

CHRISTIAN CONFESSIONS AND STYLES OF SCIENCE IN NINETEENTH-CENTURY BENGAL:

**Their impact on the emergence
of the social sciences in Britain**

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In talking about the structures underlying the relationship between what it is currently popular to call the “North” and the “South”, it is common to view “Northern” science as a homogeneous, undifferentiated whole, which was, or rather *not*, adequately transmitted to the erstwhile colonised part of the globe. Yet, over the last decade, a growing number of studies have endeavoured to show that scientific practices and contents are different in the different cultures that constitute the “North” and the idea of national styles has slowly started gaining acceptability to a point where attention is today turning to the identification of forces at work in “denationalizing” science (1) – at any rate a far cry from the state of affairs just about a quarter of a century ago! (2)

However, seemingly untouched by these recent shifts, historians of colonial science (3) tend to continue thinking in terms of metaphors such as “North-South” or “East-West” or, again, “[one small] Centre-[one large] Periphery”. For, received wisdom amongst most scholars of colonial science still has it that science is a universal and rational enterprise, and religious, or cultural, ambitions play little part in fashioning its content. Its development is considered inexorable, individual socio-political contexts serving only to impede or accelerate it. The spread of Northern/Western/Metropolitan science, the epitome of rationality and universality, is thus popularly conceived of in diffusionist terms: *Science takes root sooner or later everywhere because of its character, the speed depending upon the extent of development of rationality in the host culture and the degree of willingness of the colonial powers to impart their knowledge* (4). In several earlier papers, I have argued against this conception by focusing on “native” scientific practices in the Indian subcontinent in the nineteenth and twentieth centuries (5).

In this paper, I would like to illustrate some of the difficulties of looking at science as a monolithic block, this time turning my attention away from “non-Western” scientific practices or, in this conference’s vocabulary, scientific practices “beyond the

Metropolis": instead, I shall here turn to the "West" or the "Metropolis" itself and try and bring to the fore the different conceptions and practices that the terms "knowledge" and "science" covered in various *British* practices in India in the late eighteenth and early nineteenth centuries. This period (in the region concerned) has so far been largely neglected by mainstream historians of science, having been left largely to social and general historians who, while recognising the differences that we shall be looking at here, have tended nonetheless – the universalism of the Enlightenment or the homogeneity of Orientalism *oblige* – to confer a lot more unity to the resulting practices than is warranted (6). Where they have recognised disunity in knowledge practices, it has been to show that geographical displacement drove practitioners to schizophrenia, making them radically change their categories and practices when turning from Britain to the Indian subcontinent (7). Historians of science, unlike general historians and other social scientists, have also tended to underplay, if not actually ignore, the importance of the East India Company and its servants in the emergence and evolution of various sciences during this period(8); this paper is an attempt to rectify in part this "injustice". Insofar as it argues that the agenda of later nineteenth century social sciences in Britain emerged hand in hand with the forging of that nation, it could also be read as having been inspired by Linda Colley's recent book on the process of the forging of Great Britain as a nation (9). And inasmuch as it seeks to bring out the cultural locality of scientific practices, this contribution will serve also to illustrate some of Sandra Harding's contentions, though it will problematise her notion of "European science" (10). Building on the assertion that through European colonisation, "India – and the world – were added as a laboratory to the edifice of modern science" (11), this paper tries to elaborate on the meaning of this statement: laboratory studies have already taught us that there is no clear divide between the context and content of the laboratory during the course of an experiment, one of the main consequences of the successful experiment being precisely a clear determination as to what counts as context and what as content (12). It will thus try and show some of the difficulties involved, in scientific matters, in trying to separate subject from object and observer from observed: the objects that went into and emerged from the laboratory did not affect just the Other – at times at least, the material input and output was also the Us (or, from my personal standpoint, the Other). However, before starting, a few words about the context of British presence in India might be in order.

Direct contact between England and India dates back to 1600 when Elizabeth I granted a charter to a group of English merchants called "The Governor and Company of Merchants of London Trading into the East Indies", known throughout its long history simply as the East India Company. Having come initially to participate in the growing spice and luxury-commodity supply to Europe, the British, for a complex of circumstances outside the scope of this paper, found themselves having to administer territories that they had initially conquered for strategic purposes in the face of inter-European rivalry, especially vis-à-vis the French. But, as at home so too in India, Britain found itself transforming in the second half of the eighteenth century from an emerging nation based on Protestantism and commerce to an empire sustained by force of arms: the conquest of Bengal in the middle of the century put the British firmly on the road to territorial

– and political – power in India (13). However, the consciousness of this new role was slow in coming for, in the years that followed the conquest of Bengal, Company officials devoted all their attention to ruthlessly plundering and devastating the land (14). But after ten million lives, or a third of the population of Bengal (almost all peasants and artisans), had been lost in a space of three years – victims to famine, in large measure a direct consequence of the ruthless policies of the Company's servants – attention was turned to stabilising the internal order of the province (15). The Company and its agents shifted from commercial plunder to more orderly and permanent forms of exploitation and government.

