

Radical Chemist:
The Politics and Natural Philosophy of Thomas Beddoes

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By

Tim Nyborg

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Abstract

In this thesis, I examine the radical political views and activism of Thomas Beddoes, a late eighteenth century chemist and physician. A multifaceted man, Beddoes corresponded with many of Britain's leading industrial and intellectual lights, especially members of the Lunar Society, had a brief career as an Oxford lecturer, devised air delivery apparatus with James Watt, and wrote extensively to distribute useful medical knowledge to the public and argue for medical reform, all the while attracting the ire of the government and scientific community for his outspoken, radical, republican politics.

I track Beddoes' career as a Friend of Liberty, set within the context of the British reform movement, from 1792, when he began involving himself publicly in agitation, to 1797, when the death-knell of the British reform movement sounded and the French Revolution seemed to have utterly failed. In doing so, I seek to determine to what extent Beddoes was a radical, a revolutionary, and a fifth-column threat to the British, whether or not his ideology was in any regard the product of his science, and what the nature of his radicalism and the lineage of his ideas can tell us about the intellectual culture of his era.

I conclude that Beddoes' fiery rhetoric belies an otherwise moderate and pacific approach to political change, based in British Enlightenment ideas rather than emerging science. The republic, rather than a goal to be achieved through violent overthrow, was simply the only logical organization for a society of innately equal citizens, a fact he believed obvious to the enlightened mind. He defended the French Revolution while he could still cast it as a moderate endeavor led by rational men, but, like so many of its early British supporters, grew disillusioned as France descended into mob violence and the tyranny of Robespierre. Following the Priestley Riots of 1791, he harboured deep fears of a sans-culotte-like British mob, which threatened not only the Church and King, but the interests and liberty of those men like Joseph Priestley and James Watt who were generating valuable knowledge and industry around him.

My analysis supports Roy Porter's theory of a unique British Enlightenment, a social fermentation which emphasized Lockean personal liberty, improvement, and private property (which evolved into the *laissez-faire* economics of Adam Smith and David Hume), and which was, critically, defensive of liberties already gained. Beddoes' constellation of political, religious, scientific, and economic influences reflect the characteristic Englishness of the enlightenment culture around him, distinct particularly from France, and helps illustrate the links between scientific and political ideas in the late Enlightenment.

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Table of Contents

Permission to Use	i
Abstract	ii
Acknowledgements	iii
Table of Contents	iv
List of Abbreviations	v
Introduction	1
I – Ally of Revolution and “most violent Democate”	10
II – Peace Activist and Government Critic	50
III – Making a Radical: Locke, Lunars, and the British Enlightenment	82
IV – Conclusion	103
Bibliography	107

List of Abbreviations

The following societies will be referred to by their abbreviations.

LCS	London Corresponding Society
LRS	London Revolution Society
MCS	Manchester Constitutional Society
SCI	Society for Constitutional Information

Introduction

Thomas Beddoes was a polymath in an age of polymaths. He studied chemistry and medicine at the Universities of Oxford and Edinburgh in the 1780s. He lectured on the burgeoning fields of chemistry and geology at Oxford to great success from 1787 to 1793. Self-taught in numerous languages, he translated works of science from the continent. He entangled himself with the luminaries of the Lunar Society of Birmingham, from the iconoclast scientific patriarch Erasmus Darwin to the steam engine developer and industrial businessman James Watt and his radical son. He set up a medical practice in Bristol, and there established a medical research institution where he and his assistant, the young Humphrey Davy, later a famous chemist and President of the Royal Society, attempted to cure tuberculosis and a wide array of diseases by pioneering the medicinal use of nitrous oxide. In Bristol, he assembled an intellectual circle around himself, including Davy, the young Samuel Taylor Coleridge – upon whose early politics and poetry Beddoes had a great impact – and his friend Robert Southey. He continued his medical practice until his early death in 1808, consistently seeking medical reform.

But Beddoes was also a revolutionary in an age of revolutions. He met the French Revolution with a song and a tricolore in his hat, and defended the Revolution against all opponents in private and in print. A republican with enormous faith in human potential, progress, and the power of education, he was committed to the abolition of slaveries and despotisms of all sorts. A critic of church and state alike, and a vehement opponent of Prime Minister William Pitt the Younger, he made himself both a social and scientific pariah. Expelled from Oxford, he was marked as a seditious person by the Home Office and shunned by Joseph Banks, then President of the Royal Society. Mocked in satirical poems, he was viewed as one of Edmund Burke's reviled atheistic, alchemic "calculators," as a subversive who followed French

chemistry and philosophy alike. Undaunted, Beddoes took part in the reform and protest movements of the 1790s, writing improvement tracts for the public and criticizing the government's actions in its growing continental war against France. Beddoes thus provides a window into the interconnection of the radical politics of late Enlightenment Britain with the scientific advances and culture of the era, exemplified by revolution in both chemistry and industry.

Beddoes was long ignored after the 1811 publication of *Memoirs of the Life of Thomas Beddoes*, an account by John Edmonds Stock which concealed Beddoes' driving political interests in an effort to restore respectability. Rediscovered in reference to the work of his Pneumatic Institution, Beddoes has seen a resurgence of interest since the publication of Dorothy Stansfield's pioneering biography in 1984.¹ A stream of essays by Trevor Levere have illustrated various elements of Beddoes career, be it his career at Oxford, the Pneumatic Institution, or his assembly of an enormous library of foreign books. Roy Porter has delved into Beddoes' opinions on health, medicine, and society, and his goals for medical reform in the context of the medical philosophy and culture of the late eighteenth century.² Nuanced work has continued into the twenty-first century, with a Royal Society conference on the bicentennial of his death and a new, vibrant biography by Mike Jay.³ However, no study has looked primarily at Beddoes' radicalism, instead subsuming it in studies of his scientific networks, medicine, chemistry, and Pneumatic Institute.

Thus, this project follows Beddoes' career as a Friend of Liberty. It tracks his political activity from 1792, when he began involving himself publicly in the reform movement, whether

¹ Dorothy A. Stansfield, *Thomas Beddoes M.D., 1760-1808* (Dordrecht: D. Reidel, 1984).

² Roy Porter, *Doctor of Society: Thomas Beddoes and the Sick Trade in Late Enlightenment England* (London: Routledge, 1992).

³ Mike Jay, *The Atmosphere of Heaven: the Unnatural Experiments of Dr. Beddoes and his Sons of Genius* (New Haven: Yale University Press, 2009).

in the public discourse surrounding the French Revolution or in the protest to the war with France and incursions on British liberty, to 1797, when the death-knell of the British reform movement sounded and the French experiment seemed to have utterly failed. I seek to discover the nature of Beddoes' political radicalism: to what extent was Beddoes a radical (and radical in what form), to what extent was the progressive or radical ideology of his political writing a product of his science or of a broader scientific culture, and what can his ideas' lineage tell us about intellectual culture of his era? Were Beddoes' political views the product of radical, atheistic, French chemistry and philosophy, as critics like Burke would suggest, or did they instead descend from a British tradition and the liberal culture of Beddoes' scientific and philosophical allies? To address these questions, I rely upon Beddoes' numerous published political tracts and tracts for public education, as well as scientific publications which reflect his ebullient, almost millennial expectations for improvement of the individual and the state in the short term. I also rely upon his private correspondence, above all with Davies Giddy (later Gilbert), his student at Oxford and then close friend and philosophical ally. Their correspondence displays the remarkable breadth of Beddoes' interests – on one paragraph, Volta's exciting electrical experiments, on the next, events in Poland – and reveal Beddoes' private political opinions, be they his support of the death penalty for Louis XVI or his anguish at violence in France and fear of invasion.

I sought to find evidence in his political writings that his understanding of new chemical and medical knowledge informed his view of the political order and the individual within it, while wholly expecting a more nuanced interaction. He might present epidemiology and the sciences of the human body and mind as justifications for egalitarian political doctrines, or provide medical explanations for social and political problems. And I found such influence:

seeking to explain the brutality of his countrymen in burning the home and laboratory of his colleague and hero Joseph Priestley, he resorted in part to medical explanations – the moral and intellectual degradation of the poor in the face of famine and disease. The famine and disease came, naturally, part and parcel with the government policy, which did little to mitigate suffering through enlightened policy, but indeed exacerbated it through religious education and heavy taxation. So too, the nature of disease gave credence to an egalitarian view, at least of body, as such diseases as tuberculosis paid no heed to class in their affliction. Beddoes looked to the rapidly revolutionizing field of chemistry for hope, seeing in its depths the potential for understanding the influence of chemistry on the human body and, thus, human nature itself.

This medical interest in politics and hope for progress, however, explains too little. His experience as a doctor may have suggested causal links between illness, poverty, and moral and intellectual harm. But he was a political radical and iconoclast early in his career, before much experience as a doctor.⁴ Unlike another radical chemist, Joseph Priestley, Beddoes' political writings exhibit a dearth of scientific metaphor and, while his medical works often betray his revolutionary hopes, they make no explicit scientific justification for political doctrines. His emphasis on medical reforms and his proposals of policy to mitigate suffering from disease emerged from his expertise and experience as a doctor, but otherwise, his defense of the French, opposition to the war, abhorrence of slavery, and desire for universal liberty were reflective of a broad collection of contemporaries without his experience in science. While he may have used scientific knowledge to sustain his politics when useful – as in providing environmental

⁴ Note, for example, his support of Lavoisian chemical nomenclature and Huttonian geology, or his willingness to lambast the management of the Bodleian Library in print in *A Memorial Concerning the State of the Bodleian Library, and the Conduct of the Principal Librarian, Addressed to the Curators of that Library by the Chemical Reader* (Oxford, 1787). Even Stock, his careful biographer, noted “upon many...subjects, Dr. Beddoes's opinions deviated from the beaten track.” John Edmonds Stock, *Memoirs of the life of Thomas Beddoes* (London and Bristol: John Murray, 1811), 32. Stansfield, likewise, describes him as an iconoclast while still studying in Edinburgh in the mid 1780s. Stansfield, 29.

explanations of skin colour – it was not the source.

Instead, I identify in his political and scientific interests a common thread, a thoroughgoing empirical philosophy inherited from John Locke and the English scientific and enlightenment traditions. Far from being a politicizing *philosophe* of the French tradition, Beddoes was the product of an intellectual fermentation in Britain itself, an heir to Locke, but also to David Hume, Adam Smith, David Hartley, Richard Price, Joseph Priestley, Erasmus Darwin, and Thomas Day. Closely and variously connected to the Lunar Society of Birmingham, the intellectual nexus of what some like Peter Jones now call the Midlands Enlightenment, Beddoes saw firsthand the success of a small-scale liberal republic, a society unmatched in its production of novel industry, discovery, and genius – though moderated by conservative and pro-government players. When he looked to the early French Revolution, he saw a set of moderate and enlightened men attempting to establish a similar liberal republic, until violence and terror made the enterprise indefensible.

The first chapter sketches Beddoes' acquisition of an ever-growing network of associations with the Birmingham Lunar Society. It likewise situates his early career, through to his expulsion from Oxford in 1792, within the revolutionary atmosphere of the era, as his activities and writing can only be understood with reference to the debates and events of the day, whether they be the Revolution itself, the revolution controversy induced by Burke's publication of his *Reflections on the Revolution in France*, the September Massacres, or the King and Country mob in Birmingham which torched Joseph Priestley's laboratory. Beddoes' reformist activities and political tracts are set within this narrative, presenting a man whose opinions are close in line with such typical reformist and enlightenment objectives as abolitionism, education, and public health, but whose vocal support of the French Revolution and connection with often-abhorred

French chemistry blackened his name and stopped short the possibility of an Oxford career. So too, the chapter presents how he early valued the scientific culture of the Lunar Society as an exemplar, shown by his repeated denunciation of the Priestley Riots as a product of despotism and by his promotion of the society's progressive, empirical values in the public sphere. Finally, it shows how his early support of the French Revolution was undermined through 1791 and 1792 as violence overtook the nation and accounting for it became increasingly difficult.

The second chapter presents the latter stage of Beddoes' career of political activism, conducted from his medical practice in Bristol from 1793 until 1797, against the backdrop of continental war. His activity is situated within the ferment of wartime protest and repression. In 1794 he ceased potentially-seditious public and private writing for fear of prosecution, beginning again with renewed vigour following the acquittal of John Thelwall, Thomas Hardy, and John Horne Tooke in the nationally-followed Treason Trials of November 1794. I look at how the tracts he issued between 1795 and 1797, published in response to wartime famine, attack the Pitt government and its squelching of rights under the Gagging Bills (the Treasonable Practices Bill and Seditious Meetings Bill) and agitate for quick continental peace. These are fundamentally part of the wider protest movement, but reflect Beddoes' view of the role of government, which was founded on empiricism and utility and was informed by British enlightenment thinkers.

In the third chapter, I draw together the ideas, concepts, and influences presented throughout his political writing and return to my original questions. Contrary to Beddoes' branding as a Jacobin threat and Lavoisierian, informed by French science and thus French radical materialist philosophy, Beddoes was a radical in expectations rather than practice. He was a pacifist who subscribed to a view of human improvability, if not perfectibility, and looked to republicanism and democracy as the inevitable, logical results of enlightenment and empirical

study, rather than the products of active revolution.⁵ Likewise, while he believed science fundamentally supported the liberal egalitarian ideology he so eagerly supported, he never sought to prove it, but instead looked empirically to a century of British industrial and scientific success under the freedoms of speech and press, best exemplified by the rapid scientific discovery and technical innovation generated in the Lunar circle. I present Beddoes' philosophical influences as support for the concept, championed by Roy Porter and Margaret Jacob, of a British enlightenment of unique character – it emphasized individual improvement, linked enlightenment with practical science and industry, and required defending once accomplished. Beddoes' philosophical and political ideas provide evidence of a distinctly British intellectual ferment, being fundamentally and explicitly Lockean; informed by an array of English, Scottish, and Irish philosophers, economists, educationalists, and scientists; and fostered in a culture of print and free discussion of ideas. Thus, Beddoes' radical political activity was a product of the British enlightenment⁶ tradition, and was an attempt to preserve the social, economic, and political benefits produced by the liberal English constitution – best exemplified by the enormous success of Lunar model of tolerance, empirical inquiry, and industry – and extend that model and its fruits to government and the public for the common good.

Terminology

The British political movements of the 1790s variously included reformers, radicals, and republicans, and each of these terms will be employed, though each entails different though overlapping political commitments. Reformers included the broad set of British citizens active

⁵ In this, and in seeing politics as amenable to empirical study and the scientific method, Beddoes followed Priestley (though without millenarian conviction). Isaac Kramnick, "Eighteenth-Century Science and Radical Social Theory: The Case of Joseph Priestley's Scientific Liberalism," *The Journal of British Studies* 25, no. 1 (1986), 24.

⁶ I will primarily use the term "British Enlightenment" for clarity, as it extended beyond the boundaries of English nationality, though it is synonymous with the "English Enlightenment." Porter uses the terms interchangeably.

on a number of fronts, be they respectable, as in the abolition of the slave trade, or sometimes volatile, as with parliamentary reform.

Radicals were committed to large-scale political reform, most notably the cause of parliamentary reform, with goals of annual elections and universal male suffrage. In Parliament, this included Charles James Fox and the Foxite Whigs and their use of populism. Radicals outside Parliament sought reform through the use of extra-parliamentary pressure – petitions, newspapers, pamphleteering, and agitation through local societies and projects like the abortive British National Assembly. Often self-described as “Friends of Liberty,”⁷ their activity could entail rhetorical attacks on the government, established church, or crown, distribution of Paineite and otherwise subversive or radical literature, or dialogue with French revolutionary societies, and they did not shy away from political innovation.⁸

Republicans entailed a far smaller group of radicals. Some were committed, like Thomas Paine, to the establishment of an English republic, while others defended and promoted the French Republic as an ideal political system. Beddoes, we shall see, was a reformer, radical, and republican alike. Though he left aside the details of the parliamentary reform he preferred, he was a constant agitator through his writing, a strident critic of the government, an eager innovator, an ideological ally of the revolutionary societies pushing for reform, and a sometime supporter of the Foxite Whigs.⁹ Though not seeking the destruction of the English crown, he upheld the French system as an emulable ideal, expected and awaited its arrival in Britain as the

⁷ Beddoes used this term to describe radicals in France and England alike.

⁸ For an overview of reformist and radical objectives and activities, see Albert Goodwin, *The Friends of Liberty: The English Democratic Movement in the Age of the French Revolution* (Cambridge, MA: Harvard University Press, 1979), 13-15, 19-22.

⁹ Beddoes’ likely had an early respect for Fox’ radicalism, but by 1792 he noted, “His former speeches deceived many friends of the French revolution” and now proved “the general & inevitable rascality of our leaders of factions.” Thomas Beddoes to Davies Giddy, DG 41/15, 21/10/ 1792, Cornwall County Record Office. His support of the London Corresponding Society is evinced in *Where would be the Harm of a Speedy Peace* (Bristol: N. Biggs, 1795), 5.

result of a rapidly spreading republican spirit of equality and fraternity. The Republic, he declared, was “the only form of govt. consistent with honesty & common sense.”¹⁰ Thus, he was both a radical and a moderate republican.

¹⁰ Beddoes to Giddy, DG 41/5, 8/11/1792.

I – Ally of Revolution and “most violent Democate”

Beddoes’ formative years took place in an era of revolutionary change, social activism, and radical political movements. The son of an affluent tanner, he was born in 1760 and raised in Shifnal, Shropshire. With coal and iron, canals and steam, Shifnal was rapidly transforming into a centre of industry and innovation amidst a rapidly changing economy driven by new technology.¹¹ The scale of local change was matched by the scale of change abroad. He witnessed unprecedented revolution early on, as the American colonies declared independence when he was a teenager. So too he witnessed a long and unpopular war, as his nation fought overseas in the years that followed. Indeed, he studied at Oxford University amidst the American Revolutionary War, and amidst debate in Britain between those who sympathized with the liberal and republican ideals extolled by the Americans and in Thomas Paine’s *Common Sense*, and those favoring the foreign policy of George III. While Beddoes studied science, language, and medicine at the strictly conservative, High Tory Oxford, and translated foreign works on chemistry and electricity, reformers agitated against war abroad and in favor of liberal reform at home.¹² Edmund Burke defended the Americans’ grievances, as did radicals who would deeply influence Beddoes’ thought while commanding his respect. Richard Price, the Unitarian minister, philosopher, and member of the radical coffee-house society, the Club of Honest Whigs, published his *Observations on the Nature of Civil Liberty*, a defense of the Americans’ grievances.¹³ Meanwhile, radicals like Major John Cartwright lobbied unsuccessfully for major electoral reform at home.¹⁴

Upon completing his M.A. at Oxford in 1783, Beddoes left its conservative environment

¹¹ Stansfield, 7-8, 10.

¹² Trevor H. Levere, “Dr. Thomas Beddoes (1760–1808): Chemistry, Medicine, and Books in the French and Chemical Revolutions,” *Archimedes* 18 (2007), 157.

¹³ Goodwin, 55.

¹⁴ Goodwin, 57.

to study medicine at the University of Edinburgh, a centre of the intellectual fermentation of the Scottish Enlightenment.¹⁵ The liberal and non-ecclesiastic environment at the university had made it the destination for nonconformist education, and it was Britain's preeminent centre for medicine and chemistry alike, with luminaries such as William Cullen, John Brown, and, most importantly, Joseph Black.¹⁶ Attending Black's lectures and observing his experiments, Beddoes' found in him both a mentor and inspiration, but also a connection to the cosmopolitan world of chemistry and science in general. Attracting students from across Europe, Black was amply supplied with notes from lectures by continental chemists. Beddoes was quick to borrow them, presaging the enormous collection of foreign scientific texts which he would soon amass.¹⁷ Returning to Oxford University briefly in 1786, he acquired his medical degree, and began building connections with the continental scientific community before taking up the post of Chemical Reader at Oxford in 1788.

Connections to Communities of Scientists and Reformers

Beddoes became personally acquainted with the cosmopolitanism of chemistry in 1787 as he travelled to Dijon and Paris for a holiday of science and sociability, meeting some of Black's most preeminent connections. In Dijon, he met with Guyton de Morveau, and toured his world-class laboratory and surveyed Morveau's use of hydrochloric acid to disinfect the city's hospital, a case of the practical application of the new chemistry which Beddoes would cite for years to come.¹⁸ Fortuitously, he arrived in the city while it was being visited by many of French

¹⁵ Stansfield, 21.

¹⁶ See Nicholas Phillipson, "The Scottish Enlightenment," in *The Enlightenment in National Context*, edited by Roy Porter and Mikulas Teich (Cambridge: Cambridge University Press, 1981), 19-20.

¹⁷ Levere, "Dr. Thomas Beddoes (1760–1808): Chemistry, Medicine, and Books in the French and Chemical Revolutions," 158.

¹⁸ Stansfield, 33-4. Beddoes refers to this application in his criticism of government in Thomas Beddoes, *An Essay on the Public Merits of Mr. Pitt* (London: J. Johnson, 1796), 13.

chemistry's leading lights – Antoine Lavoisier, Claude Louis Berthollet, and Antoine-François de Fourcroy all being present. Beddoes thus engaged himself with their experiments and discussion, which extended well beyond the realm of chemistry – the four having just completed their *Methode de Nomenclature Chimique* – into the progressive, practical, and political. James Watt Jr., making a later visit in 1792 in different circumstances would report, “We met Messrs. Mourveau, Fourcroy, Hassenfratz and other first rate chemists at his house, but not a word of chemistry was there spoken, they are all mad with politics we have not met anywhere with such a set of *enragés*....”¹⁹ Morveau was a notable critic of the monarchist government and was later elected member of the French Legislative Assembly, and then to the Committee of Public Safety, along with Fourcroy, before its fall into infamy.²⁰ Lavoisier was a liberal reformer and constitutional monarchist, who had long been committed to the application of science to social improvement, particularly matters of health and sanitation.²¹ And above all, the French chemists shared Beddoes' conviction of the remarkable potential utility of their new science. Leaving Dijon, Beddoes travelled to Paris, where he spent a few weeks with Lavoisier for much the same purpose, viewing experiments and discussing widely, leaving Beddoes with a regard for both Lavoisier and Mrs. Lavoisier.²² Indeed, he emerged with an enormous respect for the French scientific community in general, and the liberal character which defined these men would come to define the French Revolution in his mind. He would not look to the Jacobins or the masses with glee, but to leading scientific and political lights such as Lavoisier and the Comte de

¹⁹ Watt quoted in W. A. Smeaton, “Louis Bernard Guyton de Morveau, F.R.S. (1737-1816) and His Relations with British Scientists,” *Notes and Records of the Royal Society of London* 22, no. 1 (1967), 122.

²⁰ Smeaton, 122.

²¹ Madison Smartt Bell, *Lavoisier in the Year One: the Birth of a New Science in an Age of Revolution* (New York : W.W. Norton, 2005), 17.

²² Stock, 17-8. Stock claims that Beddoes' respect did not extend to Lavoisier's “philosophical countrymen,” whom he treated with contempt. While Beddoes was far more deeply engaged in the English philosophical tradition, this is likely an attempt to shield Beddoes from accusations of French philosophical thinking, as he praised them extremely highly in 1792.

Mirabeau, whose knowledge and character would, he hoped, see France through the trials of Revolution and bring great prosperity.

Meanwhile, in England, he was forging links with the Lunar Society, which would form the nexus of his intellectual circle; contacts with its members would comprise the majority of his British correspondence. Various friends, heroes, teachers, donors, and entrepreneurial partners, the society's members would have an indelible impact on the course of his life, career, and thinking, whether scientific, educational, or political. We have seen how Beddoes studied under and befriended the chemist Joseph Black at Edinburgh. Black was himself a friend and correspondent of James Watt, and a Lunar correspondent. Beddoes would later dedicate one of his works to Black and model his Oxford lectures after Black's, while imbibing his emphasis on public lectures and interest in the medical application of chemistry.²³

Beddoes' connection to the Lunar physicians began early as he met William Withering, also from Shropshire, and Erasmus Darwin, in the late 1780s. By 1787, he and Darwin had engaged in a vigorous correspondence – he became Darwin's most frequent correspondent – on matters of geology, chemistry, and eventually medicine, philosophy, and politics.²⁴ Through 1795, he reviewed draft sheets of Darwin's voluminous *Zoonomia*, a biological and medical work which reflected much of the materialism which pervaded Beddoes' own scientific and political thinking.²⁵ He likewise corresponded with Withering about pneumatic medicine, publishing some of their correspondence in 1794 in a collection of letters from various doctors on the subject.²⁶

In 1791, he travelled to Birmingham and became acquainted with some Lunar chemists.

