# Science and Empire in the Nineteenth Century

# Science and Empire in the Nineteenth Century: A Journey of Imperial Conquest and Scientific Progress

Edited by

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and Donna Spalding Andréolle

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# INTRODUCTION

If science and technology contributed to the development of European civilisation, they also facilitated the exploration of the world and the expansion of territories. The word "civilization," introduced into the French and English languages in the eighteenth century, implies the idea of social, political, economic progress, but also dovetails with expansion and colonisation. Civilisation, from the Latin *civis*, or *civilitas*, combines two notions: the state of being civilised, and the process or action of civilising others, by exporting a model, be it a model of government or a cultural, religious and social model. In his introduction to *The Decline of the West* (1952), Oswald Spengler, basing his analysis on the historical evolution from Greek culture to Roman civilisation, explains that civilisation is synonymous with achievement and money interests, and most importantly that imperialism is its logical conclusion.

The extraordinary development of science from the sixteenth century onwards through the Enlightenment and the industrial Revolution and its decisive economic, ideological and political impact throughout the nineteenth century marked a new stage in the progress of western civilisation, often opposed in the Victorian era to a previous, more primitive stage of development, the dark ages of "barbarism," which could consequently be enlightened thanks to the civilising mission undertaken by the western world. Science and technology were both the means which made this "civilizing mission" possible, and the proclaimed goal of discovering new peoples, species and territories that contributed to the further advancement of knowledge. Confronted with the unknown, scientists collected data, examined and classified plant, animal and sometimes human species to encompass the multiplicity and diversity of the earth. Nineteenth century scientists were interested in an extensive range of research fields—botany, anthropology, hydrography, map-making or geology to quote but a few.

The issue at stake in this volume is the role of science as a way to fulfil a quest for knowledge, a tool in the exploration of foreign lands, a central paradigm in the discourse on and representations of otherness. The interweaving of scientific and ideological discourses is not limited to the geopolitical frame of the British empire in the nineteenth and early twentieth centuries but extends to the rise of the American empire as well.

The fields of research tackled in this book are human and social sciences (anthropology, ethnography, cartography, phrenology), which thrived during the period of imperial expansion, racial theories couched in pseudo-scientific discourse, natural sciences, as they are presented in specialised or popularised works, in the press, in travel narratives—at the crossroads of science and literature—, in essays, but also in literary texts.

Such approaches allow for the analysis of the link between knowledge and power as well as of the paradox of a scientific discourse which claims to seek the truth while at the same time both masking and revealing the political and economic stakes of Anglo-saxon imperialism. The analysis of various types of discourse and/or representation highlights the tension between science and ideology, between scientific "objectivity" and propaganda, and stresses the limits of an imperialist epistemology which has sometimes been questioned in more ambiguous or subversive texts.

The scientific discoveries of the nineteenth century and the epistemological crisis at the turn of the twentieth century also often triggered existential disquiet and anguish, metaphysical questioning, which found a convenient outlet in a quest for origins and myths, a fantasised return to a pre-industrial state and an idealisation of nature as well as the conquest or imaginary representation of newly explored countries. Science can thus engender or reveal two opposed visions of the world: a reassuring one which presents a well-ordered world with clear limits and a frightening one which features a complex and boundless universe which escapes the control of science and imperialism.

This book examines such issues as the plurality of scientific discourses, their historicity, the alienating dangers of reduction, fragmentation and reification of the Other, the interaction between scientific discourse and literary discourse, the way certain texts use scientific discourse to serve their imperialist views or, conversely, deconstruct and question them.

The first chapter shows that scientific activities are often directly or indirectly linked with military intelligence and political interests, and analyses how structures of power underlie cartography and narratives of exploration—travelogues and reports. Interest in archeology, epigraphy, geology and hydrography led Charles Doughty to explore the desert of Arabia in quest of Nabatean monuments and inscriptions, and to draw a map of the peninsula. His map and the data collected in his narrative were later used by T.E. Lawrence when he became the leader of the Arab Revolt, thus showing the link between cartography and geostrategy, knowledge and power as Catherine Delmas explains. Work for the secret services was often conducted under the cover of scientific research—archeology and topography—as the examples of Gertrude Bell in Syria

and T.E. Lawrence in Sinai and at Karkemish testify. Cartography undertaken by the Western Survey expedition and made possible by the Palestine Exploration Fund combined a double interest in Biblical land and contemporary Palestine, religious and political issues, ancient history and geostrategic interests at the time of the Ottoman empire, as shown by the bond between the PEF and the War Office at the end of the 19th century. A map can thus be ordered, funded and appropriated by various circles, be they scientific, political or religious, and invites a "multiplicity of readings" revealing structures of power and conflicting interests as Stéphanie Prévost shows.