So it was that Warren Hastings, Governor-General of Bengal from 1772 to 1785, received orders from the Company's Court of Directors in London to "stand forth as Diwan" – in other words, to take over and directly control the whole civil administration of Bengal. And since during this period the emerging state of Great Britain itself considered civil justice, public order, transport and communications as being intimately linked to taxation (16), the Court's order meant that by the agency of the Company's (200-odd civil and 1000 or so military) servants, Hastings took upon himself "the entire management of the revenues" (17). In order to successfully achieve this enterprise, this meant, to his mind, the drawing up of a kind of Domesday Book of the Company's territories in India: "Every accumulation of knowledge", he wrote, "and especially such as is obtained by social communication with people over whom we exercise a dominion founded on the right of conquest, is useful to the state" (18). Giving the highest priority to a knowledge of languages, Hastings devised a policy of monetary incentives to those of his officials who were willing to study the languages and other aspects of Indian society, a policy that constituted the first step in the transformation of the study of exotic peoples from a gentlemanly pastime into a vital concern for the emerging rulers of the subcontinent. This was also the first step in the transformation of the emerging British empire from one held by force of arms to one held – at least in fantasy – by information.

Now, not all of the Company's agents were interested in, or capable of, responding to these incentives. For, it must be said that the vast majority of recruits to the East India Company arrived in India between the ages of fourteen and seventeen with the prospect of making a quick fortune. In keeping with the tradition of the Company's service, those from England – and we shall have more to say about the Scots a little later – were usually younger sons from commercial, landed or professional (mainly London-based banking) families which competed with each other for procuring highly lucrative careers in Bengal for their offspring. The only prerequisite for recruitment to the Company seems to have been some knowledge of commercial accounting (19). Few had been to university, a costly affair normally reserved for elder sons or for those seeking academic or clerical careers. Engrossed in fortune-making, most thus had little curiosity for the subcontinent's inhabitants nor, indeed, the culture to acquire learning – commonly held to be incompatible with gentility (20). Besides, a small but significant minority of officials were either evangelical militants or sympathisers and, like their brethren in late-eighteenth- and early-nineteenth-century England, saw education as a means of reinforcing traditional religious (i.e., Christian) codes of behaviour. Thus, by

using "the simple elements of our arts, our philosophy and religion" (21), they hoped to rid the Hindus of the moral depravity which was the cause of what the evangelicals perceived as their degeneracy. They again were curious of their Indian subjects only in knowing the depths to which their depravity could reach.

Of the minority of Englishmen who had a penchant for intellectual pursuits in the leisure time their fortune-making activities left them (22), some were, in the fashion of the "Great-school"-and-Oxonian, High-Church élite of the eighteenth century to which they generally belonged, obsessed with classical thought (23). Indeed, their education had been dominated by the study of Greek and Latin (24). "Throughout the eighteenth century", write Lawson and Silver, "in the education of the noblemen and the gentlemen the university continued to be supplemented by the grand tour almost as a matter of course... Italy with its relics of the classical past was the chief attraction. Bred in the language and literature of Greece and Rome at Eton or Westminster and then at Oxford or Cambridge, and impressed by the visible remains of the ancient world seen on their travels, young milords shipped home cargoes of antique and Renaissance statuary, bronzes, marbles and mosaics to adorn their splendid neo-Palladian mansions, classically correct in every detail, which cultivated taste and growing rent rolls had prompted them to raise in their landscaped English parks. Educated men of this class easily saw themselves through the eyes of the Romans; their attitudes to politics and government, conduct, manners and style mirrored those of the world of Horace and Virgil and testify to the influence of the classical discipline in which they had been trained" 25).

Warren Hastings himself had been to Westminster; John Shore, Nathaniel Halhed and William Jones were at Harrow from where the latter two went on to Oxford (26). It goes almost without saying that on arriving in India, their understanding of the country and its inhabitants was shaped by their own education and training. Sanskrit, in their eyes, was to Indian vernaculars what Greek and Latin were to contemporary European languages and, like the late medieval and Renaissance scholars who invested a great deal in recovering the works of ancient Greece and Rome, they concentrated in their exploration of Indian learning on ancient literary, philosophical and scientific works, mainly those written in Sanskrit. Naturally enough, they sought as informants and privileged interlocutors their subcontinental counterparts – those of the Brahminical upper castes who mastered Sanskrit (assuming, of course, that they were willing to impart their knowledge to their new colonial masters, for not all of them were all that eager to do so (27)) – a reliance which only reinforced their classical inclinations. And in the same way as they cared little for their own countrymen or the contemporary Greece and Italy that some of them had probably visited, so too they held contemporary Indian society in disdain (28). Their understanding of the contemporary society that they were supposed to govern was shaped by a scrutiny of the classical Sanskrit texts and of texts – notably, the original for Halhed's *Code of Gentoo Laws* and Colebrooke's *Digest of Hindu Law on Contracts and Successions* – specially commissioned to be written, in Sanskrit, by their Brahminical collaborators (29). Even contemporary languages were systematised through this idealised vision of Sanskrit grammar. The enterprise reached its zenith when, in "On the Hindus" (1786), Jones claimed deep similarities between Sanskrit, Latin and Greek, thus becoming a formative influence on the future discipline of compa-