²³ Stansfield, 26.

²⁴ Desmond King-Hele, ed. *The Letters of Erasmus Darwin* (New York: Cambridge University Press, 1981), 174n.

²⁵ Stock, 19.

²⁶ Robert E. Schofield, *The Lunar Society of Birmingham: a Social History of Provincial Science and Industry in Eighteenth-Century England* (Oxford: Clarendon Press, 1963), 375.

In some regard, his reputation preceded him, as he had acquired laboratory equipment from Josiah Wedgwood, the pottery manufacturer, while Matthew Boulton had heard of Beddoes' Oxford lectures and had written him about sending his son to study chemistry under his tutelage.²⁷ He formed a close relationship with James Keir, a chemist and – proof of the links between science, industry, and commerce – a successful chemical manufacturer, who invited Beddoes to contribute to his *Dictionary of Chemistry*. An ardent democrat, Keir would keep Beddoes abreast of news out of Birmingham, particularly as political events turned against them.²⁸

Likewise, he developed a friendship with William Reynolds, an industrial and metallurgic innovator, whom he had met in the late 1780s, and who had likewise studied under Black. Like Keir, Reynolds was keenly interested in the application of chemistry to industry – in this case steel production – and opened his commercial operations for Beddoes' viewing, resulting in a paper to the Royal Society.²⁹ Soon the two, along with James Sadler, Beddoes' Oxford assistant, a steam engine innovator and pioneering balloonist, were conferring on steam-engine designs.³⁰ Moreover, Reynolds' home, The Bank, was open to Beddoes, and became a favourite vacationing spot, while Reynolds remained a constant communicant.³¹

Beddoes arrived too late to meet Thomas Day, the influential Rousseauvian educationalist, abolitionist, and writer.³² The author of the popular *The History of Sandford and Merton*, a children's book inspired by Rousseau's *Émile*, Day had died in 1789, and James Keir had recently completed a biography of his life.³³ Beddoes was already well familiar with his

²⁷ Schofield, 373.

²⁸ Stansfield, 62-3; Beddoes to Giddy, DG 41/50, 3/4/1792.

²⁹ Stansfield, 61.

³⁰ Stansfield, 60-2.

³¹ Stock, 19.

³² Schofield, 54-5.

³³ Stansfield, 65.

work and noted of his own time spent with Keir, “as he is the intimate friend of Darwin and Day, we should have been unlucky indeed if we had wanted conversation....” Of Day he noted admiringly, “I know not the origin of the association, but from my earliest remembrance, the sound of [his] name was always accompanied in me with an agreeable emotion : and upon the maturest reflection, I cannot but regret his premature death, as an event that deprived his country of one of its most distinguished ornaments.”³⁴ He was deeply familiar with Day’s career and his writings (which he would cite in his own discussions of education and empire), and lauded him as an excellent man and potential statesman. Stansfield has argued that Beddoes “came to identify with” the “cluster of interests which make up the matter of Thomas Day’s writings.”³⁵ This is a fair description, as Beddoes would devote himself to Day’s causes of abolition, education, social reform, and practical experiment.

In 1793, as Beddoes would leave Oxford to resettle in Bristol, he would meet the famed educationalist Richard Edgeworth, carrying a recommendation from Darwin and a certainty that the two would get along amiably, given Beddoes’ admiration for Day, as Day and Edgeworth had worked together closely. His marriage to Edgeworth’s daughter Anna the following year obviously only further strengthened his connection to the circle.

It is uncertain when Beddoes’ connection with James Watt began, but by 1794, the two were working together and corresponding extensively on the development of pneumatic apparatus to deliver medicinal gases, together producing the five-part *Considerations on the medicinal uses of factitious airs*, an introduction to the prospects of pneumatic medicine.³⁶ Their relationship extended far further than mere science or business, however, as Watt’s daughter Jessie had died of consumption in 1794, and he would send his son Gregory, also consumption-

³⁴ Beddoes to Giddy, DG 41/48/1, 21/11/1791.

³⁵ Stansfield, 65.

³⁶ Stansfield, 152.

afflicted, to Beddoes' care. Links to the family went further as Beddoes would develop a friendship with James Watt Jr., the Lunar black-sheep and democrat, whose politics matched Beddoes' own, and whose journey to the Parisian Jacobin club with Thomas Cooper, a chemist from the radical Manchester Constitutional Society (MCS), enraged Edmund Burke.³⁷ Watt Jr.'s radicalism, like Beddoes', would wane after 1794 in the wake of the Great Terror.³⁸

The connections and friendships he had made proved their worth as Beddoes sought to establish his Pneumatic Institute; donations came in from Thomas Wedgwood, the Reynolds, Watts, Boultons, Darwins, Edgeworths, and Keir, and Boulton even wrote to Shelburne, Marquis of Lansdowne – who had also patronized Priestley – encouraging Parliamentary support of the Institute.³⁹ As Schofield has noted, the Pneumatic Institute formed the “last co-operative endeavour of the Lunar Society.”⁴⁰ But the Lunar Society also provided Beddoes with ample empirical evidence of the value of a particularly liberal model of organization and discursion. First, the Society exemplified the potential of scientific utility, above all in the field of chemistry. It was no mere discussion group, but a crucible of technological and industrial development which was enlarging the fortunes and prospects of the midlands' industrial class. The Lunar Society extended the Baconian maxim – knowledge is power – to knowledge is wealth (and if Beddoes had his way, knowledge would be health). As Boulton had noted to James Boswell, “I sell here, Sir, what all the world desires to have, – Power.”⁴¹ Wealth in turn produced philanthropy and an improved social good. Josiah Wedgwood saw such social improvement flowing from the industrialization in which he took part: “Industry and the machine have been

³⁷ Stansfield, 153.

³⁸ Peter M. Jones, "Living the Enlightenment and the French Revolution: James Watt, Matthew Boulton, and Their Sons," *The Historical Journal* 42, no. 1 (1999), 181-2.

³⁹ Schofield, 374.

⁴⁰ Schofield, 377.

⁴¹ Boulton quoted in Roy Porter, *The Creation of the Modern World: the Untold Story of the British Enlightenment* (New York: W.W. Norton, 2000), 432.

the parent of this happy change. A well directed and long continued series of industrious exertions, has so changed, for the better, the face of our country, its buildings, lands, roads, and the manners and deportment of its inhabitants too.”⁴²

But the society’s nonhierarchical structure and extensive – though not unanimous – liberalism and the general cosmopolitanism of the corresponding chemists (excepting national tensions over nomenclature⁴³) had distinctly political ramifications. Here was a group largely outside the halls of power, but composed of men of great talent effecting enormous change on the British landscape. Most were educated at Dissenting Academies and, as in Beddoes’ case, the liberal and flourishing Scottish universities, centers of chemical study and education.⁴⁴ Mostly non-conformists, whether Quaker, Unitarian, deist, or atheist, they maintained generally progressive views, whether opposition to the American and French wars, commitment to the abolition of slavery, or anti-imperialist sentiments, and maintained extensive connections abroad – even sending their sons overseas to widen their horizons. Thus the Lunar circle provided a model for the ideals and ideology which might underlie a more progressive and prosperous British nation. Important exceptions could be found in each case; Watt and Boulton were highly sceptical of republicanism and, above all, the mob. Boulton had been an ardent opponent of the American revolutionaries while Watt saw the French Revolution in 1789 not as a wellspring of liberty but as a disturbance which was interfering with scientific correspondence.⁴⁵ With large commercial and industrial interests as well as conservative backers, they were supporters of the government. And yet even they still “retained an attachment to the universalist values and

⁴² Wedgwood quoted in Porter, *The Creation of the Modern World*, 431.

⁴³ Bell, 131.

⁴⁴ Margaret Jacob, *The Cultural Meaning of the Scientific Revolution* (Philadelphia: Temple University Press, 1988), 145; Jan Golinski, *Science as Public Culture: Chemistry and Enlightenment in Britain, 1760-1820* (Cambridge: Cambridge University Press, 1992), 54.

⁴⁵ Jennifer S. Uglow, *The Lunar Men: Five Friends Whose Curiosity Changed the World* (New York: Farrar, Straus, and Giroux, 2002), 258-260; Jones, “Living the Enlightenment,” 157.

aspirations of the Enlightenment.”⁴⁶ It was this ability to mix politically and religiously diverse individuals with common philosophical and scientific aims and interests which was important. The society’s members’ were characterized by religious toleration, open discussion on wide-ranging topics, and a commitment to the public good rather than nationalistic endeavours. That good might take the form of health, combating poverty, or improving education. And it was education which formed the keystone of this deeply enlightened worldview – the horrors of war, poverty, famine, disease, brutality, religious bigotry, and despotism could be combated by combating ignorance through the universal dissemination of knowledge. For the Unitarian Priestley this was a millenarian vision and fulfillment of prophecy, as the spread of knowledge would entail peace and fraternity worldwide.⁴⁷ Paired with the emphasis on education was a confidence in the potential of applying emerging science for the public – and private – good, whether this entailed industry, health, or better education through understanding the material basis of human nature and human understanding. While Beddoes met these men already an iconoclast, he immediately identified with their politics, and years of discourse and mutual interest would see Darwin, Keir, Day, and Edgeworth influence his views. Calls for pacifism, education, health reform, and the universal dissemination of knowledge, all indicative of the progressive goals of this circle of men, would come to dominate Beddoes’ tracts, political and otherwise, for the remainder of his life.

The French and Chemical Revolutions

The French Revolution rekindled a desire for progress and even utopian hopes among English reformers and radicals who saw the opportunity for new fraternal ties and the spread of

⁴⁶ Jones, “Living the Enlightenment,” 162.

⁴⁷ Kramnick, 14.

republicanism across the channel. Here was a nation throwing off oppression and superstition, while seeking to forge a new constitution which would see liberty, equality, and prosperity ascendant. Nowhere was this sentiment stronger than among Beddoes' growing circle of friends and colleagues: Erasmus Darwin wrote James Watt, "Do you not congratulate your grandchildren on the dawn of universal liberty? I feel myself becoming all french both in chemistry and politics."⁴⁸ Coleridge, then 16 and unacquainted with Beddoes, was inspired by the fall of the Bastille to pen the lines: "No fetter vile the mind shall know, / And eloquence shall fearless grow."⁴⁹ James Keir saw it as the "sole *triumph of Reason*, having been the effect of the gradual illumination of the human mind over a whole nation...."⁵⁰ For Keir, it was proof that civilization was being rapidly enlightened by a "sudden and extensive impulse which the human mind has received.... The diffusion of a general knowledge, and of a taste for science, over all classes of men, in every nation of Europe, or of European origin, seems to be the characteristic feature of the present age."⁵¹

Beddoes became an outspoken supporter of the Revolution, making a name for himself at Oxford. By 1791 he was taking part in the festivities on the anniversary of the fall of the Bastille, singing revolutionary songs.⁵² Already he considered the republic the best of all political systems, as it was immune to the corruption and partisanship which infected the British Parliament. "[I]n time perhaps a republican party may arise," he mused, "*but that* will be a party of principle & not like our parties.... I have never heard of two distinct parties in the American Congress."⁵³ Likewise, the republic would draw out the best legislators, who would be able to

⁴⁸ Erasmus Darwin quoted in King-Hele, 200.

⁴⁹ Uglow, 435.

⁵⁰ Uglow, 436.

⁵¹ James Keir, *The First Part of a Dictionary of Chemistry* (Birmingham: Pearson and Rollason, 1789), iii.

⁵² Stansfield, 55.

⁵³ Beddoes to Giddy, DG 41/4, 4/11/1791. The split between Federalists and Democratic-Republicans in the Congress was then arising.

overcome any evil and difficulty.⁵⁴ Fundamentally, however, the French Revolution was for Beddoes a moderate revolution. He favored moderate, enlightened statesmen, whether constitutional monarchists (the comte de Mirabeau was his preferred statesman), clergymen like the Abbé Sieyès, or Girondin like Jacques Thouret.⁵⁵ Thus his language was often fiery, but he would never call for violence or illegal action, instead appealing to public opinion and the common good in his tracts. And though he expected it to be moderate and civil, his expectations for the Revolution were enormous. He saw it as the hallmark of rapid societal changes in play and to come. Enlightenment, republicanism, and fellow-feeling were rapidly spreading throughout the British population due to “the increased liberality of the age.”⁵⁶ A shifting zeitgeist entailed the transition to a more rational form of government, whether a constitutional monarchy or republic.

More broadly in Britain, reformist and radical societies, with “citizens of the world” like Price and Priestley with extensive connections in France, were swelled with pride and hoped to emulate the French.⁵⁷ Price provoked Burke’s rage by preaching his sermon, “On the Love of our Country,” before the London Revolution Society (LRS) at its November 4th celebration in 1789, which concluded with the proclamation, “Tremble all ye oppressors of the world! Take warning all ye supporters of slavish governments, and slavish hierarchies! Call no more (absurdly and wickedly) REFORMATION, innovation. You cannot now hold the world in darkness. Struggle no longer against increasing light and liberality. Restore to mankind their rights; and consent to the correction of abuses, before they and you are destroyed together.”⁵⁸ The LRS and

⁵⁴ Beddoes to Giddy, DG 41/4, 4/11/1791.

⁵⁵ Beddoes to Giddy, DG 40/4 n/d.; Beddoes to Giddy, DG 41/48/1, 21/11/1791; Stock, 37.

⁵⁶ Beddoes to Giddy, DG 41/2, 7/4/1793.

⁵⁷ Goodwin, 91.

⁵⁸ Richard Price, *A discourse on the love of our country, delivered on Nov. 4, 1789, at the meeting-house in the Old Jewry, to the Society for commemorating the revolution in Great Britain*, 6th ed. (London: George Stafford, for T. Cadell, 1790), 50-1.

Society for Constitutional Information (SCI) forwarded their congratulations to the French National Assembly, initiated correspondence with French philosophical allies, and sought to set up similar societies throughout Britain.⁵⁹ In 1792, Thomas Cooper and James Watt Jr., who would later become one of Beddoes' correspondents, visited the Paris Jacobin Club as delegates of the MCS, prompting Burke to denounce both in the House of Commons as traitors and conspirators. He attracted Cooper's mocking reply, *A reply to Mr. Burke's invective against Mr. Cooper, and Mr. Watt*, a lengthy defense of their own conduct and that of the MCS, and even a defense of the Jacobin club against Burke's charges of treason and regicide.⁶⁰

The French Revolution was not the only source of radical pride and expectation of reform, however. As the American Revolution abated and the French Revolution began, chemistry underwent revolutionary changes as British and continental scientists sought to establish the science on as firm a footing as physics. At the centre of this effort stood the Lunar Society. Beddoes, as a scientist committed to the new chemistry, was deeply interested in the changes. In the 1770s, Priestley had discovered oxygen, and a series of new gases were soon being discovered and described in England and on the continent. In 1789, as the French mob was tearing down the Bastille, Antoine Lavoisier and the French chemists were tearing down the archaic system of confusing alchemic nomenclature and replacing it with a prototype of the new chemical nomenclature. The potential practical applications of this new science were as assiduously pursued as the discoveries themselves. Priestley and Boulton studied manufacturing town airs for their qualities and the physician Thomas Percival pursued the medical application

⁵⁹ Goodwin, 111-114.

⁶⁰ Goodwin, 201-203; Thomas Cooper, *A reply to Mr. Burke's invective against Mr. Cooper, and Mr. Watt in the House of Commons, on the 30th of April, 1792* (London: J. Johnson, 1792).

of new airs.⁶¹ Naturally, such advances in chemistry seemingly had enormous medical potential. These portended political consequences. In Beddoes, educated during this time of rapid discovery, and in likeminded physicians, it inspired a vision of revolutionary human improvement. Writing in 1793 to Darwin about how medicine might be improved through the application of pneumatic chemistry, he asked if the “organization of man [was] equally susceptible of improvement,” if natural philosophers might effect a “beneficial change...in the constitution of human nature itself.”⁶² With such potential for ameliorating the human condition, the role of the physician would expand to include moral improvement by medicine. So too the physician would be involved in statecraft, as the ability to influence human nature for the better would form the cornerstone of progressive politics.

Britain was soon embroiled in the revolution controversy, a debate in British print over the merits or dangers of the Revolution. The debate emerged as Burke published his arch-conservative *Reflections on the Revolution in France* in November 1790. This was an attack on Price in particular and a response to the English Friends of Liberty, radical societies and Francophile Whigs alike, attracting a spree of response tracts.⁶³ Burke feared that the public might view the Revolution as radicals like Price and Beddoes viewed it – as an exemplar, as proof that it was possible for a people to create a wholly new constitution, with no reference to precedent, tradition, or existing custom. Haste bred rashness, as reformers were “delivered over blindly to every projector and adventurer, to every alchemist and empiric.”⁶⁴ Burke feared social engineering, stemming from scientism bred by the French *philosophes* and by their English

⁶¹ Larry Stewart, “His Majesty’s Subjects: From Laboratory to Human Experiment in Pneumatic Chemistry,” *Notes and Record of the Royal Society* 63, no. 3 (2009), 233.

⁶² Thomas Beddoes, *A Letter to Erasmus Darwin, M.D., on a New Method of Treating Pulmonary Consumption and Some Other Diseases Hitherto Found Incurable* (Bristol: Bulgin & Rosser, 1793), 60.

⁶³ Goodwin, 100.

⁶⁴ Burke, quoted in E. P. Thompson, *The Making of the English Working Class* (London : V. Gollancz, 1980), 79.

counterparts, notably Price and Priestley.⁶⁵ Indeed, Burke was quick to define the character of the English and its constitution in opposition to the French scientific philosophy: “We are not the converts of Rousseau; we are not the disciples of Voltaire. . . .Atheists are not our preachers,” while praising the nation’s “sullen resistance to innovation.”⁶⁶

The reference to alchemists and empirics was not merely stylistic, but showed that revolutionary chemistry and revolutionary politics had been connected by the Revolution’s opponents, as well as its friends. Burke connected social engineering not merely with calculation and atheism, but with science, specifically the science of chemistry. Drawing upon the language of chemistry or, derisively, alchemy, Burke entangled French politics with French chemistry until the two were, as Trevor Levere suggests, largely indistinguishable.⁶⁷ As Maurice Crosland has established, this was largely an attack on Priestley, who became Burke’s primary antagonist after Price’s death in 1791, and on Priestley’s science of airs.⁶⁸

The connection between chemistry and revolution had been established long before Beddoes had commented on the possibility of its revolutionizing human nature. Promoting the liberating properties of free inquiry in a 1787 sermon, Priestley had already declared “We are, as it were, laying gunpowder, grain by grain, under the old building of error and superstition, which a single spark may here after inflame so as to produce an instantaneous explosion.”⁶⁹

Gunpowder was inextricably linked with French chemistry, as Lavoisier had involved himself deeply in its production, and with the scientific work of Morveau and Fourcroy, a fact which

⁶⁵ Maurice Crosland, “The Image of Science as a Threat: Burke versus Priestley and the ‘Philosophic Revolution,’” *The British Journal for the History of Science* 20, no. 3 (1987), 278.

⁶⁶ Edmund Burke, *Reflections on the Revolution in France*, Edited by Frank M. Turner (New Haven: Yale University Press, 2003), 73.

⁶⁷ Trevor Levere, “Dr Thomas Beddoes: Chemistry, Medicine, and the Perils of Democracy,” *Notes and Record of the Royal Society* 63, no. 3 (2009), 215.

⁶⁸ Crosland, 283.

⁶⁹ Priestley quoted in Crosland, 285.

Burke had noticed.⁷⁰ Thus, when Burke saw the excesses of French Revolution, he declared, “The wild *gas*, the fixed air, is plainly broke loose...[emphasis original]”⁷¹ Nor did the House of Commons fail to note it, as Priestley’s sermon was quoted to highlight the danger posed by dissenters to the establishment during the 1787 debate to repeal the Test and Corporation Acts.⁷² Thus, when Beddoes’ dissent came under the administration’s eye, he was not merely seen as a threat to the establishment as a Francophile republican, but as a chemist and political innovator as well.

While Beddoes was indeed a chemist with sympathy for Lavoisier’s system, as well as a political innovator and a republican, his response to the revolution controversy shows him to be more cautious and moderate than a Burke might expect. English reformers responded to Burke’s publication with a flurry of books, pamphlets, and speeches. Most influential by far was part one of Thomas Paine’s *The Rights of Man*, which was adopted for widespread distribution by the London Constitutional Society, along with various provincial societies. Selling over 200,000 copies by 1793, it contained a sharp assault on the hereditary power which Burke held so dear, and proclaimed that enlightenment was poised to destroy the vestiges of tyranny.⁷³ More revolutionary in character than most English reformers, Paine rejected the common references to antiquarian Anglo-Saxon precedents in favour of government founded on first rights.⁷⁴ Here, Beddoes joined him. The strictures of the *ancien régime*, from tithes to game laws were to be destroyed, and rationally-built republican laws erected in their place.⁷⁵ Paine’s goals for English revolution, however, went far beyond what even most radical societies desired. Indeed, many

⁷⁰ Crosland, 285.

⁷¹ Burke, 7.

⁷² Crosland, 285-6.

⁷³ Porter, *The Creation of the Modern World*, 452.

⁷⁴ For example, in Beddoes to Giddy, DG 41/40/1, 9/1/1792, Beddoes rejected antiquarian arguments for British rights and, arguing the moderns had better knowledge at their disposal, supported rational inquiry into the form of government most conducive to happiness.

⁷⁵ Goodwin, 173-4.

groups distributed copies, promoting the philosophy of rights while carefully rejecting his call for a republican revolution and leaving aside his more vociferous attacks on the clergy.

Beddoes had read Burke, and he desired to find an effective response. Paine, he decided, was too radical. Although he agreed with Paine's philosophy and maintained similarly severe criticisms of the clergy, the active call for revolution in the second part of the *Rights of Man* raised the spectre of mob violence.⁷⁶ Instead, he turned to a moderate response: "An old acquaintance of mine, Mackintosh, has almost satisfied my desideration of an able & popular answer to Burke."⁷⁷ James Mackintosh, a young Whig MP, trained like Beddoes in medicine in Scotland, had published *Vindiciae Gallicae*, a liberal defense of the French Revolution. Directed toward middle class readers, it gained Burke's respect along with Beddoes'.⁷⁸ With its less confrontational approach, Mackintosh's response, along with a tract by Thomas Christie, cofounder with Joseph Johnson of the radical *Analytical Review*, would be "more to the purpose than Payne's [*sic*]."⁷⁹

Contrary to the revolutionary character of *The Rights of Man*, Mackintosh asserted the English reformers' desire to "avoid" revolution through improvement of the constitution: "We desire to avert revolution by reform, subversion by correction."⁸⁰ This combination of progressive politics and fear of the mob was indicative of Beddoes' circle, and particularly Beddoes himself, as he was quickly coming to fear mob violence and desired to avoid it through timely reform.⁸¹ "I know not which is the more detestable or pernicious character," he opined to

⁷⁶ Goodwin, 174; Jay, 23.

⁷⁷ Beddoes to Giddy, DG 41/15, 21/10/1792.

⁷⁸ Marilyn Butler, *Burke, Paine, Godwin, and the Revolution Controversy* (Cambridge: Cambridge University Press, 1984), 90; Beddoes to Giddy, DG 41/15, 21/10/1792.

⁷⁹ Beddoes to Giddy, DG 41/15, 21/10/1792.

⁸⁰ James Mackintosh quoted in Marcel Isnard, "Vindiciae Gallicae Revisited," *The Yearbook of English Studies* 19 (1989), 224.

⁸¹ See especially Thomas Beddoes, *Alternatives Compared: or, What Shall the Rich do to be Safe?* (J. Debrett, London, 1797).