The mapping of Ireland by the Ordnance Survey which began in 1820 also testifies to the collusion of science and colonial power, not only in the use made of the map—if we consider its administrative, economic and social functions, census, taxation and colonial policy—but in the rhetoric which underlies it and which reveals norms and values as Valérie Morisson explains. For J. B. Harley, a map is a text, in the broad sense of the word, a system and an "instrument of persuasion." It relies on selection, classification, interpretation, a choice of symbols and as such it is a construct which reveals its author's scientific and cultural background. Mapping obeys certain rules which are scientific but are also "related to values, such as those of ethnicity, politics, religion or social class, and they are also embedded in the map-producing society at large, and in its other forms of representation." (Harley, in Barnes and Duncan 1992, 236). Maps are a mode of representation, anchored in culture and historicity; they reveal a point of view, a way of apprehending the world, and structures of power. They can lie, distort and manipulate, and they can be used for propaganda or to spread ideology as Monmonnier explains in *How to Lie with Maps* (1991). They respond to the need for control and surveillance in a colonial context, which they help to implement by "legitimizing territorial conquest, economic exploitation and cultural imperialism" (Monmonier, 90). For Tiffin and Lawson in *De-scribing Empire. Post colonialism and Textuality*, "maps are productions of complex social forces; they create and manipulate reality as much as they record it" (1994, 116). Even the representation of blanks on a map indicates gaps in western knowledge as well as a "process of erasure of existing social and geo-cultural formations in preparation for the projection and subsequent emplacement of a new order" (Tiffin and Lawson, 116). Cartography is thus at the cusp between science and the rhetoric of power.

Cartography and narratives of exploration often reveal nationalist discourse and imperialist ideology, concealed, in Doughty's case, behind an overt interest in man's origins and the desire to preserve the purity of

the English language in a travelbook which interlaces scientific and literary discourse. Catherine Delmas thus shows that the purpose of his journey of exploration was to serve and improve European knowledge through the data he had collected, and to defend the faith of a Christian. Doughty's study and practice of natural or "Liberal sciences," as he called them, cast light on the multifaceted activities of a scientist in the nineteenth century; they also reveal his ideological and scientific Eurocentric point of view, based on analogy, classification, typology, i.e. a European point of reference and system of thought which is "arborescent" according to Deleuze and Guattari in *A Thousand Plateaus* (5) and fails to account for the multiplicity, hybridity and heterogeneity of the world. Although a map, contrary to tracing, is "open and connectable in all its dimensions" (Deleuze and Guattari 1980, 13) and has, like a rhizome, "multiple entryways" inviting to nomadology, cartography in the nineteenth century *did* illustrate colonial powers' determination to appropriate and control territories, to turn nomadic space into structured and administered territories. As Edward Casey explains, "[n]owhere is Eurocentrism—that most insidious long-lived form of ethnocentrism—more manifest than in the case of Western cartography" (Casey 2002, 194).

Cartography and the memoirs which were published with the O.S. maps of Ireland had, however, a paradoxical effect as Valérie Morisson shows. The renaming of Irish places into English and the record of Irish names before they disappeared aroused a new interest in toponymy; the memoirs which collected data in "archeology, spelling, genealogy and philology" led to a national and regional awareness, "which would fuel the forging of a strong national identity during the Celtic Revival." Cartography, which shows a "dichotomy between the scholarly observer and the objectified, uncivilized other" (Valérie Morisson), can thus have unexpected effects when it strengthens local nationalism. Instead of illustrating the rhetoric of colonial power, it may become an instrument of resistance which shows that structures of power can be double-edged.

But such a paradoxical side effect of imperial *surveillance* resulting in the strengthening of the colonised subject's position, instead of its intended subjection, remains anecdotal and relatively exceptional. In the second chapter of the book, a close look at the way science or pseudo-scientific theories were used in the nineteenth century to classify both plant and human specimens testifies to the inextricable link between science, empire and the subjugation of the *other*. In her book on *Imperial Eyes, Travel Writing and Transculturation* (1992), Marie Louise Pratt explains how the rise of natural sciences in the eighteenth century, based

on specimen gathering, naming, collecting, and a classificatory system devised by Linnaeus, contributed to "othering" newly discovered people (30). Classification and nomenclature are nowhere more central than with botany; and it is very illuminating to note that the binomial nomenclature set up by Linnaeus is still in use nowadays even though his method of classification was criticised as early as the beginning of the nineteenth century for its reductiveness and relative arbitrariness. The taxonomy was too much based on distinguishing features between plants—rather than their similarities—and the selected criteria were exclusively morphological (especially the various types of sexual organs); more essential criteria having to do with the fundamental physiological processes of reproduction and nutrition were simply ignored. Similarly, concerning the classification of human specimens, even though the late nineteenth century saw the development of what was to become modern anthropology, there was a tendency to consider different "races" as distinct in their morphological characteristics (the colour of the skin or the size of the skull for instance) rather than reflect on what they had in common, physiologically or culturally. In Australia for instance, there was a temptation throughout the nineteenth century to use the scientific idea of classification as a model of social classification, assigning a place to both coloniser and colonised. Christine Vandamme shows such an indeniable link between the idea of colonisation, cultivation and classification as a powerful nexus for both scientific and social control. David Malouf's *Remembering Babylon* (1994) remains indeed a literary cornerstone in the examination of the entanglement between a scientific approach—here botanical, in the manner of famous botanist Joseph Banks—and imperial interests. Native plant specimens were forced into a systematic grid imported from the West and if they did not contribute to the general dictate of "improvement," it was simply as if they never existed and they were ignored. In an almost identical way, Australian native "specimens," Aborigines, were offered specific places in society where they could be put to good use both for the community and supposedly for themselves, with the setting up of successive Aboriginal protection boards all over Australia as early as the 1860s (the first one was created in 1860 in Victoria), the idea being that they had to be placed in the right institutions to be given the most appropriate type of occupation later in life. Classification is thus clearly associated with the typically utilitarian doctrine of improvement and the subjection of science to empire. Such a collusion between science, empire and control was also blatant in the thriving scientific theories revolving on the notions of evolution, races and

