutrality put out by its gentlemen practitioners. Still more retreated completely, away from science *and* society. By the late 1830s, the 'sacred socialists' rejected the prevailing irreligious materialism of so many Owenites like Saull. They withdrew into 'aesthetic' institutions, where intuitive judgement replaced science as a source of knowledge, and the new morality of vegetarianism, teetotalism, pacifism, and celibacy became the human-perfecting instruments.[39] Still more treated bourgeois science with cynicism. An editorial inaugurating that "ferocious" illegal rag, *The Man*, talked of official science being tainted by "the cankering contamination of custom and pride", meaning it was poisoned by "prejudices".[40] This was shown by their Whig lordships' using science in socially-controlling, anti-radical ways—a subject worked up by Steven Shapin and Barry Barnes in the 1970s. An anodyne science cluttered up many mechanics' institutes, while innocuous articles about animals in 'improving' magazines were criticized as politically-useless pap. Working men were demanding emancipation, yet the Whig "thinks to stop our mouths with kangaroos."[41] Not that the strange kangaroos from the antipodes were uninteresting to mechanics,[42] more that they

38 A. Secord 1994, 1996; Fyfe and Lightman 2007; Winter 1998; Morus 2011.
39 Latham 1999, 20, 80, 168, 175.
40 *The Man* 1 (7 July 1833): 1; "ferocious": Noel 1835, 63.
41 Shapin and Barnes 1976, 243; 1977, 55–56.
42 Topham 1992, 1998, 2005, 2009a, 2009b, 2022, provide a more sympathetic reappraisal of the Society for the Diffusion of Useful Knowledge, Mechanics'

seemed like a distraction. Owenite house organs warned against these bourgeois-controlled institutes. They can teach you the 'abc' of practical science, said a Saull ally, but "only to make you better servants".[43]

Totally in step, Saull denounced any schooling run by the clergy and gentry, who simply want "to put your children in livery".[44] To be liberating, socialist science had to undermine such enslaving tactics. In this respect, Saull's views were typical of those of many radicals of the time, who saw the liberation of the mind accompany a liberation of governance. And, as a first step, new emancipatory sciences had to be developed at street level. For Saull, the moral of the French Revolution was that demolishing the old order without readying any replacement was ineffective—the forces of monarchy, church, and reaction would simply return.[45] Therefore new emancipationist sciences had to be developed in advance to replace the Creationist props of the *ancien régime*. They had to be fed into the educational system early, hence socialist junior schools countrywide by the early 1840s were training youngsters in progressive geology, or real, anti-Mosaic, earth history, as they saw it.[46]

This was proof, as Roger Cooter put it in *The Cultural Meaning of Popular Science*, that use of science as a "powerful tool in social and political debate ... need not necessarily have entailed endorsement of the dominant class's supposedly objective view of the structure of natural reality."[47] Saull's certainly did not. His 'evolutionary' lectures and museum promoted a different reality from the pulpit standard or geological norm. As he said at London's Rotunda building, just over the Thames on the Southwark Road, in its day the premier 'blasphemy' outlet in the metropolis, a new sort of materialist reasoning was needed to counteract such enslaving tactics upholding religious power, and he

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Institutions, Bridgewater Treatises, and popular serials in general.

43 *Crisis* 2 (1 June 1833): 163; Johnson 1979, 85. This was Benjamin Warden speaking at Owen's institution. Warden was a master saddler in Marylebone. Warden, raised a Tory churchman, became a Unitarian and Freethinking Christian, finally renouncing all religion in the late 1820s. He and Saull worked in the British Association for Promoting Co-operative Knowledge (1830), the National Union of the Working Classes (1831), and the Labour Exchange. He was active at the Western Co-operative Institute, Poland Street, where Saull lectured on geology. Chase 1988, 150; Prothero 1979, 308–9, 306 n.18; Hollis 1970, 195.

44 *Crisis* 3 (4 Jan. 1834): 150.

45 *TS*, 28 Apr. 1835, 2.

46 *NMW* 11 (17 Sept. 1842): 99; (17 Dec. 1842): 203.

47 Cooter 1984, 203.

declared that his science as a "force would be fatal to that of tyranny and priestcraft. (Cheers.)".[48] His comrades equally sensed a subversive science's effectiveness against a repressive religious authority. Listen to George Petrie, a one-time insurrectionary and land reformer (and, another time, would-be assassinator of the hated Duke of Wellington),[49] whose contribution to Saull's museum would take a more grizzly form. Consult those "tutors which Nature has provided", the intellectual faculties, which "teach all sciences", Petrie told his ragged readers, and then ask "whether Religion has not in all ages, countries, and climes, produced the most debased slaves, the most demoralized people, and the most revolting carnage amongst mankind."[50] Saull's views precisely.

Atheism?

1830 was a pivotal time. The old onslaughts on "Kingcraft" and "Priestcraft" were slowly giving way to attacks on capital. Saull stood at an intersection, on the one hand slamming the old-style "tyranny and priestcraft" with Carlile's deists, while being about to set up the co-operators' Labour Exchange on the other. The exchange cut out the capitalist. It enabled the swapping of artisan manufactures, from bread to boots, or they could be switched for labour notes—Owenite 'bank' notes representing the hours of work a product entailed. The radicals were shifting targets from the "swaggering aristocrat", and were beginning to form "a labor theory of value that would make capital rather than hereditary privilege the antagonist of the 'useful and productive' classes."[51]

The 1820s–30s was also the time at which Saull becomes historically visible. Yet, however hazily he moved his sights from kings (under Carlile's influence) to capitalists (under Owen's), Saull saw religious authority as a root problem in both cases. He never stopped denouncing the Anglican undergirding of a political structure which he blamed for legally depriving the poor of their political rights. Saull's target

48 *Isis* 1 (3 Mar. 1832): 59–60.
49 Petrie [1841], 20–21; McCalman 1988, 197; Prothero 1979, 257–58, 289; Holyoake 1905, 102–05.
50 *The Man* 1 (4 Aug. 1833): 34.
51 Klancher 1987, 102.

remained the legitimating sanction of the state-supported and high-taxing Anglican authority. As he wrote (anonymously, see Appendix 2),

> *religion is a despotism*, reigning tyrannically over the human mind, blighting all its fair buddings, draining away or scorching up its proper nurture, misdirecting its energies, and making of human society one vast lazar-house, in which nothing but insanity is countenanced or encouraged...[52]

Of "all the evil genius that has ever existed", nothing was more guaranteed "to bring about the greatest amount of human misery". The screaming nature of such claims show their intensity. They were made time and again by Saull's comrades, both radical (those who sought enfranchisement first) and Owenite (those who looked to social regeneration as a prerequisite).

Take the radical Henry Hetherington, a republican democrat who is so often a counterpoint in our story. While Saull remained in the shadows, activists like Hetherington stood in the glare. Such men, proud and obstinate, refused to abase themselves before judges, let alone priests or kings, for they considered fighting for democracy and disestablishment neither immoral nor criminal. Hetherington was not at war with God (he was a Freethinking Christian) but with tithe-grabbing priests as a 'class', and the religions they peddled to retain their hegemony. Serving a term in Clerkenwell jail for publishing his *Poor Man's Guardian*, he wrote no less hysterically in 1832 about state-endowed clergymen fogging minds before emptying pockets. Religion was

> an artful scheme of robbers and tyrants to emasculate the mind of man—to rivet the fetters of slavery—to doom the honest and industrious portion of the community to the inextricable thraldom of ignorance and superstition—that they may ever remain an easy prey to their oppressors.[53]

Immersed in a sub-culture where such views were prevalent, Saull was in tune in seeing his museum's *raison d'être* as liberating, in kicking away the crutches of the Anglican regime.

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52 [Saull] 1832a, 4, emphasis original here and throughout, except where noted.

53 Hetherington [1832], vi; Barker [1938], 15. Hetherington was eventually expelled from the brotherhood of Freethinking Christians for thinking too freely. The creed was often a halfway house for discontents on their way to deism or materialism.

With modern secularity viewed both as the jettisoning of theology and as "the fruit of newly-constructed self-understandings" embracing traditional moral values,[54] Saull's museum can be seen as a site that contributed to the shaping of the new secular man. In its challenging environment, new self-perceptions were being forged and complex class identities being reinforced. It was one of many emergent venues that were a seedbed for what would eventually come to be called "secularism" by Saull's close comrades.

But "secularism" was an endpoint in the 1850s. Saull passed through many earlier stages of unbelief, and these showed his irreligion progressing as the infidel milieu changed. Although I have used "atheist" in the subtitle, the word is shorthand and contentious. Saull never called himself an atheist. Probably, like Richard Carlile, he hated labels, and his changing standpoint can best be judged from the context. 'Atheist' shouted clerical (and thus class) antagonism in a radical age. But, then, "everything", said E. P. Thompson, "was turned into a battleground of class";[55] to which Joss Marsh, in *Word Crimes*, added aptly that an atheist was a person "who 'ignores God, just as a rude man might ignore the presence of his superior in rank'".[56] "Atheism" was never a stationary concept. As radicals deployed new vectors of attack on the gentry's sons dumped into the priesthood, so infidel positions adapted.