Davies Giddy when mob violence afflicting France was beginning to trouble him, “he who flatters the passions of kings or inflames those of the people. Both the one and the other are capacious sources of human misery; the former the more perennial, the latter the more violent while it lasts.”⁸²

Anti-Republican Reaction and the Fear of Mob Violence

Beddoes’ growing fear of the mob emerged as he witnessed riots in Britain – against his friends, no less – and massacres in France through 1791 and 1792. In Britain, loyalists responded to Friends of Liberty with violence, while the government was attempting to suppress radical organizations. In May 1791, Beddoes suspected Prime Minister Pitt and his government sought to “turn this whole country into one great court of political inquisition.”⁸³ While the Treason Trials of 1794 remained in the distance, his fear of political reprisal was soon met by the 1791 “Priestley Riots” in Birmingham. Inspired, like their fellows throughout Britain, by the centenary of the Glorious Revolution of 1688, Birmingham’s dissenting elite had been forceful in pushing for an appeal of the Test and Corporation Acts throughout 1789-90, particularly under the direction of Joseph Priestley. Priestley’s sermon “The conduct to be observed by Dissenters in order to procure the repeal of the Corporation and Test Acts,” preached in November 1789,⁸⁴ had drawn bitter scorn from the city’s established churches and Anglican public. Priestley’s home was violently attacked, slogans against him were plastered about the town, and dissenters feared mob violence might be further provoked.⁸⁵ Antagonistic sermons charged the dissenting community with republicanism (not unfounded), and accused them of seeking to demolish

⁸² Beddoes to Giddy, DG 41/3, 11/5/1792.

⁸³ Beddoes to Giddy, DG 41/6, 5/5/1791.

⁸⁴ Joseph Priestley, *The Conduct to be Observed by Dissenters in Order to Procure the Repeal of the Corporation and Test Acts* (Birmingham: J. Thompson; London: J. Johnson, 1789), frontmatter.

⁸⁵ Porter, *The Creation of the Modern World*, 437.

Christianity itself.⁸⁶ These episodes of fear-mongering were repeated as “Church and King” clubs, to some extent instigated by alarmists, arose in opposition to the now-connected dangers of dissenting religion and French revolutionary principles.⁸⁷ The Birmingham reformers had done little to prevent such assertion. They even did much to sustain it, as most of the Lunar circle, from Darwin to Keir, with the notable exceptions of James Watt and Matthew Boulton, had connected reform with French philosophy and nonconformist religion.⁸⁸ Indeed, one slogan would proclaim from a wall, “No philosophers – Church and King For Ever.”⁸⁹

The Church and King movement turned violent in July 1791, in reaction to a celebratory dinner marking the second anniversary of the storming of the Bastille held at Birmingham’s Hotel in Temple Row on the 14th, chaired by Beddoes’ good friend James Keir.⁹⁰ The circulation of a revolutionary handbill had fueled the anger of the city’s loyalists at this Francophilic, albeit moderately-conducted meeting. A mob of several hundred converged on the hotel after the diners had departed, smashing and plundering it, and proceeded to riot for several days, sacking and burning the Unitarian churches, and attacking and looting more than two dozen homes, including Priestley’s. Priestley (who, incidentally, had not attended the dinner) was forewarned and escaped, though his priceless laboratory was destroyed.⁹¹ The rioting was directed against dinner attendees, local dissenters, and, importantly, against members of the Lunar Society itself.⁹² Indeed, a number of Beddoes’ then and future friends were threatened, as Watt and Boulton needed to persuade their Soho workers to defend them rather than join the mob and guarded their manufactory with cannon, while the Doctors Priestley and William Parr

⁸⁶ Rose, 71.

⁸⁷ Goodwin, 68.

⁸⁸ Jones, “Living the Enlightenment,” 169.

⁸⁹ Uglow, 448.

⁹⁰ Rose, 72.

⁹¹ Rose, 73-6; Stansfield, 73.

⁹² Though not directed against the group itself. Elements such as dissenting religion, identification as *philosophes*, and wealthy status likely singled out Lunar members as targets in the riot.

escaped. James Keir and William Withering were forced to garrison their interests against the mob, while Samuel Galton Jr. plied the rioters with cash and liquor.⁹³ The effects of the riots extended well beyond damaged property; Priestley soon fled Britain to try a more inviting public in America. As Watt later wrote Black, “The Hellish miscreants who committed so many outrages here by banishing Dr Priestley have almost broke up our Lunar Society, at least when we meet we have more politics than Philosophy.”⁹⁴ Erasmus Darwin wrote, “The Birmingham riots are a disgrace to mankind,”⁹⁵ a sentiment which would be repeatedly echoed in Beddoes’ writing.

Indeed, the riots had an enormous effect upon Beddoes’ thinking, as they provided the strongest of evidence in his mind of the link between reactionism, despotism, and the use of the mob. Only months earlier, he had bluntly told his friend and most frequent correspondent, Davies Giddy, his fear of the masses in the French context: “I dread the Paris mob.”⁹⁶ Such fears were justified in Birmingham. He occasioned to travel to the city in the months following the riots and wrote to Giddy, “I conversed with several friends of Church and King and what was no trivial penance I heard their political sentiments. Their ideas exactly resemble a mass of felt. It would be certain loss of labour to disentangle and put them straight.”⁹⁷ He kept in contact with James Keir, and through him learned about the trials which followed. They were both convinced that the government had no interest in actually prosecuting the perpetrators of the crimes, and had perhaps even inspired them – indeed, he lent credence to the idea that justices in the case had even “given very unequivocal encouragement to the rioters.”⁹⁸ This was not without some

⁹³ Rose, 75-6; Stansfield, 73; Jones, “Living the Enlightenment,” 169.

⁹⁴ Watt to Black, quoted in Jones, “Living the Enlightenment,” 169-70.

⁹⁵ Darwin to Wedgwood, quoted in Uglow, 447.

⁹⁶ Beddoes to Giddy, DG 41/6, 5/5/1791.

⁹⁷ Beddoes to Giddy, DG 41, 3/4/1792.

⁹⁸ Beddoes to Giddy, DG 41/44, 1/11/1791.

foundation, as Burke was pleased by the result and King George III had said, likewise satisfied by the riots, “I cannot but feel better pleased that Priestley is the sufferer for the doctrines he and his party have instilled, and that the people see them in their true light.”⁹⁹ Beddoes wrote Giddy that he believed he held unassailable proof that the government was set upon maintaining the public’s prejudices and using individuals as tools in such riots, but stopped short of making his proofs public.¹⁰⁰

Thus, he saw in Birmingham how easily a mob, instilled with intolerant principles, could attack moderate and progressive individuals. So too, he saw he saw the ideals of the Lunar circle under attack. As Jones has noted, the Lunar circle had been an “effort to construct an open and non-hierarchical model of Enlightenment discourse,” which had been thoroughly rebuffed.¹⁰¹ Beddoes had been and continued to be committed to that model, and would see the riots not as a failure of the experiment, but as proof that despotism corrupted the minds of the ignorant against their own interest. Such souls needed proper education and the benefits of social reform, and he would soon make this case in print.

Attacking Bigotry

Thus, in January 1792, he published his *Extract of a Letter on Early Instruction, Particularly that of the Poor*.¹⁰² Ostensibly, it was an educational treatise, arguing against the religious mode of education, in which reading and writing were taught by the rote memorization of intangible theological concepts. In fact, the treatise was a political polemic, a broad attack on the pernicious effects of sectarianism, poor laws, oppressive government policy, and nationalism

⁹⁹ George III, quoted in Uglow, 446.

¹⁰⁰ Beddoes to Giddy, DG 41/50, 3/4/1792.

¹⁰¹ Jones, “Living the Enlightenment,” 169.

¹⁰² Beddoes’ many thoughts on education are too broad to be dealt with here. See Stansfield’s biography and Porter’s *Doctor of Society*.

on the minds of the nation's poor, with a special emphasis on the causes and remedies of the events in Birmingham.¹⁰³

The philosophical underpinning of Beddoes' critiques was the Lockean theory of mind: "The soul of a child," he claimed "to borrow an expression from the French legislators, essentially resides in his senses."¹⁰⁴ Thus, attempting to teach children by forcing upon them theological concepts of which they had no sensory experience would prove inferior to an experiential education with an emphasis on natural objects – as promoted in Day's Rousseauian *Sandford and Merton* – and produce feeble minds.¹⁰⁵ Beddoes' criticism of religious education soon descended into an attack on sectarianism and the irrationality of religious custom. Following religious indoctrination from an early age, "[t]here are numberless instances where we persevere in absurd and pernicious customs from an overwhelming sentiment of blind necessity," the result of which was the denigration of men: "It is not enough to be a man; your tokens of religious free-masonry must be produced." He countered with his deistic cosmopolitanism and scientific skepticism, "I prefer therefore the natural bond, by which man is linked to man, to the artificial by which sectary is linked to sectary," while stating the dangers of sectarianism in certain terms: "Without great precautions it can produce no specific effect except to kindle the enthusiasm of misanthropy."¹⁰⁶

The impetus of this attack was, of course, the escalating bigotry and violence visited upon Dissenting religious groups, as evinced by the Birmingham Church and King mob. Indeed, mob violence, not simply the improvement of childhood education, was the cause of his writing, and the origins of mob violence could be found in oppression. He viewed human nature as

¹⁰³ In his attacks on the Poor Laws, he followed Priestley, who similarly described their "debasing" effects. Porter, *The Creation of the Modern World*, 413.

¹⁰⁴ Thomas Beddoes, *Extract of a Letter on Early Instruction, Particularly that of the Poor*. Jan. 25, 1792, 2.

¹⁰⁵ Beddoes, *Extract of a Letter on Early Instruction*, 2-4.

¹⁰⁶ Beddoes, *Extract of a Letter on Early Instruction*, 10.

intrinsically benevolent: “Nature has made us very early sensible to kindness,” but “Oppression, I am aware, such as is practiced upon slaves and what is generally taught for religion, together with the time and manner of teaching it, stifle these benevolent tendencies: both indeed so far brutalize the mind and so entirely pervert our sympathy as to make us feel pleasure from the pain of our fellow creatures.”¹⁰⁷ Indeed, *oppression* at the hands of slave owners had been the cause of recent slave revolts and massacres in St. Domingo. Oppression and sectarian indoctrination created brutalized mobs, easily directed by those of a tyrannical disposition, and their behaviour was exploited as a pretext for the infringement of rights. The Priestley riots were again foremost in his mind:

[P]ermit me to observe that if a small portion of human kindness had been infused into their bosoms by such a mode of instruction, as I wish to see generally adopted among the poor, they never could have committed excess so disgraceful to their age and country. But I am utterly unable to conceive how... endless repetition of godly exclamations, can inspire any human being with benevolence towards his neighbour.¹⁰⁸

Here was an abiding faith in the transformative power of proper education, the enlightenment panacea enunciated. The only way to reconcile freedom and security, he wrote, was to “civilize the people, unless we choose to repose beneath the shadow of Bayonets in mercenary and often in brutal hands.”¹⁰⁹

Indeed, Beddoes’ remedy to mob violence itself was liberal education. He proceeded to promote those very virtues which characterized the Lunar circle and scientific inquiry. Notably, it was not simply education but *natural philosophical* education which he believed would improve the morals of man. First-hand education with flora and fauna would encourage latent curiosity and establish an association between nature and delight, eliminating the childhood

¹⁰⁷ Beddoes, *Extract of a Letter on Early Instruction*, 5-6.

¹⁰⁸ Beddoes, *Extract of a Letter on Early Instruction*, 8-9.

¹⁰⁹ Beddoes, *Extract of a Letter on Early Instruction*, 9.

mistreatment of animals which was indicative of the corrupted human mind.¹¹⁰ In the sectarian sphere, he proposed a Lunaresque tolerance of diverse religious opinion, “to inculcate with care and effect a RESPECTFUL INDIFFERENCE for the religion or irreligion of our neighbour.”¹¹¹ Far more seriously, however, religion was to be subjected to the same analysis and inquiry which characterized scientific investigation. The people were to know that their religion was largely due to the place of their birth, and to seek the universal truth in a cosmopolitan manner. The Lunar scientific community was again the exemplar, as “we see the mathematicians, the astronomers, and the natural philosophers in general of these several countries, receiving and returning instruction. As soon as any truth is fairly proved, it is universally admitted; it finds no difficulty in overleaping natural and political boundaries.”¹¹²

Defending the Revolution

The mob violence in Birmingham was mirrored by violence in France, and Beddoes was soon apologizing for the Revolution in the public realm as British opinion soured. First, a Jacobin directed mob, angered by the Brunswick Manifesto which threatened retaliation by the allied Austrian and Prussian armies against any harm to the Royal Family, attacked the Tuileries palace on August 10, soon ending the Bourbon monarchy – at least until its restoration in 1814. Worse, news of the Austro-Prussian invasion of France reached Paris on September 2, inciting a mob which decimated the clergy and aristocracy held in the city’s prisons. The effect of the “September Massacres” upon British Friends of Liberty, as Goodwin has succinctly stated, “was profound,”¹¹³ as their early ebullience was replaced by a need to distance themselves from such

¹¹⁰ Beddoes, *Extract of a Letter on Early Instruction*, 7, 9.

¹¹¹ Beddoes, *Extract of a Letter on Early Instruction*, 11.

¹¹² Beddoes, *Extract of a Letter on Early Instruction*, 12-3.

¹¹³ Goodwin, 241.

acts. French clergy emigrated en masse to England in fear of continued violence, and subscriptions were raised across the nation, in spite of religious differences and anti-Catholic sentiment, to aid the émigrés, raising the further ire of British radicals.

Beddoes drew himself into this controversy, in a characteristically polemic manner, and his response is representative of the radical movement at large. For a year, he had been disgusted by English press reports of events in France, convinced that their accounts were reactionary, censorious, and thoroughly misleading, maligning the National Assembly and omitting vital and mitigating information he could only acquire by searching out French papers.¹¹⁴ Particularly, he was angered by claims, promoted by Burke, that the brutal violence which had descended upon France was the result of his fellow “Friends of Liberty,” moderates, *philosophes*, and scientists. He proposed instead that the violence stemmed from centuries of brutalization of the mob at the hands of the French priesthood. In response to a particular subscription pamphlet entitled *Sufferings of the French Refugees* from a London committee headed by the Duke of Portland,¹¹⁵ he collected his attacks in a flysheet entitled *Reasons for believing the friends of liberty in France not to be the authors or abettors of the crimes committed in that country*.

Beddoes was attempting to restore the reputation of moderates and scientists across the channel, and thus he praised the French for their liberal spirit in a manner commonplace among English radicals at the time.¹¹⁶ The French, he wrote, were “the most injured and the most enlightened people upon earth.”¹¹⁷ His reason for believing so, however, was not so

¹¹⁴ Beddoes to Giddy, DG 41/41, 4/11/1791.

¹¹⁵ Included in Beddoes to Giddy, DG 41/56, nd.

¹¹⁶ This would later be cited by Beddoes’ anti-Jacobin enemies as proof of his ill character. See [Anon.], *The Golden Age: A Poetical Epistle from Erasmus D—n, M.D. to Thomas Beddoes, M.D.* (Oxford: F. & C. Rivington, 1794).

¹¹⁷ Beddoes, *Reasons for Believing the Friends of Liberty in France not to be the Authors or Abettors of the Crimes Committed in That Country*, Beddoes to Giddy, DG 41/25, 9/11/1793, 1.

commonplace; it was not merely a matter of the *philosophes*, the encyclopedists, nor the ostensibly liberal goals of the Revolution which inspired this decoration, but that they – hinting closely now at his fellow chemists – “have improved Science more than all other nations put together and have at least rivaled all others in every sort of literature.”¹¹⁸ A people with such an enlightened spirit could not be capable of such purported acts. Such things were only possible in “nations first brutalized and then instigated to fanatical fury, by the Priesthood.”¹¹⁹

The English, he argued, were likewise such a nation. The brutalities of the French were no worse than the “*horrid barbarities* exercised by Englishmen in America, Asia and Africa.” He cited the “Birmingham and London riots,” and the mob’s “design to roast Dr. Priestly alive (though but one man, and that man an Unitarian and a Philosopher)...”¹²⁰ However, he had faith that, unlike the English, the French nation would prevent a repeat of the massacres: “I have no doubt but they will quell the daemon of anarchy, as they have done those of fanaticism and despotism.”¹²¹ He laid the blame for the massacres at the feet of the Duke of Brunswick and the atrocious invasions which were part and parcel of a “crusade of Despots,” while condemning English accounts of the massacres as “fabricated lies.”¹²² Throwing any remaining caution to the wind, he showed himself an enemy of monarchy, defending the attack on the Tuileries and the deposition of Louis XVI on the Lockean grounds of the right to self-defense. He proceeded to enumerate the benefits already brought by France’s recently attained liberty: abolition of tithes along with the parasitic nobility and clergy, improvement of agriculture, reduction of poverty, an end of injurious taxation, a more efficient government, and the prospect of a debt-free nation.¹²³

¹¹⁸ Beddoes, *Reasons for Believing the Friends of Liberty*, 1.

¹¹⁹ Beddoes, *Reasons for Believing the Friends of Liberty*, 1.

¹²⁰ Beddoes, *Reasons for Believing the Friends of Liberty*, 2. The London Riots referred to are likely the anti-Catholic “Gordon Riots” of 1780.

¹²¹ Beddoes, *Reasons for Believing the Friends of Liberty*, 2.

¹²² Beddoes, *Reasons for Believing the Friends of Liberty*, 2.

¹²³ Beddoes, *Reasons for Believing the Friends of Liberty*, 2.

Even in the face of a calamity, Beddoes maintained his faith in the French experiment, while drawing out those consequences which republicanism might have for Britain as well.

The pamphlet makes eminently clear that, already in 1792, Beddoes had no fear of making his unpopular, even dangerous, beliefs plain. Beyond his unyielding defense of the French, he accused a good portion of the émigré clergy of atheism. In doing so he drew criticism as he wrote, reflecting and preempting Paine's *The Age of Reason*, "to a large portion of the Popish priesthood, Christianity is believed *upon good grounds* to be as much foolishness as it was to the Greeks. [emphasis added]"¹²⁴ Such open free-thinking would connect him ever more closely with alarmist caricatures of the evil English Jacobin – atheist, Francophile, political innovator – and provide easy grounds to attack him and link him with figures anathematic to loyalists, Erasmus Darwin and Thomas Paine. With such immoderate language in his attack on the clergy and apparent defense of the mob, few would have difficulty in seeing him as a threat to Church and King.

Moderate Reformist Activity

Beddoes' political activity was not confined to anti-clerical polemic and revolutionary apologetics. He was also engaged in socially respectable causes of public health and abolitionism. Attacking society's problems on all sides with characteristic energy, he wrote improving tracts directed for mass consumption. The first, *The History of Isaac Jenkins*, proved his most successful. A cheaply-priced moral tract promoting sobriety, linking drink to poverty and ill health, *Isaac Jenkins* sold thousands of copies, received Coleridge's accolades, and was

¹²⁴ Beddoes, *Reasons for Believing the Friends of Liberty*, 1; See, for example, Thomas Paine, *The Age of Reason* (London: Watts, 1919), 27.

distributed by the disciples of Hannah More well into the nineteenth century.¹²⁵ While the text was largely apolitical, some of its causal underpinning reflects Beddoes' political philosophy and is worth mentioning in passing. Against a backdrop of tracts emphasizing drunkenness as a *moral* failure, reversible by individual moral and religious improvement, Beddoes' story of the sorry state of an impoverished family and their redemption describes poverty and sickness as the product of misfortune and circumstance from which the poor cannot escape on their own (in his story, the timely intervention of a kindly doctor was required). In a line, he encapsulated the idea he proposed and which impelled him to fight for reform: "Ah, believe me, there would be little wickedness in the world if there was no distress.—Vice almost always begins among the poor from misery...."¹²⁶ The second tract aimed at lessening the public misery was his *A Guide for Self Preservation and Parental Affection*. A short and simple work attempting to parlay some simple medical knowledge to prevent evitable illness and famine among the poor, caused by unsustainable family size, the endeavour gained Erasmus Darwin's highest praise.¹²⁷

Early in 1792, on the activist front, he also involved himself eagerly in the movement for the abolition of the slave trade. He was of course not alone among his friends in this regard; Lunar members had been agitating for years against, as Day had described it, this "crime so monstrous against the human species that all those who practice it deserve to be extirpated from the earth."¹²⁸ Darwin, true to form, assaulted the trade in verse, Priestley from his pulpit, and Wedgwood mass-produced cameos of supplicant shackled slaves with the words, "Am I not a man and a brother?" It was a broad movement, with reformers and Dissenters, from Paley to

¹²⁵ Beddoes to Giddy, DG 41/53, 12/1/1793; Stansfield, 87-93.

¹²⁶ Thomas Beddoes, *The History of Isaac Jenkins, and of the Sickness of Sarah his Wife, and Their Three Children*. (Madeley: J. Edmunds, 1792), 30.

¹²⁷ King-Hele, 254.

¹²⁸ Day quoted in Porter, *The Creation of the Modern World*, 359.

Bentham to Cooper, backing the effort.¹²⁹ Thus, when William Wilberforce tried anew in 1792 to pass a bill in the House of Commons abolishing the slave trade, backed by Fox, Burke, and Pitt, groups throughout the nation organized to assist.¹³⁰ Beddoes attended the meetings of one such local society, Archdeacon Plymley's "Society for effecting an abolition of the slave trade in Shropshire," and assisted it in assembling a petition in support of the bill. He set up a petition in his home of Shifnal, which added 150 names to the Shropshire petition, justifying the effort in such a small town on the grounds that it would "help to shew the universal voice of the nation."¹³¹ He even proposed a system of replacing sugar from the West Indies with imports from China and the United States, in order to "undermine an evil which our legislature has not virtue enough to extirpate," a theme he would return to in 1796.¹³² Thus, he contributed to a considerably more socially acceptable cause, a nationwide movement which effected a successful vote in the House of Commons, albeit waylaid by the "gradualist" compromise of imperialist Henry Dundas, then Home Secretary, a ploy which effectively put abolition on hold until 1807.¹³³

Even here, however, Beddoes reveals a radical streak, as he was opposed to imperialism in all its forms, whether reliant on slavery or not. Collecting his opinions on the subject in 1792, he produced *Alexander's Expedition down the Hydaspes & the Indus to the Indian Ocean*, a poem in epic verse. Beddoes is said to have written it in response to a bet, proposed at Reynolds' dinner table, that the verse of Erasmus Darwin's lauded *Botanic Garden* was inimitable. Beddoes won by later producing the poem, the style of which fooled its readers.¹³⁴

¹²⁹ Porter, *The Creation of the Modern World*, 359-60.

¹³⁰ William Hague, *William Wilberforce: the Life of the Great Anti-Slave Trade Campaigner* (London: HarperPress, 2007), 231.

¹³¹ Stansfield, 74-5.

¹³² Beddoes quoted in Jay, 49-50; Beddoes, *An Essay on the Public Merits of Mr. Pitt*.

¹³³ Hague, 234-5.

¹³⁴ Stansfield, 65-6.

The content, however, shows he had long had a keen interest in colonial affairs in India, as well as the region's culture, history, and religion.¹³⁵ The poem itself retells Alexander's journey down the rivers and arrival at India, where he failed to extend his empire. It then reflects Beddoes' liberal and enlightenment values, extending his critiques of British bigotry to the subcontinent; would that India had been colonized by the open and cosmopolitan Hellenic culture rather than waiting centuries to be dominated by the barbaric British, it might have avoided its sorry situation, ravaged by war, famine, and disease.

While a poem, the bulk of the book is composed of voluminous footnotes in the style of Darwin's *Botanic Garden*, commenting on matters of Hindu culture, Indian history, and, critically, indictments against Warren Hastings, the East India Company, and the conduct of the whole of the British military. They likewise reveal Beddoes' hopes for social and human improvement, for racial equality, and his argument for the greater employment of women.¹³⁶ The goal of this, he explained in his introduction, was the wider dissemination of knowledge of "old and new Hindoo literature," largely unknown to the general public.¹³⁷ This came at a time when India was much in the public eye as Hastings, formerly Governor General of India, had been put on trial for crimes – amounting to despotic control of the region – committed during his tenure, the long spectacle of a prosecution spearheaded by Burke and the Whigs.