their respective destinies, which were so prominent at the end of the nineteenth century.

An interesting case in point is the imperial use of medicine to justify theories of racial Darwinism which developed in parallel with imperialist expansion all along the century. In the case of Australian settlement, Anne Le Guellec also underlines the importance of British empiricism as contrasted with both Continental rationalism and a desire, inherited from the Enlightenment, to contribute to the advancement of Western knowledge of diseases and remedies; the encyclopaedic approach with a view to set up a catalogue that would be as comprehensive and exhaustive as possible is not essential here. What is more compelling for British and American colonial medical science throughout the century is to answer the prerequisites of an ideologically loaded agenda, namely proving scientifically the inferiority of colonised races and their greater frailty when faced with diseases. But, concerning Australia, another aspect consisted in warning the nation against the possible damaging effects which colonisation could have on the British settlers themselves in weakening the strength of the white race when transplanted in an environment where adaptation could only lead to degeneration. In her article on the experimental aspects of medical science in Australia, Anne Le Guellec thus shows how scientific discourse could legitimise colonisation first as an experiment in survival and adaptation with the risk of degeneration and finally as an experiment in countering the negative effects of the climate and geography through assimilation of the already dying-out Aboriginal race. Such shifts in the experimental paradigm are typical of the representation and the scientific approach of the Other in an imperial context. As Patrick Brantlinger shows in his book *Rule of Darkness* (2003), at the end of the eighteenth century and in the first half of the nineteenth century, the Enlightenment and Romanticism tended to see the native as endowed with a primitive purity and innocence that could save Western civilisations on the decline, but conversely, in the second half of the century, with the sudden explosion of the colonial expansion, the native was turned into the degenerate savage Great Britain had to save from his barbaric ways (178-9).

Thus, in each period, whether Romantic or mid and late-Victorian, the representation of the Other, whether philosophical, literary or scientific, is a direct result of the prevailing ideology of the time. With the transition from a utilitarian advocacy of freedom, *laissez-faire* and abolitionism which was a direct result of Great Britain's unrivalled industrial and naval supremacy, to a context of fierce economic and geopolitical competition, especially in the colonial world, an increased interest in what the colony

could bring to the metropolis became omnipresent and the luxury of furthering scientific knowledge for the sheer sake of universal progress had come to be considered more or less obsolete or amateurish.

Towards the end of the century, science was increasingly used in the service of empire but the reverse statement was rarely true. In Australia for instance, whether with botany and its instrumentalisation as a perfect means of forcing beings, be they plant or human specimens, into a preestablished grid imposed by empire and set up to serve its interests, or with medicine and its successive pseudo scientific experiments in matters of adaptation (or the impossibility thereof), degeneration or even assimilation, science came in handy as a perfect tool for colonial ideology. Both its apparently rigorous and rational systematicity and its more tentative experimental aspects could serve the imperial enterprise of classifying but also of correcting the natural course of evolution and selection by either speeding up the natural disappearance of a doomed race (imported diseases and their deathly toll only proved the inherent inadaptability of the native) or preventing it by a progressive "breeding out" of the Aborigines. As Sheila Whittick points out, the dynamics of classification found a perfect if grim illustration in the blind worship of scientific measurements and the fetishistic collection of human remains that characterised racial science in the second half of the nineteenth century and the beginning of the twentieth century. Indeed, the indigenous body could provide the ultimate tangible proof of the inferiority of the native on a global scale of evolution and thus confirm the pseudo scientific prediction of the necessary and ineluctable "passing of the aborigine" as amateur and self-proclaimed anthropologist Daisy Bates would have it in the title of her famous book published in 1938. In her analysis of the complex entanglement between hard sciences such as anatomy, craniology, phrenology and social sciences like anthropology or ethnography increasingly developping, Sheila Whittick shows how irremediably ideological scientific practice could be. Instead of applying one of the most basic principles of the discipline, namely the law of deduction, imperial anthropology, ethnography and museumization tended to first set up an *a priori* theory of extinction and then try and find scientific data to prove the validity of the theory. In so doing, as Patrick Brantlinger shows in his book *Dark Vanishings*, scientific and imperial discourses coalesce in an epistemologically specious way; he thus terms "extinction discourse" a "discursive formation" (in Foucault's sense) which "does not respect the boundaries of disciplines or the cultural hierarchies of high and low" in presenting side by side the analyses of

"humanitarians, missionaries, scientists, government officials, explorers, colonists, soldiers, journalists, novelists and poets" (2003, 1).