This gives us our trajectory from the 1820s to the 1850s. Saull was Richard Carlile's patron in the 1820s as Carlile, rejecting even Tom Paine's arguments as too superstitious, moved from deism to atheism (although he preferred the term "materialism"). On the last day of 1827, Saull could still write of the "goodness of the Supreme Being to all creatures" while denying the inspiration of the Bible.[57] Assuming he was not being facetious (this was a letter lambasting his vicar's position), he was still a deist or something more providential at this point. And, in the later 1820s, he sponsored the astro-theological theatre of the flamboyant dandy, the Rev. Robert Taylor, who taught that the Bible was a story-book personification of celestial events. Saull also financially underwrote another blasphemer, the deistical preacher, the

54 C. Taylor 2007, 22.
55 E. P. Thompson 1980, 914.
56 Marsh 1998, 21.
57 Saull 1828a, 4.

Rev. Josiah Fitch, in the twenties. By 1830, Saull himself was a committed materialist. London's blasphemy venues were infiltrated by police spies, so we have surveillance reports on Saull's speeches. One, on 22 November 1830, relayed rather breathlessly how Saull "ascended the pulpit" at the Optimist Chapel in Windmill Street

> and began a Lecture on Superstition in which he much abused the Ministers of all Religions and the Religions also and said he was glad to find that knowledge and Union of the people had begun to have some weight and pressed the Necessity of still further to unite for though slow they were sure in the end they would put down all Superstition and Tyranny. He also began to prove the eternal existence of all matter and contended that Materialism was the only true Religion ...[58]

By the 1830s, he was part of Robert Owen's co-operative movement and pinned his colours to its "rationalist" mast. This flew an Enlightenment flag proclaiming the sovereignty of the "laws of nature". Then, when a group of self-proclaimed 'atheists'-proper split from Owen around 1840, Saull supported them. Finally, he migrated to George Jacob Holyoake's catch-all "secularist" camp in the early 1850s. In short, a fine study of Saull shows him moving with the times, as so many did. However, behind the terminological facades, he probably shifted little from his 1830 denial of spirit, soul, and Christ's existence.[59]

The Missing Museum

Today's historiography tends to favour larger metropolitan and provincial public museums. These reflected national importance, regional assets, and civic pride. Fewer studies target difficult niche institutions, not least those with a radical working-class clientele, let alone tackle their politically transformative intent.[60] It is time to switch priorities from posh to poor, however hard it might be to penetrate this neglected class space, which left few archival traces. Saull's 'underworld' museum

58 HO 64/11, f. 167.
59 HO 64/11, f. 205 (1830); f. 462 (26 Dec. 1831).
60 Lundgren 2013 for a later nineteenth-century example (albeit non-emancipatory) of ambitions to transform the visitors' self-understanding in relation to social debates.

of 'evolution'[61], with its artisan clientele, emancipatory ideology, and palaeontological and pantheonic content is our entry point.

The uniqueness of Saull's endeavour was shown in the way it bucked trends. Generally "exhibitions rarely seek to explain their contents in terms of a broader social and political context",[62] being somewhat static, usually non-interactive, sometimes arranged aesthetically, and leaving visitors to bring meaning to often ill-labelled exhibits. But Saull's was completely the reverse. He was ever-present to point out why his fossils were chosen, how they fitted together, and what perfectibilist message they carried for the moral development of socialist man.

All of this suggests that the fossils might have been viewed somewhat uniquely in Aldersgate Street. At least, compared to the fossil cabinets being fitted up by dealers "in the first style of elegance" in fashionable drawing rooms,[63] the exhibits served a different purpose. Ralph O'Connor in the *Earth on Show* illustrates how fossils captured the imagination in polite society, invaded expensive literature and carried

61 The words "evolve" and "evolution", and "palaeontology", were on the cusp of use in the 1830s. "Palaeontology" was a neologism (*Report of the Third Meeting of the British Association for the Advancement of Science; Held in Cambridge in 1833* [1834]: 480), and, by 1837, the word was "becoming usual" (J. Phillips 1837, 1: 2). Although "evolve" generally meant a foetal unfolding, it was occasionally extended, even in the 1830s, to cover the emergence or unfurling of species through time. Sir Richard Phillips used it this way in a reprint republished by Saull. He said that secondary causes "must evolve ... every thing that is possible" to leave a gradation of species (Phillips 1832a, 52). The word could also mean the emergence of latent capabilities. The Rev. Robert Taylor said in his (Saull-financed) pulpit in 1827 that the "purpose of nature to evolve and bring forth the moral capabilities of man, may be traced from the very first origination of animal life" (*Lion* 4 [9 Oct. 1829]: 462). Most often it referenced moral development, as in another Taylor sermon, when he claimed that, without struggle, the "latent faculties and capacities would never be evolved: man would seem to be born only to eat turtle, and to die like an alderman, choked in his own fat" (*Lion* 4 [6 Nov. 1829]: 607). Robert J. Richards 1992 maps the changes in meaning of the word "evolution" onto its underlying anatomical contexts. In Phillips's and Saull's use, the "multivalent discursive terrain of Romantic evolution—literary, scientific, aesthetic, philosophical, religious" (Faflak 2017, 14)—was being pinned down to the specific biological realm. In short, the word was transitioning to its more modern meaning, although it had yet to denote blindness in direction, for socialists and romantics still saw evolution in teleological terms, as aiming at human perfection.

62 S. Macdonald 1998, 2.

63 An early advert for this service can be seen in *Gardener's Magazine* 2 (May 1827): 356.

the new 'deep-time' message into the heart of a pious nation.[64] Here they could be displayed simply as curios, or for their beauty, to strike awe or spark curiosity about antediluvial times. While Saull might have used these aspects as lures, the meaning he extracted from the fossils was much more pointed.

In another aspect, too, he saw things differently. The learned were starting to suggest that *serious* museum collecting should result in the production of new knowledge—monographs, descriptions of new species, and specialist books.[65] In short, the fossils were there to be studied scientifically. Not so for Saull, who used them to sustain a new politics, not produce new knowledge. Anyway, despite growing demands that museums become knowledge-producing sites, it is clear, as Tony Bennett points out in *Birth of the Museum*, that they were never just places of knowledge acquisition. They always acted to regulate visitor conduct, marshal perceptions, reshape behaviour, and generally act to reform manners in such a way as to obviate more external coercive measures.[66] This appreciation makes Saull's venue, shaped by its Owenite ideology, particularly valuable as a sphere of study today.

Saull wove the fossils into his distinct narrative about the past to make a political point. The museum helped to empower an audience being made conscious of its dispossessed status by new class-awakening papers, particularly his friend Hetherington's *Poor Man's Guardian*. To this extent it served the same purpose—an assertion of power—as the unrealized museum projects of Henry Hunt and of the Grand National Consolidated Trades Union in 1833.[67] They show that Saull's was one of a number of possible museum tacks in the 1820s and 1830s, but the only one that took a geology-based turn. Saull's museum pre-eminently mated Carlilean irreligion and the social millennium. The fossil facility

64 O'Connor 2008.

65 Strasser 2012, 319.

66 T. Bennett 1995. There has been an avalanche of scholarship since the early 1990s on museums, warranting a "Focus" section in *Isis* (96 [Dec. 2005]: 559–608). Regarding natural history, many scholars have come in from the perspective of "popular science" (and on historicizing "popular science", see Topham 2009a, 2009b; O'Connor 2009). Audiences have been less studied in a historical context. Few historians have focused on exhibits designed to turn visitors into activists, despite the accounts of interactive displays, for example, Morus 1998, 2011.

67 *The Pioneer; or, Grand National Consolidated Trades' Union Magazine* 1 (2 Nov. 1833): 68.

was to help establish a new nature-based authority for an infidel Owenite society. Saull, in this quasi-millenarian[68] setting, was to show the great unwashed how, in fact, they had been invigorated by their 'evolutionary' bath, and how this evolutionary ascent guaranteed their progress to the promised land. Thus the museum exposes the use of geology in a naked class context, where it aids political campaigns to redress grievances and points to the inevitability of the coming Owenite man.

There are also more mundane reasons why we should be interested in Saull's lost museum—the number and nature of its exhibits. Let us start with the obvious: size. It was claimed to be *the* largest private geological collection in London. The press all agreed on this, from the Chartist *Northern Star* to the Tory *Morning Post*.[69] This point seemed uncontroversial. But size would count for little if visitors found the contents mediocre, meaning uninformative, unrelated to contemporary interests. The venue had to be exciting, disturbing or revealing, with star exhibits, something realized by all showmen. Studies have emphasized how exhibitors were looking for the exotic crowd pullers.[70] What drew the public were the ancient and marvellous—and what fitted the bill in Saull's case were those bizarre reptiles that would figure in his friend Gideon Mantell's double-decker *Wonders of Geology* (1838).