rative linguistics and comparative philology and, indeed, on one of the founders of ethnology in early nineteenth-century Britain: James Cowles Prichard (30). He also became an unwitting precursor of Victorian "physico-cultural" anthropology whose central concern was to study the connections between "great families of mankind" (31). Besides linguistics and grammar, logic, metaphysics and ethics were subjects they typically considered sciences. Among the most important works to be written by this group were: *The Code of Gentoo Laws, Grammar of the Bengali Language* (Halhed, 1776 and 1778 respectively); *The Bhagavad Gita*, "On the Chronology of the Hindus", "On the Gods of Greece, Italy and India", "On the Origin and Families of Nations", *The Institutes of Hindu Law*, (Jones, 1785, 1788, 1790, 1792, 1793); *A Digest of Hindu Law*, "Enumeration of Indian Classes", "On the Sanscrit and Pracrit Languages", "On the Vedas", "Essay on the Notions of the Hindu Astronomers" (Colebrooke, 1798, 1798, 1802, 1805, 1816). The Asiatic Society of Bengal, founded in 1784 by Jones and Hastings, was to become a powerful and extremely efficient agency for publicising their findings both in India and in Europe and had an undeniable influence right up to the 1830s not only on the Hindu élites of Bengal but also on the English and German romantic movements (32).

But, as we have just seen, the great schools and the two universities trained people mainly in the classics and had in fact become nurseries of the Anglican clergy. The number of university graduates with a training in natural philosophy from the English universities was declining and men of science, law and medicine were mostly trained outside these institutions, either in the Dissenting academies – which combined theological with scientific training and produced many outstanding men of the eighteenth century – or in the Scottish and Dutch universities (33). Indeed, it was predominantly the Scots who manned the highly successful operational scientific and technological aspects of British activity in India – with the general mapping of the newly conquered lands as well as with the logistics of maintaining power, and covered disciplines like botany, zoology, cartography, meteorology, human and veterinary medicine and civil and military engineering. The reason for this was that, in Scotland's more egalitarian Presbyterian tradition, many more went to university there than in England and at a much earlier age, often at fourteen or fifteen. If not all had university degrees, a good number had attended university courses. Of those Scots who had degrees, some were Doctors of Medicine or of Divinity from Scottish or Dutch universities. At any rate, Scottish education, both at school and university was much broader than in England covering scientific subjects as well as history, navigation, geography and mensuration at school, and natural and moral philosophy for the university arts degree (34). However, Scotland itself did not have the capacity to absorb its qualified work force which consequently emigrated to England seeking specialised employment there. A large number were absorbed into Britain's ever-expanding colonial services to occupy senior technical positions – especially as engineers, military commanders, veterinarians, diplomats, doctors and botanists. Besides, many Highlanders were encouraged to join the army in a concerted effort to divert their martial spirit from Jacobite adventure to imperial war (35). It is estimated that by the mid-eighteenth century, more than a quarter of the East India Company's army officers were Scotsmen (36). And by the end of the century, their proportion had reached nearly a half (37). Thus it was that it was medical

officers of the Company who were the first to systematically make meteorological recordings;³⁸ that George Bogle travelled to Tibet to negotiate trade relations or Major Alexander Hannay to the Mughal court on an equally hazardous mission; that Robert Kyd set up the botanic gardens in Calcutta and William Roxburgh consolidated his effort, assisted by Hunter, Anderson and Buchanan; that John McClelland headed the first committee for the exploration of mineral resources; that Colin Mackenzie was one of the first to professionally start topographical surveys; and that David Ross was called upon to teach natural and experimental philosophy when the Hindu College was set up in Calcutta in 1817. And the list could carry on... Besides, many Scotsmen mastered Persian and Arabic, the court languages of Mughal India, compiled bilingual dictionaries and translated texts to and from them.