In the last section of the chapter, Donna Andréolle and Susan Berthier-Foglar demonstrate how, even in "purely" scientific works such as Samuel George Morton's *Crania Americana* (1839) or Josiah Nott and Gliddon's *Types of Mankind* (1855) race theories prevail. And it is therefore interesting to replace such discursive formations in their respective contexts, namely the first half of the nineteenth century in America, with a continued expansion west and the divisive issue of slavery. Morton tried to be as neutral as possible in presenting some objective data, even though his selection of criteria for assessment can be criticised; some of his conclusions, however, would later on be pounced upon to justify slavery– his claim, for instance, that the black man would usually accept relatively easily a state of affairs detrimental to him and not of his own choosing. Conversely, Morton insisted on the fact that different types of black people could range from "intelligent" to "stupid" and such an argument would most probably have been quickly forgotten. The impact of the political and ideological context was even more striking in the work of his successors Nott and Gliddon who selected the aspects from Morton's work that enabled them to support the theory of polygenism and therefore of the distinct nature of the black man as perfect for enslavement contrary to the Indian or other races. The striking irony of such anthropological research was that, *in fine*, neither the North nor the South really used such scientific theories to defend their respective positions contrary to what was happening only shortly afterwards in Europe with the fierce scramble for new colonies in the period that came to be called new imperialism.

On the North American continent, the political and philosophical approaches to science had another essential concern from the very beginning of the nineteenth century, that of America's *manifest destiny* where the principles inherited from the Enlightenment could best flourish. The expansion to the west of the American empire was simply synonymous with the advance of scientific progress and universal knowledge; it is only in the second half of the century that science became so central to political discourse in trying to assign a respective place not only to Indian natives and black slaves but also to the American empire as opposed to all other empires, British or otherwise. Although attitudes toward empire-building and the role of science therein were obviously inherited from the traditions of the British empire of which they had been an integral part during the colonial period, Americans' commitment to using science in the name of colonisation was seen as a necessity if the

United States were to be "put on the map," so to speak, as the American republic emerged:

> The Americans living in this period of exploding scientific inquiry, the fundamental fact conditioning every thought and deed was the consciousness that they were now an independent nation. With respect to science this meant two things: as the example par excellence of useful knowledge, science must be cultivated to promote the interests, prosperity, and power of the rising American nation; and as the supreme example of the powers of the human mind, the success of science challenged Americans to prove to the world that republican institutions were as favorable to intellectual achievement as they were to liberty. (Greene 1984, 5-6)

The key idea here is the notion of *useful* knowledge, that is the promotion of science through which "agriculture is improved, trade enlarged, the arts of living made more easy and more comfortable, and, of course, the increase and happiness of mankind promoted" (*American Philosophical Society* 1771 in Greene 1984, 6). And as both Mehdi Achouche and Jean-Marie Ruiz point out in their respective articles, at the heart of the American vision of science and the building of the American empire resided the figure of Thomas Jefferson. One of the founders of the American republic, astute politician, inventor, and third president of the United States, Jefferson himself was fascinated with various fields of science—ethnography, meteorology, botany and paleontology to name but a few—as is attested in his *Notes on the State of Virginia* (1781) for example; and he spent much time and energy disproving Comte de Buffon's theories on the supposed degenerating nature of the North American climate on its fauna and flora.

Strangely enough, however, Jefferson was antipathetic to scientific theory as well as uninterested in nomenclature and classification which were in vogue at the turn of the nineteenth century, assuming a purely utilitarian vision of science; thus he found botany to be the most important science simply because plants supplied

> the principal subsistence of life to man and beast, delicious varieties for our tables, refreshments from our orchards, the adornments of our flower-borders, shade and perfume for our groves, materials for our buildings, or medicaments for our bodies (qtd. in Greene 1984, 33)

John C. Greene (in *American Science in the Age of Jefferson*, 1984) concludes, then, that although Jefferson was "unimpressive as a scientist and unimaginative in his attitude toward innovation in science" (33), he

was an untiring *promoter* of science. This is most obvious in the numerous scientific expeditions which he organized to explore the territories acquired by the Louisiana Purchase of 1803, the most famous of which was the Lewis and Clark Corps of Discovery expedition of 1804-1806. True to Jefferson's pragmatic approach to science, Meriwether Lewis, captain of the Corps and former personal secretary to Jefferson, was trained by the best scientists of the day in field medicine, ethnography, mineralogy, botany and zoology; in the famous letter addressed to him by Jefferson, he was instructed to map all things of interest, provide detailed information on Indian tribes encountered as well as "other objects worthy of notice" such as

