Kilve Study Weekend, September 2010
'Coleridge: Science and Poetry'

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COLERIDGE'S OBSERVATIONS ON SCIENCE are not the most immediately accessible of his writings and from soon after his death until the middle of the twentieth century they were mostly ignored or dismissed by commentators. Things began to change however as more scholarly editions of and selections from his notebooks, letters, shorter works and marginalia were produced, and as a select number of philosophers and historians of science began to interpret them for a new generation. As a non-specialist reader of Coleridge (more an occasionally dipping duck than a literary cormorant) I found what they had to say tantalising: I could just begin to see that in his observations on science Coleridge was on to something important, still relevant today: but precisely what that something was, was more difficult to pin down; and so the prospect of exploring these issues at a Kilve Study Weekend on Coleridge and Science was highly inviting. My only reservation, as I re-read the programme on the Penrith to Taunton (change now alas at Birmingham New Street) train, was that the weekend was entitled 'Coleridge: Science & Poetry'. Had the programme planners become faint-hearted at the last moment, fearing that a diet of STC on science alone might be too tough or dry, unaccompanied by a glass or two of amber literary liquid, so leaving me still in the dark about what Mr Mystic really meant?

I soon found however that my fears were on the wrong track. The '&' rapidly appeared to be not a conjunction but a copula, and Coleridge's observations on science not obscurantist if derivative monologues, but insightful if fragmentary contributions to a larger and longer conversation—that of Romantic Science—to which many others from Erasmus to Charles Darwin also contributed. The first hint of this larger context appeared immediately after dinner on the Friday evening when the study weekend began not with a learned lecture but with a dramatic reading, by the splendid Taunton Thespians, of Anthony C. H. Smith's 'light tragedy' entitled 'A Box of Frogs'. Immediately we were back in Dr Beddoes' Bristol Pneumatic Institution, with all the high therapeutic hopes of its founder, assisted by the young Humphry Davy and Peter Roget, their future scientific and philological careers, and the descent of Beddoes' dreams into mere entertainment, skilfully foreshadowed in the explosive arrival of the celebrity Georgiana Duchess of Devonshire. Coleridge is there too, but rather in the background, absorbing so much new and exciting scientific knowledge, and perhaps beginning to apply it to his own ills and ailments, real and imagined.

After a good night's sleep and (for some) an early morning walk by the Green Sea, the audience settled down for the first learned lecture, only to be warned by David Fairer, who wears his great learning lightly, that his subject again might lead to some overheating, perhaps best followed by a further brisk

walk in the fresh air. His subject was Erasmus Darwin (who with Beddoes significantly influenced Coleridge's medical notions), but more specifically Darwin's 'The Botanic Garden' and especially the first part of that long poem entitled 'The Loves of the Plants', a 'popular and influential… versification of the sexual classification system of Linneaus', in which many different varieties of the marriage or infertility of the male stamen and the female pistil are described in ways that are 'highly effervescent, but never superficial'. Not everyone at the time of course approved: Coleridge was ambivalent about the poem and Darwin was 'caricatured and lampooned' for it. As nineteenth century respectability bore down moreover, later botanical writers and educators veered away from his sexual nomenclature towards that of familial love and parenthood. Nevertheless, as David Fairer showed in some concluding illuminating readings, Darwin left notable poetic progeny in the influence of his botanical metaphors which 'suffused Coleridge's early poetry' especially 'The Rose', The Kiss' and 'Lines Written at Shurton Bars'.

The theme of Science & Poetry was illustrated again after coffee by the return of one of STC's old friends from the night before. Sharon Ruston, currently working with Tim Fulford on an edition of the collected letters of Humphry Davy, and also with her students on various aspects of his life and work, reported that not the least interesting of these aspects was that the great Sir Humphry, sometime President of the Royal Society, 'wrote poetry all his life… lyrics, ballads, odes, conversation poems, epics'. While most of this was not published at the time or later, some had circulated: enough at least for Coleridge to boldly affirm that Davy was in 'the first rank of poets', and for Southey, less generously, to complain that at least one of Davy's poems was 'tedious and feeble'. Illustrating her lecture with examples of Davy's verse, Sharon Ruston allowed her hearers to make up their own mind about its literary merits, but also raised a question close to the heart of Romantic Science, alluded to in Coleridge's observation that when chemistry was 'performed with the passion of hope it was poetical'. This question had also surfaced in meetings and correspondence between Davy and Wordsworth, in which Wordsworth *inter alia* had asked Davy to correct his notorious punctuation. More substantially, influencing the revised introduction to the *Lyrical Ballads*, in reply to Wordsworth's complaint that writing made him ill, the inventor of the miners' lamp responded that science in the form of chemical pursuits itself could be healing.

