Introduction: literature, science and the hothouse of culture

1. 'LIFE, LIFE, LIFE': A READING AND WRITING RELATION

In *Culture and Anarchy* (1869), Matthew Arnold offered his gospel proclaiming sweetness and light. 'Culture' would speak through '*all* the voices of human experience . . . of art, science, poetry, philosophy, history, as well as of religion'.[1] The many-sided receptor of culture would then look and listen: 'Consider these people, then, their way of life, their habits, their manners, the very tones of their voice' (97). Arnold had listened, and his response was to satirise. One vocal tone to receive this treatment belonged to the poet Robert Buchanan, who had celebrated God's 'move to multiplicity' and 'divine philoprogenitiveness'.[2] Arnold cites Buchanan's language praising God's 'love of distribution and expansion into living forms' at length:

> Every animal added seems a new ecstasy to the Maker; every life added, a new embodiment of his love. He would *swarm* the earth with beings. There are never enough. Life, life, life, — faces gleaming, hearts beating, must fill every cranny. Not a corner is suffered to remain empty. The whole earth breeds and God glories. (215)

Arnold's discourse on 'culture' here cites and confronts a discourse on 'life' and its divinely sanctioned reproductive urges. Buchanan's language celebrating divinely created and cherished swarms of living things is derived in part from Christian traditions of agape, and in part from the popular science of phrenology. 'Philoprogenitiveness' was one of George Combe's 'affective propensities', a mental faculty common to man and 'the lower animals'; situated at the back of the head, this faculty cultivated an 'affection for young and tender beings'.[3] Buchanan's language, in its concern with 'distribution' and 'expansion', also drew on another nineteenth-century fascination: the power of biological science to explain the diversity of teeming life forms, and their patterns of distribution into every available 'cranny'. *Culture and Anarchy* was published in the same year as Alfred Russel Wallace's great

travel narrative about the distribution of exotic life forms in the Malay Archipelago, one of the world's foremost regions for posing questions about life's distribution, diversity and sheer inventiveness. Arnold's extensive citation of Buchanan's linguistic celebration of 'life' is strategic, for Buchanan's language becomes the object of Arnold's satire:

> how inspiriting is here the whole strain of thought! and these beautiful words, too, I carry about with me in the East of London, and often read them there. They are quite in agreement with the popular language one is accustomed to hear about children and large families, which describes children as *sent*. And a line of poetry which Mr. Robert Buchanan throws in presently after the poetical prose I have quoted:–
>
> 'Tis the old story of the fig-leaf time–
>
> this fine line, too, naturally connects itself, when one is in the East of London, with the idea of God's desire to *swarm* the earth with beings; because the swarming of the earth with beings does indeed, in the East of London, so seem to revive *the old story of the fig-leaf time*, such a number of the people one meets there having hardly a rag to cover them; and the more the swarming goes on, the more it promises to revive the old story. (*Culture and Anarchy*, 214–15)

Buchanan's language is countered by Arnold's satire upon the swarming population of the East End of London, a satire haunted by Thomas Malthus' principle of population. Ten years prior to the publication of *Culture and Anarchy*, Malthus was cited as an important theoretical building block in Charles Darwin's theory of transmutation or evolution by natural selection.[4] Malthus became one of Darwin's ways of explaining life's distribution, expansion – and, crucially, its contractions or extinctions. Alfred Russel Wallace's *Malay Archipelago* also offered a Malthusian account of nature; Wallace dedicated his text to Darwin and the extension of the principle of natural selection. If Arnold's culture was a 'criticism of life' then biological finitude, or death, was visible, more or less explicitly, from its critical horizon. Arnold plays with Buchanan's line about 'the old story of the fig-leaf time' to re-locate the Fall in a degenerating area of London, a colony in the East where the savage populations are bereft of culture's garments. In satirising the felicitousness of Buchanan's language and allusiveness, Arnold makes the worth of Buchanan's 'poetical-prose' and popular language a vital issue, devaluing it as cultural capital for the reader's consumption. As Jon Klancher has remarked, cultural capital is

> not a stock of particular ideological positions, nor even a particular content . . . It is, rather, a framework of reading, a habitual energy, a mode of reception and comprehension. That mode must be inscribed in language as well as in social relations, in prose style as well as in publishing institutions.[5]