> the soil & face of the country, it's [sic] growth & vegetable productions, especially those not of the U.S;
> the animals of the country generally, & especially those not known in the U.S.;
> the remains or accounts of any which may be deemed rare or extinct;
> the mineral productions of every kind […];
> climate, as characterized by the thermometer […] the dates at which particular plants put forth or lose their flower, or leaf, times of appearance of particular birds, reptiles of insects. (qtd. in Ronda 1998, 34-35)

The expedition was to return with a total of over five thousand pages of journals, botanic samples, sketches of animals and Indian tribes and the first accurate maps which banished forever the myth of the Northwest passage; the great irony of this scientific episode of the early American empire is that this work was to fall into oblivion, filed in the archives of the American Philosophical Society and only "rediscovered" at the turn of the twentieth century for the centennial celebration of the Corps of Discovery.

Science was used in other ways to shape empire-building. As Mark Meigs points out, for example, the unearthing and displaying of dinosaur remains in museums such as Charles Peale's in Philadelphia were used to build a popular image of American domination of science. Yet another aspect developed in Jean-Marie Ruiz's article is American fascination for the astronomical model of the planets revolving around the sun which gave birth to the notion of "political gravitation," used to serve expansionism beyond American shores in the late nineteenth century. Feeding into this newer, imperialistic vision was the shift from the Enlightenment view of a rational, stable universe to the Darwinian view of progress as a result of inequality in a world of change and competition for resources. This would not prevent, however, a certain nostalgic return to

the veneration of nature as embodied in John Muir in the early twentieth century, and the desire to preserve the receding wilderness in the name of the same science which had been so instrumental in conquering the great American continent.

# PART I:

# SPACE AND STRUCTURES OF POWER

# CHARLES DOUGHTY'S QUEST AND CRUSADE IN *ARABIA DESERTA*

CATHERINE DELMAS

In his book *The Penetration of Arabia* (1904), David George Hogarth shows that the European knowledge of Arabia in the early 20th century was based on the various journeys of exploration undertaken by Westerners since Ludovico di Varthema in the 16th century and the data they had collected. Arabia at the beginning of the 20th century still challenged European knowledge and imagination as numerous blanks on the map remained to be filled. The country resisted exploration for religious reasons, as European visitors were not allowed to enter or even come near the holy cities of Medina and Mecca. Furthermore, the Arabs mistrusted and were often hostile to Christians. The other reasons were climatic and geological as some extremely dry areas like the Nejd or the Nefud deserts were sparsely populated or uninhabited and made exploration extremely difficult.

Although no explorer of inland Arabia himself, Hogarth, an archeologist and later the curator of the Ashmolean museum in Oxford, derives his presentation of the situation, geology and history of the country from previous accounts, i.e. from European observation and representation, and not from Arab testimonies and direct sources. His book shows that knowledge is a construct, both an archive composed of the various data and documents piling up on Arabia and brought back by European travellers (notes, journals, maps, drawings, as well as stones or artefacts), and an ideogical and cultural construct owing to the selection, analysis and interpretation of documents from a western point of view.

At first the urge to discover the country was motivated by personal reasons, more than political ones: curiosity, the physical challenge a journey through Arabia represented, courage in the face of adversity and danger, fame and recognition which were the rewards for one's efforts, and which resulted in fierce competition between European travellers. They all walked in the steps of their predecessors, but were all eager to be the first explorer to set foot in a so far unknown area and to bring back new information. No European traveller had been able to explore the area of

Meidán Sâlih since Varthema. Ludwig Burckhard went as far as Petra, the Nabatean necropolis, but Charles Doughty, who managed to continue the journey from Petra to Meidán Sâlih, was the first explorer to visit the place and copy the inscriptions on bibulous paper.

When he came back to England, competition with Euting, Burton and Charles Huber, the French explorer, made his recognition difficult. Doughty was an obscure scientist at the time; the British Museum refused to publish the results of his findings and he was acknowledged by the Royal Geographical Society much later, in 1912. As Taylor explains in his biography, Burton was already planning to visit Meidán Sâlih and the Blunts were in Hayil. Some of his discoveries, like the stone he had found in Teyma, were credited to Huber and Euting (Taylor 1999, 225). Some of his results were eventually published in *Globus* in Germany thanks to Alois Sprengler, the author of *Die Alte Geographie Arabiens* (1895), a copy of which he carried with him in Arabia; the inscriptions of Meidán Sâlih were published in France at the Académie des Belles Lettres thanks to Ernest Renan.[1]