The central goal of the poem, building on general knowledge of Hastings' crimes, was to promote the abolition of European domination of foreign peoples. Commenting on the depravity seen among numerous Indian groups, Beddoes pointed to the British authorities as the cause:

I have learned with horror but not surprize, that too many of the poorer class in Bengal are fraudulent, false and venal.... It by no means, however, follows that we should

¹³⁵ Stansfield, 66.

¹³⁶ Beddoes, *Alexander's Expedition Down the Hydaspes & The Indus To The Indian Ocean* (Madeley: J. Edmunds, 1792), vii.

¹³⁷ Beddoes, *Alexander's Expedition*, iv.

withdraw our pity from an unhappy people, degraded by oppression; but rather that every one contribute his utmost to banish slavery and despotism of every species from the face of the earth. The moral character of the Hindoos can never begin to improve, if it needs improvement, till the last hour of their merciless tyrants from Europe shall arrive.”¹³⁸

In opposition to theories of racial superiority, he explained the woes of India in terms of history and oppression. It was a nation deep in its arts and culture, broad in its industry, and indeed morally equal or superior to the forces which subjugated it: “In consequence of the differences of colour, customs, religious creed or rather title of their religion, the European Soldiers have little or no fellow-feeling with the natives of these regions; and they will, of course, take every opportunity of giving a loose to their rapacity, cruelty and caprice.”¹³⁹ He then cited reports from Indian newspapers and information gleaned, notably, from Thomas Day, recounting the brutality and famine visited upon the Indians by pillaging soldiers and British policy, without so much as an acknowledgment from the British government.¹⁴⁰ Affairs in India, then, could be traced to the ignorant and bigoted character of some British, to which Beddoes would frequently refer in his other works.

So too alleged inferiorities could be traced to oppression. He accepted claims that there existed an indolence in the Asiatic character, but responded that far from being an innate, inferior trait, the Indian masses simply had suffered intellectual and social repression at the hands of political and religious entities: “The energy of human nature being repressed on all sides by the tyranny of priests and despots, the primitive nations sunk into languor.”¹⁴¹ Imperial despots replaced local despots and for centuries the natural progress of Indian civilization via the fruits of intellect was arrested, letting the progress of foreign nations pass them by. Nor was this a solely Indian phenomenon. His comparison of debasement among the British held, and was extended,

¹³⁸ Beddoes, *Alexander's Expedition*, 12.

¹³⁹ Beddoes, *Alexander's Expedition*, 33-4.

¹⁴⁰ Beddoes, *Alexander's Expedition*, 34-5.

¹⁴¹ Beddoes, *Alexander's Expedition*, 49-58. Quote on page 58.

as “temporal and ecclesiastical despotism” restrained human intellect in every quarter of the world.”¹⁴² So, against the debasement wrought by despotism Beddoes contrasted the ameliorative powers of science. He argued that the laws of human nature might be known and the decay of human intellect slowed, if reactionary institutions did not continue to check the improvement of the human species.¹⁴³ He adds to the list of Alexander’s virtues “his eager thirst as well as liberal encouragement of science,” which set him apart from all other conquerors.¹⁴⁴ These were his critiques from the *Letter on Early Instruction*, but showing an extensive cosmopolitanism.

It is thus clear why the author’s name is absent and the publisher’s a fake; thinly disguised attacks on the military and church and calls to fight all forms of despotism far exceeded his *Reasons* in terms of seditious content.¹⁴⁵ Yet his fiery rhetoric should not be mistaken as a call for rebellion or revolution. As ever, he was a pacifist and reformer rather than a promoter of violence, calling for each friend of liberty to “contribute his utmost” for the amelioration of the subcontinent and, of course, his writing was never intended to reach the subcontinent, then again to inspire the population there. The war being fought was in the British press and over public opinion.

Beddoes’ End at Oxford

The immoderacy of Beddoes writings, especially his *Reasons*, proved dangerous as it ran afoul of the May 1792 “Royal Proclamation against seditious publications,” directed against Paine’s *Rights of Man* and its distributors, especially the London Corresponding Society (LCS)

¹⁴² Beddoes, *Alexander’s Expedition*, 58.

¹⁴³ Beddoes, *Alexander’s Expedition*, vi.

¹⁴⁴ Beddoes, *Alexander’s Expedition*, 10.

¹⁴⁵ Alternately, as Stansfield has suggested, he may have been embarrassed by the verse, or afraid of embarrassing Darwin through his inferior imitation.

and SCI.¹⁴⁶ By the time of the publication of Beddoes' pamphlet, the British government had grown progressively alarmed by events in France, and by an explosion of – mostly urban – English radicalism,¹⁴⁷ which threatened to form a French-republican fifth-column in case of war. In November, the danger was realized as the ideologically-expansionist French government issued its Edict of Fraternity, by which it committed itself to the emancipation of all nations ruled by monarchs and despots. It commenced with an invasion of Belgium, and created an inherently ideological conflict with Britain, in which the nation's Francophiles were an ideological enemy.¹⁴⁸ The possibility of revolution being exported through bloody violence was already recognized, as the slave population of the French colony of Santo Domingo, inspired by the French *Declaration of the Rights of Man*, and buoyed up by now-influential French intellectuals seeking the abolition of slavery, revolted against the island's plantation owners. The ensuing massacres and civil war shocked observers on both sides of the Atlantic and led the British to attempt conquest of the island.¹⁴⁹ So, while Beddoes perhaps expected little would result from his publication beyond damage to his reputation among conservatives, national affairs overtook him and the potential of trial and conviction became very real. In late 1792, the government prepared to prosecute the publication and sale of such literature, while Church and King mobs were rallied again to attack radicals of note. Thomas Walker of the MCS, which had attracted alarmist attention by sending Watt Jr. and Thomas Cooper to the Paris Jacobin club, had his home mobbed.¹⁵⁰

The tracts had a terminal effect on Beddoes' otherwise promising career at Oxford

¹⁴⁶ Thompson, 116.

¹⁴⁷ Goodwin, 99.

¹⁴⁸ Goodwin, 250. Beddoes described the Edict as symptomatic of the National Convention's "extravagant folly," by which the French "thought that they could subdue the earth," while neglecting important military matters. Beddoes to Giddy, DG 41/2, 7/4/1793.

¹⁴⁹ John E. Baur, "International Repercussions of the Haitian Revolution," *The Americas* 26, no. 4 (1970), 394-5."

¹⁵⁰ Goodwin, 264-5.

University. As Levere has established, Beddoes had the beginnings of an excellent career lecturing on chemistry and geology at Oxford. His lectures were large and growing, and he was effectively reviving the teaching of chemistry, which had long sat far behind the education at the Scottish universities, largely ignoring the latest developments in the science.¹⁵¹ In 1787, he wrote to Joseph Black, “I think my number will be greater this than the last course, though I had then the largest class that has ever been seen at Oxford, at least within the memory of man, in any department of knowledge.”¹⁵² Moreover, he wrote expectantly to Joseph Banks that Oxford would soon claim the best chemical laboratory in Europe.¹⁵³ He made a close friend of one of his students, Davies Giddy, then a fellow radical,¹⁵⁴ who would soon become his frequent and closest correspondent on matters medical and political, and later President of the Royal Society after Beddoes’ death. And while we have reason to suspect that he was a rather awkward lecturer and experimenter,¹⁵⁵ his reputation as a chemist was excellent and his prospects brightening as Oxford’s administration hoped in 1792 to attain a Regius Chair in chemistry using Beddoes’ success and reputation.¹⁵⁶

However, Beddoes had already conspired with events to ensure that such a career would be impossible. His open support of the French Revolution had become an increasingly dark mark among loyalists since 1789. Oxford, a thoroughly High Tory university, grew an unwelcome place for an outspokenly republican lecturer, and his classes began to dry up as

¹⁵¹ Golinski, 53-4.

¹⁵² Beddoes to Black, quoted in Trevor Levere, “Dr. Thomas Beddoes at Oxford: Radical Politics in 1788-1793 and the Fate of the Regius Chair in Chemistry,” *Ambix* 28, no. 2 (1981), 62.

¹⁵³ Beddoes to Banks, quoted in Levere, “Dr. Thomas Beddoes at Oxford,” 62.

¹⁵⁴ The young Giddy was close in line with Beddoes’ political sentiments and supported the French Revolution, but he managed to avoid severe career damage, becoming Sheriff of Cornwall, Member of Parliament, and President of the Royal Society. See Jay, 17, 40-2.

¹⁵⁵ See Trevor Levere, “Dr. Thomas Beddoes (1760–1808): Chemistry, Medicine, and Books in the French and Chemical Revolutions,” 164.

¹⁵⁶ Levere, “Dr. Thomas Beddoes at Oxford,” 64.

students effectively boycotted his lectures and politics.¹⁵⁷ Oxford and Beddoes' chances were dashed as the government was informed of his politics. Vice Chancellor Charles Willoughby wrote to Home Secretary Dundas that despite Beddoes' skill and the high attendance of his lectures, "in his political character I am informed, he is a most violent *Democrate* and that he takes great pains to seduce Young Men to the same political principles with himself."¹⁵⁸ Beddoes' *Reasons* and *Letter on Early Instruction* had been noticed, and Dundas' office contacted Bridgnorth's MP, Isaac Hawkins Browne, requesting samples of Beddoes' pamphlets and information on whether Beddoes could effectively be accused.¹⁵⁹ Beddoes, though shocked, was aware that he had come under the eye of the government, as he wrote Giddy, "I went into the country, became eminently and much beyond my importance, odious to Pitt and his gang as I knew from a hundred curious facts...."¹⁶⁰ He did not know, however, that he was listed on the Home Office's list of "Disaffected & seditious persons,"¹⁶¹ alongside such illustrious threats as Priestley, nor did he know a spy had recorded his attendance at a seditious meeting in Derby.¹⁶²

By this stage, Beddoes had abandoned continuing his career at Oxford. He was well aware that his radicalism was anathema to his colleagues, that all his ideas and initiatives were tarred with the same revolutionary brush. Writing of reception of his ideas on hospitals, he wrote Giddy, "I suppose one might trace a chain of ideas from the French Revolution to doubts concerning the extensive usefulness of hospitals; & one might venture to foretell that neither the one nor the other would be well received in the house adjacent to the Divinity-school or the tower of St. Angels."¹⁶³ Likewise, his ebullience at class attendance in 1787 was replaced with

¹⁵⁷ Beddoes to Withering, quoted in Levere, "Dr. Thomas Beddoes at Oxford," 62.

¹⁵⁸ Willoughby to Dundas, quoted in Levere, "Dr. Thomas Beddoes at Oxford," 65.

¹⁵⁹ Nepean quoted in Stansfield, 78.

¹⁶⁰ Beddoes to Giddy, quoted in Stansfield, 78.

¹⁶¹ Levere, "Dr. Thomas Beddoes at Oxford," 65.

¹⁶² Levere, "Dr Thomas Beddoes: Chemistry, Medicine, and the Perils of Democracy," 218.

¹⁶³ Beddoes to Giddy, quoted in Levere, "Dr. Thomas Beddoes at Oxford," 63.

pessimism by 1791, as the “spirit of Chemistry [had] almost evaporated.”¹⁶⁴ In March 1789, he had written to William Reynolds, wishing that the administration might provide a salary for a medical man such as himself, but, by the time a Chair was actually in the works, Beddoes was prepared to resign – at least before he was forced out.¹⁶⁵ Asked in the summer of 1792 to resign after his next series of lectures, he agreed, noting his political sentiments were surely the cause. And yet he remained hopeful: despite some refusing to speak to him, he noted an “unusual forwardness of civility” from the rest of his acquaintances, which he ascribed to “the increased liberality of the age,” perhaps a positive sign for Oxford’s future.¹⁶⁶

Naturally, Beddoes was not alone in Britain in seeing his career severely damaged by his sentiments. He emerged relatively unharmed as his activity had been limited to print, and the government inquiries were not followed up. As protests for peace arose in response to war with France in 1793, alarmist attacks on radicals rose as well. Members of the SCI, publishers of radical pamphlets like Richard Phillips in Leicester, and owners of radical newspapers like the *Manchester Herald* were variously removed from their positions, tried for sedition, and convicted. Thomas Paine was famously tried and convicted of sedition *in absentia*, becoming an outlaw.¹⁶⁷ As a radical lecturer, Beddoes was merely ahead of the curve in his Oxford expulsion, and one of the few well documented casualties in this slew of “personal victimization,” as Clive Emsley termed it;¹⁶⁸ the Cambridge reformer and Unitarian William Frend would find himself banished for a pamphlet much tamer than anything Beddoes had published, while the cotton business of Thomas Walker, founder of the Manchester Constitutional Society, was likewise a

¹⁶⁴ Beddoes to Withering, quoted in Levere, “Dr. Thomas Beddoes at Oxford,” 62.

¹⁶⁵ Stock, 21.

¹⁶⁶ Beddoes to Giddy, DG 41/2, 7/4/1793.

¹⁶⁷ Goodwin, 270-273.

¹⁶⁸ Clive Emsley, “An Aspect of Pitt's 'Terror': Prosecutions for Sedition during the 1790s,” *Social History* 6, no. 2 (1981), 155.

casualty of his politics.¹⁶⁹

Beddoes' opinion of the intellectual and political atmosphere at Oxford proves most enlightening. As he told Black in 1791, Chemistry would never achieve success at the university while "under the shadow of ecclesiastical & scholastic institutions."¹⁷⁰ There could not have been greater contrast with the French and Birmingham circles, or indeed the climate in Edinburgh. Where the religiously tolerant and politically progressive society of his Birmingham friends promoted a scientific spirit, encouraged inquiry, improved scientific knowledge, and generated novel industry (and indeed affluence), and whereas French success had been built upon the same grounds, religious and political conservatism impeded scientific inquiry.

War and Disillusionment

The execution of Louis XVI in January 1793 at the hands of the National Assembly was swiftly followed by a French declaration of war against Great Britain on February 1, drawing the island nation into a continental conflict. Burke's condemnation of the Jacobins as regicides was justified and the French Revolution's allies were placed in a dilemma: further defense of the French entailed defense of regicide, and could be construed as treasonous in wartime. The British radicals, whether Fox in Parliament or Cooper in public, prioritized opposing the war and protecting the Bill of Rights, though never abandoning the goal of enfranchisement. Beddoes faced this dilemma, and followed the same route, abandoning revolutionary apologetics and, indeed, any political publication which might bring him further under the eye of the Home

¹⁶⁹ Clive Emsley, "Repression, 'Terror' and the Rule of Law in England during the Decade of the French Revolution," *The English Historical Review* 100, no. 397 (1985), 803; Chris Evans, *Debating the Revolution: Britain in the 1790s*, 71.

¹⁷⁰ Beddoes to Black, 1791, quoted in Levere, "Dr. Thomas Beddoes at Oxford," 62.

Office, at least for the time being.¹⁷¹

But this was not merely a matter of avoiding violence or prosecution. As British opinion of the French Revolution had soured, Beddoes' opinion of it had been compromised throughout 1792. First, the peaceful creation of a constitution was being hampered by internal conflict far more than he had expected. Sectarian conflict and attacks on clergy, fanaticism in government departments, and general anarchy hampered the creation of republican civil society.¹⁷² The French non-conforming clergy were proving as violent as the Church and King protestors and the nonreligious were descending into "political fanaticism," incessant bickering over minutia, verging on the vulgar partisanship of the House of Commons. The French had not proven as reasonable as he had hoped, he opined to Giddy, because of a lack of general education: "There was not a sufficient diffusion of information."¹⁷³ While excellent French works had revealed the "evils of superstition and despotism...in such a variety of ways," a smaller segment of the French public had read them than he had suspected.¹⁷⁴ The establishment of republican government would be universally popular, and the reasoned judgment of the reading public could be relied upon, if only they could be given the facts. Yet, news of French barbarity early in the war against the Austro-Prussians shook Beddoes and could not be so easily dismissed. He could not explain the actions of defeated French troops outside Lille, who murdered their commanding officer, accused of being a traitorous nobleman, as well as a priest and prisoners. He could not account for these events as the overflow of "the intemperate spirit of newly acquired freedom." Echoing Burke, he told Giddy despondently, "they are wild beasts broke loose." All of France might suffer for such atrocities, and the Revolution was rapidly losing its romantic luster: "The

¹⁷¹ Goodwin, 268.

¹⁷² In his description of fanaticism among the otherwise secular, he mirrored Burke's writing a year earlier. See Burke, 94.

¹⁷³ Beddoes to Giddy, DG 41/11, 6/3/1792.

¹⁷⁴ Beddoes to Giddy, DG 41/11, 6/3/1792.

French Revolution is every day losing that amiable aspect which it wore in the beginning: it is no longer a revolution cemented by water instead of blood.”¹⁷⁵ And yet he hoped. Such isolated incidents, though atrocious, did not reflect the character of the nation as a whole, nor did they prove its constitution to be in error. As the year progressed, he was further disillusioned by lack of progress in France – indeed, he was horrified by the behaviour of the National Assembly, which had “by their incapacity & cowardice...united everything that is ridiculous with everything that is horrible...”¹⁷⁶ – yet he still hoped for triumph.

He still maintained that France’s republican constitution would see it through these trials, proclaiming, “France, you see, Is forever free as a REPUBLIC, the only form of govt. consistent with honesty & common sense.”¹⁷⁷ And yet the conduct of the National Assembly was a matter for alarm, as it operated more from “irresolution, haste & injustice than any thing else [*sic*],” and the behavior of Robespierre and Marat was more alarming still.¹⁷⁸ Still, Beddoes hoped the National Assembly might mature, even amidst the show trial of Louis XVI. Here, he expressed his most ardent republicanism: “Shall the King be tried, condemned & executed? I vote for this measure – it will be a measure of salutary justice. The question whether a Man because he is called King shall be allowed with impunity to practice all sorts of crimes & sport with the fate of millions, will be agitated all over Europe – & it must be rightly decided. And things (while kings remain) as well as the people will be benefited by the example & the reflections it will excite.”¹⁷⁹ And yet he foresaw that an execution, along with distrust fostered by lies circulated in the press about “French patriots & their favourers in England” was “likely to produce popular violence in

¹⁷⁵ Beddoes to Giddy, DG 41/3, 11/5/1792.

¹⁷⁶ Beddoes to Giddy, DG 41/19, 12/9/1792.

¹⁷⁷ Beddoes to Giddy, DG 41/5, 8/11/1792.

¹⁷⁸ Beddoes to Giddy, DG 41/5, 8/11/1792.

¹⁷⁹ Beddoes to Giddy, DG 41/5, 8/11/1792.

England.”¹⁸⁰ On the pretext of preempting violence by British republicans, the government would stir up mobs to attack the Friends of Liberty, in repeats of the Birmingham mob. Beddoes was, then, a regicide, if only because his Lockean principles extended the application of justice to any man and because he believed Louis XVI guilty. And yet he was growing uncomfortable with the activities of the National Assembly and fearful that violence, rather than democracy, would leap across the channel.

The mixture of disillusionment and hope was mirrored in his impression of events in Britain. With good cause, he feared the extension of popular violence. Alarmism had spread rapidly, and November saw the formation of John Reeve’s Association for the Preservation of Liberty and Property against Republicans and Levellers, an organization effective at suppressing reformists.¹⁸¹ An Oxford chapter was being organized at the very time Beddoes was leaving his teaching post at Oxford University, but he, staying well-appraised of events in the nation, wrote dismissively in December that he doubted such organizations would succeed in intimidating the reformers or misleading the public about their goals.¹⁸² Far from gloom, he still maintained that the spirit of republicanism was at that moment sweeping Britain. He wrote in November that the aristocracy was now trembling, that he had received news: “The Nth of England & Scotland all democratic – London rapidly democratizing – ‘Vive l’egalite; vice G – S – the K -.’”¹⁸³ His expectations would not survive once war was declared and France descended into its Reign of Terror.

Beddoes’ letters and tracts from 1792 show him operating in a political environment which, despite threats of career damage or even prosecution for sedition, still allowed dissent,

¹⁸⁰ Beddoes to Giddy, DG 41/5, 8/11/1792.

¹⁸¹ Goodwin, 264.

¹⁸² Beddoes to Giddy, DG 41/57, 9/12/1792.

¹⁸³ Beddoes to Giddy, DG 41/38, 19/11/1792.

and in which Beddoes could still view the Revolution as a moderate, philosophical enterprise.

As 1792 came to a close, however, that environment rapidly deteriorated. The war over public opinion was subsumed within a continental war, defending the French National Assembly verged on treason, and open support of the death penalty of the King would mark a man as a serious threat. It was well that Beddoes kept his most dangerous opinions to himself.

II – Peace Activist and Government Critic

With the advent of war, the course of Beddoes' political activities followed the general course of British radicals as a whole: it became increasingly difficult to defend the French experiment in private, and dangerous to do so in public. While the "beasts broke loose" had made him uneasy in 1792, he could still place hope in the abilities of intelligent and moderate men. The rise of Robespierre in 1793 and experience of the Great Terror replaced unease with despair, as France descended into tyranny anew, and many moderates, Lavoisier among them, met their end at the guillotine. Thus Beddoes' political publications ceased for a time, while he directed his energies to medical practice and chemical investigation.

However, the ongoing war, he believed, undermined Britain's wealth, health, and national security. Moreover, the Pitt administration's continued and widening restriction of civil liberties hinted at a lurking danger. The example of Robespierre, combined with the experience of mob violence in France and Birmingham alike, suggested to Beddoes the potential of British tyranny, in which Pitt would cull the Bill of Rights and direct mobs against Friends of Liberty under the guise of maintaining security. So, after a time of relative quiet, Beddoes' words were redirected to attack the Pitt administration's policies and its prosecution of the war, while defending British liberties against incursion. He attempted to help alleviate the effects of wartime famine by publishing useful knowledge, and hoped to improve the political situation by influencing public opinion, which he still believed could win the day. In this regard, he redirected his political efforts in response to the course of events in Britain and formed a piece of the wider protest movement.¹⁸⁴

¹⁸⁴ Goodwin, 359-415.

1793-4 – Silence and Satire

Upon being pushed out of Oxford in December 1792, Beddoes stayed with Reynolds in Ketley for a time while devoting himself to chemistry and medicine, delving into the investigation of pneumatic chemistry – which he had been discussing with Darwin and Reynolds for some time – while seeking out a city suitable for medical practice and the establishment of a medical research institute, the Pneumatic Institution.¹⁸⁵ Settling, at Darwin’s recommendation, upon Clifton in Bristol, he set about building his practice among a large, long-standing community of dissenters and reformers, with extensive links to the Lunar Society.¹⁸⁶

Foremost among them was the Anglo-Irish educationalist and inventor Richard Lovell Edgeworth, who had been a central member of the Lunar network since the 1760s. Edgeworth and Beddoes, having been a close friend and great admirer of Thomas Day respectively, quickly struck up a friendship which was solidified as Beddoes married Edgeworth’s daughter Anna in 1794. Beddoes, Edgeworth noted, was a “little fat democrat of considerable abilities, of great name in the scientific world as a naturalist and chemist....” But he was also aware of the danger his politics posed to his career, particularly among the élite, upon whose graces a doctor’s career stood: “if he will put off his political projects till he has accomplished his medical establishment he will succeed and make a fortune – but if he bloweth the trumpet of sedition the aristocracy will rather go to hell with Satan than with any democratic Devil.”¹⁸⁷

And “put off his political projects” Beddoes did. Frightened to find himself “odious to Pitt and his gang,” his scientific and medical career became the focus. Building on the support of Darwin and Reynolds, he began seeking subscriptions for his Institution, to be established at Hopewell Square. Yet his expectations for extensive improvement in politics and chemistry

¹⁸⁵ Stansfield, 145.

¹⁸⁶ Thompson, 42; Jay, 75.