In describing cultural capital as a 'habitual energy', Klancher gives Pierre Bourdieu's concept a foothold in the sciences of life, and the intellectual field in which they were articulated in the nineteenth century. To be sure, cultural capital is inscribed in social relations, registers, styles and discourses, and the modes of publication that disseminate its materials. It accumulates and disseminates in the practice of reading, that new horizon of research in the history of nineteenth-century science.[6] But in being read, it is also re-invented and re-invested in new forms of expression that perhaps break up and interrogate habitual, familiar conventions. Such new forms emerge as literary responses that are located in either 'higher' or 'lower' niches of that field. In other words, the responses are located in that meticulously zoned yet reproductively promiscuous 'hothouse', as Thomas Henry Huxley would describe it, of sprouting intellectual and affective forms: the field of symbolic power that we have come to know as 'culture'.[7]

It can be defamiliarising to note Arnold's influential account of culture for its inclusion of a Malthusian anxiety about population and swarming life.[8] This book offers a new reading of 'culture' and its linguistic derivatives as immensely complex forms of mediation. It argues that 'culture' is less a concept in itself than the product of competing accounts of the different dimensions of material reality. By examining the multiple faces of 'culture' in nineteenth-century writing, especially the writing of evolutionary theory, the book argues that some of the most active interpretive devices in the cultural discourse of the present – defamiliarisation, hybridity, mimicry, cybernetics – carry a genealogy that can be linked back to 'culture' as the nineteenth-century field of symbolic power that hosted complex encounters between literary and scientific discourse, and was in turn shaped by those encounters.[9]

To illustrate this further, let me balance the example from Arnold, writing when biological evolution was emerging as an authoritative descriptive and critical discourse, with an earlier nineteenth-century example from Charles Darwin, writing when 'transmutation' was significantly different, and intellectually risky. In 1837–8, Darwin was reading the *Edinburgh New Philosophical Journal* as part of an eclectic reading programme ranging from natural history, to the philosophy of the sensorium, to the poetry of William Wordsworth. Darwin's reading embraced the speculative possibilities of the intellectual field, and it was, according to Sydney Smith, 'about the last time when such an activity was within the capacity of a single man'.[10]

Recently returned from the exploratory voyage of H.M.S. *Beagle* (1831–6), Darwin was busy making his name as a geologist and natural

historian through elite scientific societies in London, and writing up his travel narrative of the voyage. Having been exposed to geological evidence of the depth and scale of the earth's history, Darwin was also occupied in making notes towards answering speculative questions concerning the origins and distribution of its various organic productions: did living organisms evolve or transmute from one species into another, and if this did occur, by what means did it happen in natural history? Darwin noted points towards a potential public answer secretly, in private notebooks, for the question conveyed dangerously materialist philosophical implications for orthodox religion and its account of life – especially human life – as a divinely ordained vital energy. In reading and making notes from this periodical in pursuit of a transmutational theory, Darwin did not always transcribe from the most obvious sources carried by the journal.[11]

Instead, he made a note from another essay published in the same number of the journal, entitled 'An Account of Mr Crawfurd's Mission to Ava'; the editors of the journal had published it in the expectation that it 'will be read with interest by the general reader and also by the natural historian'.[12] For although Darwin was selectively focused on the question of transmutation, the materials that he read and noted in the desire to answer it were wide ranging, and the possible openings that Darwin noted were varied, and to our eyes surprising. In reading Crawfurd's travel narrative about a diplomatic mission to Burma, Darwin transcribed Crawfurd's anecdote of an albino Burman that he encountered: this man had been given by his people to a Portuguese priest because he was strange, a monstrosity, and they were ashamed of him and considered him 'little better than a European' (368). Darwin wondered what effect the banishment of monstrosities might have on the propagation of a race: if, in colonising a new territory, they were split into isolated groups, would their peculiar variations be maintained and spread by the new populations that they created?[13]

Crawfurd's text contained observations with the potential to contribute to a theory of evolution, but also ethnographic observations that would contribute to the formation of what is now recognised as a conception of culture. Crawfurd trained as a military surgeon, and went on to become a scholarly Orientalist and a diplomat. He was thus one of the great, though now largely forgotten, generalists produced by the drives of nineteenth-century colonialism. His ethnographic and natural history of the Malay Archipelago would be read with approval by Samuel Taylor Coleridge, and his experience of Asia would lead him to mentor Alfred Russel Wallace. His knowledge of ethnology and race led to his election as President of the Ethnological Society in 1861. And yet, as I shall show, his reading of

Darwin's published work would, in the 1860s, trouble his view of the means by which races populated and colonised the earth.