However, linguistic ability was not the sole prerogative of the Scots or the High-Church English. Another group of Englishmen was also busy from the closing years of the eighteenth century onwards to discover the languages of the inhabitants of the subcontinent. These were the Baptist missionaries. Persecuted like other nonconformists in England throughout the seventeenth and eighteenth centuries (39), a few succeeded in fleeing and sought refuge in India, establishing themselves at the Danish colony of Serampore near Calcutta. Under William Carey, Baptist-fugitive-turned-indigo-factory-owner-and-small-time-tradesman, the Baptists with their populist notions, sought out the crafts-oriented lower castes and tried to introduce the Bible through an understanding of the languages and ways of life of the indigenous population (40). They were to master a large number of vernaculars of the subcontinent and gain deep insights into the culture of different groups of inhabitants. They too were to write grammars of Indian languages – those actually used – and collect folktales and other lore in order to better understand the people they set out to proselytise. (However, the proselytising met with as little success as did that of the High-church evangelicals.) In 1800 the Serampore missionaries founded a printing press where they cast fonts of many Indian vernaculars including Bengali, Urdu, Oriya, Tamil, Telugu, Kannada and Marathi. This press was the first and most important in the world in its time for books in living oriental languages.

This story shows a mosaic of activities which together made up colonial science in the early nineteenth century, each part manned by a specific group with its specific confessions and conditions of professionalisation, echoing Bacon's description of Salomon's House in the *New Atlantis* (41). The only thing they all had in common (except initially the Baptists who till 1800 were *persona non grata* in British India) was the official agenda to catalogue every aspect of India and Indian life. But, interesting in itself though it might be, this is but only part of the tale: as in the House of Salomon, not only did one need collectors of experiments, experimenters, abstracters, compilers, men who investigate the practical application of discoveries, men who direct new research and those who follow it out, one also needed those who abstract fundamental principles from all the work. For this the "compleat" civil servant had to be formed, one who could be at the centre of the "imperial archive", digest all the information available to him and act on it. The Asiatic Society of Bengal, though a forum for compiling, theorising and disseminating much of the information gathered – and of course legitimating British

rule and its civilising mission in India – was not an official organ of the East India Company and thus could not be directly used for this purpose.

The gap was filled in 1800 when, in an effort to stem the spread among British employees of “erroneous principles of the same dangerous tendency [as the doctrines of the French Revolution]”, which “had reached the minds of some individuals in the civil and military service of the Company in India”, and instead “to fix and establish sound and correct principles of religion and government in their minds at an early period of life” (42), the East India Company authorities in India – notably Richard, Marquess Wellesley, the then Governor-General and elder brother of Lord Wellington – set up a college at Fort William, Calcutta, albeit in the face of a hostile Court of Directors in London (43). In this establishment comparable in size and funds to contemporary Oxford and Cambridge, young, newly arrived covenanted officers of the East India Company, were to spend three years learning English, Hindu and Islamic law, jurisprudence, political economy, world geography, mathematics, natural history, botany, chemistry, astronomy Latin, Greek, Sanskrit, Arabic, Persian and modern European languages in addition to the *culture and the six known languages of their South-Asian subjects* (these being Hindustani, Bengali, Telugu, Marathi, Tamil and Kannada) (44), many of these being disciplines (or languages) never before taught in Britain or in Europe at any level. In order to teach these various subjects Wellesley recruited his faculty amongst the British in Calcutta. He entrusted Persian to Neil Edmonstone, Arabic to John Baillie, Hindustani to John Gilchrist, Sanskrit to Henry Colebrooke and the five remaining Indian vernaculars to the Baptist William Carey (thereby giving the Baptists legitimacy and a fig-leaf of respectability in exchange for their knowledge about those aspects of the natives which were inaccessible to official Indo-British culture). Natural and experimental philosophy was to be taught by a Scotsman, James Dinwiddie. The other subjects were taught in co-operation with the Asiatic Society. Besides, a number of Indians, both Hindus and Muslims, were recruited to assist the European staff and very often taught in their place. It was this institution then that provided the first sustained professional contact between the different “confessional nations” of the British in India, creating a situation which would have been unthinkable in Britain at the turn of the nineteenth century. For although the English and the Scots had had ample opportunity to meet at least all through the second half of the eighteenth century, it was as yet inconceivable for populist dissidents and above all “natives” to congregate within the same precincts in Britain.

In addition to teaching, the College organised and sponsored expeditions all over Company-controlled territories in order to discover and catalogue manuscripts for its library and, by 1805 its Indo-British staff had succeeded in encoding into grammatical forms, transliterating and translating into English a number of spoken languages. The College of Fort William was thus the first of a series of institutions where these different knowledge traditions and the *specific skills attached to each came together, got standardised and pedagogised*. The College was thus the first step in producing a new brand of civil administrator who would be able to synthesise the various styles of knowledge practice of his senior colleagues and who could for the first time be called truly (Indo-) British.