¹⁸⁷ Edgeworth quoted in Jay, 91.

remained. He published a medical treatise promoting the enormous potential of pneumatic medicine in early 1793, his *Observations on the Nature and Cure of Calculus*, which presented his humanitarian and pacifist goals and convictions as clearly as ever. His dedication bemoaned the direction of society's efforts away from the relief of misery by despots and juntas while hoping for improvement of the human condition through peaceful economic competition, a "bloodless rivalship of nations."¹⁸⁸ His hopes were founded upon the new chemistry, which "is daily unfolding the profoundest secrets of nature, and...the delicate play of living machinery."¹⁸⁹ The knowledge wrought by physical science, properly disseminated among the population, would "effect a greater improvement in the morals of mankind, than all the sermons that have ever been, or ever will be preached."¹⁹⁰ Thus, his disillusionment with affairs in France did not seriously dampen his hopes for progress. If overt political revolution failed, it could still be accomplished by improving the health and morals of the public through scientific inquiry and education. Yet beyond these brief forays in a quite lengthy and successful tome, Beddoes the critic was largely silent – in public and in correspondence. Fear of government espionage and reprisal severely curtailed his correspondence on political matters through the end of 1794. Only in 1795 could he write to Giddy, "I do not see the great danger of writing now, if it be compared with the danger that subsisted 18 months ago."¹⁹¹

In private circles, however, the reformer's heart beat as strongly as ever, and Beddoes began to assemble a circle of radicals and liberals around him. He met Tom Wedgwood, a son and heir of Josiah, who became his friend, patient, and the most ardent supporter of his medical

¹⁸⁸ Beddoes, *Observations on the Nature and Cure of Calculus*, iv.

¹⁸⁹ Beddoes, *Observations on the Nature and Cure of Calculus*, 5.

¹⁹⁰ Beddoes, *Observations on the Nature and Cure of Calculus*, 266.

¹⁹¹ Beddoes to Giddy, DG 42/30, 3/19/1795.

enterprise.¹⁹² A brilliant invalid and chemist who shared Beddoes' hopeful republicanism, Tom had stayed in revolutionary France with James Watt Jr.¹⁹³ Watt Jr. likewise entered his sphere, and Beddoes began a steady correspondence with the son on radical and revolutionary matters while working with the father on pneumatic chemistry and medical apparatus.

Beddoes had not abandoned public polemics a moment too soon. His writing, scientific and political alike, had caught the attention of anti-Jacobins beyond the Home Office, and the connection between subversive politics and scientific projecting – hinted at by Burke – was made clearly in Beddoes' case. An anonymous satirical poem, *The Golden Age: A Poetical Epistle*, was published in 1794, lampooning Beddoes' science and painting him as a Jacobin. The poem was a small part of a larger campaign to discredit progressivism and radicalism in the public sphere, most notably seen in the political cartoons of James Gillray, the 1797 periodical *The Anti-Jacobin*, and its successor, *The Anti-Jacobin Review*, which attacked targets ranging from radical leaders (Priestley a perennial target) to the experimental poetry of the democratic poets Southey, Wordsworth, and Coleridge. Allegedly written to Beddoes by Erasmus Darwin, but in fact the work of an anonymous author, the poem attempted to demolish Beddoes' credibility by highlighting his defense of the French in his *Reasons* while mocking the bolder claims he had made for chemistry's near future in his *Observations on Calculus*. Beddoes had asked if chemists, with great control over animal chemistry, might not “by regulating the vegetable functions, teach our Woods and Hedges to supply us with Butter and Tallow.”¹⁹⁴ His hopes for margarine were evidently not widely shared.

With such claims on the public record, Beddoes' satirist had an easy time lampooning his

¹⁹² Porter, *Doctor of Society*, 18.

¹⁹³ Jones, “Living the Enlightenment,” 173; Eric Robinson, “An English Jacobin: James Watt, Junior, 1769-1848,” *Cambridge Historical Journal* 11, no. 3 (1955), 351.

¹⁹⁴ [Anon.], *The Golden Age*, 2.

mark – connecting Beddoes’ radicalism with projection, Jacobinism, atheism, and absurd chemical pseudoscience. “Thou Paracelsus of this wondrous age,” the poet declared him, rushing to the point, “The Bigot’s Scourge, of Democrats the Pride, / Accept this lay ; and to thy Brother, Friend, / Or name more dear, a Sans Culotte attend.”¹⁹⁵ Beddoes’ writings were quoted frequently, particularly his predictions of a new chemical and medical revolution. When not exploring a future filled with butter, strawberries, and cream, the poem lauded his ability to be inspired by blood and violence in France, mocked his self-experimentation with oxygen,¹⁹⁶ underlined his condemnation of the clergy and more outlandish advice (avoiding scurvy by eating food raw), and noted it was his *Reasons* “which eventually occasioned his resignation of the Chemical Chair in the University of Oxford.”¹⁹⁷ The message recapitulated the fears of Burke and the alarmists and drew a portrait which would reappear throughout his career; his politics were radical, foreign, utopian, and sanguinary, his science likewise French, utopian, and patently absurd. He was one of Burke’s hated “sophisters, economists, and calculators.”¹⁹⁸

This tarring was not lost on Beddoes, nor his friends and associates, especially the conservative James Watt, as their joint venture was hindered by Beddoes’ reputation. He wrote Beddoes in 1795, noting that London physicians condemned Beddoes’ pneumatic medicine on the grounds of his Jacobinism, materialism, and most notably, adherence to Lavoisier’s chemistry – an adherence which Watt did not share. The Burkean connection had been made solid, French chemistry and politics tightly linked, and Watt made it clear to challengers that he put no stock in Lavoisier while advising Beddoes to put away his political pen and stick to

¹⁹⁵ [Anon.], *The Golden Age*, 3.

¹⁹⁶ Believing tuberculosis to result from hyper-oxygenation, Beddoes had tested a regimen of inhaling oxygen on himself and marked the effects. See Beddoes, *Observations on the Nature and Cure of Calculus*.

¹⁹⁷ [Anon.], *The Golden Age*, 4-14.

¹⁹⁸ Burke, 65.

medical facts.¹⁹⁹ Beddoes admitted “my politics have been very injurious to the airs,” but could not long desist, as events that year renewed his fervor. Science could not be pursued alone, as its useful study relied so heavily upon political freedom: “Yet as every stroke aimed at liberty, equally threatens science, morals, & humanity, it requires great self-denial to look on patiently & silently, when such great interests are at stake.”²⁰⁰

Thus, the evidence of Jacobinism tarring pneumatic chemistry was strong, and more satire and career damage followed. Shortly after publication of the first two of five parts of Watt and Beddoes’ *Considerations on the Medicinal Use, and on the Production of Factitious Airs* in 1795, a sequel to *The Golden Age* was published, lampooning Beddoes’ proposed uses of airs and expectations of cures, pointing to the seemingly bizarre, such as the bleaching of dark skin (see Chapter 3) and treating tuberculosis with cow’s breath, meanwhile providing page citations to his proposals and claims.²⁰¹ The targets, however, remained Beddoes and Darwin, while the respectable James Watt was entirely spared ridicule for his involvement in the endeavour.

The Pneumatic Institution, however, was not spared. Sir Joseph Banks, President of the Royal Society, was approached both by the Duchess of Devonshire and Watt Jr. to support Beddoes’ project, with assurances that Beddoes had renounced radical politics. Banks’ support was paramount, as the prestige of the Royal Society would provide unmatched respectability and national support to the programme, while providing some political rehabilitation for Beddoes.²⁰² While Banks had been cordially acquainted with Beddoes in 1792, even presenting Beddoes’ scientific papers to the Royal Society, he declined. As Watt Jr. understood it, “he has seen

¹⁹⁹ Levere, “Dr Thomas Beddoes: Chemistry, Medicine, and the Perils of Democracy,” 220-1.

²⁰⁰ Beddoes to Watt, 26 December 1795, BCA MS 3219/4/28:23. Quoted in Levere, “Dr Thomas Beddoes: Chemistry, Medicine, and the Perils of Democracy,” 221.

²⁰¹ Bob Aliquis, *A Supplement to the Golden Age: or, the Virtues of the Modern Catholicon clearly displayed* (London: J. Owen, 1795), 13, 16.

²⁰² Jay, 106-7.

Beddoes' cloven Jacobin foot and it is the order of the day to suppress or oppose all Jacobin innovations such as this is already called."²⁰³

The Treason Trials

While Beddoes' friends attempted to convince Banks that he had abandoned politics, accelerating repression in England was making continued silence difficult, if desirable. In an atmosphere of mounting government repression and fear of martial law and Hessian mercenaries, with reformists' and radicals' petitions rejected, Britain's radical organizations called for a convention to be held in Scotland, to discuss tactics for bringing about parliamentary reform. The convention, interpreted by the government as a challenge to parliamentary sovereignty, led to the arrest and conviction of Thomas Muir and the Unitarian Reverend Thomas Palmer on the grounds of sedition – now defined as broadly as agitation for reform.²⁰⁴ Muir's desire to accomplish reform in a legal manner was cast as "sowing the seeds of discontent and sedition," terms reminiscent of the Home Office's description of Beddoes' behaviour but a year earlier.²⁰⁵

Whigs and radicals protested and petitioned for the reversal of the convictions, but their efforts were to no effect, and the government responded to the SCI's and LCS' public meetings and declarations with arrests of a swath of radical leaders in May 1794. Thomas Hardy, John Horne Tooke, and John Thelwall were to be tried for high treason, and the course of these Treason Trials, as they became known, enthralled the nation. Reformers saw British liberty hanging in the balance of their outcome – Habeas Corpus was suspended despite Whig threats of secession from parliament – while Pitt's government sorely needed convictions in its campaign

²⁰³ Trevor Levere, "Dr Thomas Beddoes and the Establishment of his Pneumatic Institution: A Tale of Three Presidents," *Notes and Records of the Royal Society of London* 32, no. 1 (1977), 44.

²⁰⁴ Goodwin, 288.

²⁰⁵ Goodwin, 288.

to silence its opposition.²⁰⁶ Indeed, immediate danger extended well beyond the three defendants; the government supposedly had 800 warrants for radicals' arrests, ready to be issued upon a successful conviction.²⁰⁷

For Beddoes, this was not simply a matter of justice, but a sign of the imminent danger of despotism. The rapid and devastating rise of Robespierre was ever in his mind, and he feared Pitt was on the same course. Like other British liberals, he followed events in the metropolis intently, especially the trial of Thomas Hardy, while conducting the business of his burgeoning practice and canvassing for support for the Pneumatic Institute.²⁰⁸ After a nine-day trial, Hardy was acquitted, to the glee of massive crowds around the Old Bailey.²⁰⁹ Overjoyed at the news, Beddoes wrote to James Watt Jr., "I was very anxious as was yourself for the issue of the state trial though I said Hardy must be acquitted, there being no evidence of high treason."²¹⁰ He composed a letter of congratulation, forwarding it first to Watt and Giddy to make sure it contained nothing libelous. He praised Hardy's merits and assaulted the "evidence" brought against him. Importantly, he drew the same connection between Pitt, Robespierre, and terror as Fox and Godwin, among others, were now inclined to make.²¹¹ "But above all," he proclaimed, "we rejoice that you have escaped the dangerous malice of a man...who had he succeeded like Robespierre in securing his power by terror, wd. have held all good men in a state of silent dejection."²¹² This fear for the survival of British liberty was quickly becoming a driving force in his thinking, and was fortified as new restrictions on print and assembly arrived the following

²⁰⁶ Goodwin, 334.

²⁰⁷ Thompson, 137.

²⁰⁸ It is likely that Beddoes also followed the trial of Horne Tooke with some anticipation, as he had read and respected Tooke's linguistic work. Thomas Beddoes, *Observations on the Nature of Demonstrative Evidence* (London: J. Johnson, 1793), 4.

²⁰⁹ Goodwin, 353.

²¹⁰ Beddoes to Watt Jr., MIV/B3/3, 26/10/1794.

²¹¹ See Clive Emsley, "An Aspect of Pitt's Terror."

²¹² Beddoes to Watt Jr., MIV/B3/3, 26/10/1794.

year. Yet the outcome of the trials buoyed his spirits, as he believed that, in their wake, Pitt would not long survive – “if there was an opposition [in Parliament] of any credit or strength.”²¹³

Beddoes, Coleridge, and the Gagging Bills

A catalyst for renewed political action arrived in January 1795, as Robert Southey brought Samuel Taylor Coleridge to stay in Bristol. There they made plans for a pantisocratic colony in America. Beddoes’ circle expanded as he forged lasting friendships with the two, especially the outspoken radical Coleridge, and contributed to Coleridge’s brief publication, *The Watchman*. Beddoes’ Clifton home became a center of discussion of science, philosophy, poetry, and shared political views.²¹⁴ In this regard, it reflected much of the Lunar Society model; though younger, more radical, and shorter lived, it contained a similarly brilliant set of individuals and extensive interaction between disparate spheres of interest, especially with the arrival of Humphry Davy in 1798.

A crisis arose in October 1795, as George III’s carriage was attacked on his way to open parliament by a mob, angered by war-time conditions. The event was described as an attempted assassination at the hands of republicans, and William Pitt used it as a pretext to crack down more severely upon radical societies. Upset by his failure to convict the nation’s leading radicals, he introduced two laws to severely circumscribe the abilities of the radical movement. The Two Acts – the Treasonable Practices Bill and Seditious Meetings Bill – or Gagging Bills, as they were disparagingly known, made most seditious and radical writing treasonous, and

²¹³ Beddoes to Giddy, DG 42/4, 7/1/1795 or 7/2/1795.

²¹⁴ Stansfield, 124-5.

banned assemblies with more than fifty people for the purpose of political discussion.²¹⁵ These acts were proof that Beddoes' fear of approaching despotism was justified. Only a would-be Robespierre could so quickly abrogate the Bill of Rights. Beddoes was roused from his political slumber, and he and Coleridge found themselves working to a common purpose in protesting the bills.

Following the supposed assassination attempt, meetings were called across the country to congratulate the King on his escape, and some were used by critics of the government to protest the war and new acts in their petitions to the King. At a meeting held for this purpose in Bristol's Guild Hall on November 17, a large group of the attendees, with Beddoes among them and eloquently represented by Coleridge, pushed to include a request for peace with France as a remedy for the people's plight in their address to the King. They were silenced by the conservative mayor and contingent, which feared – rightly – that the meeting would be used to further the reformist agenda.²¹⁶

Attempting to bolster opposition to the government, Beddoes distributed his urgent "A Word in Defence of the Bill of Rights against Gagging Bills," a pamphlet distributed in London as well as Bristol. He reissued the pamphlet on the 19th and 21st, coinciding with a meeting of Bristol's anti-war contingent on the 20th, held with the stated purpose, "to consider the Propriety of Petitioning Parliament against certain Bills...."²¹⁷ Similar meetings were held nationwide, producing 94 petitions with 130,000 signatures opposing the Bills, which were forwarded to Parliament. The Bristol meeting saw Beddoes speak to the dangers of the Bills, as reflected in

²¹⁵ Treasonable practices were expanded to cover a very broad array of activities, including intimidating Parliament – an attack on large assemblies and extra-parliamentary pressure – and promoting "contempt" of government institutions. See Goodwin, 386-7.

²¹⁶ See Stansfield 129; Beddoes to Giddy, DG 42/36, 12/2/1795; and Samuel Taylor Coleridge, *The Watchman*, vol. 2 of *The Collected Works of Samuel Taylor Coleridge*, edited by Kathleen Coburn and Bart Winer (London: Routledge; Princeton University Press, 1969), xxix-xxx.

²¹⁷ Stansfield, 129.

his pamphlet, and concluded with a unanimously supported petition which both congratulated the king on his escape and condemned the acts. Beddoes displayed moderation as he attempted to forestall criticism of the meeting and petition by maintaining order and decorum, particularly important given the military procession held outside and pamphlets which had earlier been distributed by the attendees' opponents in an effort to dissuade attendance.²¹⁸ He persuaded the attendees to have Bristol's MP deliver the petition to the House of Commons, rather than, as Coleridge had suggested, Fox and Sheridan. By no means would Beddoes have accusations of anarchy and irregularity besmirch and compromise their orderly proceedings.

The pamphlet itself shows Beddoes at his most serious and terse, and clearly frightened by the prospect of despotism. It is also rare among his political publications as it is addressed to citizens as a fellow citizen, rather than as a doctor. He saw the Gagging Bills not merely as an attack on the reform movement but, because he was always suspicious of Pitt's pretensions to power, perceived them to be a Robespierrean attack on liberty which marked the dawn of despotism. They were likewise an attack on the science, industry, and fraternity which flowed from the British constitution. Making this connection, he extolled the superior British character, linking Britain's prosperity with both its political freedoms and application of reason, harkening back to the Glorious Revolution: "The individual inhabitants of Great Britain have been distinguished for a century past by superior generosity, openness, and energy of character; the society at large by a degree of unexampled prosperity. For so long have we enjoyed in a superior degree the use of REASON and SPEECH...."²¹⁹ Likewise, the freedoms enshrined within the Bill of Rights provided the foundation of British morality, fraternity, and the love of the common good. To alter it was "to cut by one cruel stroke the nerve of accretion, by which each

²¹⁸ Stansfield, 129.

²¹⁹ Thomas Beddoes, *Beddoes, A Word in Defence of the Bill of Rights against Gagging Bills* (Bristol: N. Biggs, 1795), 2.

Englishman feels for the welfare or adversity of all – the nerve which connects us all with the sensorium of the State.”²²⁰

Appealing to history, he stated that, contrary to any conception of inevitable historical progress, liberty could at any moment be lost, and must thus be protected by eternal vigilance against incursions. Reflecting on the precarious nature of progress while resorting to apocalyptic imagery, he feared honest men would prove too timid to act, and thus would open the “jubilee of villainy, the millennium of knaves.”²²¹ The right to assembly in particular must be protected as it was critical to the public’s oversight of their government. The “surrender” of it would be “political suicide,”²²² entailing the end of both national prosperity and the nobility of character which defined Britain itself. Above all, he feared that at the moment of the ministry’s next crisis, legislation would be introduced to silence criticism from the press, with enormous impact on public morality. With the elimination of freedom of the press, the people’s cries of misery would be silenced, and every “manly and humane attribute, all the kindly feelings of the heart [would] retire inwards and die.”²²³ The urgent fear of the loss of freedom of the press was reflected in his advertisement for the pamphlet in the *Bristol Gazette*, which noted, “to be on Sale while the Liberty of the Press continues....”²²⁴

But despite his alarmist rhetoric, he feared any rash behaviour among protestors might provide a pretext for crackdowns. Thus, he repeated his calls for caution and moderation, and his declaration of nonviolence, asking his fellow citizens to “pronounce with calm and dignified

²²⁰ Beddoes, *A Word in Defence of the Bill of Rights*, 4.

²²¹ Beddoes, *A Word in Defence of the Bill of Rights*, 5.

²²² Beddoes, *A Word in Defence of the Bill of Rights*, 4.

²²³ Beddoes, *A Word in Defence of the Bill of Rights*, 5. This emphasis on freedom of the press had broad following in eighteenth century Britain. Its status as the pillar of other liberties was a “veritable Whig mantra.” Porter, *The Creation of the Modern World*, 192.

²²⁴ Coleridge, *The Watchman*, 344n.

firmness,”²²⁵ but not to “let even an indiscretion escape you, which can lend a plausible argument to tyranny.”²²⁶ In the aftermath of the terror he declared, “I deprecate all violence. I have no talents for pillage.” But he feared the anarchy which oppression might provoke, and closed by recapitulating his perceived purpose of government, reflected by Priestley and Paine, that it is “the duty of all governments to mitigate [bigotry] by diffusing the divine spirit of universal charity.”²²⁷

In his Postscript to the pamphlet, composed on the 20th and 21st, and reprinted in the May 13, 1796 edition of *The Watchman*, Beddoes reconstituted his arguments in a more optimistic fashion, while proclaiming his goals of an enlightened public to his fellow Bristolians.²²⁸ Reacting to the orderly compilation of their petition, which enlisted patriotic zeal tempered by necessary precaution, and attacking attempts to defame it, he congratulated them, writing, “It has ever been my opinion, *that the salvation of every State depends on the reasonableness of the great body of the people.* [emphasis original]”²²⁹ While this may appear a common sense sentiment, he elaborated – the security of the state was not simply a matter of reasonableness, but *rationality*: “A rational people cannot be the dupes of wicked demagogues; who...seek power or profit by damping the reason, and firing the passions, of the uninstructed.”²³⁰ As he had suggested in his *Letter on Early Instruction*, education was the bulwark against despotism.

Despite the gravity of the situation, he held high hopes founded upon human progress and the old Enlightenment maxim, knowledge will make you free: “I augur therefore that your rights will not be infringed, or if infringed, will be speedily restored. As men become more humanized

²²⁵ Beddoes, *A Word in Defence of the Bill of Rights*, 6.

²²⁶ Beddoes, *A Word in Defence of the Bill of Rights*, 7.

²²⁷ Beddoes, *A Word in Defence of the Bill of Rights*, 8.

²²⁸ Coleridge, *The Watchman*, 344-6.

²²⁹ Thomas Beddoes, *A Postscript to the Defense of the Bill of Rights*, in *A Word in Defence of the Bill of Rights against Gagging Bills* (Bristol: N. Biggs, 1795), 2.

²³⁰ Beddoes, *A Postscript to the Defense of the Bill of Rights*, 3.

by knowledge, they cannot indeed become less free.”²³¹ Contrary to his fears that despotism might cast England into a permanent dark, he now wrote that the “stream” of enlightenment, as he described it, could only “for a moment be ruffled and ensanguined” by ministerial schemes, but inevitably the stream would overtake the minister, sweeping memory of him into the “gulph of infamy.”²³²

Attacking War, Promoting Peace

The *Defense of the Bill of Rights* formed a part of a Bristol pamphlet war, waged between the city’s reformers and High Churchmen, but defending the constitution was only one prong of Beddoes’ attack on government policy. Seeing, as a medical man, the effects of famine and disease on the public, and fearing the government’s prosecution of the war entailed disease, unrest, worsening famine, and even invasion or societal collapse, Beddoes added his voice to that of the peace movement asserting itself nationwide. He had grown increasingly pessimistic of Britain’s prospects, and now admitted privately that “Nothing but a peace which I much doubt whether we can obtain can save this country from universal distress, eternal convulsions, and perhaps invasion.”²³³ Yet he held out hope, as he perceived growing discontent against Pitt and his administration in the right circles. “The majority of men of property here,” he explained, “now exclaim against Pitt, and he is universally sunk in the estimation even of his advisors.”²³⁴ Thus, still believing attempts to convince the public could help halt the war, he readied an argument in favor of peace. He was naturally not alone in making the case for peace, but was contributing to a broad national reformist argument. Radicals used the war as a potent recruiting

²³¹ Beddoes, *A Postscript to the Defense of the Bill of Rights*, 4.

²³² Beddoes, *A Postscript to the Defense of the Bill of Rights*, 4.

²³³ Beddoes to Giddy, DG 42/36, 12/2/1795.

²³⁴ Beddoes to Giddy, DG 42/36, 12/2/1795.

tool – radical society memberships grew quickly in light of wartime adversity and the Treason Trial acquittals. They argued, like Beddoes, that peace and reform were the only cures for famine. At its massive outdoor protests in London in June 1795, the LCS allied the demand for a speedy resolution of the war along with its regular petitions for enfranchisement and annual parliaments.²³⁵

As part of the ongoing Bristol pamphlet war, Beddoes – quite possibly in collaboration with Coleridge – penned his tract, *Where would be the Harm of a Speedy Peace?*²³⁶ He called on the citizens of Bristol, who had succeeded so well in demonstrating against the Two Acts, “who lately stood forth the asserters of LIBERTY!”, to redirect their voices against the continental war.²³⁷ The national protest had softened the Gagging Bills, he argued, as Pitt had dropped restrictions on speech in private households. Massive but tempered demonstration had proven effective, and might even have saved the nation from despotism. Upon further praising British reason and spirit, he presented his case for an immediate peace: no public ill could follow it, while continued prosecution of the war would continue to starve the nation of its men and resources indefinitely. With continued war, England’s colonies would be threatened by belligerent powers and slave revolts, tax burdens would expand, middle class comforts would decline, and famine would recur.²³⁸ Radicals and protestors would be hard hit: faced with renewed defeats, statesmen would attempt to lay blame on the critics, “to divert your attention from the evils *actually* felt in consequence of his mal-administration, to those that may *possibly* arise from Thelwall and the London corresponding society. [*sic*]”²³⁹ This was preceded, as it was a meeting of Thelwall’s LCS which had preceded the Gagging Bills, and scapegoating was a

²³⁵ Goodwin, 372-86.