With two such rich intellectual diets to digest, it was time after lunch for another, longer walk, up a gently sloping coombe, more slowly as it ascended, and out at last onto the high heath and heather—where it then proceeded to rain, occluding the view but not the spirits. And then down, quickly, for the next speaker was Richard Holmes.

The title chosen for his lecture by STC's biographer was 'Coleridge and Davy: Dangerous Gases' of which, he said, he would talk about four: Nitrous Oxide, Methane, Hydrogen and Poetry. Beginning with the last, he sketched a

constellation of stars and surprisingly reflected responses to the 'beauty and terror of science'. Byron, for example, who 'thought about himself and the whole earth… And then he thought of Donna Julia's eyes'. But next, 'The Mouse's Petition to Doctor Priestley', the 'first animal rights poem', written by the doctor's sometime scientific assistant Anna Barbauld sparking off the recollection of Coleridge's refusal of Sara's request to set a mousetrap in their cottage, because to do so would be deceiving the mouse, and on principle STC could not tell a lie! Or Keats feeling 'like some watcher of the skies/When a new planet swims into his ken', alluding to the discovery of Uranus by Herschel, which actually had taken the astronomer no little time to confirm as a planet, but of which later, in his old age he declared, after Keats, "I recognised it the moment I saw it". And then STC again in more sombre mood, in 'Human Life: On the Denial of Immortality' reflecting on whether science, gazing into 'the eternal silence of those infinite spaces', might not heal but hollow humanity.

The other 'dangerous gases' in Richard Holmes' account (again 'highly effervescent, but never superficial') were no less paradoxical and thought provoking: Davy, hovering on the edge of inventing anaesthesia only for his nitrous oxide to degenerate into laughing gas entertainment, and discussing with Coleridge the function of pain in childbirth forty years before Queen Victoria settled the matter; Davy again, inventing the miners' lamp to protect them from methane and other dangerous gases, and being praised by Coleridge for his wholly beneficent act of never taking out a patent on it; and finally, uplifting as well as dangerous, the soaring balloon filled with hydrogen, 'an image' in STC's words, 'of human longing and inspiration, both uplifting and terrifying'.

With so many thoughts and images once more to be delighted by as well as to ponder, it was time now however for the listeners to speak: a postprandial 'postlude' of readings chosen and in some cases written by their readers gently ended a very full day.

The study weekend concluded on Sunday morning with two exceptionally well-researched but also accessibly presented papers by two fine contemporary Coleridge scholars, Neil Vickers and Tim Fulford.

Neil Vickers, who possibly knows more about STC's knowledge of Medicine than anyone else alive, began his paper on 'Coleridge and the Medical Imagination' with three observations: first to bear in mind that Coleridge was 'always and at all times a religious propagandist', second that his knowledge of contemporary medicine was 'staggering', and third, that while Coleridge may have been an amateur, 'amateurism doesn't have to be superficial'. It is difficult however to understand what Coleridge knew and wrote about Medicine, Neil Vickers pointed out, without first understanding something about the wider context of late 18th and early 19th century medical knowledge and practice, and also about how this knowledge and practice was integrated into but also had a disintegrating effect on Coleridge's own thinking and living.

Eighteenth century Medicine, Neil Vickers pointed out, had been what Roy Porter called a 'curative desert', but with two notable exceptions: Jenner's discovery of vaccination, and the therapeutic replacement of bloodletting by opium. In the latter, Coleridge 'had the misfortune to be an informal clinical trial' with 'disastrous results': the problem with laudanum was that 'you couldn't distinguish the symptoms of addiction from what made you take it in the first place'. But (what made the Medicine of his time particularly fascinating to someone with Coleridge's intellectual interests) was that it was the time when Medicine took on the appearance of a systematic science or discipline, seeking to understand the basic principles of life, health and illness, and attempting to classify diseases in Linnean terms.

In particular, Neil Vickers traced how Erasmus Darwin and Beddoes, the two main early influences on Coleridge's medical thinking, had in turn been influenced by the physiological ideas of the Edinburgh physicians Whytt and Brown—basically that all illnesses were attributable to either too much or too little stimulation of the principle or processes of life by its environment (such as the therapeutic 'factitious airs' of Beddoes pneumatic medicine) or by various forms of rest and exercise, or by pharmacological or dietary means (such as opium or alcohol). Some of these theories were 'breathtaking in their speculative arrogance', and the controversial 'Brunonian Medicine' proved a dangerous as well as blind alley, but Darwin's environmental interests (for example in the quality of air in mines) and Beddoes epidemiological data on the incidence of consumption helped to move medical knowledge forward, and with his European contacts, Beddoes in fact was 'one of the most important physicians of the age'.