But in the 1820s, Crawfurd had been sent by Lord Ameherst, the Governor-General of India, as envoy to the Burmese court at Ava. In 1826, the *Calcutta Gazette* first published his account of the mission, but it was the *Edinburgh New Philosophical Journal* which gave it a broader circulation. The journal's inscribed 'general reader' would have been professional and highly educated, with particular interests in natural science and philosophy. Crawfurd's narrative offered such a reader insights into a territory recently colonised by the British: its population, resources, the language, manners, customs, tastes and religious practices of its native inhabitants. In simultaneously appealing to the interests of the 'natural historian', the narrative draws attention to Crawfurd's comment on his mission's collection of eighteen thousand botanical specimens, some of which were to be lodged in the Botanical Gardens of Calcutta, for they were 'rare and curious . . . combining, in a great degree, the characters of the *Floras* of continental India and the Malayan countries' (367). In addition, Crawfurd comments on the geological formation of the territory, in particular the vestiges, or fossil evidence, of life forms that had passed from the territory; indeed, in some cases, from the face of the earth itself. Darwin was Crawfurd's ideal reader.

For the region that Darwin read about was 'abounding every where with fossil remains of one of the last great changes the world has undergone' (360). Crawfurd saw that the earth's surface had been subject to processes of evolutionary change and transformation. This was evinced by the 'petrified' remains of life forms which were either extinct (mammoths), or which, as in the case of the 'abundance of sea shells', could no longer occupy the area because of radical environmental change (369). Natural history and archaeological ethnography were linked by their interest in commemorative monuments, and one of the last details that Crawfurd mentions relates to the discovery of vestiges of an earlier braminical civilisation, its places of worship, and the epitaphic inscriptions to the dead recorded on stones which resemble the monuments 'placed at the head of graves in an English church-yard' (369–70). Burma may have been the embodiment of the Orient in all its difference and otherness – Crawfurd could not help thinking of an 'Arabian Nights Entertainment' as he viewed a festival (361) – yet, uncannily, its survivals from the past conveyed impressions of England. Crawfurd thus found that observations derived from encounters with the colonised 'primitive' could cast an estranging perspective on the familiarities of home.

As Crawfurd tries to calculate the population of the area surrounding the capital, Ava, he reports that he sees little 'evidence of culture or occupation' (360). He uses 'culture' to signify pastoral activity, past and present. This is entirely consistent with usage at the time.[14] Yet his use of 'culture' in relation to a synonym – 'culture or occupation' – throws our attention towards the word 'occupation'. In its localised context, 'occupation' means little more than simply the process of inhabiting and tilling the soil. But as it stands, the term cannot be dissociated from the context of Crawfurd's entire narrative, which records an episode in the history of Britain's colonial occupation of Asia. Crawfurd represents colonial 'culture' in a narrative form, revealed in his recording the passing of 'the spot at which the Burmese contemplated making their last effort, had the British army not been arrested in its progress by the treaty of Yandabu' (360).

The experience of colonial activity was all-pervasive, and yet immensely varied and highly mediated, in the nineteenth century, as David Cannadine's work has demonstrated.[15] Crawfurd's mission needs to be seen in the context of a very specific moment of Britain's imperial history: having lost its North American colonies in the late eighteenth century, its attention and activity became focused on consolidation in India and its surrounding territories, which also meant engaging in post-Napoleonic rivalries with other European colonial powers.[16] This very reading of British colonial history became available in the late nineteenth century when the historian J. R. Seeley published *The Expansion of England* (1883) at a time of increased, if politically controversial, imperial consciousness. While Seeley claimed that the revolution in print and the production of mass reading materials would consolidate his vision of 'Greater Britain' overseas, such productive capacity also generated political and ideological contestation.[17] Colonial governance was a different question for a 'squarson' whig liberal such as Charles Darwin, a liberal meritocrat such as T. H. Huxley (in the 1860s at least), and a socialist such as Alfred Russel Wallace.[18] Indeed, political positions would be further complicated by the deeper implications of Darwinian evolutionary discourse, as my reading of Huxley's 'Evolution and Ethics' (later in this chapter) will demonstrate. For evolutionary thought identified a proliferating range of agencies at work in the world which complicated understandings of colonialism and political affiliation themselves.[19]