Possibly Saull's biggest coup was to bring in sea-rolled fossils of giant saurians from the Isle of Wight, which Hugh Torrens believes started arriving at the museum about 1836.[71] These gigantic creatures from the "Age of Reptiles"—as Mantell provocatively named it—were a sensation. The fossil bones of *Iguanodon* could be scaled up to suggest a living reptile seventy feet long, and the gigantic *Cetiosaurus* ("whale saurian") was even more colossal. Nothing like them had ever been

68 Rather than using the term "millennial", I follow J. F. C. Harrison 1979 in using "millenarian", since it refers to the newer, plebeian, and Southcottian prophetic tradition, which characterises some of Saull's fellow-travellers, notably the Rev. J. E. Smith. The term "millenarian" is also used for those infidels who anticipated a perfected socialist man in an eventual Heaven on Earth, the socialist New Jerusalem. Critics such as Henry Hetherington called this their "political millennium" (*PMG*, 14 Jan. 1832), to distinguish it from any religious expectation of Christ's Second Coming.

69 *NS*, 31 Oct. 1846, 3; *Morning Post*, 31 Dec. 1841.

70 E.g. Pearce 2008; Greenwood 1996, on William Bullock, a master of exotic crowd pullers.

71 Torrens 2014, 670.

seen before: disarticulated legs bigger than an elephant's, giant pelvises, eight-inch vertebrae, and a monstrous seven-inch claw, all of which left a huge amount to the visitors' imagination.[72] By 1839, Aldersgate Street had the greatest assemblage of *Iguanodon* bones from the Isle of Wight in Britain, and each new influx of exhibits swelled the ranks of visitors.[73]

These shipments naturally attracted the geological gentry as well. Saull gained personally from this. His stock rose with the museum's status. It provided his entrée and greased his otherwise difficult path through learned society, just as his provincial friend Gideon Mantell used his "Mantellian Museum" to garnish his profile as a fashionable doctor.[74] Saull's exhibits were a growing resource for desk-bound descriptive palaeontologists. And for none was this truer than the social-climbing young comparative anatomist, Richard Owen. Owen was the new Hunterian Professor at the Royal College of Surgeons in 1836, a pious man moving under wealthy patronage from anatomizing London Zoo's dead exotics[75] to the still more esoteric fossil reptiles of Britain's deep past.

Therefore we also should care about Saull's museum because it was exploited by the leading men of the day. Owen famously went on to make the *Iguanodon* sacrum (fused pelvic vertebrae) in Saull's collection the justification for his new 'Dinosaur',[76] a Brobdignagian creature which would become so iconic to future generations. That at least one major—and culturally crucial—taxonomic construction was based on Saull's specimens should underline the importance of his museum, at least with hindsight. Furthermore, these Aldersgate Street fossils became real bones of contention. Saull's museum was not only a site of political controversy, but palaeontological, as arch enemies Owen and Mantell tussled over Saull's prize *Iguanodon* sacrum, each figuring it and producing counter-reports.[77]

Though the leaders in their field, Owen and Mantell were far from the only elite visitors. Saull's collection was acknowledged and name-checked in the various fossil compendia and standard texts of the

72 Karkeek 1841a, 72; 1841b, 175; G. F. Richardson 1842, 402. On the scaling procedures, see Dawson 2016, 70–72.
73 *Morning Post*, 31 Dec. 1841; A. Booth 1839, 121.
74 Cleevely and Chapman 1992, 309.
75 Desmond 1985a, 235–41.
76 Torrens 1997, 2014; D. R. Dean 1999, 185; Dear 1986; Desmond 1979.
77 Cadbury 2000.

day.[78] It was recommended to students.[79] Thus it was widely known in the geological community, and was important enough to be routinely visited by specialists.[80] No less was it the stopping off point for visitors to London. Indeed, it was graced by the gamut of non-specialists, from foreign royals and ladies of leisure to Owenites and Chartist firebrands.

So we should care about the museum because Saull's contemporaries cared. Whether they loved or loathed him, they never objected to his museum's *contents*, which were usually lauded. Looking at the fossils alone, however visualized by the proprietor, they saw nothing to match, say, the "indecent" displays of anatomy museums,[81] which often engendered disgust in a puritanical nation. The reservations were solely about his Owenite explanations. And, because of these, the geological gentry might have found it uncomfortable to step inside an indicted blasphemer's private[82] museum. There was also a question of who they might meet there, the radical hot-heads who were specifically invited. This, too, raises questions. To what extent was the museum a place of mediation, where classes and masses, which might otherwise stand on opposite sides of the barricades,[83] could meet on common rocky ground?

The reason the gentlemen were here was to examine the unique exhibits, not least the 'type' specimens (the first found, named, and described fossil for any particular species, which set the standard). The museum was opened in 1831 after Saull bought the fossil collection of the late Lambeth mineralogist and natural history engraver James Sowerby. The Sowerbys have generated a huge literature—twenty papers in the *Archives of Natural History* alone, including a special issue

78 Dixon 1850, 55; Morris 1854, iv; G. F. Richardson 1855, 353, 379, 392.

79 G. F. Richardson 1842, 80.

80 Those known to have visited his establishment include Richard Owen, Gideon Mantell, Thomas Hawkins, Sir Richard Phillips, Thomas Rupert Jones (*Geologist* 6 [1863]: 312–13), Boucher de Perthes, and Edward Hitchcock. Identifying visitors is a chancy business, and certainly many more came but left no trace.

81 Bates 2008.

82 Swinney 2010 on changing meanings of "private" and "public" in relation to museums, and emerging attitudes to their access. The fast pace of early nineteenth-century palaeontology was partly dependent on the growing network of collectors and proliferation of private museums: M. Evans 2010; Knell 2000, 74; M. A. Taylor 1994.

83 Richard Owen certainly stood opposite Saull's barricade. Owen enlisted part-time in the Honourable Artillery Company in 1834, which backed the police and militia during the Chartist 'riots': Desmond 1989, 331–32.

on the family.[84] This is understandable because the Sowerbys produced expensive, beautifully illustrated monographs on shells, and were the 'trade' engravers for gentlemen's books. Their clientele was upmarket.[85] Yet, not a single paper has ever been published on Sowerby's museum after it passed into Saull's hands, where it functioned in a different class context. A study of this transition to Owenite territory is thus long overdue. The exhibits acquired by Saull were supposed to contain many 'type' specimens figured in Sowerby's multi-part *Mineral Conchology*.[86] But how many Saull inherited and then opened up to plebeian gaze has always been a matter of conjecture.[87]

Through his publications, Richard Owen raised the status of some specimens, from dinosaurs to fossil whales. And Saull, through his contact with the French (he was, after all, a wine and brandy trader, not to mention supporter of the 1830 and 1848 revolutions), raised the profile of other fossils. He even had one tree fern from the Oldham coal seams christened *Sigillaria Saullii* after him by the great French fossil botanist Adolphe Brongniart. Saull was hardly a prophet in his own land, and this Parisian influence is another reason we should be interested.

The switch from Sowerby, a client of the gentry, to Saull, a patron of co-operators, provides one starting point to explain science changing with context. Sowerby and Saull used the same fossils in diametrically different ways, and this reflected in their different museum approaches.

Saull's Aldersgate Street museum was opened in the charged atmosphere of June 1831. The Reformers, having wiped out the Tories in the general election, were pushing the Reform Bill, which would lead to riots and incendiarism within months when the Lords tried to block it. As the museum was opening, the Whigs were contemplating swamping the Lords with new peers to ram the Bill through.[88] Even when passed, the Bill failed the working classes, Saull's target audience, resulting in

84 *Archives of Natural History* and its forerunner *Journal of the Society for the Bibliography of Natural History*. The special issue was *JSBNH* 6, iss. 6 (Feb. 1974). This is not to mention books on the Sowerbys, most recently Henderson 2015.

85 Dolan 1998.

86 Conklin 1995.

87 George Waterhouse thought a "large number": House of Commons, *Finance Accounts I.-VII of the United Kingdom of Great Britain and Ireland, for the Financial Year 1863–4*, Income and Expenditure of the British Museum, 24–6; while Anon. 1904, 322, had trouble identifying them.

88 M. Brock 1973, 234; Halévy 1950, 33–43.

two decades of mass action. While the Bill struggled, Saull was treasurer of the campaigning National Union of the Working Classes, collecting funds for jailed street vendors of pauper papers, and helping plan the Labour Exchange in the Gray's Inn Road (see Chapter 6). Although he supported Hetherington's radicals, who wanted democracy first, his base of operations would be the socialist institutions, where the onus was on re-modelling mankind for the social millennium. Even so, his sympathies lay with the republican deists and materialists. Whether they were the imprisoned publisher Richard Carlile in the 1820s, whose defence costs Saull paid, the flamboyant "Devil's Chaplain", the Rev. Robert Taylor, whom Saull sponsored, or the atheists of the *Oracle of Reason* jailed in the 1840s, Saull never failed in his financial duty. This was Aldersgate Street's wider context of resistance. The museum spanned the rise of the socialist Halls of Science, the atheist schisms, and the emergence of 'secularism' in the 1850s, flourishing until Saull's death in 1855, when it spectacularly vanished, just as Chartism and Owenism had done. Saull engaged at every radical level through a quarter of a century, and his lectures and museum artefacts, their arrangements and meaning, reflected this context.