However, inter-confessional rivalries were not yet dead. While the Company's administration in India was engaging in symbiotic experiments, the evangelicals, especially the Clapham sect, not having met with much success in proselytising Indians, were becoming increasingly influential in its Court of Directors in Leadenhall Street (45). Under the leadership of Charles Grant, this group succeeded for example in asserting its authority in limiting the influence of the Calcutta British by establishing the East India College at Haileybury in England in 1807 to act as a counterweight to the College of Fort William. Without initially wanting to replace the Calcutta establishment, the new institution was intended to function as a sort of preparatory school where future civil servants were to be firmly grounded in British socio-cultural values before being turned over to the Calcutta prodigals. The teaching staff at the new institution had a distinct religious orientation, many being Anglican priests and some well-known Evangelicals. It was in this establishment, incidentally, that Thomas Malthus taught. Apart from mathematics, land-surveying, geography, astronomy, natural philosophy, law, classical and general literature, Sanskrit, Persian, Arabic, Hindustani and Bengali were introduced to the trainees at Haileybury with the help of Indian assistants (46). Although the Haileybury establishment did diminish the Calcutta orientalist's direct influence on the Company's new recruits, it only reinforced the *brassage* of knowledge traditions and the emergence of new knowledge through the establishment of these new, hybrid – and durable – networks of trust. For, it was undoubtedly through the institutionalised transmission inaugurated at the Fort William College, and carried on at Haileybury and, in part at the Company's military school at Addiscombe, of the different British – and South-Asian – traditions of the late-eighteenth and early-nineteenth century that works like *Desiderata and Inquiries connected with the Presidency of Madras and Bombay... on points relating to the language, literature, ancient history of families, antiquities, coins, people, architecture, landed tenures, arts and manufactures of India* (1827), J. Long's, *Five Hundred Questions on the Social Condition of the Natives of Bengal* (1862), *The People of India* (1868-75), or the *Caste Handbooks for the Indian Army* (1890s) were written. This hybridised training thus maintained and strengthened an image of knowledge made visible through the lens of administrative finality rendering it impossible – to stand Risle's expression on its head – to determine where science ended and where administration began (47).

Michel Foucault has taught us that discipline and training can reconstruct objects to produce new gestures, actions, habits and skills, and ultimately new kinds of people (48). As a number of old students of the melting pot that were the Colleges of Fort William, Haileybury and Addiscombe wrote manuals for the use of fellow administrators, published papers in *Asiatic Researches* (the journal of the Asiatic Society of Bengal) or in other reviews and found jobs in later life as professors in British universities (e.g., Horace Hayman Wilson who became Boden Professor of Sanskrit at Oxford besides being examiner of Sanskrit at Haileybury and Addiscombe), or were elected to high offices in the various learned societies of the Empire – Henry Colebrooke was to become a member of the Linnean and Geological Societies and President of the Royal Astronomical Society; Andrew Waugh and Thomas Montgomerie became members of the Royal Geographical Society of London – an unexpected consequence of this unique meeting of traditions is seen in the genesis later in the century of a specific British tradition in

geography and anthropology. Also, it might not be out of place to remind the reader of the well-known fact that many of the debates carried out in Britain in the first half of the nineteenth century on the kind of society British society ought to be had as their protagonists people who had either been educated in these institutions or were closely associated with the East India Company (49). James and John Stuart Mill and Thomas Babington Macaulay, for example, had built their careers in the Company, the former as examiners of correspondence, the latter as law member of the Supreme Council at Calcutta from 1834 to 1838.

This story, although taken from the nineteenth century, is pertinent for us today in that it shows how the forging of the epistemology of the power structures of North-South relations also meant the simultaneous forging of at least a part of the North itself. However, it also spells a word of caution – if indeed it needs spelling out again – about the type of knowledge fabricated inside the colonial context: in spite of its apparently disparate nature, not only is the initial manufacture of knowledge fashioned within an epistemic framework of colonialism but the new endeavours that emerge through a confluence of traditions too are framed within “*régimes*” of truth that have their own specificities. They do not necessarily have a great relevance in today’s post-colonial world, and Indian anthropologists and social theorists are still trying to come to grips with the grid imposed on them during the formative years of their disciplines (50). In today’s world of changed and ever-changing equations of power, is it even possible for disciplines that were born in a certain context – and carry in their very process of institutionalisation the limits of the applicability of their truth – to answer our needs with any cogency?