Colonial ideologies were conveyed imaginatively and powerfully in relationships founded on writing and reading: when Charles Darwin published the second edition of his *Journal of Researches* (his account of the *Beagle* voyage, an expedition substantially concerned with exploiting new

advantages in the context of shifting colonial relations[20]) in 1845 with the house of John Murray, he did so in the publisher's series entitled 'Colonial and Home Library', a series which imagined serving 'the highly intelligent and educated population of our Colonies' with English literature, and domestic readers with reading about the history of travel and the occupation of far away lands.[21] 'Occupiers' assumed many identities: they included the white settler colonists who emigrated to what would become the dominions (Canada, Australia, and New Zealand) and Darwin would write sympathetically of these agrarian cultivators in his *Journal of Researches*; indeed, this identity would also be the basis of his initial warm response to Samuel Butler, a former sheep farmer in New Zealand. But occupiers could also wield martial power: Crawfurd's narrative presents the reader with images of trading ships and gun-boats arrayed in the harbour created by 'the new settlement of Amherst . . . a curious spectacle . . . a harbour which was not known to exist ten months ago' (364). Crawfurd represents the signs of British colonial 'culture', carved into the landscape as unmistakably as the vestiges of past, natural creations.

Crawfurd's colonial mission also furnished his readers with ethnographic insights. Arriving at the court of Ava, Crawfurd's mission was 'detained for nearly three hours, to afford us the magnificence of the Burmese court, but, above all, to afford the court an opportunity of displaying it' (361). The performance of Burmese hierarchies through deferential antics is contrasted with the reserve of the British: before King Hpagyidoa 'the courtiers humbly prostrated themselves. The English gentlemen made a bow . . . touching the forehead with the right hand' (362). In Crawfurd's account, this display honours a peculiarly Burmese cult of regal authority. Later in Crawfurd's narrative, having departed Ava, the mission encounters a group of 'insurgent' ethnic Talains who had just risen against the Burmese: 'Our visitors saluted us in the manner of English sepoys, standing up. This, they said, was the positive order of his Talain majesty, who declared he would permit no one henceforth to crouch in his presence, or any other chief' (363). The insurgents are ordered to imitate the posture of sepoys, native Indian soldiers trained under English discipline. Crawfurd's ethnography thus includes the practice of imitation as a category observation and an engine of diffusion.

Towards the end of his narrative, Crawfurd becomes a philologer, recording some of the details of 'the language and literature of the Burmans' that had been collected in the course of the mission: enshrined in portable, diffusable form, they record the modes of symbolic signification that had

been performed in ceremonial gatherings. Burman books were donated by the King, including 'some histories of Guatama . . . highly esteemed by the Burmans', as well as 'vocabularies . . . of some of the numerous dialects spoken' (369). In the 1970s Clifford Geertz urged ethnographers to see their practice as the interpretation of webs of symbolic signification, which Geertz held to encode the fundamental meanings comprising what had come, by his time, to be known as a 'culture'. Some sense of this literary critical practice – 'sorting out the structures of significations' to use Geertz's words – underpins Crawfurd's interpretation of Burmese 'fit objects of worship' and their symbolic encodings.[22] Applying this to Crawfurd's text, one can begin to 'sort out structures of signification' that seem to blur distinctions between human and animal economies, precisely as monstrous animal and human 'specimens' enter different circuits of social exchange. Such conceptual blurrings resonated for Charles Darwin.

Crawfurd mentions a 'white elephant' of the court at Ava as a 'royal curiosity' that was shown to men of the mission. Towards the end of his narrative he returns to this specimen, remarking that 'there is but one Albino elephant':

> this, a male of about twenty five years of age, was repeatedly seen and examined by the gentlemen of the mission; and his Majesty has made a present to the Governor-General of a drawing of the animal in its state of caparison, which is no bad specimen of Burman art.
>
> As connected with this department, may be mentioned the existence at Ava of a man covered from head to foot in hair, whose history is not less remarkable than that of the celebrated porcupine man, who excited so much curiosity in England, and other parts of Europe, near a century ago . . . At Ava he married a pretty Burmese woman, by whom he has two daughters; the eldest resembles her mother, the youngest is covered with hair like her father, only that it is white or fair, whereas his is now white or black, having, however, been fair when a child, like that of the infant . . . Albinos occur, now and then, among the Burmese, as among other races of men. We saw two examples; one of these, a young man of twenty, was born of Burmese parents. They were ashamed of him, considering him little better than a European, they made him over to the Portuguese clergyman. The reverend father, in due course, made him a Christian. (368)

A representation of the twenty-five-year-old albino elephant is given to the Governor; the hairy man enters networks of marital and sexual exchange, propagating his peculiarities through heredity; the twenty-year old albino man becomes a 'gift' to a priest, and the priest 'makes' or cultivates the man into a Christian. Of course, this is the moment of Crawfurd's narrative that so fascinates Darwin that he transcribes a version of it into his notebook

account of HAIRY man (**because ancestors hairy)** with one hairy child, and of *albino* DISEASE being banished, and given to Portuguese priest.– In first settling a country.– people very apt to be split up into many isolated races! Are there any instances of peculiar people banished by the rest? –

most monstrous form has tendency to propagate as well as diseases.[23]