²³⁶ See Stansfield’s discussion of their collaborations, Stansfield, 130.

²³⁷ Beddoes, *Where would be the Harm of a Speedy Peace*, 2.

²³⁸ Beddoes, *Where would be the Harm of a Speedy Peace*, 24.

²³⁹ Beddoes, *Where would be the Harm of a Speedy Peace*, 25.

regular practice, as British royalists placed the blame even for grain shortages on British Jacobin hoarding.²⁴⁰

The usual arguments for continued war, he argued, were groundless. There was no indignity in abandoning a fruitless war to pursue utility and the public good. Britain would show no weakness, as all the empire's weaknesses had already been laid bare, and peace would not threaten British colonial possessions. Naval warfare and French promises of emancipation of the slaves were far more dangerous, especially as Britain was reduced to self-defense. The costs of war vastly exceeded any profits which might be gained from the colonies in coming years. The greatest threats to commerce were continued war and the increasing appeal of Levelling, wrought by war-time hardship. Levellers – with their alleged desire to eliminate class distinction – pushed the concept of equality well past any definition Beddoes' liberal sensibilities would admit, especially in light of the violent redistribution which had taken place in France.²⁴¹ The introduction of this age-long fear shows Beddoes' argumentation shifting, as fear of invasion and British sans-cullotism spread and it became valuable to show the voting classes the danger of war entailing violent revolution. He was not merely pandering to the prejudices of the landed classes, but was reflecting a fear of the masses which he had expressed to friends, and which was ardently shared by allies like Watt and Boulton. "I perfectly agree with you," he told Giddy, "as to the danger from a general fermentation among the labouring class."²⁴² Britain's safety could only be assured by staying out of continental affairs. If the nations captured by France supported their new masters, war was futile. If not, occupation would prove a massive drain on French resources. Pitt's desire to determine who governed across the channel, "to portion out the

²⁴⁰ Clive Emsley, *British Society and the French Wars, 1793-1815* (Totowa, N.J.: Rowman and Littlefield, 1979), 46.

²⁴¹ Beddoes, *Where would be the Harm of a Speedy Peace*, 2, 6-8.

²⁴² Beddoes to Giddy, DG 42/30, 14/3/1795.

Continent of Europe,” was impossible and foolish to the point of insanity, as Revolutionary France now proved militarily stronger as its citizens were inspired by the light of liberty.²⁴³

Beddoes again held some hope that a citizens’ rational stand might bring about war’s end, as he appended his pamphlet with current news of a peace bill in the House of Commons. The government, he supposed, “alarmed at the general opposition to the noted bills, and the cry for peace at many late public meetings, feels that he must now try to appease the national indignation. If peace speedily follow, the people may justly ascribe it to their exertions....”²⁴⁴ Thus he agitated in the hope that the wider movement in which he played a small part could actively reform and remold the political system.

But he acknowledged he was now writing under threat of unjust legal action. Despite the weakened Gagging Bills, “I think it likely,” he argued, “cunningly devised treason-traps will catch some of those, who like myself have protested, with imprudent regard for mankind, against the machinations of a minister....”²⁴⁵ Apparent success in weakening the Gagging Bills inspired hope, but circumstances remained particularly dire.

Famine and the Practical Knowledge

Beddoes medical experience with the effects of wartime famine allied with his desires to provide practical advice and solutions and lambast the Pitt administration in 1796. The year 1795 had been one of serious famine, not only in England but throughout Europe itself. Food prices were driven to dramatic heights and bread was unobtainable in some regions.²⁴⁶

Provision-riots broke out in diverse British towns and cities, with private citizens often joined by

²⁴³ Beddoes, *Where would be the Harm of a Speedy Peace*, 12.

²⁴⁴ Beddoes, *Where would be the Harm of a Speedy Peace*, 12.

²⁴⁵ Beddoes, *Where would be the Harm of a Speedy Peace*, 3.

²⁴⁶ Thompson, 70-1, 156.

militias and military recruits.²⁴⁷ The unrest showed itself to Beddoes as such a riot broke out in Bristol on June 6, and he had interested himself keenly in the consequent trials.²⁴⁸ While crop failures were attributable to nature, wartime requisitions and government policy had made matters much worse. After such a year, the winter proved to be especially hard on the poor, and they could hardly be inspired by Burke's advice for dealing with famine, which was simple: "Patience, labour, sobriety, frugality and religion, should be recommended to them; all the rest is downright fraud."²⁴⁹ Morally outraged by famine and war, Beddoes was prepared to recommend some such "fraud," schemes of increasing food production and general nutrition.

Responding to the dire need for increased food production, and incensed by a government which seemed intent on making matters worse, he published his *A Letter to the Right Hon. William Pitt, on the Means of Relieving the Present Scarcity and Preventing the Diseases that arise from Meagre Food*. A fusion of his political and scientific interests, it was both a piece of polemic attacking the Prime Minister and a collection of policy proposals and potential solutions for the food crisis. Moreover, the tract reflected Beddoes' continued faith in the value of universally-disseminated knowledge, as he was eager to realize the practical uses of science and promote an empirical approach to policy and governance.

With the mockery of *The Golden Age* in mind, he attempted to head off scoffs which would inevitably rise from the Pitts, Burkes, and satirists, who would see in his proposals material worthy of Swiftian satire. Being a country doctor well removed from the metropolis, "I have," he wrote, "recourse to the ordinary expedient of projectors, who busy themselves in

²⁴⁷ Emsley, *British Society and the French Wars*, 42.

²⁴⁸ Jay, 123-4.

²⁴⁹ Thompson, 61.

cutting out work for a prime minister.”²⁵⁰ After pausing to lay out the administration’s mismanagement of food procurement and lack of forethought in prosecuting the war which had generated the shortage, as France had bought up foreign grain supplies while the British waited, he resumed his train and justified the value of his advice: “The nature of animal wants, the ill consequence of leaving them unsatisfied, and the effects of excessive indulgence, present themselves frequently and forcibly to medical men.”²⁵¹ Physicians observed during the normal practice of peacetime the results which would be produced en masse by wartime famine, and were thus capable of seeking and crafting solutions, relying upon “The observation of nature, the experiments of science, and the relations of travelers....”²⁵² National policy might be directed by qualified experts, guided by scientific investigation.

The schemes and policies he had in mind varied from the simple and austere – redirecting genteel women’s handiwork to the charitable production of clothes for the poor, would only Burke and Hannah More nudge the prevailing culture – to the seemingly mad use of animal feed as a food source for the public. “To those whose thoughts never straggle out of the broad and beaten track of reality, this project will appear like one of the most extravagant flights of insanity,” he admitted.²⁵³ And yet Britain’s history of scientific innovation must give hope to any man who knew it. Pitt’s military successes in the preceding two years, he argued, were the result of fantastic military improvement at the hands of scientists and innovators, whose schemes were given ear by the Prime Minister. Could not grasses and hay then be made edible through inquiry and innovation? Conversely, animals might be dieted upon food fit for men, to form a production reserve in case of shortage, while the quantity of meat in the average diet might be

²⁵⁰ Thomas Beddoes, *A Letter to the Right Hon William Pitt, on the Means of Relieving the Present Scarcity, and Preventing the Diseases that Arise from Meagre Food* (London: J. Johnson, 1796), 3.

²⁵¹ Beddoes, *A Letter to the Right Hon William Pitt*, 8.

²⁵² Beddoes, *A Letter to the Right Hon William Pitt*, 8.

²⁵³ Beddoes, *A Letter to the Right Hon William Pitt*, 14.

reduced, as eating vegetables was a more efficient use of agricultural land than feeding livestock.²⁵⁴ Opium might, as Darwin had suggested in the *Zoonomia*, prove a sustaining seasoning in the place of salt, could its misuses be prevented, and inquiry into other possible healthy seasonings might be made.²⁵⁵ The government might save barley by limiting the strength of beer, while methods of producing healthy beers might be made widely known.²⁵⁶ This scheme had precedent: Pitt had, in response to the shortages, legislated against the use of wheat in brewing and starch-making.²⁵⁷ Beddoes cautiously noted, however, that the methods he proposed offered no certainty of success; it was necessary to cautiously test the possibilities in each case.

Not all of his proposals required government implementation. He described and provided a detailed design of a broth machine, an industrial pressure-cooker, which produced wholesome soup from otherwise wasted food at a minimal cost.²⁵⁸ Such a device might be employed anywhere in the nation, if means and talent could be brought together. This work was, then, the complement of his educational tracts on individual health; grave circumstances among the populace drove him to provide scientific advice to individuals and government alike, regardless of the likelihood of it being heeded or implemented by the administration.

An Expert Critic of the Pitt Government

Following his activity in Bristol's pamphlet wars, buoyed by the public's widespread protest of the Gagging Bills, Beddoes continued to focus on swaying public opinion away from the Pitt regime in order to effect both his goals of establishing peace and protecting British

²⁵⁴ Beddoes, *A Letter to the Right Hon William Pitt*, 14-7.

²⁵⁵ Beddoes, *A Letter to the Right Hon William Pitt*, 28-9.

²⁵⁶ Beddoes, *A Letter to the Right Hon William Pitt*, 21-4.

²⁵⁷ Emsley, *British Society and the French Wars*, 43.

²⁵⁸ Beddoes, *A Letter to the Right Hon William Pitt*, 18-21.

liberty and science. With a major publisher now behind him – Joseph Johnson, a longtime publisher of radical writers, from Priestley and Paine to Wollstonecroft and Godwin, had purchased and resold Beddoes’ tracts in London and would now publish Beddoes’ work²⁵⁹ – Beddoes prepared a thorough survey of Pitt’s career. By highlighting the deception and failure of the administration, he would drive public opinion and voters from Pitt. Meanwhile he would publicly promote the possibilities of rational government, informed by expert science, and promote the liberal Scottish school of economics.

In the resulting work, *An Essay on the Public Merits of Mr. Pitt*, Beddoes sought to trace the course of Pitt’s entire political career, in order to show his lack of character and his potential for despotism. Beddoes followed Pitt’s entrance into politics and rise to fame during the mired American Revolutionary War, a rise attributable to his namesake, his beautiful but empty oratory, and a common love of young statesmen.²⁶⁰ A self-declared reformer, Pitt had addressed the public as a defender of freedom and the constitution, and had abandoned those principles once in power, showing himself to be a nascent Robespierre, willing to abrogate British liberty in the pursuit of power.²⁶¹

The Public Merits of Mr. Pitt begins with an anecdote illuminating Beddoes’ connection of medicine and politics and illustrates a fundamentally utilitarian conception of government. During the Bristol meeting about the Gagging Bills, a woman was taken aback that Beddoes was at such an event rather than on call lest a patient grow suddenly ill. “I wonder,” she asked, “what a physician has to do with politics!”²⁶² This objection, he noted, was common, and to it he replied, “A large portion of human misery passes under close medical inspection. Among its

²⁵⁹ Jay, 135-6.

²⁶⁰ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 36-8.

²⁶¹ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 50-66.

²⁶² Thomas Beddoes, *An Essay on the Public Merits of Mr. Pitt* (London: J. Johnson, 1796), 10.

possible causes may not some be political? Has the folly, the neglect or the abuse of a regulation of law never occasioned any sensitive and rational being a pang?”²⁶³ The political action of a physician was justified on the grounds of expert knowledge and utilitarian outcomes: “If there be ordinances in existence which operate to the production of disease and ordinances in possibility by which disease would be prevented, we have just so many instances of political information thrown in a physician's way during the discharge of his daily functions.”²⁶⁴ The social effects of government policy were amenable to medical and scientific inquiry, so policy should be based upon the soundest and most current knowledge. Given this, he argued the medical man might prove an able judge: “The practitioner of medicine...seems to have some title to be considered as more sagacious than the parish-officer or magistrate....”²⁶⁵

In order to prove his competency, he began his criticisms of the government with those stemming from his special knowledge of chemistry and medicine, attacking Pitt on the grounds that he had failed to make proper use of scientific knowledge, particularly new medical innovation.²⁶⁶ He recalled Guyton de Morveau's scheme of using hydrochloric acid as a disinfectant, which he had seen firsthand at Dijon in 1787.²⁶⁷ The French government, at Morveau's encouragement, had implemented a chemical disinfection scheme in its armies and navies, potentially saving “many thousand lives by its adoption.”²⁶⁸ In contrast, the British government, despite recommendations made directly to Home Secretary Dundas, had failed to take notice of the *military* applications of hydrochloric and nitrous acid in disinfection, “to be

²⁶³ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 11.

²⁶⁴ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 11.

²⁶⁵ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 156.

²⁶⁶ Levere, “Dr. Thomas Beddoes (1750-1808): Science and Medicine in Politics and Society,” *The British Journal for the History of Science* 17, no. 2 (1984), 195.

²⁶⁷ Stansfield, 33-4.

²⁶⁸ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 13.

tried in our islands, fleets and armies.”²⁶⁹ Due to bureaucratic bungling and an ear deaf to scientific advice, the English government had potentially lost thousands of soldiers to disease, a critical matter for a nation now deeply engaged in war.

His professional competence established, Beddoes put forth his “political catechism,” a series of questions he sought to address, from the fundamentally liberal – “Do unjust laws, encroachments on freedom by persons in power, or other public impediments prevent my hands from executing what my head has devised?” – and radical – “Do the fruits of my industry or possessions go to delude the weak, bribe the corrupt, and slaughter the innocent?” – to the empirical and medical: “What are the causes of the growing happiness or misery, improvement or degeneracy of the community?”²⁷⁰

Addressing these questions of industry, morality, and the public good, Beddoes repeatedly juxtaposed the effects of a manipulative and despotic government against the potential of rational, empirical governance. The rise of such an appealing but insubstantial ruler as Pitt would have proven impossible if the public had reasoned dispassionately. Indeed, experience and positive trends in education were leading in such a direction: within a generation, scepticism would become universal and infatuation with leaders extirpated by the sufferings of war.²⁷¹ Beddoes not only called for an empirical application of the new chemistry, but also the discoveries of Scottish liberal economics; the doctrines of Josiah Tucker, David Hume, and Adam Smith would ensure greater national wealth through freer international trade – bolstered by a waning of xenophobia among the people.²⁷² On the Irish question, Beddoes reviled Pitt’s adherence to a system of subservience. Suppressing Irish production was both a moral and

²⁶⁹ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 13.

²⁷⁰ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 15.

²⁷¹ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 30.

²⁷² Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 79.

economic failure, and he cited Smith's assertion in the *Wealth of Nations* that inhibiting a people's industry was a "violation of the most sacred rights of mankind."²⁷³ The underlying enlightenment philosophy was simple, and ready at hand to his readers: "the *prosperous* condition of a community depends on the intelligence of the farmer ; the inventive genius of the mechanic ; the enterprising spirit of the merchant ; on the increase of capital, and the multiplication of those means, by which labour and time are annihilated."²⁷⁴ Emphasis on industry, innovation, the education necessary for their development, and a free market which would not hold them back were the formulae for a productive, healthy society. He continued, "other circumstances being equal, these advantages are always exactly in proportion to the liberty enjoyed by any people."²⁷⁵

This philosophy of political economy established, he defined the purpose of the government and Pitt's office itself: "As the purest and most permanent enjoyment of man is derived from the exercise of his rational faculties, it must be the constant care of a philanthropic minister to promote the dissemination of knowledge," particularly the dissemination of the insights of science, as "besides the liberalizing effect of knowledge, it is the immediate interest of every individual exposed to their influence, to be acquainted with the properties of the various agents in nature."²⁷⁶ Scientific ignorance harmed health and lost lives, whether in times of war or peace.

Summarizing his argument, he reflected the conflict between his optimism in human improvement and despair at political events in France and Britain. He still maintained some of the millenarian hope with which he had met the fall of the Bastille, and the sheer terror of a slide

²⁷³ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 94

²⁷⁴ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 115.

²⁷⁵ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 115.

²⁷⁶ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 138.

into Robespierrean despotism as presaged by the Gagging Bills. When Pitt arrived, he argued, the public in Britain and indeed Europe were evidencing a shifting zeitgeist, comparable to the Reformation. A sense of justice had been growing. The oppressed peoples of Europe became impatient of their station and now stood at a crossroads, capable of taking liberty into their own hands but bound by their government and their own ignorance. Realizing the public's potential was the capability of the administration and, in this regard, Pitt had utterly failed. Had he irreversibly abolished the slave trade, for example, the state of Europe would be incredibly improved, and the morals of the British people improved by the example:

Gratification of that desire to redress the wrongs of Africa which the great majority among us once so ardently felt, might have prevented part of the evils, that have since afflicted Europe. So unprecedented an act of national justice was not incapable of generating a kindness of disposition, such as no people have yet felt. Each Briton would have felt in himself and perceived in his neighbour new elevation of mind. Each would have been anxious to increase his stock of generous pride...The sunshine of benevolence might have warmed the cold heart, and illuminated the gloomy mind, of the minister himself.²⁷⁷

So too, had Pitt been a moral and moderate man, he would have intervened against the continental attacks on France, and by the "same stroke of policy would have disarmed the internal enemies of France."²⁷⁸ Britain would not have suffered war, debt, famine, and the disapprobation of the world. Without the war, innovation would proceed rapidly, trade with foreign powers would expand, and international relations would improve.²⁷⁹ The Bourbons would have survived, along with the nobility and clergy, though with their powers justly curtailed, and the French Revolution would have remained in the hands of the moderates as Beddoes had always hoped. Thus he placed the Jacobin despotism and terror at the hands, not of the French, but the Pitt administration itself.

²⁷⁷ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 198.

²⁷⁸ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 198-9.

²⁷⁹ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 198-9.

While these ebullient, even rapturous predictions appear hardly credible, they reflect the hopes of a man convinced of endless possibilities of human potential and the paramount importance of enlightenment and equality in crafting a society. If, as he had long argued, oppression, ignorance, and tyranny brutalized the public, it was conversely possible to generate a “kindness of disposition” through the elimination of gross abuses. The individual and the body politic were morally malleable, and improving both required the application of the principles of scientific inquiry and equality to the public writ large. While Beddoes regretted that his hoped-for future had not arrived, it might still be possible to undo some of the damage and move toward a rational society.

The Merits of Mr. Pitt gained praise from the radical community, though failing to sell as well as Beddoes had hoped.²⁸⁰ Coleridge repeated and analyzed the tract’s arguments in his *Watchman* no. 9, William Hazlitt later recommended the work,²⁸¹ the *Whig Monthly Review* declared Beddoes a “bold and original thinker,”²⁸² while the *English Review* praised his content and ardour if not his style.²⁸³ Beddoes had promised a continuation to describe Pitt’s merits as a war minister, and so worked on his final overtly political tract.

A Final Sortie – An Appeal to the Elite

Following the publication of the *Public Merits of Mr. Pitt*, Beddoes remained distraught by the administration’s injustice, and grew increasingly worried about the twin dangers of French invasion and hardship-inspired mob violence. He was keenly watching the fallout of Bristol’s

²⁸⁰ He wrote to Giddy of Johnson, “If I did not think him an honest man and the minister perfectly callous I should suspect foul play.” Beddoes to Giddy, DG 42/20, 6/29/1796.

²⁸¹ William Hazlitt, *Political essays, with sketches of public characters* (London: W. Hone, 1819), 393n.

²⁸² Quoted in Jay, 146.

²⁸³ Coleridge, *The Watchman*, 305-15; S. Highley and J. Murray, eds., *The English Review* (London, 1796), 28:347-50.

1795 riots. While he acknowledged riots must be met by martial force, it was the failure of the judiciary which raised his ire. Four had been tried for the crimes, he wrote Giddy, and “one was condemned upon incompetent evidence.”²⁸⁴ The judge had abandoned justice and the verdict had produced a public ferment that worried Beddoes. He had the evidence, he claimed, to prove the conviction a miscarriage of justice, and had considered publishing an account of the proceedings, but dared not incite another enemy, having just unleashed his attack on Pitt.

As Britain found itself fighting alone against France, the British public was terrorized by the possibility of invasion, which was in fact planned for Ireland.²⁸⁵ Beddoes was captured by the same opinion and wrote bluntly to Giddy in late 1796, noting “We shall be invaded, I believe,” and the fear continued unabated.²⁸⁶ Still hoping that such an event might be averted by altering public opinion, Beddoes now addressed himself to Pitt’s support base, the landed aristocracy and gentry. His treatise, *Alternatives Compared; or, What Shall the Rich do to be Safe?*, was at heart an extension of his critique of Pitt alloyed with his arguments for the end of the war, tailored to appeal to the landed – what he called *patrician* – classes, gentry and aristocracy alike. As ever, he attempted to describe his opinion as expert, and he introduced politics as a field amenable to scientific inquiry, accessible to the same empiricists who studied the physical world. A temperate and “philosophically humble” observer, such as himself, could discover and shed light on political truths, regardless of his plebian origins.²⁸⁷

The rich had proven entirely indifferent to the scale of suffering wrought by the war, from the heavy military losses to the starvation of twenty thousand poor families.²⁸⁸ If appeals to human feeling as he had made in his *Letter to Pitt* were doomed to failure, an appeal to self-

²⁸⁴ Beddoes to Giddy, DG 42/23, 23/4/1796.

²⁸⁵ Thompson, 84.

²⁸⁶ Beddoes to Giddy, DG 42/7, 21/8/1796.

²⁸⁷ Beddoes, *Alternatives Compared*, 1-2.

²⁸⁸ Beddoes, *Alternatives Compared*, 11.

interest was necessary. The rich, he argued, had supported the administration out of feeling for their peers in France and for fear that the Jacobin ideology of civic equality which had razed the nobility and clergy in that nation might jump the channel if not contained.²⁸⁹ The war aims of supporting the French nobility and restoring their pre-revolutionary rights had long since been abandoned. Jacobinism had not been crushed and the administration was desperately trying to expunge those aims from memory. In fact, the French war machine was proving stronger than ever, and Britain would have no more success in imposing its will on the continent as it had in imposing it on the American colonies. The critical difference was that the Americans could not counter attack nor invade.²⁹⁰ Thus, far from success and safety, war had decimated Britain's previous "unprecedented stature," and now threatened not only invasion but also serious civic discontent. The national outrage at the Gagging Bills and the large peace protests might signal only the start; the people would awake to the administration's incompetence, as they had in the 1780s, and rising unrest and harsher laws would continue the cycle.²⁹¹ Suppression of discontent might be possible but, he asked, "would it be safe?"²⁹² It would be far better if the opulent halted the cycle. As he saw it, four possibilities presented themselves. The first three – returning the administration to the original anti-Jacobin goals of the war, replacing the administration with Burke and his allies, and sitting tight in hopes of a change of fortune – were unworthy of comment. The only serious possibility was that "We may bestir ourselves against the ministry with as much alertness as if we had to rescue all we hold dear from a building of flames."²⁹³

Published in March, *Alternatives Compared* coincided with the LCS' mobilization of meetings to petition the King for peace and the removal of the Pitt administration, all but one of

²⁸⁹ Beddoes, *Alternatives Compared*, 4-5.

²⁹⁰ Beddoes, *Alternatives Compared*, 13-4.

²⁹¹ Beddoes, *Alternatives Compared*, 17, 59.

²⁹² Beddoes, *Alternatives Compared*, 67.