NOTES

- 1) See E. Crawford, T. Shinn and S. Sörlin, eds., *Denationalising Science: the contexts of international scientific practice* (Dordrecht, Boston: Kluwer Academic Publishers, 1993)
- 2) Charles Rosenberg tells of the reaction to an attempt to introduce a course on the history of American science. "Nonsense", replied a senior colleague in the history of science. "Perhaps science in America", he condescended, "but the other was an absurdity; science was an international enterprise, its ultimate essence an ever-shifting structure of ideas dependent upon a developing internal logic and not upon the peculiar circumstances in which they happened to be elaborated. ... Given such an undeniable emphasis upon the internal, intellectual history of science, the study of scientific ideas and institutions in any one nation must seem inevitably parochial, a confession either of atavistic nationalism or of an inability to master that higher calling, the exegesis of scientific innovation". C. E. Rosenberg, "On Writing the History of American Science", in H. J. Bass, ed., *The State of American History* (Chicago: Quadrangle Books, 1970): 183-196; this quotation: 183-4.
- 3) Although a lot of scholars from a number of disciplines have written on questions relating to colonial science, I use "historians of colonial science" in a narrow sense designating a field with a distinct academic genealogy and tradition, with its own channels of validation and communication.
- 4) For the most popular example of the diffusionist thesis, see G. Basalla, "The Spread of Western Science", *Science*, 156 (5 May, 1967): 611-622.
- 5) K. Raj, "Hermeneutics and Cross-Cultural Communication in Science: the reception of western science in 19th-century India", *Revue de Synthèse*, IVe série, 1-2(1986): 107-120; "Images of Knowledge, Social Organization, and Attitudes to Research in an Indian Physics Department" *Science in Context*, 2, 2 (1988):317-339; "Defusing Diffusionism. The institutionalisation of modern science in India in the early 19th century", Paper presented at the *Science and Empires* Conference, organised by CNRS-UNESCO, Paris 3-6, April, 1990; "Knowledge, Power and Modern Science: The Brahmins Strike Back" in D. Kumar, ed., *Science and Empire. Essays in Indian Context* (Delhi: Anamika Prakashan, 1991): 115-125.
- 6) See for instance, D. Kopf, *British Orientalism and Bengal Renaissance. The Dynamics of Indian Modernization 1773-1835* (Calcutta: Firma KLM, 1969); P. J. Marshall, "The Founding Fathers of the Asiatic Society", *Journal of the Asiatic Society*, XXVII, 2 (1985): 63-76; R. Guha, *An Indian Historiography of India*, Deuskar Lectures, 1988 (Calcutta: CSSSC mimeograph, 1988); E. Said, *Orientalism* (London: Routledge & Kegan Paul, 1978). See, however, C. A. Breckenridge & P. van der Veer, eds., *Orientalism and the Postcolonial Predicament* (Philadelphia: University of Pennsylvania Press, 1993).
- 7) S. N. Mukherjee's *Sir William Jones. A study in eighteenth-century British attitudes to India* (Cambridge: Cambridge University Press, 1968) and A. Appadurai's "Number in the Colonial Imagination" in C. A. Breckenridge & P. van der Veer, eds., *op. cit.*: 314-339 are good examples of this type of writing.
- 8) For general historical and anthropological appraisals of this role of the East India Company, see B. Cohn, *An Anthropologist among the Historians, and Other Essays* (New Delhi: Oxford University Press, 1987) and many of the essays in C. A. Breckenridge & P. van der Veer, eds., *op. cit.*
- 9) L. Colley, *Britons. Forging the nation 1707-1837* (London: Pimlico, 1994)
- 10) S. Harding, "Is Modern Science an Ethnoscience? Toward a Postcolonial Epistemology for Science Studies" Paper presented at the ORSTOM-UNESCO Conference on *Twentieth Century Science: Beyond the Metropolis*, Paris, 19-23 September, 1994
- 11) S. Harding, *Loc. cit.*: 8. (With apologies for having telescoped two consecutive sentences into one, especially as the first is a citation from R. K. Kocchar, but I do not think I have in any way misrepresented her intentions!).
- 12) See, for instance, M. Callon & J. Law, "La protohistoire d'un laboratoire" in M. Callon, ed., *La science et ses réseaux* (Paris: La Découverte, 1989): 66-116
- 13) This change is best summed up in the contrast between the careeral success in India of Thomas Pitt, in the first half of the eighteenth century, and Richard Wellesley, at the beginning of the nineteenth century:

- the former through the acquisition of the Pitt diamond which laid the foundation of the Pitt family's fortunes; the latter through the virtual establishment of British supremacy by the defeat of the Marathas.
- 14) A comprehensive list of these "most atrocious abuses that ever stained the name of civil government" [Burgoyne Report, quoted in N. K. Sinha, *The Economic History of Bengal*, Vol. 1 (Calcutta: Firma K. L. Mukhopadhyay, 1962): 186] may be found in "Reports from the Committee Appointed to Enquire into the Nature, State and Condition of the East India Company and of the British Affairs in East India", *Reports from Committees of the House of Commons, 1772-1773*, Vol. III (London, 1803)
 - 15) D. Kumar, ed., *The Cambridge Economic History of India*, Vol. 2, (Cambridge: Cambridge University Press, 1982): 299
 - 16) It is noteworthy that the transformation of state power in Britain during the latter half of the eighteenth century led directly to the creation of the Bank of England and the City. See J. Brewer, *The Sinews of Power: war, money and the English state 1688-1783* (London: Unwin Hyman, 1989).
 - 17) *Memoirs of the Life of Right Honourable Warren Hastings*, 2 vols. (London: Richard Bentley, 1841): I, 214.
 - 18) Quoted in D. Kopf, *op. cit.*: 18.
 - 19) See B. S. Cohn, "The Recruitment and Training of British Civil Servants in India" in *An Anthropologist among the Historians and Other Essays* (Delhi: Oxford University Press, 1988): 500-553.
 - 20) Defoe thus portrayed the "compleat" English gentleman: "That our gentlemen are illiterate and untaught is true; but 'tis as true that where there is one gentleman who complains of it and thinks himself the worse for it, there are 20 that boast of it, value themselves upon it, think their ignorance sits well upon their quality, and that contemn the men of letters and books as below them and not worth their regard; who think learning unfashionable, and, at best, useless to them, and that to write their names is enough for men of fortunes, that they have nothing to do but sit still and enjoy the world and roll in the abundance of it, that the rest is all business and bustle, that 'tis below them and not worth their notice". (Daniel Defoe, *The Compleat English Gentleman*, quoted in G. C. Brauer, *The Education of a Gentleman: theories of gentlemanly education in England 1660-1775* (New York: Bookman Associates, 1959): 57).
 - 21) C. Grant, *Observations on the state of society among the Asiatic subjects of Great Britain, particularly with respect to morals; and on the means of improving it*, reprinted in H. Sharp, ed., *Selections from Educational Records*, Part I, 1781-1839 (Calcutta: Superintendent Government Printing, 1920): 83.
 - 22) For a description of the daily life of the British in India during this period, see P. Spear, *The Nabobs* (Oxford: Oxford University Press, 1963)
 - 23) Winchester (founded 1387), Eton (1441), St. Paul's (1510), Shrewsbury (1552), Westminster (1560), Merchant Taylor's (1561), Rugby (1567), Harrow (1571) and Charterhouse (1611) have been commonly known as the "Great Grammar Schools" for at least two hundred and fifty years although they were officially separated from the rest of the English schooling system only by the Act of 1864. These schools supplied one-third of the *élite* in England of the eighteenth and nineteenth centuries. See N. Hans, *New Trends in Education in the Eighteenth Century* (London: Routledge and Kegan Paul, 1951).
 - 24) See R. M. Ogilvie, *Latin and Greek: a history of the influence of the classics on English life from 1600 to 1918* (London: Routledge and Kegan Paul, 1964): 46ff.
 - 25) J. Lawson and H. Silver, *A Social History of Education in England* (London: Methuen, 1973): 217-218; see also G. C. Brauer, *op. cit.*: 156-194.
 - 26) P. J. Marshall, *Loc. cit.*: 65
 - 27) See R. Guha, *Op. cit.*: pp 6ff. See also R. Rocher, "The Career of Radhakanta Tarkavagisa, an Eighteenth-Century Pandit in British Employ", *Journal of the American Oriental Society*, 109 (1989): 27-33.
 - 28) After all, it was listening to Franciscan friars singing vespers in the Temple of Jupiter while "musing amid the ruins of the Capitol", that Edward Gibbon conceived his project not of writing about the Friars and their world but about the decline and fall of the Roman empire.
 - 29) For a list of expressly commissioned books, see J. D. M. Derret, "Sanskrit Legal Texts Compiled at the Insistence of the British", *Zeitschrift für vergleichende Rechtswissenschaft*, 63 (1961): 72-117