Looking at other museums shows how different Saull's was. What did working people get from fossils? One Tory in the later Museum of Practical Geology (that solid embodiment of industrial utilitarianism) told his fustian audience that collecting was more mercenary than moral—collectors could make money from selling their finds. This tacitly reduced the cliff-face poor to the status of suppliers. Sold on to experts, fossils helped identify strata and coal or mineral seams, which (it was left unsaid) would augment the wealth of mine barons and investors. And arranged in museums they gave "a deeper insight into the ... perfection of the Creator as exhibited in all his works".[89] There was often an underlying anti-radical, Christian message in such traditional views. In the ancient seminaries, Oxford and Cambridge, liberal Tories and Whig divines with a dual calling as "saurologists" and clergymen came to a consensus with the metropolitan gentry on safe science and

89 Edward Forbes, in *Working Man's Friend* n.s. 1 (28 Feb. 1852): 338–39; on selling fossils, e.g., Taylor and Torrens 1986.

ganged up to denounce the hated radicals.[90] They defended a descensive spiral of power from the Godhead reinforcing much of the hierarchical status quo, and turned fossils into a hymn to divine beneficence—coal, for example, being providentially arranged to ready Britain for industrial greatness.

Saull's anti-religious views, and thus the moral he drew from fossils, were a stark contrast. He went beyond attacking Anglican tithes and "other compulsory payments for the alleged support of religion"; beyond disestablishment of the Church (or stopping the "annexation of political power to episcopal rank"); beyond criticizing plural livings and the union of clerical and magisterial offices.[91] Even Dissenters would have agreed with much of this. Saull went on to assault Christianity itself, to slate the Bible as full of "contradictions, inconsistencies, and untruths", to consider all religions "nothing but insanity", perpetrated by a priestly caste in "the pursuit of wealth" at the expense of the industrious poor.[92] "What, then, is the course we should pursue, to counteract these direful effects?" he asked in 1833. The answer: contradict tradition, disrupt it through guerilla tactics, expose the astrological roots of Christian myth (a fashionable tactic in blasphemous back-street chapels), re-broadcast the anti-gravitational astronomy of "dirty little Jacobins" from the radical Enlightenment, use the new deep-time vistas of geology to refute Genesis, and surreally suggest our real simian origins. As a result, he used his fossil merchandise to conjure up disturbingly godless evolutionary images and opened the museum not only to mechanics but to coalmen, chimney sweeps, and charwomen, to blow away their religious "phantasies".[93]

This is the final reason why Saull's subversive science should be interesting. His museum was a site of political education, where geology was a tool to sharpen working men's ideals. It was also a site supporting a new sort of geology, fashioned for this purpose.

90 Morrell and Thackray 1981, 2; [Whewell] 1832, 117; descensive: Desmond 1989, 260 passim.

91 Calls made typically by the Society for the Extinction of Ecclesiastical Abuses, which he would chair: *TS*, 12 Oct. 1832, 1. On the society: *PMG*, 13 Oct. 1832; *The British Magazine and Monthly Register of Religious and Ecclesiastical Information* 2 (1832): 178–79.

92 Saull 1828a, 10; 1832a, 3–4.

93 Saull 1833a, 37; 1833b, 530.

What were the predisposing factors that brought an Owenite freethinker not merely to a love of fossils but to a singular understanding of their meaning—one that led to his heretical belief in monkey antecedents for mankind? The environmental determinism of his urban socialist milieu, which oozed republican, anti-clerical values and merged with democratic demands, provided a context where 'evolutionary' naturalism could flourish. Thus, *Reign of the Beast* is a contribution to the revisionist historiography of 'evolution'—in the sense of the self-emergence and unaided rise of life—in the early nineteenth century. It adds another enabling context. Our locus is outside of medical radical circles, the other context where transformist ideas could flourish,[94] and our time is long before Darwin published—Saull was dead by then. Indeed, his museum was thriving well before the blockbuster *Vestiges of the Natural History of Creation* (1844).

One can see why Saull's museum might have been different, given the angry agenda. And this is highlighted by a comparison to museums at the other end of the social spectrum. Look, for example, at two fossil fish aficionados, the Old Harrovian Lord Cole and Old Etonian Sir Philip Egerton. They ploughed money into elegant museum edifices—Cole converted a wing of his stately pile, Florence Court, in Fermanagh. There was a strange cachet to such fossils for these Grand-Touring grandees, and they were in a position to invite the Swiss Louis Agassiz—fossil fish expert *par excellence*—to visit and name their specimens. As patrons, they were taken seriously by the career geologists: their status, dedication, and duty to the nation, their cabinets exhibiting the intricacies of God's fishy works, all brought preferments, political and geological.[95] Their stately homes hosted Tory ministers no less than geological gentry. High rank, deep avocation, and deeper pockets paid dividends. Hence, these elite museum owners are better known. Saull's mercantile status counted for less, liquor money without rank was uncouth. His City museum spoke of neither career aspirations nor gentility, neither Christian humility nor political obedience, but the opposite in each case. Given this contrary ideology, the museum might have been expected to have had a different reception.

94 Desmond 1989; J. A. Secord 2000.
95 H. Woodward 1908, 301; James 1986.

In between Saull's City museum for ragamuffins and the squires' elegant edifice lay a whole host of private museums.[96] Most of these are better known than Saull's because they were catalogued in situ, and their content lists were printed. Gideon Mantell, for instance, published a self-promoting forty-four page guide to his Brighton museum.[97] Or the collections were auctioned off with descriptive brochures—the one for James Bowerbank's Highbury museum in 1865 ran to sixty-seven pages.[98] If there was an Aldersgate street catalogue, it has yet to be discovered, and the disastrous disposal of Saull's museum precluded any sales brochure. Saull's public-spirited gesture in bequeathing the museum to a new working man's institution ironically resulted in its breakup, with the riches cherry-picked and the rest hauled off in carts—the result of ignorant managers and unscrupulous predators. Other museums would be lost when owners or even curators[99] died but rarely in such a catastrophic series of circumstances as Saull's. With it went all systematic knowledge of its content. As with other lost private collections,[100] reconstructing its contents is a haphazard art. It involves scouring radical prints, tourist guides, press notices, monographs, museum repositories, and so on.

What was Saull's place in the geological order? The community was a vast assemblage, sorted by class, wealth, leisure, dedication, literacy, and commerce, with all the tangled patronage strings characterizing society at large. Historians have long dismissed the old 'amateur' and 'professional' categories back-projected onto the 1830s. There were no

96 These are becoming better known through pieces in the *Geological Curator*, Knell's *Culture of Geology*, and Hugh Torrens' indefatigable unearthing. Examples include Scarborough's William Bean, who specialised in molluscs, corals and sponges (McMillan and Greenwood 1972, 152–53); John Lee (1783–1866), whose museum was in Hartwell, Buckinghamshire (Delair 1985); Gideon Mantell (1790–1852), with a museum in Lewes, near Brighton (Cleevely and Chapman 1992); Thomas Hawkins (1810–1899), who sold his Glastonbury collection to the British Museum in 1835 (Carroll 2007; M. A. Taylor 1988–94, 112–14), and many more. Even in London there were competing collections: the James Baber (1817–1887) museum in Knightsbridge, built on oil-cloth manufacturing money (Anon. 1904, 242, 262); the Highbury museum of James Bowerbank (1797–1877), specialising in fossil fruits and sponges (Williams and Torrens 2016a; Robinson 2003); and that of the Strand mineral dealer James Tennant (1808–1881) (Tennant 1858).

97 Mantell 1836.

98 Anon. 1865.

99 K. Duffy 2017.

100 E.g., Fishburn 2020.

'professional' geologists at the time, no tiers of academically-trained, examined and accredited 'experts', the lab-coated men who would appear later in the century.[101] Quite the reverse, the actual professions—church, law and medicine—appeared as suspect, Latiny closed-shops, which circumscribed knowledge to retain their power and privilege. "They all live upon the ignorance of the people", was a typical radical rant. "They therefore think, if the 'mob' become too intelligent on one subject, they may grow too wise on others. Hence the 'Holy Alliance' amongst the professions" to keep the people subservient.[102]

It is better to talk in terms of cottage-industry fossil 'suppliers', the local beach-combers and flag-stone breakers, who traded their fossil finds and esoteric lore with exhibitors, academics, and gentlemen. To these unknowns at the source of the exchange chain, the fossils were often merely "trade goods".[103] The yokels would show the same sort of deferential attitude in their dealings with gentlemen that Anne Secord has revealed for Manchester's artisan botanists, as they gifted specimens to their 'betters' to ingratiate themselves or pique interest.[104] But these finders invariably go uncredited, as the buyers raise the fossils' status by making them 'specimens', and investing them with a scientific name to ratchet up their value. This is capitalist expropriation; being re-packaged—the fossil blocks are neatly trimmed and enclosed in mahogany cases—and publicized, the 'specimens' become bankable, or, as an old Tory said: "when once an animal subject is named and described, it becomes ... a possession for ever, and the value of every individual specimen of it, even in a mercantile view, is enhanced."[105] In short, bartered up the supply chain and shipped from province to metropolis, a fossil's intellectual and financial worth continually rises. Thus, as a first approximation, Hugh Torrens, in his study of the famous fossil finder Mary Anning—a Lyme Regis stall-holder of fossils—thinks that "collectors" (like Anning) and "gatherers" (the wealthy

101 Allen 2009; Desmond 2001.
102 *LI* 1 (June 1854): 41.
103 Lucas and Lucas 2014.
104 A. Secord 1994.
105 *Zoological Journal* 2 (Apr. 1825), 5. Simon Knell has begun drilling down to these local levels to snatch away the anonymity. For a broader view of the birth of the "specimen" in the natural history museum: Thiemeyer 2015: 401–03.

patrons and buyers, like Saull) is a better first-order breakdown.[106] In the end, though, the squirearchy controlling the prestigious learned bodies always got the kudos for fossil 'discoveries'. They were the ones authorized by the societies to produce published papers and take the credit.