²⁹³ Beddoes, *Alternatives Compared*, 16.

which were shut down or prevented.²⁹⁴ Beddoes watched this crackdown with horror, and added his thoughts on the matter to a second edition. His efforts had been of no use: his advice was far too late and the rich had proven incorrigible by “their conduct at the meetings, respecting the dismissal of ministers.”²⁹⁵ Secure in their position, they had resorted to unjust conduct from which “the friends of liberty and peace religiously abstained.”²⁹⁶

Far more dire events had transpired between publications. Sailors at Spithead had mutinied in April over stagnant pay and a variety of grievances, in turn inspiring a more radical mutiny at the Thames’ Nore anchorage. The Nore mutineers blockaded London and considered defection to France while demanding, among other things, an end to the war and the dissolution of parliament, producing a standoff with the government, army, and city militia which had ended in convictions, executions, and widespread fears that the mutinies were in fact Jacobin plots.²⁹⁷ Naturally, the mutineers attracted numerous apologists to their cause. Beddoes was in fact impressed by the Spithead mutiny, which had proceeded with great restraint, order, and the maintenance of naval discipline. Here was further evidence of the improvement of the lower classes, or the third estate, “through the channel of curiosity.”²⁹⁸ “Among the facts that might be adduced to shew the improvement of the lower classes,” he argued, “the conduct of the seamen at Portsmouth is perhaps the most decisive. Here we have seen a set of men, the least accustomed to read, reflect, and act systematically, exhibiting the ability of consummate politicians, and the moderation of the most chastised philosophers.”²⁹⁹ He could not be so sanguine about the Nore mutiny, however, which had exhibited none of that discipline. He

²⁹⁴ Emsley, *British Society and the French Wars*, 63.

²⁹⁵ Beddoes, *Alternatives Compared*, iii.

²⁹⁶ Beddoes, *Alternatives Compared*, iii.

²⁹⁷ Thompson, 183-4.

²⁹⁸ Beddoes, *Alternatives Compared*, v.

²⁹⁹ Beddoes, *Alternatives Compared*, v.

described the mutineers' actions as unwarrantable and demands as unreasonable, but placed blame for both crises at Pitt's feet, as he had ignored the sailors' plight and previous petitions for increased wages for several years.

An End to Protest and Return to Education

This, however, proved Beddoes' last salvo in the political realm, and not coincidentally. Despite its major gains in 1795 following the Treason Trials, the reform movement as a whole was under heavy siege and suffering attrition from which it would never recover. The *Anti-Jacobin* continued its attacks on reformers, radicals, and peace-protestors. Britain's allies in the continental war were gone and the nation found itself facing Napoleon's army across the channel planning for invasion. French apologists of old were cast, as ever, as a French fifth-column, now an enemy to the public in the event of an invasion. The invasion threat bolstered patriotism through 1798, and protesting a war of survival was far more difficult to justify than protesting an ideological war, especially as it became a war against Bonaparte's expansionist empire.³⁰⁰ James Keir, despite his agreement with Beddoes' politics, was soon part of his local militia, setting the nation's defense above political principles.³⁰¹ Coleridge too announced "I have snapped my squeaking baby-trumpet of Sedition..."³⁰² The crackdown on radical societies intensified, with the arrest of numerous LCS members, and Beddoes' London publisher, Joseph Johnson, was imprisoned for seditious libel in 1799.³⁰³ The suspension of Habeas Corpus was renewed, and Pitt extended the restrictions of the Gagging Bills to prevent all gatherings with the 1799

³⁰⁰ Emsley, *British Society and the French Wars*, 65-7; Porter, *Doctor of Society*, 16.

³⁰¹ Jay, 167.

³⁰² Coleridge quoted in Porter, *The Creation of the Modern World*, 462.

³⁰³ Emsley, *British Society and the French Wars*, 68.

Combination Act.³⁰⁴ The scale of protest which met the Gagging Bills was not repeated, as Britain came to accept its war-time measures.

In 1797, John Horne Tooke had declared reform “dead and buried.”³⁰⁵ The LCS organized its last major protest in that year, only to be quickly dispersed, and an increasing number of reformers, like Priestley and Thomas Cooper before them, emigrated to America or the European continent.³⁰⁶ For Beddoes, too, agitation for reform was dead. His political career had followed the track of the wider reform movement – an initial ebullience at revolution and defense of the French soon tempered by Jacobinism and atrocity, ideological repression, a move to peace protest, and finally silence on political matters. His attempts to sway the public in 1796 and 1797 had failed, and the Pitt administration survived. Though he had for a decade reviled and argued against British domination of Ireland and its massive troop presence on the island, the 1798 Irish Rebellion did not bring him back to writing, despite its republican nature. Instead he refocused his attention on his medical practice and the intensive research of nitrous oxide at the Pneumatic Institution, finally opened in 1799, while interacting with the circle of young and brilliant men who surrounded him, including his new assistant, Humphry Davy, who would prove his longest lasting influence.

Despite the death of the protest movement, Beddoes’ ideals and hopes for improvement in politics and public morals persisted. Like the radical leader John Thelwall, he turned to lecturing as his method of fostering progress, organizing public lectures on science and medicine to improve the public while avoiding government restrictions on overtly political meetings. In 1792 he had upheld education, particularly scientific education, as a panacea against barbarity and despotism, and he returned to that effort in 1797. He prepared a series of anatomical lectures

³⁰⁴ Goodwin, 454-7.

³⁰⁵ Goodwin, 469.

³⁰⁶ Goodwin, 395, 413.

to provide practical medical knowledge to the public, in line with his 1792 *Guide for Self Preservation*.³⁰⁷ His lectures on geology and chemistry in Bristol went well, and he noted to Giddy that they had political consequences. They were “attended by persons of opposite parties,” who would “acquire in common a number of agreeable ideas — and the effect may be to spare some acts of barbarity in the times that are approaching.”³⁰⁸ Scientific education, he hoped, would achieve what his political tracts had not, as knowledge of the natural world would foster political liberalism, even in the hardest-dyed conservative or reactionary.³⁰⁹

³⁰⁷ Beddoes to Giddy, DG 42/29, 8/10/1797.

³⁰⁸ Beddoes to Giddy, DG 42/2, 14/4/1798.

³⁰⁹ Stansfield, 190-1.

III – Making a Radical: Locke, Lunars, and the British Enlightenment

With his political career in view, it remains to discuss three interrelated questions. First, to what extent was Beddoes a radical, a revolutionary, and a fifth-column threat to the British state as Burke would suggest, as opposed to a proud and loyal, if discontented, Briton? Second, was his ideology in any regard the product of his science, whether the loathed Lavoisierian, materialistic French science or otherwise, or did it emerge from a fundamentally English tradition? Finally, what can his ideas' lineage tell us about the intellectual culture of his era? Despite his fiery rhetoric and support for the death of Louis XVI, Beddoes was a moderate and passive republican, who sought to expand an extant enlightenment culture rather than tear down national institutions. So too, he was not Burke's despised calculator: his political views did not extend from scientific study (though he would draw on science for evidence of equality when he could) but from a British philosophical tradition.

Beddoes' philosophical pedigree and the relatively conservative nature of his radicalism provide insight into a recent debate over the nature of Enlightenment itself, namely, whether the Enlightenment was, as traditional scholarship contended or assumed, a homogeneous socio-philosophical movement emergent from the *philosophes* of France and the *Encyclopédie*,³¹⁰ or otherwise a series of enlightenments with national context, unique though deeply interconnected movements with individual characteristics. The latter is the historical portrait which has been painted in Britain's case, by Margaret Jacob, Roy Porter, and Peter Jones, who identify in Britain a unique social fermentation throughout the eighteenth century. Thinkers generated and debated ideas in coffee houses, in philosophical societies, through the exploding print market, and in the

³¹⁰ Porter, *The Creation of the Modern World*, 3-5; Peter Jones, *Industrial Enlightenment: Science, Technology, and Culture in Birmingham and the West Midlands, 1760-1820* (Manchester: Manchester University Press, 2008), 4-6.

interface between science and industry.³¹¹ Philosophical, scientific, economic, and political ideas generated in Britain, whether by Locke, Newton, Smith, or Hume, were deeply influential among the reading public (Locke in particular sold well, and his ideas infiltrated the popular culture and were disseminated in publications like *The Spectator*).³¹² That intellectual fermentation maintained a characteristic “Englishness,” with a reliance on practical, Newtonian, science and mechanical philosophy; an emphasis on Lockean personal liberty, improvement, and private property (evolving into the Scottish *laissez-faire* economics); and a need to defend enlightenment already attained in the Glorious Revolution.³¹³ Beddoes was an heir to this ferment and situated within a network of enlightenment discussion. He repeatedly returned to Locke and discussed Berkeley and Hume in his letters to Darwin, and Smith in his letters to Giddy.³¹⁴ Porter describes the panoply of coffeehouses, clubs, meeting houses, but gave emphasis to Beddoes’ England: “There were many Englands, but one was the stage of thrusting achievers, sold on science...aspiring provincials, dissenters.”³¹⁵

The British pedigree of Beddoes’ thought informs our knowledge of the intellectual history of Britain; insofar as he was an heir to a century of novel British ideas and thought, he represents the unique character of enlightenment in Britain. As he was deeply connected to many of the standard-bearers of a British enlightenment, whose ideas permeated and influenced his writing, and as his ideas were rarely uniquely held, he is highly characteristic of the influence of the British enlightenment tradition – liberal and progressive, highly idiosyncratic but committed to discussion with peers in meeting groups and with the public in print.

³¹¹ See especially Porter, *The Creation of the Modern World*, and Jacob, *Cultural Meaning of the Scientific Revolution*.

³¹² Porter, *The Creation of the Modern World*, 67-9.

³¹³ Jacob, *The Cultural Meaning of the Scientific Revolution*, 139; Porter, *The Creation of the Modern World*, 482.

³¹⁴ King-Hele, 94C, 95F.

³¹⁵ Porter, *The Creation of the Modern World*, 46.

A Passive Revolutionary

The first question, the extent of Beddoes' radicalism and whether or not he was a subversive threat, illustrates a difference of optics which was clear as soon the revolution controversy began, beautifully elucidated by Albert Goodwin. The anti-Jacobins were increasingly successful through the 1790s at painting early friends of the French Revolution, parliamentary reformers, dissenters, and the peace movement as potential revolutionaries. As Beddoes' active political career reached its end, Burke railed against Britain's supposed 80,000 "pure Jacobins, utterly incapable of amendment," describing them, as ever, as an atheistic, lawless demographic which threatened to collude with the French government, all innovators, Levellers, and the products of French rationalist philosophy.³¹⁶ Against the sticky attribution and connotations of *Jacobinism*, the self-described Friends of Liberty countered that few of their ranks were atheists, their calls for equality reflected not Levelling but a desire for the elimination of unjust and corrupt practices and institutions – whether game laws or enormous clerical privileges – and, most importantly, "their political principles were...of pure English growth, derived from Locke, Sydney, Marvell and Milton...."³¹⁷ Goodwin concludes that the latter description was accurate for the vast majority of the Friends of Liberty, with only small pockets of radicals showing interest in sowing disorder or assisting the French.³¹⁸

Beddoes matched the description Burke had set out more closely than most. Beddoes' public criticisms of the French and British clergy in his *Reasons* were stark and untempered, and revealed his own contempt for Christian doctrine and the Church of England. Discussing moralistic education in his *Letter on Early Instruction*, he belittled religious education and

³¹⁶ Burke quoted in Goodwin, 470.

³¹⁷ Goodwin, 470-2.

³¹⁸ Goodwin, 482.

defended deism explicitly. This was enough to fit him within the era's concept of atheism and made him appear to be a disestablishmentarian along with Priestley. Unlike the vast majority of his fellow reformers, Beddoes had extensive links with the derided French scientific community, was a chemist, and had accepted Lavoisier's system of chemistry against the inclination of the nation, and even of his friends like Watt. He was a supporter of innovation in politics as in science, medicine, and economics. As an innovator himself, he saw the need to defend himself against claims of projecting, which were quick to follow him. He was an ardent supporter and defender of the French Revolution in its early days, and hoped and expected to see republicanism burgeon in England. It was this set of characteristics which marked Beddoes at conservative Oxford as a violent, seducing democrat and led the government to intervene and expedite his expulsion, before placing him on the Seditious Persons list and considering prosecution. These characteristics prompted *The Golden Age* and its successor, the anti-Jacobin mockery against his Pneumatic Institution, the tarring of pneumatic medicine by London doctors, and Joseph Banks' refusal to endorse the Institution.³¹⁹

Regardless of anti-Jacobins' conclusions, however, Beddoes was by no means an active threat to the state, but closely fit the self-definition of the Friends of Liberty. His writings are utterly devoid of calls for aggression, rebellion, revolution, armed-resistance, or indeed unlawful behavior of any sort. When he wrote in his *Defense of the Bill of Rights*, "I deprecate all violence. I have no talents for pillage," he spoke truly.³²⁰ Republicanism was the only logical organization for a society of innately equal citizens, a fact he believed obvious to the enlightened mind. Thus he hoped English republicanism would arrive not by violent political action, but

³¹⁹ It should be noted that, per Jay, 146, Banks rejected Jenner's inoculations on similar medical grounds, so Jacobinism may have only been part. Jenner's science was likewise mocked by Gillray in the anti-Jacobin as absurd projecting.

³²⁰ Beddoes, *A Word in Defence of the Bill of Rights*, 8.

would emerge from a demographic shift in morality and ideology. Likewise, he believed the Friends of Liberty must fight against despotism in India, but the fight would take place in print and in the arena of public opinion.³²¹ So as Beddoes despaired at sans-culottism, violence, and terror in France, he hoped and expected that British industry would raise the standard of living, just political action would raise the morals of the classes, education would inspire empathetic and egalitarian thinking, and the application of chemistry and pneumatic medicine would catalyze all three. Revolution would be brought by the shift in morals, conditions, and knowledge, not by civil revolt. Beddoes believed he was in the midst of a shift in the zeitgeist, and wrote of the “increased liberality of the age”³²² and the “republican spirit” becoming universal,³²³ with a premature and soon abandoned belief that the country was rapidly democratizing around him.

Like so many of his conservative friends and fellow reformers, Beddoes was unsettled by the prospect of a violent revolution, especially in immediate light of the French experience. He was disillusioned by the “beasts broke loose” in France and the manipulability of the British poor. He harboured an anxiety, like Watt, Burke, Paine, and countless others, of violence from the poor. Watt feared an anarchist, Levelling mob, and Burke one directed by Francophile projectors, while Beddoes feared a mob morally debased by state institutions, like that which had burned Priestley’s laboratory, whether anarchic or directed by a seemingly despotic, Robespierrean leader like Pitt. Thus, when he advised the rich to promote peace and reform for the sake of their security, he was reflecting his own middle-class fear of “general fermentation among the labouring class.”³²⁴ While riots at home, bloody sans-culottes, and the manipulation

³²¹ With publications such as *Alexander’s Expedition*.

³²² Beddoes to Giddy, DG 41/2, 7/41793.

³²³ Beddoes to Giddy, DG 41/14, 18/7/1792.

³²⁴ Beddoes to Giddy, DG 42/30, 14/3/1795.

of the mob at Robespierre's hands were enough to instill such apprehensions, they were unnecessary; Beddoes desired to maintain British liberty, landownership, and culture in general, but with an effort to improve and reform. Thus, he saw it better to enact reforms quickly and preemptively to ward off severe threats to the body politic, the very goals expressed by the moderate Mackintosh. In the case of British imperialism, Beddoes did not want to be immediately rid of Britain's island possessions, though they were costly and unjust, as "the consequence would be ruinous to many families; and it is with nations as with individuals; neither can suddenly depart without risque from bad habits."³²⁵ Thus his ecstatic hopes for improvement were tempered by fear and a philosophical commitment to the Lockean doctrine of individual property and liberty which characterized the British Enlightenment.³²⁶ He was well in line with the wider reformist agenda of fighting discrimination, poverty, and misery, but did not wish to undermine British science and industry, which liberty and innovation had sustained.³²⁷

As the radical nature of Beddoes' politics was tempered by support of individual property and a fear of the mob, so too was his support of the revolutionary government less radical than it appeared. Here again we find a crucial difference of optics, the polarized opinions of the French experiment which formed the revolution controversy. Burke, as ever, set the tone, painting the Revolution as a doomed attempt to tear down the moral basis of the state – its institutions, constitution, historical laws, natural and stable order – and replace it with the wild-eyed experiments of projectors, *philosophes*, and chemists, the untamed ideas of, he quipped sarcastically, "this enlightened age."³²⁸ The "enlightened" men of England, Price, Priestley, and Paine bearing the banner, sought to experiment with the self-same French philosophy. When

³²⁵ Beddoes, *Where would be the Harm of a Speedy Peace*, 9.

³²⁶ Roy Porter, "The Enlightenment in England," in *The Enlightenment in National Context*, edited by Roy Porter and Mikulas Teich (Cambridge: Cambridge University Press, 1981), 9.

³²⁷ Goodwin, 471-2.

³²⁸ Burke, 74.

France descended, as he had predicted in 1790, into terror and despotism, it was safe to conclude that the enlightenment experiment had utterly failed.

Beddoes' revolutionary ideal, however, was moderate, and he could not accept that the experiment had failed. A test of enlightenment-based government had not yet been finished in France. Begun in 1789, directed by moderate and scientifically-informed individuals, France had seen great early success. In 1792 he had hailed the benefits: improvement of agriculture, reduction of poverty, improvement of taxation schemes, efficient government, and reductions in debt.³²⁹ Yet the moderates had been assaulted from without by anti-republican states and from within by royalist forces, and undermined by the Pitt government.³³⁰ The French experiment had been corrupted and ultimately abandoned by the rise of Jacobin despotism. Far from being the product of moderate, liberal, rational enlightenment, French despotism was the product of the same antirational political movement extant in England, which took advantage of a morally debased poor and attacked similar moderates and philosophers, as seen in the Church and King riots.

The desired experiment had already been run in Britain on a small scale, particularly in the Midlands and in the nation's scientific and philosophical networks. I push the metaphor as Beddoes was apt to use it himself – in 1796, with finances and the war effort exceedingly dire, he expected in true empirical fashion that “[a]nother year will certainly decide experimentally between the opposite doctrines” of politics and economics in England and France alike, between warmonger and reformer, between “Pitt & Grey.”³³¹ The experiment had been conducted for decades past in the coffee houses, clubs, philosophical societies, and informal groups of diverse thinkers like that which met at Beddoes' Bristol home, of a kind that Porter described most aptly

³²⁹ Beddoes, *Reasons for Believing the Friends of Liberty*, 2.

³³⁰ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 198-9

³³¹ Beddoes to Giddy, DG 42/23, 4/23/1796.

as “miniature free republics of rational society.”³³² These were the centres which had fostered and transmitted the culture of enlightenment. The locus most important to Beddoes’ opinion was of course the Lunar Society, among whom were the majority of his network of communicants on matters philosophical, political, and scientific. It formed the basis of what is emerging among historians attuned to provincial enlightenment as the “Midlands Enlightenment,”³³³ and what Peter Jones has described as an “effort to construct an open and non-hierarchical model of Enlightenment discourse....”³³⁴

The Lunar society was not merely Beddoes’ network, but formed the model for organization, interaction, and discourse. To quote Levere, “Their successes in industry and the breadth of their scientific culture were mutually reinforcing....”³³⁵ Such achievement proved the Lunar experiment. If free thought, free enterprise, and the progressive ideas and politics which defined the society had entailed scientific discovery, practical innovation, and industrial generation of wealth, surely the model should be applied on a wider scale. Beddoes extended the Lunar model of free interdisciplinary discourse to his Bristol circle and, as Porter has argued, he modeled his Pneumatic Institution on British philosophical circles.³³⁶ When he defended the Bill of Rights in 1795, Beddoes drew on the success of such circles. He connected a century of British science, innovation, and prosperity with the strength of British liberty.

In this regard, Beddoes’ career lends support to another national feature of the British Enlightenment, that its proponents had to “*defend* it once achieved – theirs became a labour not

³³² Porter, *The Creation of the Modern World*, 22.

³³³ Gavin Budge, “Science and Soul in the Midlands Enlightenment,” *Journal for Eighteenth Century Studies* 30, no. 2 (2007), 157.

³³⁴ Jones, “Living the Enlightenment,” 169.

³³⁵ Trevor Levere, “Dr Thomas Beddoes (1760–1808) and the Lunar Society of Birmingham: Collaborations in Medicine and Science,” *Journal for Eighteenth Century Studies* 30, no. 2 (2007), 222.

³³⁶ Porter, *Doctor of Society*, 44. The Pneumatic Institution became a locus for his circle, with self-experimentation with laughing gas by Coleridge, Davy, et. Al.

just of criticizing and demolishing but of explaining, vindicating and extending.”³³⁷ Though Beddoes believed in rapid progress and sought innovation, his political radicalism reflected the desire to protect and extend the Lunar model. The Lunar society was emblematic of the best virtues of British culture and the British constitution, which had produced the enormous progress of the seventeenth and eighteenth centuries. This progress, far from being inevitable, however, was being hijacked by despots and public ignorance, and needed defending in print. Thus Beddoes repeatedly presented the Birmingham riots as a crime against morality, philosophy, and science alike, while promoting the connection between liberty and useful science. Beddoes was an ardent revolutionary apologist so long as the French Revolution could be cast as a moderate, philosophical enterprise. He sought an English republic, but he did not seek active revolution. His desired state already existed in fragments and needed only to be extended. Its ideals only needed to be transmitted to Parliament and to the general public.

Egalitarianism and the Lockean Theory of Mind

Was Beddoes, however, one of Burke’s dreaded calculators, infected by the contagion of French science and philosophy? Can his progressive politics be attributed to the scientific discoveries being made around him or even to his own chemical and medical research? It appears not. He was not one to cite medical evidence as proof of his political doctrines and, unlike a great many writers of his day (notably Priestley and Burke himself),³³⁸ he only very rarely used scientific analogy and rhetoric in his writing.³³⁹ His doctrines could not have been

³³⁷ Porter, *The Creation of the Modern World*, 482.

³³⁸ See Maurice Crosland, “The Image of Science as a Threat: Burke versus Priestley and the ‘Philosophic Revolution,’”

³³⁹ The most obvious example, mentioned above, was noting removal of Briton’s liberty was “to cut by one cruel stroke the nerve of accretion, by which each Englishman feels for the welfare or adversity of all – the nerve which connects us all with the sensorium of the State.” Beddoes, *A Word in Defence of the Bill of Rights*, 4. Otherwise, in his *Merits of Pitt*, occasional comparison was made between political doctrines and astrological pseudoscience.

the outcome of a dispassionate consideration of scientific evidence, as he had been an iconoclast even as a student, long before establishing himself as a physician and chemist.³⁴⁰ And yet, his politics *were* a product of eighteenth-century scientific *culture*, informed by the philosophy of Locke, mediated through diverse economists, philosophers, and industrialists.

Beddoes was a Lockean, thoroughly and explicitly, whether in his educational schemes, defense of toleration, or desire for empirically-based policy. In a foray into mathematics and philosophy, his *Observations on the nature of demonstrative evidence*, he even attempted to extend Locke's empiricism to mathematical proofs.³⁴¹ Above all, he was fundamentally a Lockean in his theory of mind. "The soul of a child...resides in his senses," he argued in his *Letter on Education*, and thus the best method of education was through sensory experience.³⁴² Most importantly, however, he followed the argument of Locke's *Essay Concerning Human Understanding* and asserted the human mind was originally in "a blank state."³⁴³ The political implications of the "blank slate," as it is better known, were enormous. If all individuals began equally empty, class and rank had no physiological or philosophical justification; all could rise given the right circumstance and all could be improved through education. Beddoes' egalitarianism and zeal for education are perfectly natural in this context. Within Lockean philosophy, man was educable, and the intellectual potential of the classes varied much less than the elite would suspect.³⁴⁴

The indissoluble link between science and the politics of human improvement in Beddoes' thinking was not entirely Lockean. It could be traced through a century of British

Compare this with Priestley's continual use of chemical metaphor in his sermons and tracts, and Burke's adoption of the same.

³⁴⁰ See note on his iconoclasm in the introduction.

³⁴¹ Beddoes, *Observations on the Nature of Demonstrative Evidence*.

³⁴² Beddoes, *Extract of a Letter on Early Instruction*, 2.

³⁴³ Thomas Beddoes, *Hygëia: Or Essays Moral and Medical on the Cause affecting the Personal State of our Middling and Affluent Classes* (Bristol: Phillips, 1802), 1:53.