The military metaphors used by Hogarth in his book illustrate the fierce competition between the various explorers and cast light on their desire to conquer the unknown—he speaks of scientific "conquest," of "attack" and "penetration;" however they also foreshadow the military penetration of Arabia during the First World War, when Thomas Edward Lawrence, working for the War Office in Cairo, later commissioned by the Arab Bureau directed by Hogarth, led the Arab rebellion and guerilla warfare against the Ottoman occupation. David Hogarth, Thomas Edward Lawrence, Gertrude Bell were archeologists and historians, and they were all present in Palestine and Syria before the war. Lawrence conducted excavations on the archeological site of Karkemish[2] under Hogarth's supervision and met Gertrude Bell there in 1911 (Brown 1991, 36). With Woolley, he explored the Sinai, and the findings were published in a report entitled *The Wilderness of Sin*; meanwhile the officers who accompanied them mapped the area, then controlled by the Turks (Brown 1991, 4). Cartography and the record of topographic data, under the cover of harmless scientific research such as archeology, geology or geography, were obviously useful to the British army and the secret services to which T.E. Lawrence and G. Bell belonged.

However, Charles Doughty (1843-1926), who travelled to the Middle East and explored the Sinai in 1873, hardly corresponds to the portrait of the scientist with covert activities. His biographers underline his "quixotic genius" (Hogarth 1904, 275) and "his almost obsessive search for ancient remains" (Taylor 1999, 54) while one critic regards him as "a kind of

allegorical Everyman" and "a Spenserian knight" whose quest was "an antiquarian obsession with the origins of civilisations" (Tabachnick 1981, 48, 94). Both Taylor and Tabachnick insist on his romantic vision of rock formations or ruins. Doughty, who saw himself as a wanderer, a "*saieh*," "a walker about the world" (Doughty 1979, I 315), seems at first to be disconnected from political interests in the Middle East; he left England in 1870 for a conventional Grand Tour of Europe which took him to Belgium, France, Italy, Malta, Tunisia and Algeria. From 1873 to 1875, he travelled to Greece, Egypt, Palestine and Syria; the desire to explore the Nabatean city of Meidán Sâlih motivated him to go back to the Middle East and after a year in Damascus, where he learnt Arabic and prepared his journey, he explored inland Arabia from 1876 to 1878. Doughty was poor and travelled alone, without the financial support of the Royal Geographical Society and the British Association, and without the recommendations of the British Consul in Damas and of the *Dowla*, the local Turkish authorities. He first accompanied the *Hajj* as far as Meidán Sâlih, then explored the desert, sharing the lives of the Beduins who welcomed him, and stayed in small towns like Teyma, Hayil, Kheybar, Boreyda and Aneyza until he reached Jiddah and left the country.

Doughty was both a poet and a scientist "with a dishevelled mind," said Professor Thomas George Bonney from London University where he studied geology (Taylor 1999, 23). The portrait of the "peripatetic scholar" (Taylor 1999, 27) or mystic wanderer who roamed the Arabian desert in search of Nabatean or Hymiaritic inscriptions, rock formations and ruins seems, at first, to undermine the close link between knowledge and power, science and imperialism drawn by Edward Said in his seminal works *Orientalism* and *Culture and Imperialism.* Doughty's autobiographical narrative, *Travels in Arabia Deserta*, published in two thick volumes ten years after he came back from Arabia, was furthermore poorly received by the critics and did not quite correspond to the readers' and scholars' expectations in matter of travelogues. Yet we may wonder whether, through the study of Doughty's quest and crusade in Arabia, exploration can remain innocent and disconnected from political and military interests, or on the contrary whether scientific contribution was not inevitably linked to imperialism in the Victorian era.

After failing to enter a naval career in keeping with a family tradition of naval officers, squires and clergymen, Doughty studied at Gonville and Caius College, Cambridge. His early interests in fossils and rock formations led him to prefer natural sciences to the Classics and to study geology and archeology. Recent findings in England and France and Lyells' *Principles of Geology* challenged Christian beliefs in divine

Creation in the same way as Darwin's theory of evolution revisited the origins of Man in *The Origins of Species* and *The Descent of Man*. The epistemological break was marked by the rise of archeology, prehistory, geology, i.e. human and natural sciences centered on the origins of man and the earth.

Such was Doughty's quest in Arabia:

> Of surpassing interest to those many minds, which seek after philosophic knowledge and instruction, is the Story of the Earth, Her manifold living creatures, the human generations, and Her ancient rocks.[3]

The emphatic, nearly bombastic tone, the archaic grammatical inversion and use of capital letters cast light on the grandeur of the task undertaken by an enlightened scholar and on the universality of a quest for the origins of time and Creation. His epistemological field is plural, in order to encompass the diversity of the living and ancient world. "Liberal sciences," as he calls them (Doughty 1979, I 643), correspond to human, natural and social sciences, and comprise geology, anthropology, ethnography, archeology, epigraphy, linguistics, natural sciences and medecine, which he practiced with the help of a book, but without any previous formation.