Ultra-radicals were incensed by this sort of appropriation. The fossilists laboured, and the gentlemen capitalized. The activists were outraged by condescending patronage relations generally, and the poverty created by "respectable society". *The Poor Man's Guardian* railed not only against kings, priests, and "gentlemen"—"the real 'scum of the earth'"—but bankers and merchants, and only as a backer to the cause did Saull evade Hetherington's tarring brush. Plundering capitalists grew fat as workers were reduced "to the greatest possible misery, privation, and distress".[107] Mary Anning herself was near penury in 1836, her health "impaired from the hardships" of her lifestyle. Pressure from the geological gentry caused the Whig ministry to stump up cash for a £25 annuity, which ensured the survival of her fabulous fossil supply chain. But the ultras' evening rag, the *True Sun*, saw the petty sum demean the useful labourer when gigantic pensions were lavished on the mothers of Tory Dukes.[108]

106 Torrens 1995; Taylor and Torrens 1986. Torrens has done for the fossilists, what Anne Secord has done for the fustian botanists, opened up the province of the lost craftsman/woman and his/her patrons. Of course, even Anning was not at the base of the fossil chain, but required labourers to cut and transport her bulky rocks. On transmission up the hierarchy to "second-order collectors" and exploitation: Strasser 2012, 313–14. For a deconstruction of the derogatory "arm-chair collector" terminology, Barton 2022. On the provenance of specimens in supply chains: Lucas and Lucas 2014. See also Kohler 2007. On patronage in return for gifted or cheap fossils: Spary 2000, 77; and on field collecting, Endersby 2008, 54–83. Saull clearly collected some fossils, for example, his Hertfordshire hippopotamus molar (Mantell 1844, 2: 838–39). He also collected Eocene fossils in Bracklesham Bay, between Selsey Bill and Chichester Harbour (Mantell 1844, 2: 903). And he was a constant visitor to the Isle of Wight: *JBAA* 11 (1855): 66–67. Field collecting could be essential to establishing one's credentials, but I suspect in Saull's case it was desultory rather than systematic.

107 *PMG*, 30 July 1831.

108 Referring to the Duke of Newcastle's mother, whom Wellington had put up for a £1000 a year pension: *TS*, 3 Feb. 1836, 4; Torrens 1995, 269; *Cobbett's Weekly Political Register* 88 (4 Apr. 1835): 43. Poverty was the lot awaiting many old fossilists. Sandy M'Callum was a case in point. He was a "clever" Silurian collector in South Scotland who showed Sir Roderick Murchison the ropes but whose destitute wife had to be helped out after he died suddenly, by a fund to which Saull contributed: *Literary Gazette* 1984 (Jan. 1855), 49.

Saull, then, was a buyer, collator, and exhibitor. He bought the blocks, nodules, and slabs containing fossils rather than chiselling them out of the rock, which brackets him incongruously with those Tory patrons of palaeontology, Cole and Egerton. The brandy business put him on financial par with landed wealth and enabled him to vie with rich bidders at auctions or pay top price on site. The latter is probably how he obtained such a selection of choice Isle of Wight saurians.

But 'gatherers' also fed on one another. Thus, Richard Owen, who to my knowledge never scrambled over a rock-face in his life, thrived on museum specimens (Saull's included) and published on them extensively. This served both men well and they had a complex relationship, which probably remained icily formal. The poorer Owen's fast-publishing fame and elevated scientific status gave him a "Cuvierian rank without the means of doing it justice",[109] a sentiment echoed by fellow Tories requesting government help for him. Successfully so, for his Church-and-Queen traditionalism led to an offer of a knighthood, a civil list pension and trips to Buckingham Palace in short order. While the social-climbing Owen would have execrated Saull's blasphemous and socialist leanings, he needed access to his museum. On the other side, Saull, the richer merchant, had no scientific profile, so the elite exposure served his wine-depot museum well. And since a merchant amassing fossils risked being written off as a dilettante, no better than the hobbyists with their crazes for aquariums or ferns,[110] such imprimatur was crucial. It could help deflect conservative criticism. And if the museum was to be a site of political education, it was important to show that geological giants like Richard Owen had vouched for its contents.

Lectures and Venues

Saull was never one of the Geological Society's inner coterie of publishing specialists.[111] He remained a spare-time trader in fossil commodities. He

109 Richard Owen to C. Owen, 27 December [1841] (BL Add. MS 45,927, f. 38); Desmond 1989, 354–55; MacLeod 1970, 47–48.

110 Allen 1996.

111 Being a wine merchant did not preclude Saull's becoming one. Another City-based wine-trader, Joseph Prestwich (1812–1896) in Mark Lane, a fellow business visitor to France, showed that this was feasible. Where Saull's spare hours were spent in the Labour Exchange, Prestwich's were devoted to field geology. He descended the

collected fossil artefacts from all over Britain, blocks chiselled, sawn, and standardized—'manufacts' in effect. They were turned into an indoor representation of idealized progressive nature, by placing them in a single time-sequenced line to display life's inexorable ascent, pregnant with hope for the future. Most museums arranged their artefacts in a "relational" way and aimed for representational "completedness".[112] Saull's went further to make his museum the justification for political action. It carried the Enlightenment implication that, whatever the blundering, blocking, or bullying by obscurantist royals and religionists, this inexorably-rising nature was the guarantor of the coming social millennium. But an effort was needed to see it this way, or rather Saull's explanatory lecture. Without his talk, the museum to the uninitiated stood mute and uninformative, a jumble of rocks, a "sealed book",[113] the 'message' hidden. It needed Saull to open the book and read the narrative.

Saull's open-access Thursday lecture was one of many he gave on Owenism, geology, and (in the 1840s, as he crossed the porous border from deep-time geology to shallow-time archaeology) the rise of aboriginal Britons. He joined a growing band of independent lecturers at this time. The market for science talks was expanding in the 1830s and creating a host of itinerant speakers to exploit the new venues.[114] It was, said a magazine, "the rage of the present day to teach science to the people".[115] The political tumult pushed radical campaigners onto the boards—committed activists giving gratis talks, with entrance fees going to the cause, funding jailed news vendors or court defences. The *Brighton Herald* noted that:

> A new race of men has sprung up—full of energy, intelligence, and perseverance. They spread themselves in every direction; treat of every

Coalbrookdale coal pits to study the strata, and gained an FGS for it in 1833 (aged only 21), three years after Saull. Such dedication won him the Society's Wollaston Medal in 1849 for his work on the oldest Tertiary beds around London, despite being in full-time business (Prestwich 1899, chs. 2–3).

112 Strasser 2012, 321.

113 *National Standard* 3 (18 Jan. 1834): 44–45.

114 Hays 1983; Sheets-Pyenson 1985; Fyfe and Lightman 2007; Topham 2009a. 2009b; Huang 2016, 2017. Most of these concentrate on the entrepreneurial lecturing trade, rather than political propagandism, and thus they scarcely tap the underworld halls and grub-street venues.

115 *Shepherd* 2 (15 Feb. 1837): 33–35.

> subject ... The platform is daily becoming a formidable rival to the pulpit, the theatre, and the concert or ball-room. These men are apostles of popular science ... sweeping away, wholesale, bigotry and superstition, enlarging men's minds, and compelling them to abandon those narrow and selfish prejudices which are the besetting sin of those who ... refuse to take common interest in the great family of mankind.[116]

But Saull was fairly unique in blending science and politics at a deep level: his geological lectures would end in a political harangue, and socialist talks would wind up with the crowd being invited to the museum.

Freethinkers called for their own social interpreters of science. The geological knights generated enormous respect but intense frustration. They were "party-writers", serving their class, producing content, at once interesting but socially worthless to the "productive" population, until it was dismembered and repurposed. Calls were for activists to interpret science themselves, to use geology to "contribute to the overthrow of every thing fabulous, vicious, or unreasonable".[117] And Saull was one of the few on the stump who could actually do this: turn geology to advantage. He rose to the call for radical and Owenite lecturers to fulfil social, religious, and scientific briefs.