³⁴⁴ Porter, *Doctor of Society*, 79.

debate about Locke (in which Beddoes took part),³⁴⁵ and especially the materialist psychology of David Hartley. Locke had industriously sought to shield himself from religious criticism by distancing himself from material ideas of the mind. Hartley, however, had done no such thing, adopting Locke's associationism and principle of the blank slate as well the principles of Newtonian mechanics to produce an entirely materialist science of the mind. This theory had enormous appeal to progressively and scientifically-minded men like Beddoes who wished to extend the benefits of science to the improvement of human nature. Indeed, Hartley's influence was nowhere greater than upon the Rational Dissenters, Richard Price and Joseph Priestley, and, by consequence, Beddoes' circle;³⁴⁶ Priestley had taken great pains to republish Hartley's work and thus save it from oblivion, which Beddoes considered a great accomplishment. Its near loss was "a proof paramount to all others, of the unconcern of mankind about the true means and ease of happiness."³⁴⁷ Erasmus Darwin's *Zoonomia* – which Beddoes had read with great interest and provided comment on before its publication – was founded upon Hartley's neurology. Coleridge would name his firstborn son Hartley – almost certainly introduced to this science by Beddoes.³⁴⁸ Outside the circle, Godwin's 1793 work *Political Justice*, which shared Beddoes' hopes of human perfectibility, or at least a saltatory change of human nature, was likewise Hartleian to the core.³⁴⁹ This alliance of radicalism with Hartley's work suggests that Beddoes and his fellow idealists found in Locke and Hartley a scientific justification for an egalitarian philosophy. But we must not take Beddoes' liberalism to simply be the product of reading Locke and Hartley, or dispassionately evaluating the evidence of his theory of mind. Locke's ideas so thoroughly

³⁴⁵ Note for example, Beddoes' discussion of Horne Tooke's elaboration of Locke in *Observations on the Nature of Demonstrative Evidence*.

³⁴⁶ Goodwin, 73.

³⁴⁷ Jay 55-6; Stock, Appendix III.

³⁴⁸ Porter, *The Creation of the Modern World*, 182-3.

³⁴⁹ Porter, *The Creation of the Modern World*, 182-3.

permeated the culture of eighteenth-century Britain that they were even present in the works of Richardson and Sterne, which Beddoes had read and respected.³⁵⁰

But if the doctrine of the blank slate suggested or necessitated egalitarianism, could science not prove the equality of mankind? Beddoes believed it could; he found evidence from pathology, as diseases such as consumption did not respect class boundaries, (though many diseases confined themselves to the rich or poor, so far as they emerged from living conditions and lifestyle).³⁵¹ He went further however, and sought evidence of racial equality, conducting a remarkable experiment to verify his political and philosophical views early in his career. After concluding his poetic experiment, *Alexander's Expedition*, which rejected claims of Indian inferiority and relied upon explanations of imperial and religious oppression, he appended an essay, "On the complexion of the natives of hot countries, and the varieties of the human race."³⁵² Addressing the admittedly volatile question of human varieties and the debates over the mutability of racial features and the potential common origin of man, Beddoes sought to provide evidence that skin colour, at least, could be scientifically explained through recourse to varying environments. Here, he was influenced by the seminal anthropological work of Johann Blumenbach, who proposed the same climatic, anti-racial argument.³⁵³ Noting the effects of heat and light on oxygen in various substances, Beddoes noted, "These considerations led me to conjecture that the black complexion of certain races of men is owing to the discharge of the elastic fluid abovementioned, an operation I suppose owing to the power of the Sun in the

³⁵⁰ Porter, *The Creation of the Modern World*, 69-70.

³⁵¹ Stewart, 241; Beddoes, *Hygeia*, 1:77-8

³⁵² The details of this experiment were repeated for the public reader in volume 1 of his joint work with James Watt, *Considerations on the Medicinal Use and on the Production of Factitious Airs*, though mostly freed of the political context and commentary.

³⁵³ Beddoes, *Alexander's Expedition*, 78. For Blumenbach, see Stephen Jay Gould, *The Mismeasure of Man* (New York: W. W. Norton, 1996), 401-10.

countries they inhabit.”³⁵⁴ Unsatisfied with mere conjecture, he attempted a preliminary test:

I put a lock of Negro’s hair recently cut from his head, into a bottle full of oxygenated marine acid air, a substance which is well known to natural philosophers to have the power of discharging a great variety of colours. The hair in a short time became white with scarce any tinge of yellow.

At another time I prevailed upon a Negro to introduce his arm into a large jar full of the same elastic fluid, at the bottom of which there lay a small quantity of water impregnated with it. The back of the fore finger and part of the second lay in this water. Knowing the prodigious efficacy of this air, I desired the man to withdraw his arm as soon as he should be sensible of any pain... The arm being now withdrawn and examined, there appeared over its whole surface something of a grayish cast, like the colour of ointment of quicksilver. But the two fingers, where they had lain in the water, were remarkably changed. They had acquired very much the colour of white lead paint, but they did not retain this colour for many days.³⁵⁵

This result, he explained, followed from a relative lack of oxygen, readily supplied by the acid air. Consequently, “a careful consideration of the resources of chemistry would, I believe, furnish the European with the means of turning his skin black.”³⁵⁶ He proceeded to cite the work of Blumenbach and Soemmerring on the physical differences between Europeans and African bodies, including claims of difference in brain size (making sure to mention the Asiatic cranium was supposedly larger still than the European).

However, he was clear to note in concluding that scientific study could not be used to justify racism or slavery: “I hope it is unnecessary to protect against all attempts to wrest [these facts] to a palliation of that criminal commerce, which is as disgraceful to a nation, as robbery and murder to an individual... At all events, to whatever differences of conformation, moral and physical causes may have given rise, they can never repeal the great law of sympathy, nor confer upon us the right of doing, that which we should be unwilling under the same circumstances to suffer.”³⁵⁷ If he could account for some apparent racial differences through simple environment,

³⁵⁴ Beddoes, *Alexander’s Expedition*, 79.

³⁵⁵ Beddoes, *Alexander’s Expedition*, 79.

³⁵⁶ Beddoes, *Alexander’s Expedition*, 80.

³⁵⁷ Beddoes, *Alexander’s Expedition*, 82.

could not others be explained likewise given sufficient inquiry? And given such evidence of a common origin of all races, on what ground could the differentiation of humanity into “species” and slavery be supported? Yet, even in the rare case where Beddoes was willing to place science in support of his politics, he took care to tone down the implications of the facts lest his opponents draw racist conclusions where they could be drawn. The equality of man was assumed *a priori*, and science could provide evidence of it if required.

Beddoes and the British Enlightenment

Psychology was not the only field in which British enlightenment thinkers influenced Beddoes’ ideology. So too, in economics, political philosophy, education, and religion, he was deeply informed by British thinkers, rather than continental *philosophes*. His constellation of political and philosophical commitments, objectives, and connections show him to be an exemplar of enlightenment ideology – insofar as an idiosyncratic man could be in an era of idiosyncratic men and women. In religion, he followed the path of rationalization, past Unitarianism to deism. In philosophy as in politics he praised the moderns over the ancients, promoted skepticism, and promulgated a hope in progress, founded upon a powerful optimism in innate equality and thus potential for improvement of the individual. His political philosophy was utilitarian and pacific, defining government’s role to be the acquisition and dissemination of useful knowledge for the public well being, fostering trade rather than colonizing, encouraging industry and innovation rather than raising mobs against intellectual clubs. His ideal was the republic, founded upon those ideals engendered by the American Declaration of Independence and French *Declaration of the Rights of Man and Citizen*.

Here, the “Britishness” of his influences lends further credence to the concept of a British

Enlightenment. Newtonian and Lockean ideas promoted in the seventeenth and the eighteenth centuries formed the basis of the broad intellectual culture of the late eighteenth, in the hands of such thinkers and writers as Priestley, Price, Hume, Smith, Darwin, Hartley, Day, Edgeworth, and Paine. Beddoes and his contemporaries and juniors, like Watt Jr., Giddy, and Coleridge, even Wollstonecroft and Godwin, were heir to that enlightenment tradition at the very time it was asserting itself most radically and being put to death. Here, the emphasis on Locke proves important. In England, he was a best-seller. His thought formed one of the two intellectual pillars of the British enlightenment (along with Newton). In France, vaunted centre of the Enlightenment, he was not.³⁵⁸

We have already seen much of Beddoes' intellectual pedigree throughout his publications and discussion of influence on and from his science, but it will prove useful here to sketch the constellation of his influences and sources. They were fundamentally English,³⁵⁹ and the influence of Scottish enlightenment thinking likewise proved strong, which is unsurprising, given Beddoes' time at Edinburgh and the massive influence of Scottish science and thought on Britain in general. His great influence in chemistry, naturally, was Joseph Black, and he supported the novel geology of James Hutton which threatened traditional notions of biblical times and which, he noted, was then largely unknown in France.³⁶⁰ So too he was influenced by French and German sources, true to his wide, cosmopolitan reading, but his enlightenment

³⁵⁸ Porter notes, however, that French *philosophes* owed more to Locke and the English tradition than is usually acknowledged. Porter, *The Creation of the Modern World*, 67, 98; Locke was taken up, like Newton, by Voltaire, who was perhaps the chief anglophile of the French Enlightenment. Charles Coulston Gillispie, *The Edge Of Objectivity: An Essay in the History of Scientific Ideas* (Princeton, N.J.: Princeton University Press, 1960), 159.

³⁵⁹ While nationality was of enormous importance at this period, and while the distinction of Scottish Enlightenment thinking is useful earlier in the eighteenth century as a semi-separate tradition, distinguishing between Britain's nationalities and the term "British" itself is largely irrelevant in this discourse, especially when discussing Beddoes' cosmopolitan influences and peers, who often travelled as much as their ideas; Watt was Scottish, Edgeworth Anglo-Irish, and Price Welsh. Beddoes used the terms British and English interchangeably and saw no innate national differences.

³⁶⁰ Stansfield, 37, 41.

ideology did not have its origins in the likes of Diderot, Rousseau, and Voltaire.³⁶¹ In a list of the great discoverers he included recent and continental scientific paragons, Boerhaave, Linnaeus, and Lavoisier, but he gave top billing to the progenitors of the empirical tradition itself, to Locke and Newton.³⁶² This is no coincidence, nor is it at all surprising, as there existed an “(almost universal) coupling of Locke and Newton associated science with liberalism in a nexus of English empiricism.”³⁶³

In Beddoes’ critique of the Anglican church and his aversion to organized religion in general, we find a history of British enlightenment thought. Again the deepest roots are in Locke. Locke’s stripped-down, anti-theological form of Christianity, his discussion of the varieties of religion in the *Essay Concerning Human Understanding*, and his philosophy of empiricism over innatism promoted broader religious criticism and skepticism.³⁶⁴ This informed Price and Priestley’s rational, Unitarian religion, as well as the deism of Beddoes, Darwin, and Paine. Likewise we see the influence of the ideas of Hume, whose *The Natural History of Religion* and *Dialogues Concerning Natural Religion* attacked religious superstition and common dogma. These ideas percolated through the intellectual culture of Enlightenment Britain, such that Beddoes, condemning the French clergy, could accuse them of hypocritically disbelieving their own religion “upon good grounds.”³⁶⁵ So too, when he proposed an improved and scientific method of education drawn from Edgeworth and Day, he attacked religious education on explicitly Lockean grounds.³⁶⁶ Thus Beddoes and his circle matched (or pushed beyond) Jacob’s description of the man of the British enlightenment: educated, “vaguely

³⁶¹ Beddoes had read Voltaire, and admired Rousseau’s *Emile*, though he disagreed with many of his pronouncements on education and culture. Beddoes, *Hygëia*, 1:87-90.

³⁶² Beddoes, *Alexander’s Expedition*, v.

³⁶³ Gillispie, 159.

³⁶⁴ Porter, *The Creation of the Modern World*, 50-52, 59-60.

³⁶⁵ Beddoes, *Reasons for Believing the Friends of Liberty*, 1.

³⁶⁶ Beddoes, *Extract of a Letter on Early Instruction*, 2.

Christian.³⁶⁷

Useful Knowledge and the Purpose of Government

In economics, political economy, and public policy, the British enlightenment tradition dominated Beddoes' thought. He repeatedly cited the Scottish economics of Adam Smith and David Hume, as well as the policy of Richard Price. Indeed, he professed a confidence in the application of recent discoveries in the "great science of political economy," embodied above all in the open trade policy of Smith, Hume, and Josiah Tucker.³⁶⁸ In his condemnations of administrative failure and his recommendations for government policy, foreign and domestic alike, he looked to these thinkers. Attacking Pitt's war with France, rebuking English domination of the Irish, and harkening back to the experience of the American Revolutionary War, Beddoes echoed Hume in proposing peace, internationalism, and ever expanding trade.³⁶⁹ Colonization of India, he noted, inevitably led to the ruin of prosperity.³⁷⁰ Wealth and security would follow the unfettering of industry, which was not simply economically useful but, *à la* Smith, a moral necessity.³⁷¹ And he looked to Smith for more than economics. In discussions of civil rights with Giddy, he relied on Smith: "There is not the smallest difficulty in deducing these rights from A. Smith's theory of moral sentiments."³⁷² In monetary policy, he recommended the policies of Richard Price, whose advice had been sought by the Pitt government but, Beddoes thought, not sufficiently heeded.³⁷³

The utilitarianism which defined his expectations of government likewise showed an

³⁶⁷ Jacob, *The Cultural Meaning of the Scientific Revolution*, 120.

³⁶⁸ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 45, 79.

³⁶⁹ For Hume, see Porter, *The Creation of the Modern World*, 247.

³⁷⁰ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 59.

³⁷¹ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 79.

³⁷² Beddoes to Giddy, DG 41/11, 6/3/1792.

³⁷³ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 103-110.

English lineage. Locke's *Two Treatises of Government* attempted to define the purpose of political power as promoting the public good, be it the promotion of life, liberty, or property. Smith and Hume identified that commerce, learning, and trade required free governments, while Priestley identified the good as happiness.³⁷⁴ Beddoes' critiques of government reflect a similar conviction. He sought the encouragement of science and industry, unfettering of trade, enlightenment of the masses, and improvement of public health – each of which came part and parcel with a moral improvement of the public. He identified happiness as the central goal: “As the purest and most permanent enjoyment of man is derived from the exercise of his rational faculties, it must be the constant care of a philanthropic minister to promote the dissemination of knowledge.”³⁷⁵

This distribution of knowledge was the vocation of responsible government, and it was only the illusions of politicians which blinded the public to the common good in favour of the lust for territory and glory in battle. War above all was contrary to the good.³⁷⁶ His *Letter to Pitt* and *Public Merits of Mr. Pitt* show his expectation for rational government to both apply useful knowledge and disseminate it to the public. Policy informed by experts was central. Scientists, economists and, above all, doctors could uncover the causes of human suffering, measure their effects, and find the means of removing them.³⁷⁷ Morveau's antiseptic chemistry should be used by the administration to save soldiers at sea. Methods of increasing food production and bolstering nutrition in times of famine – whether through altered farming practices, novel seasonings, or use of the broth machine – should be sought, investigated, and, if valuable, distributed to the public. He eviscerated the imposition of the Window Tax, as it inflicted

³⁷⁴ Porter, *The Creation of the Modern World*, 185-204.

³⁷⁵ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 138.

³⁷⁶ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 16, 39.

³⁷⁷ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 14.

disease upon the poorest citizens, and hoped the government would fight drunkenness, a corrupter of the public and source of disease.³⁷⁸ The fundamental duty, however, was the distribution of natural knowledge. Every sizeable town would be provided with scientific libraries boasting “the whole furniture of science,” which liberalized those who were enlightened.³⁷⁹ Lack of knowledge harmed health and deprived life.³⁸⁰ Possession of knowledge encouraged private industry and innovation. As ever, Beddoes fit firmly into the British enlightenment tradition where “industry, knowledge, and humanity were linked by an indissoluble chain.”³⁸¹

The Panacea: Educating the Masses

Public distribution of knowledge, natural or otherwise, was of course a matter of education and Beddoes’ educational opinions were firmly rooted in British thinkers. Price’s declaration, “enlighten and you will elevate,” was a shared ideal.³⁸² We have seen that Beddoes’ philosophy of mind was Lockean and Hartleyan. He accepted the proposition of the blank state, and it formed the foundation of his educational theories, influenced greatly by Edgeworth and Day. They had absorbed Rousseau, who had in turn absorbed Locke’s *Some Thoughts Concerning Education*.³⁸³ These figures were not irregular in building upon Locke in forming educational schemes. So deeply influential were Locke’s ideas among educational reformers that two hundred treatises had followed, responding to Locke’s work.³⁸⁴

Beddoes described education as of paramount importance beginning in 1792. Education

³⁷⁸ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 100-113.

³⁷⁹ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 138.

³⁸⁰ Beddoes, *An Essay on the Public Merits of Mr. Pitt*, 138.

³⁸¹ Porter, *The Creation of the Modern World*, 200.

³⁸² Porter, *The Creation of the Modern World*, 46.

³⁸³ Beddoes, *Hygeia*, 1:53.

³⁸⁴ Porter, *The Creation of the Modern World*, 341.

in natural sciences was the strongest bulwark against despotism and barbarism, as it inoculated individuals against bigotry. He maintained this view in 1797, when the prospects of despotism and barbarism appeared direr: “Knowledge renders us more sensible and resentful of injustice : but I consider the promotion of union and co-operation among mankind as its most conspicuous and certain effect. It is exactly to men in general what discipline is to soldiers. Its operation may be traced through all the stages of refinement, from the combination of wandering savages against wild beasts, to the noblest efforts against civil and ecclesiastical oppression, which history records.”³⁸⁵

He did his part, of course, in contributing to that public education. Taking part in the explosion of print culture which marked eighteenth-century Britain, he sought to improve public health through the distribution of practical medical knowledge. His *Guide for Self Preservation* distributed such knowledge to the poor – and was priced accordingly – while the *Story of Isaac Jenkins* proved a popular attempt at reducing the ill effects of alcoholism. His collection of medical and other essays, *Hygëia*, likewise attempted to inform the middling and upper classes. Once he abandoned public political agitation in 1797, he devoted himself to encouraging liberalization and reform through public lectures in Bristol on chemistry, geology, and anatomy. He was convinced that the acquisition of natural knowledge could alter the opinions of the staunchest conservative.³⁸⁶

Thus we see that Beddoes was not merely heir to the British enlightenment tradition, but an active part of it. He not only read and discussed Locke, Smith, Hartley and Paine, but actively promoted and disseminated ideas and practical knowledge, agitated for change, and continued political and philosophical debates and the transmission of ideas among his Lunar and Bristol

³⁸⁵ Beddoes, *Alternatives Compared*, v.

³⁸⁶ Stansfield, 190-1.

circles. He reflects the national characteristics of the British Enlightenment which Porter and Jacob have described. His radicalism was mitigated by an individualistic emphasis on the protection of property while he saw it necessary to defend an enlightenment already achieved. And the thinkers he relied upon, whether in education, philosophy, politics, or economics, were with rare exception British, Irish, and Scottish. Though a committed cosmopolitan, seeking a world of peace, free-trade, and international scientific discourse, Beddoes the radical was fundamentally British.

IV – Conclusion

Thomas Beddoes' career as an agitator, reformer, and critic is emblematic of the struggle between cosmopolitanism and nationalism, radicalism and reaction, enlightenment and Burkean conservatism in 1790s Britain. British cosmopolitanism, which had grown through the 1770s and 1780s with figures like Priestley and Price, who were connected to likeminded men in Philadelphia and across the Channel, entailed the idealism of Beddoes, Coleridge, Watt Jr., Cooper, and their fellow-travellers who looked to the early French Revolution with joy.³⁸⁷ But scientific and philosophical connections to the continent were soon cut and support for the French was undermined as France descended into violence and despotism and war necessitated national unity. Beddoes' career traced the general course of the wider reform movement in this shifting context. Like Richard Price and the London Revolution Society in 1789, he met the French Revolution with joy and believed it to be proof of a broader shift in the zeitgeist, a symbol of the public, French and English alike, becoming enlightened and democratic. Living amidst incredible technological change and scientific discovery, he developed a deep respect for the men, like Watt, Price, and Priestley, who were generating wealth and knowledge, and he wished to see their empirical, practical methods extended to government. So too with the Revolution, he hoped that enlightened government in France, directed by moderate men such as the French chemists he had met in 1787, would introduce rational, empirically based policy, distribute natural knowledge for the moral betterment of the public, and take steps to achieve international free trade and fraternity.

This was not a novel experiment. The American Congress, he believed, had proven nonpartisan and uncorrupted – a proof of the superiority of the republican system of government.

³⁸⁷ Margaret C. Jacob, *Strangers Nowhere in the World: The Rise of Cosmopolitanism in Early Modern Europe* (Philadelphia: University of Pennsylvania Press, 2006), 122-3, 133-5.

And the kernel of his desired state existed in philosophical societies such as the Lunar Society which had proven the Whiggish connection of science, liberty, and industry, as had the prosperity of Britain itself in the century following the Glorious Revolution. If the French Revolution was simply a matter of extending liberty-wrought science and prosperity, by removing archaic structures and corrupt institutions under the auspices of liberally-minded men like Mirabeau and Lavoisier, it was something to be hailed indeed. Yet Beddoes, like his fellow radicals, could not long view the Revolution in this way, as mob violence and despotism overtook early attempts at constitutional monarchy. He attempted to counter biased English reporting which placed the September Massacres at the hands of moderates in 1792. But the rise of Robespierre and continuation of inexplicable violence soon proved the moderate revolution was dead. Disillusioned by bloodshed and threatened by prosecution for sedition during war, he abandoned apologism, and focused on influencing affairs at home.

Yet Britain also failed to match his expectations. He believed in “the increased liberality of the age,” and believed the nation was democratizing, but he and his allies were met by stern repression.³⁸⁸ The Birmingham mobs targeted Priestley among others, alarmist organizations were established nationwide, and Pitt seemed set on a national inquisition. The Church and King riots proved that the mob, morally debased by unenlightened policy, could be directed against its own interest, and against the philosophers like Priestley whose ideas might do the masses most good. So Beddoes pressed on, arguing for Lockean educational schemes like those of Edgeworth and Day. Pitt and the mob threatened liberty, but the best defense against despotism was education, particularly scientific education. Knowledge of the natural world would improve the morals of the masses. Beddoes remained convinced of this despite years of

³⁸⁸ Beddoes to Giddy, DG 41/2, 7/4/1793.

war and repression, and would return to fighting despotism through education once he fell silent on politics in 1797.

Responding to a continental war and wartime incursions on civil liberties, Beddoes moved from defending French republicanism to defending British liberty. Viewing the Treason Trials and Gagging Bills as steps in Pitt's becoming a Robespierre, Beddoes joined the protest movement in attacking the administration and calling for peace. He defended the Bill of Rights, praising its effect on British science and industry, proposed schemes to improve public health and nutrition, and attacked the character and policies of Pitt and his government, all the while promoting Smith's economics and the universal dissemination of knowledge. Yet in all his rhetoric, never a word promoting revolt, rebellion, or active revolution escaped him. Though characterized as a seditious, violent democrat, Beddoes was fundamentally a moderate. He feared the excesses of the mob in France might be visited upon England and hoped a moderate revolution might be accomplished through education and enlightenment rather than uprising.

He was, in fact, defending the British enlightenment against opponents like Burke. Beddoes supported the French chemistry of Lavoisier, and believed chemistry was rapidly opening enormous avenues for human improvement, which was already naturally occurring, but did not base his politics upon this science. He instead derived his politics from an eighteenth-century British intellectual tradition. He read Locke, Hume, Hartley, Berkeley, Smith, and Day, discussed their ideas among friends like Edgeworth, Darwin, Giddy, and Coleridge, and conformed to Porter and Jacob's concept of the British Enlightenment in supporting utilitarian government with *laissez-faire* economics, desiring to distribute practical scientific knowledge, and promoting the links between individual liberty and national prosperity. Burke had declared,

“We are not the converts of Rousseau; we are not the disciples of Voltaire....”³⁸⁹ Beddoes had read Voltaire and was familiar with Edgeworth’s Rousseauvian educational schemes, but he was not their convert. He was a disciple of Locke and Newton and a convert to the enlightened British culture of print, science, personal liberty, and the panacea of education.

³⁸⁹ Burke, 73.

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