Drawn into these debates, not only by his devout interest in the principles and processes of life—and the One Life—but also by his own illnesses and his need to understand as well as find relief from them, Coleridge was torn between physical and 'mentalist' (psychodynamic) medical theories. Were his often excruciating physical pains and disorders symptoms of 'gout of the stomach', or were they the consequence of 'prolonged childhood misery and malnutrition', or again of present grief caused by too much deep thinking and feeling? His wrestling with these issues were reflected in still fascinating passages of the 1808 *Friend* (originally to be called 'The consolations and comforts for those in sickness and distress') on what Neil Vickers called the 'remote hinterlands of psychological experience', and were testimony to Coleridge's determination, whatever else, 'not to be mad'. Perhaps that determination was why, as Neil Vickers concluded, in 1808 also Coleridge finally woke up to the realisation that his real problem was opium.

Leaping from physiology and psychology to geology with only a brief coffee break in between was dictated by the catholicity of Coleridge's scientific interests, but Tim Fulford, the final speaker, skilfully guided his hearers over the crevasse in his lecture on 'Coleridge and the Age of the Earth'. He began aptly with Coleridge's well-known description of his dangerous and potentially

fatal 1802 descent of Sca Fell, and of his experience there of, as Tim Fulford put it, 'the Romantic Kantian sublime', of 'being at outward risk in order to discover freedom within' where his 'mind can soar above sublime mountains that overawe him'. All this however, again needed to be set in the context of the larger conversation to which Coleridge was contributing—which included not just Kant, but generations of geologists from Hutton in the 18th to Lyell in the 19th century.

In the 18th century, earlier estimates of the age of the earth (such as the 17th century Archbishop Ussher's dating of it from 4004 BC) and theories of its origin in flood or fire were being questioned as a consequence of empirical knowledge derived from mountain climbing, the mining industry and more exact measurement. Coleridge consequently was 'in the first generation to understand what fossils were and meant', especially when they were found unexpectedly at the top of mountains.

A key figure in these developments was James Hutton, the 18th century Scottish natural philosopher, who discredited earlier theories of a gentle geological formation over one million years by discovering evidence of violent igneous intrusions uplifted and eroded in many cycles over many millions of years. Because Hutton did not make fossils central to his own theories however, it was left to later generations to complete the picture, and a particularly fascinating part of Tim Fulford's lecture concerned the influence on nineteenth century geology, which unlike botany was 'culturally male', of Mary Anning of Lyme Regis, who discovered many fossilised remains large and small in local cliffs and interpreted their meaning to male scholars. No less significant was the 1821 discovery in Kirkdale Cave in Yorkshire, of the fossilised bones on tigers, bears, elephants and hippos, creatures whose extinction in England the eccentric don, clergyman and geologist William Buckland attempted to explain in terms of a universal flood, a 'catastrophe theory', over which and other competing theories controversy raged until Hutton's 'uniformitarian theory' (of the earth as we know it being formed by a continuous and continuing process of gradual changes in repeated cycles over many millions of years) was confirmed by the work of Charles Lyell in the 1830s, helping to pave the way for his young friend Charles Darwin.

By the end of this story Coleridge was dead, but for most of it he was closely engaged with these debates and, as Tim Fulford reminded his hearers, he saw many affinities between these scientific enquiries and poetry: both combined observation and contemplation, and wonder was the 'operative concept' in Romantic Science and Poetry alike. Coleridge also knew and was friendly with some of the protagonists in these debates—Beddoes had introduced him to Hutton for example—and his own contribution to them included his philosophical biblical criticism, which rejected divinely dictated literalist interpretations of creation from which geological theories could be deduced, and also his more speculative 1816 *Hints towards the Formation of A More Comprehensive Theory of Life*, which developed Blumenbach's ideas about

epochs of evolution each ending in a catastrophe, but with God saving the highest parts of the last for the next, until creation finally evolved to its completed version.

Coleridge's vision of creation, Tim Fulford concluded, was shaped by his desire to understand teleology and to answer his 'essential question—what caused the forces of fire and water'? His actual answers however were like 'Moses' visions—glimmerings of truth, symbolic like poems, that geology might confirm'. Here at the very end of this last highly illuminating lecture, perhaps, was that important and still relevant something I had felt that Coleridge was on to in his observations on science. It still remained tantalising, for we could never know the creative response that STC would characteristically have made to further scientific discoveries, especially those of the younger Darwin. But at least, thanks to all the marvellous contributors to the Kilve Study Weekend, I felt, as I sat on my homeward train (diverted by the Severn Tunnel and beside the sylvan Wye), gratitude both to them and to STC for making me just a little less 'ignorant of his understanding'.