Moreover Saull had a growing space to operate in. Not only had infidel theatres proliferated in the later 1820s, many of which he sponsored (see Chapters 3 and 4), but in the wake of the July Revolution in France (1830) and reform fever in Britain, a wealth of co-operative and radical halls sprang up (Chapter 5). These appeared in towns across the country, but London was the epicentre: chapels were converted, halls leased and assembly rooms were set up, thirty or more in the metropolis. These blasphemy dives, halls of science, and mutual instruction rooms stood outside the regular mechanics' institutions. Some were short-lived, a few became infamous in the bourgeois press. Since these venues are relatively unplumbed, I have drawn up an annotated list (Appendix 4) to show their geographic spread over the capital from the late 1820s. Usually they were set up by local cells and remained under working-class control, rather than being founded from philanthropic or socially-controlling motives by the clergy and gentry. They catered to deists,

116 Quoted in *NMW* 13 (19 Oct. 1844): 131.
117 *Republican* 14 (10 Nov. 1826): 561–65.

freethinkers, socialists, and radicals, and the surprising fact is that Saull is known to have financially backed or talked in at least half of them.

Because these halls sat far outside the social mainstream, they are almost ignored in modern studies of mechanics institutions, or of the respectable 'lits & phils'. But then they were equally eschewed by contemporary magazines in their listings of scientific venues.[118] Even the *Penny Mechanic* largely stuck with the expensive (one to two guineas per annum) Literary and Scientific Institutions "for the people". It rarely sank to the cut-price end of the market, although it did list a few of the better mutual instruction societies, including one of Saull's favourites, in Great Tower Street (at 1*s* a quarter, the cheapest on its books), which had a radical-Owenite cast.[119]

Despite this ostracism, some mechanics' institution managers still looked enviously at the socialist halls of science, which placed no bars on political, religious, or economic discussion. The halls hosted lively debates with clergymen on titillating topics such as "The Disadvantages of Christianity", or the "Genuineness, Authenticity, and Inspiration of the Bible".[120] These were real draws, yet such talks were taboo in mechanics' institutions. Nor could they match the free-for-all discussions after lectures, which made events spirited and participatory. This lured the more "reflecting" artisans.[121] And the convivial tea parties in socialist halls provided the kind of community feeling missing from more formal mechanics' institutions.

Learning from lectures was different from solitary book reading. Talks in social halls were entertaining and embracing—stump orators competed in crowd-pleasing rhetoric, cheered on or hissed, questioned and challenged. To work, talks had to be tailored to the local audience, so context was all. The halls were locked into local communities. As such, the lectures more resembled parish political rallies; they were a communal activity. Here was a more viscerally engaging way to learn of the new science and its community meaning. Visual excitement was often a key: hall walls were festooned with "splendid lithographic engravings", and

118 For example, *Magazine of Science, and School of Arts* 1 (1839): 320.
119 *PM* 2 (17 Mar. 1838): 279.
120 J. Baylee and F. Hollick 1839; *NMW* 11 (10 Sept. 1842): 90; both events chaired by Saull.
121 T. Coates to H. Brougham, 27 Sept. 1839, Brougham Correspondence 95, University College London; Coates 1841, 29.

tables covered in showy fossils, all handleable, or phrenological busts, or the latest electrical wizardry. And lectures often preceded *soirées*, again enhancing the joyous, community aspect.[122] They were cheap too, many of Saull's were free,[123] so they competed with circulating libraries and communal book clubs in penny-pinching terms.[124] In fact a penny bought you a night's entertainment and, in emancipatory Owenite circles, the wife or husband came too. Even then, any expense was made to seem worthwhile, for it was usually announced that profits would go to refurbishments or to bail out a celebrity activist. Saull's lecture profits invariably went to help jailed news vendors or finance tract distribution.[125]

Geo-Socialism

David Stack, in a bravura performance, has shifted the focus by concentrating on the "knowledge Chartist" William Lovett. Stack's claim is for what he calls the "isomorphic connections" between Lovett's political and scientific interests.[126] Science was not "coincidental" to Lovett's politics but actually helped shape his radicalism. In other words, the self-help sciences were not bourgeois imports which diluted political ideals, but were inextricable in their development, in Lovett's case moulding the fabric of his National Association. This Association was founded in 1841 to prepare the poor for their enfranchisement. Lovett's group set up a National Hall in Holborn (1842) for classes, lectures, and eventually a day school. Saull was Lovett's comrade-in-arms. Together they had sat lectures at the London Mechanics' Institution in the 1820s.[127] Then as fellow deists, radicals and co-operators they could be found in every London political union or co-operative association at the time of

122 E.g. *NMW* 3 (20 May 1837): 235.

123 When the National Political Union instituted lectures in 1832 they mooted a 2*d* entrance fee, but Saull proposed his be free: *MC*, 16 Feb. 1832.

124 A. Secord 1994, 278, on the Lancashire "weaver-botanists" and their pub-based book clubs.

125 *Crisis* 1 (6 Dec. 1832), 159; *PMG*, 24 Nov. 1832; *Lancashire and Yorkshire Co-Operator* ns no. 10 (n.d. [Oct. 1832]): 23; Hollis 1970, 194–202.

126 Stack 1999, 1029.

127 Lovett 1920, 1: vi, 36. No record now exists of Lovett in the LMI Members' Registers (1824–29) in Birkbeck College archives. Since registration was chaotic, occurring at multiple sites—at booksellers, the Crown and Anchor tavern, the secretary's office, and so on, resulting in *nine* collecting books in total—there was scope for confusion and loss during collation into one volume: Flexner 2014, 151.

the Reform Bill.[128] Saull had great sympathy for Lovett's "knowledge Chartists". But it is unknown whether he helped fund the Hall, although he promised Lovett his presence at the opening.[129]

Stack's work is suggestive but can we apply it to socialist geology? True, Saull's palaeontological progression was modified to meet Owenite needs, but one wonders how much it helped to re-shape Owenite political structure. Was there a dialectical relationship? One might have expected that an environmentally-determined rise of life would fundamentally re-ground the conditioning on which Owenism rested. In other words, within an 'evolutionary' scenario, human history became the history of the planet; therefore Owen's mantra, that "The Character of Man is Formed for Him, Not by Him"—which ran on the *New Moral World* masthead—could mean that geological forces must now be considered part of his character formation.

There certainly was recognition that the "social and moral world is subject to changes like those which geology points out in the physical world": both showed a progressive advance, but this only suggests a congruence.[130] And talk of basing "our new society on everlasting first principles, and to form society into a science in accordance with those first principles; first principles of the truth of which there shall be no more doubt than there is now respecting the sciences of mechanism, chemistry, or geology", again suggested no more than social adherence to the scientific gold standard.[131] Arguing that "human character is a formation, as obedient to fixed natural laws as any that have ever prevailed over the formation of geological strata" is simply invoking a naturalistic rationale.[132] Opponents argued that socialists demonstrated their social truths "by means of 'geology, chemistry, geometry, astronomy, and other modern onomies and ologies'",[133] but the protagonists were referring

128 The British Association for Promoting Co-operative Knowledge (1829–31), Metropolitan Political Union (1830–31), National Union of the Working Classes (1831–35), National Political Union (1831–34), and they sat together on many other committees. To make a fine distinction, Lovett was a radical with Owenite sympathies, where Saull was an Owenite with radical sympathies.

129 W. D. Saull to W. Lovett, 13 July 1842, British Library, Add. MSS., 78161 f. 162.

130 *NMW* 4 (16 June 1838): 268.

131 *NMW* 11 (9 July 1842): 9.

132 *NMW* 8 (29 Aug. 1840): 133.

133 *NMW* 7 (16 May 1840): 1205–1206; misquoting the *Quarterly Review*, 65 (Mar. 1840): 498, which said no such thing.

to socialism's infidel tendencies, using geology to deny Genesis. Many socialists did indeed make a religion of naturalism. In the *New Moral World*'s words: "As a false Geology" is "the basis of all imperfect systems of religion; true Geology ... will form the basis or fundamental principle of the improved religions of the Socialists".[134] This looks hopeful, and such programmatic statements inevitably suggest Saull's museum outlook. His work, uniting the evolutionary past to the socialist future, brought geology close to structurally enlarging Owenism.

Owenites certainly thought geology should be central. They talked of the laws of science stretching to society, and on every circumstance that goes to hone man being socialism's purview.[135] And historians have adverted to the Owenites' search for the causes forming man's character "before and from his birth".[136] Again, this largely points to Saull, given that his lecture titles typically invoked geology's influence in "Forming the Character of the Future Generations of Mankind".[137] But here Saull, the old infidel, largely seems to be arguing for the removal of religious impediments in order that man's character might develop its full socialist potential.

It appears that geology was deployed mostly in propaganda, disputation, and education as an arch-naturalistic science which de-sanctified and re-calibrated history; it propped up Owen's perfectibility stance, and promised a better future. In Saull's view, knowledge of geology would liberate and inspire man to the socialist heights. This was the meaning of his mid-1830s lectures "On Geology in

134 *NMW* 7 (6 June 1840): 1280.

135 NMW 11 (8 Oct. 1842): 117.

136 R. E. Davies 1907, 26. In truth, the Owenite literature concentrates largely on mankind's given organization at birth and the cultural forces shaping his upbringing. The atheists who split off in the 1840s came closest to discussing the pre-human conditioning of character as they explored the material ascent of life. For Charles Southwell, man was a "creature of circumstances" and "in every sense, a production of nature, no less than shrubs" (*Investigator* [1843]: 39–40). Nature had worked up to mankind, and Southwell opened his *Oracle of Reason* by invoking human progenitors, who were "not exactly either monkey or man". In short, "man could not have been always what he now is" (*OR* 1 [27 Nov. 1841]: 27). Southwell and the compositor William Chilton agreed that a person's character must partly reflect an inherited "organisation" at birth. This "original organisation", said Chilton, "is an effect", meaning it had prior causes (*Investigator* [1843]: 95).