Doughty's travelogue reveals his interest in geology and archeology, two disciplines he constantly associates in order to discover the mystery of Creation. He observes rock formations and sand dunes, the harras or volcanic plateaux, the link between topography and hydrography, and the data he collects are illustrated by numerous drawings. His panoramic gaze, the topographical study combined with the minute observation of rocks, result in a survey of the geomorphology of the country, transcribed onto a map. His archeological study of Graeco-Roman and Nabatean remains likewise encompasses towns, architecture, inscriptions and the stone of Teyma.

The two disciplines mingle when, for example, he points out the volcanic origin of the basalt used to build the ancient city of Umm Jemâl, human traces (a cross and Greek inscriptions) and the Biblical origin—Beth Gamul in Jeremiah—of the town (Doughty 1979, I 50). The adjectives he uses—"eternal," "endless," "indestructible" (I 51)—qualify the basalt itself, and dovetail the scientific approach and the belief in the eternity of divine Creation.

Doughty constantly intertwines geology, archeology and Biblical references when he travels in Palestine, and goes from Damas to Petra and Meidán Sâlih. He quotes the Old Testament to refer to places, to compare the present nomads to the "tent dwellers" of the Bible, their habitat, way of

life and activities. His approach is descriptive and comparatist, and Doughty's empiricism, based on observation and deduction, serves to prove the veracity of the Old Testament. The Bible is thus the hypotext on which scientific observation is conducted, and science is the means used to prove the truth of the Biblical text. The reader then wonders whether science is subservient to exegesis, or whether the Bible is the key which is necessary to decipher and interpret the world. The Old Testament is evoked to explain the origin of the desert of Edom and Moab (Doughty 1979, I 83) and conversely geology proves the Bible right: "the high limestone downs and open plains of Ammon, Ruben, Gad and Manasseh …the shallower grounds, we may read in the Hebrew Scriptures, were at all times pastoral." (Doughty 1979, I 56)

It is then possible to draw a metonymic and semiotic correspondence between Doughty's text meant to represent the world and the world as a text, i.e. a collection of signs to be read, deciphered and interpreted, between hermeneutics and exegesis, between Doughty's words reduplicating the world and the Logos at the origin of Creation. Although the questionings or even the anxiety triggered by Lyell's and Darwin's theories are never alluded to, Doughty seems to consider evolution within the frame of divine Creation. He tries to restore a sense of continuity in the fragments and traces he observes in the desert, which is echoed by the narrative itself, a coherent whole written in retrospect and based on impressions and notes jotted down on the way. The correspondence between geology and genealogy, the various geological strata which compose the soil of the desert and the various layers of historical time (Biblical, Himyaritic, Nabatean, pre-Muslim and Muslim periods), illustrated by the inscriptions he finds and copies, also restores continuity as they are all part of a whole. Tabachnik considers that time is, as a result, "suspended" (1981, 87), but it is also paradoxically fragmented (the time of daily experience) and linear, from the alpha to the omega of Creation. By emphasising human, linguistic and temporal continuity, Doughty restores filiation from the Hebrew Prophets and patriarchs, and to the vertical lineage, Doughty also associates horizontal kinship between the various Beduin tribes of the desert.

His quest for the origins of Man and the Earth is thus both scientific and metaphysical, and rooted in the epistemological crisis of the Victorian era. Doughty finds an answer both in the Bible and science which he compares to a temple—"the indestructible temple-building of science, wherein is truth" (Doughty 1979, II 409). Doughty's scientific and religious discourse is, however, only possible in the Christian world; as soon as Islam is evoked, Doughty considers that science is superior and

necessary to enlighten people steeped in "superstition" and "fanaticism" (*sic*): "a little salt of science would dissolve all their religion" (1979, I 92).

*Travels in Arabia Deserta* is the contribution of an individual scientist to the improvement of knowledge, but it is both an autobiographical and anthropological narrative, organised around a central consciousness, mediated by an omnipresent first person narrator and through a unique point of view, fraught with stereotype and prejudice, and focusing on the recreated persona of Khalil, the Arabic transcription of his first name Charles which also means "friend," supposedly perceived through the eyes of the local people. Tension between the universality of Doughty's quest and the subjectivity of observation and of the autobiographical narrative calls into question the objectivity of the scientific report and highlights the relativity of truth.

Furthermore his literary style often overlaps with his scientific discourse; his sublime representation of awe-inspiring volcanic landscapes can verge on the Gothic or lapse into the peacefulness of the pastoral. His modes of representation, which convey affects, go counter to scientific observation and his poetic, alliterative style, often using metaphors and hypallages, is hardly in keeping with the scientific report.

Indeed, Doughty saw himself as a poet more than a scientist or an orientalist as he wrote in a letter to David Hogarth in 1902:

> "In writing the volume *Arabia Deserta*, my main intention […] was not so much the setting forth of personal wanderings among a people of Biblical interest, as the ideal endeavour to continue the older tradition of Chaucer, Spenser, resisting to my power the decadence of English language (*sic*): so that while my work should be a mere script for Orientalists, it should also be my life's contribution, so far, to literature." (quoted by Taylor 1999, 234).