Darwin moves from speculations on monstrosity to colonisation as a source of the reproduction of peculiarities, perhaps indeed of speciation itself. But it is perhaps Crawfurd's blurring of the human/animal distinction ('as connected with this department') that initiates a response from Darwin; it prompts an evolutionary, or transformist, speculation, but one that is bound up in complex ways with notions of cultivation, colonisation, religion and practices of signification.

In focusing on this obscure but revealingly rich moment in Charles Darwin's notebooks, I am suggesting that it is misplaced to assume that evolutionary speculation led inexorably to Darwin's 'Malthusian moment' in October 1838, the most obvious source of the 'discovery' of natural selection that distinguished the argument of the *Origin of Species* from earlier, 'vulgar' theories of transformism put forward by Jean-Baptiste Lamarck and Erasmus Darwin.[24] Malthus was crucial to Darwin's theoretical mix; but Darwin's notebooks are remarkably eclectic in their coverage of late eighteenth- and early nineteenth-century arguments about 'the laws' of life and its transformational potential: the first notebook that Darwin opened began with the headnote 'Zoonomia', a reference to his grandfather Erasmus Darwin's work of that title (1794), subtitled *The Laws of Organic Life*. The older Darwin's work stimulated the grandson into notations that reflected on the mysterious relations of sameness and difference between horticultural and natural processes of generation: 'seeds of plants sown in rich soil, many kinds are produced, though individuals produced by buds are constant'.[25] On a related theme, and just prior to his notation from Crawfurd's account of the 'monstrosities', Darwin reproduced verbatim an observation from Frédéric Cuvier's 1828 essay on domesticated animals, indicating that there must be some mysterious relation between the cultivation of domesticated creatures, and the modification of 'races' in nature into 'durable form[s]', and 'accidental habits into instincts'.[26] Erasmus Darwin and Lamarck also speculated on the parallel logics of variation under, on the one hand, 'culture' and, on the other, nature. The possibility that nature was always already 'cultured' (in being shaped, modified, supplemented) became a powerful yet troubling source of analogy for Charles Darwin.

The *Origin*, far from beginning with Malthus, begins with a chapter on 'Variation under Domestication', or variation produced by culture that imitates, though by no means perfectly, what happens in nature. Little wonder that when the writer Samuel Butler went on to contest natural selection, and to 'unroll' the theory of evolution in directions that sought to remind readers of sources of evolutionary speculation that preceded the writings of Charles Darwin, Butler's techniques of reading could demonstrate theoretical affinities with predecessors that Charles Darwin was keen not to claim; beyond this, Butler read and inscribed in ways that could break existing thought conventions, and invent new possibilities. Evolutionary theory consisted of a great variety of observational orientations and inscribed accents that played uneasily and ambiguously on shifting fault lines of semantic distinction: the human and the animal, the cultivated and the natural, the colonial and the home, the living and the dead.

As Darwin attempted in the *Origin* to articulate some of the difficulties of constructing evidence of evolutionary change in the face of gaps in the geological record, he reached for an image of a text fragmented by waste and linguistic change that proves difficult to read:

> I look at the natural geological record, as a history of the world imperfectly kept, and written in a changing dialect; of this history we possess the last volume alone, relating only to two or three countries. Of this volume, only here and there a short chapter has been preserved; and of each page, only here and there a few lines. Each word of the slowly-changing language, in which the history is supposed to be written, being more or less different in the interrupted succession of chapters, may represent the apparently abruptly changed forms of life, entombed in our consecutive, but widely separated formations (*Origin* 317)

Evolution's theatre of action during the nineteenth century was as much the intellectual field as the field of nature. Language was of course the medium through which the idea of evolution was conceived and refined: as the embodiment of historical change and transformation, it could also function as a source of analogy to be tapped in cases of epistemological difficulty. Darwin conceived of the problem of evidence for evolution in terms of a 'slowly-changing language'; etymological and philological approaches to language were common to the construction of knowledge in both evolutionary theory and ideas of culture. As Stephen Alter has demonstrated in detail, Darwin borrowed many of his insights into evolution from researches into philology. Philology was still present in influential accounts of 'culture' from late 1950s Britain, but I shall suggest that this is a legacy