137 *PM* 1 (29 July 1837): 322.

Reference to Human Nature", in Owen's Institution ("Admission free").[138] These talks, known by their titles, undoubtedly followed his line that an expansive geology would purge those "mischievous" religious "phantasies" which underwrote corrupt politics and corroded morals. No religious system has produced "sound morality, social happiness, or political elevation; on the contrary, they have all invariably tended to uphold the powers of the ruling few, at the expense of the welfare and happiness of the oppressed and deeply-injured many".[139] Socialist geology remained a cleansing agent, as it had been in his earlier infidel days, which would have a liberating effect on the human character.

This inflammatory new science of geology was one of the sensations of the age. As such it obsessed middle-class readers as well. Ralph O'Connor has shown how writers and poets co-opted traditional imagery—with the new fossil giants evoking Milton's fiends and Swift's Brobdingnagians—and sold otherwise unimaginable scenes of an extinct past to genteel folk, who needed a grab-handle on this alien science. By such "literary projection", they dampened fears and eased accommodation. But while the *Presbyterian Review*, as O'Connor noted, saw the respectable public placated by poetic narratives of a beguilingly exotic elsewhere, the *Review* did darkly comment that some took up geology "that they may consecrate it".[140] That is our infidels and their sanctification. They, by turn, revelled in the religious backlash. To social brethren, geology's ground was hallowed, for providing the deep historical contradiction of priestly phantasms in a visible, material form. So deep were they steeped in it that some radicals even turned the science into a career.

Two of Robert Owen's own sons became state geologists in America (the new mineral "Owenite" was named after one, David Dale Owen, in 1853[141]). This was largely as a result of the New Harmony community on the banks of the Wabash in Indiana, set up in the mid-1820s by Robert Owen and the enthusiastic geologist, social reformer and Pestalozzian educator William Maclure. David Dale made it the headquarters of the U.S. Geological Survey in the late 1830s. Robert Owen's youngest son

138 *NMW* 3 (12 Nov. 1836): 20; *PM* 2 (5 Aug. 1837): 8.
139 Saull 1833a, 37.
140 O'Connor 2008, 3, 6, 8.
141 Genth 1854, 297–99.

Richard was, by the 1850s, a professor at Nashville University with a geology textbook under his belt, and he was shortly to take over the Survey and become an expert on earthquakes.[142] So, it is no surprise that critics speculated that even Robert "Owen's religious opinions have received ... some material modifications from the geologist".[143]

In London, the American Henry Darwin Rogers—a future geologist of note[144]—was teaching geology at Owen's Institution in Gray's Inn Road over winter 1832–33. These were astonishing months: audiences at Gray's Inn Road could hear David Dale Owen on Chemistry, Robert Dale Owen on Geography, Robert Owen on the social system, Saull on geology (Tuesdays), and Rogers on geology (Thursdays).[145] Prothero notes that these lectures were "well attended" and introduced "by popular demand", adding they were "enormously successful because they avoided the mistakes of the mechanics' institutions and were pitched at the right level".[146] That they were, judging by Saull's.[147] His are the only ones we can reconstruct—but they also show something just as important. They were couched in infidel socialist terms and were integral to the Owenite agenda, which made them more communally relevant. This party aspect was a crucial factor. The season's success meant that science lectures would become a weekly feature at Owen's institutions in the 1830s.

Even if we move away from London, the case for geology's centrality is compelling. Social missionaries up and down the country took up geological arms just as passionately. These stump orators—and there were many of them (listed in Appendix 5)—were literally that, not accredited or career 'geologists', but political demagogues who often, like Saull, developed a real love of the science. Saull was far from the

142 Armytage 1951, 14, 18; Albjerg 1946, 21, 24–25; J. P. Moore 1947; Winchell 1890, 136–37; D. R. Dean 1989; Torrens 2000.

143 *NMW* 4 (21 July 1838): 306–07.

144 He was to become professor of geology at the University of Pennsylvania and carry out state surveys of Pennsylvania and Virginia: Gerstner 1994; S. P. Adams 1998.

145 *Crisis* 1 (29 Dec. 1832): 172; *PMG*, 22 Dec. 1832.

146 Prothero 1979, 253, taking his cue from Robert Dale Owen, who considered the language in mechanics' institutes often obscure and the scientific details arcane and "useless": *Crisis* 1 (15 Dec. 1832): 164.

147 Saull's were certainly pitched differently from the salt miner George Ogg's more technical, mineralogical, and experimental lectures (which started with Moses) at the London Mechanics' Institution, about which Saull (1826) was critical.

only geological orator on the circuit, even if he was the principal one. Everything was "Galileo, Geology, and Gaslights", said the droll young Holyoake in 1841. Punning awfully, he went on that only "fuddy-duddies" failed to march with the age, those defunct "Saurian remains of mankind", priests and nobles, whom "Geologists can tell" are on the road to extinction.[148] Nor was geology limited to talks. Spectacular fossils figured as *divertissements* at Owenite social festivals, while socialist children on school outings were taken to the strata themselves for inspiration. The Owenite Central Board advised branch lecturers to gen up on the subject, to send back fossil and rock specimens and to set up geology museums themselves.[149]

The infidels' obsession was held with almost religious reverence—but then, as Jim Moore once remarked, "Irreligion was never more variously religious than in Victorian Britain."[150] However, it produced the inevitable backlash: Saull's nemesis, the universalist preacher J. E. Smith, saw such "shrine"-like museums lead to an unhealthy "worship" of fossil relics. Smith, who could never let Saull's monkey-man drop, equally had no truck with his acquisitiveness. Smith ranked the geologists' "idolatry" alongside Catholic veneration of saintly remains, and Saull's own godless proprietorship could only have encouraged Smith's near accusation of ancestor-worship.[151] Even in socialist circles there were rumblings about this over-emphasis on geology, and "miniature geologists [school children] lisping out something about primary transition, secondary and tertiary!" when the educational goal was moral and social.[152] Some thought it took eyes off the political target. Others failed to see the science's remedial benefit in the depression. Learn all you want of coal seams, but you will not get coal any cheaper, sniped a social missionary one wintry February.[153] The reaction, if anything, proved the rule: deep within Owenite social seams, a stratal layer of geology was now firmly embedded.

148 *NMW* 10 (9 Oct. 1841): 114.
149 *NMW* 4 (6 Jan. 1838): 82–83; (25 Aug. 1838): 351–52; 5 (5 Jan. 1839): 170; 6 (24 Aug. 1839): 704; 8 (10 Oct. 1840): 240; 12 (22 July 1843): 32.
150 J. R. Moore 1988, 275.
151 J. E. Smith 1873 [1848], 1: 310.
152 *NMW* 6 (24 Aug. 1839): 697.
153 *NMW* 9 (6 Feb. 1841): 88.

Reaction, Prostitution, and Appropriation

Difficult debates among the Good and Great only made the science more attractive to socialists. Geology had become a trigger subject which polarized the press. Critics saw it tarnished by its trenching on Mosaic matters, some even thought it blasphemous and imbecilic. That it was upstart knowledge, awash in a sea of well-mannered Classicism, was shown by the reactions: geology is "to religion what ... foppery is to manners—silly, disgusting, and often injurious", said one protagonist.[154]

The consensus among geologists, by the 1820s, was of a sequence of strata laid down over aeons that housed the successive creations of life, but it seems to have caught many unawares. Hence the anguish among some sects about Charles Lyell's triple-decker *Principles of Geology* (1830–1833) and Oxford divine the Rev. William Buckland's Bridgewater Treatise on *Geology and Mineralogy Considered with Reference to Natural Theology* (1836). Liberal reviews could laud the works, but they invariably had to brush aside traditionalist worries and dismiss the "timidity" of religious souls who dreaded Moses being "compromised."[155]

The eight Bridgewater books were designed to 'rebaptise the sciences', in Jonathan Topham's memorable phrase, to mollify pious folk unsettled by the upstart sciences, strengthen faith, and prove God's plan. To show the providence of the existing social order had been the original intent of the louche Earl of Bridgewater, who bequeathed the cash to set up the series—that and suppressing the atheistic fallout from the French Revolution.[156] The sums were huge, £1,000 a book, the money being parcelled out by the President of the Royal Society, the Archbishop of Canterbury, and Bishop of London, which led one pundit in the *Mechanics' Magazine* to slate the lot as an "expensive hoax".[157] Given the political climate, conspiracy theories were rampant. The Owenite *Star in the East* even thought Buckland had suppressed his "sublime discoveries" of ancient life for years so as not to offend his patrons.[158] Letter wars flared up. Consider the infamous slanging match