After *Arabia Deserta*, Doughty persevered in his literary quest by writing an epic poem in 24 cantos and 6 volumes about the origins of the nation, *The Dawn of Britain*, "the worst poetry of the 19th century" said William Blunt (quoted by Taylor 1999, 266). The epic combines his patriotism and the defense of the Mother Tongue. It was followed by "unactable dramas" (Taylor 1999, 268): *Adam Cast Forth*, *The Cliffs*, and *The Clouds*, and other poems *The Titans* and *Mansoul*. Doughty's obsessional concern was obviously the issue of origins: the origins of Man, of the nation and of the English language, his models being Chaucer and Spenser.

This already appears in *Arabia Deserta* in the archaic vocabulary and syntax, which makes the reading at times difficult and which explains why

the book was rejected. A report written in December 1883 by Sir Henry Rawlinson from the Royal Geographical Society deplores both Doughty's style and incompetence as a scientist:

> "He had no geographical requirements; no knowledge of instruments; no capacity for useful observation, while on the other hand he seems to have to adopt in the description of this journey, such an extravagant eccentricity of style and language as to make his notes not only unfitted to the pages of a scientific journal, but almost unintelligible to any reader, be he scientific or otherwise […]." (quoted by Taylor 1999, 228)

His quest for the origins of language in the pre-Islamic desert and his interests in epigraphy go hand in hand with his quest for the purity of the English language and the use of archaic grammar, vocabulary and syntax in *Arabia Deserta.* The *hajj* or pilgrimage he joins from Damas to Meidán Sâlih, the tales and conversations heard on the way, the language, are reminiscent of *The Canterbury Tales.*

Doughty's quest and pilgrimage in the company of the *Hajj* also turn into a Quixotic enterprise which conditions discourse and representation. Doughty becomes a crusader, not only in the defense of the English language, but as the herald of the western world and the defender of the British nation and Empire. He constantly opposes the embellished portrait of Khalil, his alter ego and persona carrying the torch of progress, science and Enlightenment, to the Other, whose conversations, fables and proverbs in Arabic are reported in medieval English. Linguistic archaisms used to underline the purity of the English language, are also used to highlight the Other's difference and primitive culture. Hierarchy also applies to the Arabs themselves, and Doughty celebrates the golden age of Arabia Felix, "more civil" (Doughty 1979, I 154) but condemns Islamic Arabia, "a decayed country," "forsaken and desolate," preferring myth to history and turning evolution into decadence.

Doughty's jingoism is blatant when the nostalgia for medieval times reveals the portrait of a Crusader in the holy land, a defender of the Christian faith. Doughty assimilates Islam with superstition and fanaticism, and his personal *jihhad* is to claim and defend his faith among "hostile," "fanatic," "barbarous" (1979, I 73), "savage," "hideous" (I 181), "frenetic, sanguinary" "wretches" (I 251). While Hogarth said he was "a humanitarian agnostic," Tabachnik showed that he followed the example of St Paul and St John, and was influenced by the New Testament more than by the Old Testament; but the tension which opposes the scientist and the Crusader, the quest for the truth and ideology, calls into question his humanitarianism and casts light on his patriotism.

The notions of quest and conquest can hardly be dissociated when Doughty defends British hegemony: "But we by navigation are neighbours to all nations, we encompass the earth with our speech in a moment." (Doughty 1979, II 58). He furthermore contributed to the penetration of Arabia by the British army and by T.E. Lawrence who used his map and his book to lead the Arab revolt. The second volume contains useful information about towns and tribes, clans and territories, kinship, the number of inhabitants and soldiers, the location of wells and oases. Human, geographical and topographical data are the surface level of a scientific report which, according to Lawrence, was "the indispensable foundation of all true understanding of the desert," "the great picture-book of nomad life" but which could be used as a "military text-book [that] helped us to victory in the east."[4]

If Doughty was not a conqueror himself, the quest and crusade undertaken by the poet and scientist in Arabia, his discourse and representations, confirm Edward Said's emphasis on the link between knowledge and power, orientalism and imperialism. Doughty claimed he was not an orientalist according to his own definition of the term, i.e. neither a man telling extravagant stories nor a scholar spending his time in libraries. Yet the plurality of his scientific approach corresponds to the definition given by Edward Said as it encompasses natural, human and social sciences and turns the Other into an object of study. Doughty was not an isolated adventurer or a mad scientist, even with "a dishevelled mind"; he was a man of his time and his affiliation is both cultural and ideological. It is not only blatant in his vindictive tone against Islamic Arabia or in his defense of his faith, language and nation; it also underlies his scientific approach, based on binary oppositions, classification, typology, and hierarchy[5] which connote racial prejudice and denote his hierarchical frame of mind, or "arborescent thought."[6] More than "the herald of the outside world" turned into a legend by the Arabs,[7] he was the herald of the Western world, whose quest and crusade, and epic and scientific discourse, expressed ideological, cultural and religious concerns from a Eurocentric point of view.

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