154 *Freeman's Journal*, 17 July 1839.
155 *Monthly Review* 3 (Nov. 1836): 330–50.
156 Topham 2022, 3, 14, 26–28.
157 *MM* 21 (13 Sept. 1834): 412.
158 *NMW* 4 (28 Oct. 1837): 5. The *Star in the East* (Armytage 1961, 143) was owned by the agrarian reformer and Pestalozzian educationalist James Hill of Wisbech,

in the *Times* as late as 1845. Outraged correspondents thundered that Buckland's "disgusting nonsense" of yawning aeons spawning nothing but "Crocodiles and lizards!", uttered "without blush or shame", would yield poisonous atheistic fruits, not least a blasphemous belief in the natural ascent of life.[159] In reply, commentators laughed that Latiny letter writers even found "infidelity hiding in the mineral cases of the British Museum".[160] But the real fear for many was that some clever Voltaire would seize on these wrecked worlds to "spread evil".[161]

The infidel Owenites did nothing to assuage these fears. References to Buckland and Lyell pop up in their prints. The books were tooth-combed and cannibalized, regurgitated in epithets and snippets, or spewed out wholesale to prove the earth's antiquity and the unaided rise of life. Liberal *littérateurs* and co-operators alike were awed by the "grandeur" of Buckland's vision—his "vista of illimitable extension, filled with the multiplied consummations and colossal broods". But they baulked at the "theological requisitions, sophisms, and prevarications necessarily induced by the 'terms' of the Bridgewater Treatises".[162]

In his study of Bridgewater readers, Topham has shown Buckland walking a tightrope. The Oxford don and Canon of Christ Church ("£1000 per an.^{m} & no residence or duty required"[163]) was talking in his *Geology and Mineralogy* to an array of savvy, respectable, and religious audiences,[164] never to socialists. Yet they were talking back, and prostituting his sanctioned science in ways that would have appalled him.

Cambridgeshire. In 1845, Hill bought the *New Moral World* (Holyoake 1906, 1: 149–50).

159 *Times*, 23 June 1845, 6. This letter war ran from 23 June to 4 July 1845. Buckland's book had been contested by "scriptural geologists" from its publication (Topham 1998, 258).

160 *English Gentleman*, 5 July 1845, 10.

161 *Times*, 26 June 1845, 5.

162 *Monthly Repository* ns 11 (Jan.–June 1837): 269–78. So spoke Richard Henry Horne (1802–1884), fellow-traveller with the sacred socialists (Armytage 1961, 173) and editor of the *Monthly Repository.* This was shaking off its Unitarian roots to become a refined "ultra-Radical, if not Republican" literary organ, supporting the working classes by its "lofty eloquence". Unfortunately, its even loftier price, 1*s* 6*d*, put it out of their reach and made it a financial flop ([James Grant] 1837, 2: 327–28).

163 Wennerbom 1999, 104.

164 Topham 1998, 239, 249–61.

The Oxford-educated Whig Charles Lyell in *Principles of Geology* targeted a similar well-heeled audience. Lyell's expensive volumes oozed authorial gentility, just as Lyell himself oozed intellectual hauteur. He cultivated an apolitical air so as not to offend Tory reviews, arguing that the earth had been sculpted by a continuous stream of causes, no more violent in the past than they are now. There had been no catastrophic revolutions in nature. Lyell was urging what Secord calls a sort of slow "perceptual reform", non-violent, liberal. Lyell's aim was to raise the science above the sordid collecting, curating, and mapping level. But he sidestepped scripture, and in a "parson-ridden" age (Lyell's words[165]), this could smack of unrestrained naturalism. Worse, it could be seen as a snub to Moses. So Lyell, desperate not to offend his hail-fellow-well-met confrères, went to lengths to show the safety of *his* geology. He implied that this string of causation did *not* extend to animals and plants. To prove his point, he ratcheted up his attacks on the recently-deceased Parisian transmutationist Jean-Baptiste Lamarck. Lamarck was truly loathed, not least for his poisonous Jacobin philosophy which was thought to lie behind France's revolutions. The July 1830 outbreak in Paris only reinforced the disgust. In 1831, one evangelical Old Etonian at the British Museum railed

> against the abominable trash vomited forth by Lamarck and his disciples, who have rashly, and almost blasphemously, imputed a period of comparative imbecility to Omnipotence, when they babbled out their puerile conditions about a progression in nature.[166]

It was those *modern* disciples Lyell had to watch out for,[167] but instead he chose a softer target: Lamarck's near quarter-century-old musings on apes standing erect to be counted human. Lyell judiciously padded out his polemic, warning against accepting orangs as ancestors "with foreheads villanous [*sic*] low,"[168] so much so that his diatribe ended up as an entire volume of *Principles*. Lyell had a deep, aesthetic revulsion

165 J. A. Secord 1997, xiii–xxxiii.
166 J. G. Children to W. Swainson, 11 July 1831, William Swainson MSS, Linnean Society.
167 Corsi 1978, 2005, 2021; Desmond 1989.
168 Lyell 1830–33, 2: 2:60, paraphrasing Shakespeare.

at the bestialization implied by 'evolution',[169] but in so belabouring his attacks he massively raised Lamarck's profile.

Lyell's exegesis was a gift to the infidel socialists. Within weeks of this volume reaching the shops, the radicals' own "bricks and bludgeons" organ, the *True Sun*, dragooned "Monsieur Lamarck" into its pastiche. It turned to terrible doggerel, spoofing the evolution of lords and ladies:

> For what were Lords invented? Do you think
> That Nature made them for no other uses
> Than just to talk about "destruction's brink,"
> To plead for tithes, and to resist abuses?
> ...
> Oh! good Lamarck! how habit changes men!
> How many plund'rers are there (we could score them)
> That ne'er had stolen, ne'er would steal again;
> But that their fathers had been rogues before them![170]

The truckling geological gentry had long been upbraided in deist circles for their "false reasoning" "palmed [off], not only on the minds of the illiterate and the vulgar, but also on the ... better informed."[171] Now Lyell and his cronies were to be unceremoniously stood on their heads in Saull's museum lectures,[172] just as Saull's own monkey-man was making a debut.

The point is this: historians are starting to re-balance authors and readers, museums and museum-goers. If we want the view from below, we have to look beyond high-brow writers, whose works reinforced the cultural hegemony; beyond the Bucklands and Lyells, said the co-operators, who sought the "perversion of science" in order "to accumulate power and wealth in the hands of a few", instead of spreading its materialist "blessings" to the many.[173] These audiences are crying out for study. We need to probe their back-street halls, which stood far from Oxford's spires.

Hardly any attention has been paid to these subversive social groups, who scoured expensive geology books for their own

169 Bartholomew 1973.
170 *TS*, 9 Apr. 1832, 3; "bricks": [James Grant] 1837, 2: 105.
171 *Republican* 7 (28 Mar. 1823): 390.
172 *National Standard* 3 (18 Jan. 1834): 44–45.
173 *Crisis* 2 (13 July 1833): 222.

diametrically-opposed ends. They exacerbated the fault lines exposed by Lyell's and Buckland's books, glorying in the scripturalist discomfort. The result was that 'socialism and geology' were linked in many religious minds. 'Geological infidelity' became buzzwords. That giant 1*s* Sunday paper, the *Atlas*, advised the clergy to mug up on the upstart science "to guard it from this perversion".[174] Church of England primers were bolstered with geological rebuttals to arm ordinands.[175] Itinerant anti-socialist disputants took to the rounds to deny that fossils proved that creatures had "died before the creation of man", because God would not "have peopled this beautiful world with a race of beings who could neither return thanks for their blessings, nor who even knew the hand that made them."[176]

This riveting of socialist scepticism and geological chicanery explains the epigraph at the head of the chapter. In 1840 the editor of the *Church of England Magazine* (one of the largest circulation weeklies[177]) came away dispirited from a Saull Sunday lecture at London's socialist headquarters. Progression and the socialist Promised Land would have been Saull's theme. If true to form, he had illustrated it by monstrous *Iguanodon* bones from the museum to illustrate Britain's steamy Age of Reptiles. Outrageously, at its culmination, he would have mooted mankind's monkey forbears and rise from aboriginal savagery. It was too much for the editor. Such devilish events left him claiming that all attempts by socialists to "desecrate the sabbath and outrage revelation" started off like this. It was an overstatement, but it shows how inextricable the linkage between infidel socialism and geology now appeared to their enemies.

174 *Atlas*, 12 Nov. 1842, 730.

175 Johnson Grant 1840, xiii–xiv.

176 *NMW* 6 (12 Oct. 1839): 811. Also 7 (20 June 1840): 1326; *Courier*, 5 Jan. 1841, 3. This was the Owenites' *bête noire*, John Brindley, a former schoolteacher, and now a peripatetic socialist debunker, one of the "rabid maniacs" who hounded them, in the *New Moral World*'s words (showing the Owenites could match Brindley for personal abuse [J. F. C. Harrison 1969, 216]). His debates with Owenites could end in violence, with at least one broken jaw recorded (Buchanan 1840a, 142; Royle 1974, 64). Brindley was a government informant (Garnett 1972, 176; Hardy 1979, 58) and provocateur, whose lurid allegations left some Christians suspicious of dealing with him (Ainslie et al. 1840). He tried to persuade engineering bosses to sack infidel socialists, only to hear that this would entail dismissing most of their workforce (R. Cooper 1853, 76).

177 *Penny Magazine* 6 (31 Dec. 1837): 507.