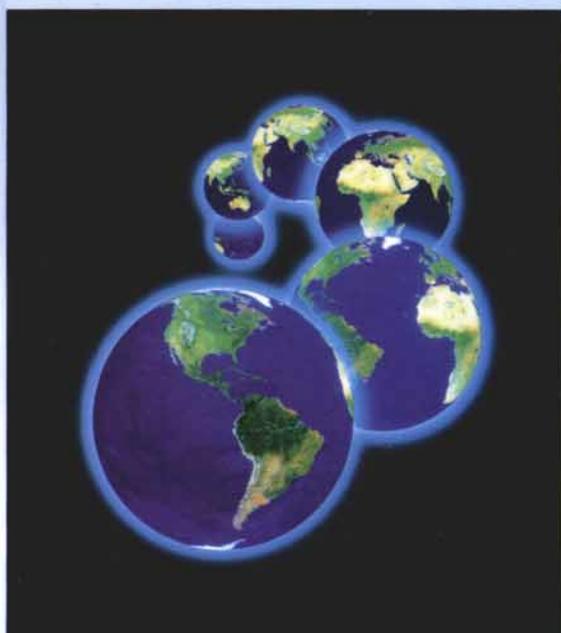
- 30) See G. W. Stocking, Jr., *Victorian Anthropology* (New York: The Free Press, 1987): 50ff
- 31) H. H. Risley, *The People of India* (Calcutta: Thacker, Spink & Co., 1915)
- 32) See R. Taylor, "The East and German Romanticism" in R. Iyer, ed., *The Glass Curtain between Asia and Europe* (London: Oxford University Press, 1965): 188-200; also H. G. Rawlinson, "India and European Literature and Thought" in G. T. Garratt, ed., *The Legacy of India* (Oxford: The Clarendon Press, 1937): 30-37.
- 33) See N. Hans, *op. cit.*: 32-36.
- 34) See P. Wood, "The Scientific Revolution in Scotland" in R. Porter & M. Teich, eds., *The Scientific Revolution in National Context* (Cambridge: Cambridge University Press, 1992): 263-287.
- 35) H. Trevor-Roper, "The Highland Tradition of Scotland" in E. Hobsbawm & T. Ranger, eds., *The Invention of Tradition* (Cambridge: Cambridge University Press, 1983): 25.
- 36) P. E. Razzell, "Social Origins of Officers in the Indian and British Home Army: 1758-1962", *British Journal of Sociology*, 14, 3 (September 1963): 248-260.
- 37) This "inordinate" rise in proportion of Scots in the services of the Bengal administration is one of the reasons for the impeachment of Warren Hastings. See J. Reddy, "Warren Hastings: Scotland's Benefactor", in G. Carnall and C. Nicholson, eds., *The Impeachment of Warren Hastings* (Edinburgh: Edinburgh University Press, 1989).
- 38) See D. M. Bose, S. N. Sen & B. V. Subbarayappa, eds., *A Concise History of Science in India* (New Delhi: Indian National Science Academy, 1971): 494.
- 39) See M. Watts, *The Dissenters from the Reformation to the French Revolution* (Oxford: Oxford University Press, 1978).
- 40) W. Carey, *An Enquiry into the Obligations of Christians to Use the Means for the Conversion of the Heathens*, new facsimile edition (London: Carey Kingsgate Ltd., 1961): 74.
- 41) *New Atlantis* is the story of a geographical discovery in the Pacific whose greatest glory is its House of Salomon or College of the Six Days' Works. It represents Bacon's dream of a scientific community based on a division of scientific labour. Describing it, Bacon wrote: "For the several employments and offices of our fellows, we have twelve that sail into foreign countries under the names of other nations (for our own conceal), who bring us the books and abstracts, and patterns of experiments of all other parts. These we call Merchants of Light.
- "We have three that collect the experiments which are in all books. These we call Depredators.
- "We have three that collect the experiments of all mechanical arts, and also of liberal sciences, and also of practices which are not brought into arts. These we call Mystery-men.
- "We have three try new experiments, such as themselves think good. These we call Pioneers or Miners.
- "We have three that draw the experiments of the former four into titles and tables, to the better light for the drawing of observations and axioms out of them. These we call Compilers.
- "We have three that bend themselves, looking into the experiments of their fellows, and cast about how to draw out of them things of use and practice for man's life and knowledge, as well for works as for plain demonstration of causes, means of natural divinations and the easy and clear discovery of the virtues and parts of bodies. These we call Dowry-men or Benefactors.
- "Then after these divers meetings and consults of our whole number to consider of the former labours and collections, we have three that take care out of them to direct new experiments, of a higher light, more penetrating into Nature than the former. These we call Lamps.
- "Lastly, we have three that raise the former discoveries by experiments into greater observations, axioms, and aphorisms. These we call Interpretators of Nature.
- "We have also, as you must think, novices and apprentices, that the succession of the former employed men not fail; beside a great number of servants and attendants, men and women. And this we do also: We have consultations, which of the inventions and experiences which we have discovered shall be published, and which not: and take all an oath of secrecy for the concealing of those which we think fit to keep secret: though some those we do reveal sometimes to the State, and some not." *New Atlantis* (Oxford: The Clarendon Press, 1974): 255-6.

- 42) Minute by Marquess Wellesley on the Foundation of a College at Fort William, July 10, 1800, reprinted in M. Martin, ed., *The Despatches, Minutes and Correspondence of the Marquess Wellesley, K. G., during his Administration in India*, 5 vols. (London: W. H. Allen, 1837): ii, 346.
- 43) The latter were hostile not so much to the principle of such an establishment (on the contrary, Henry Dundas, President of the Company's Board of Control, shared and engineered the maintenance of this same anti-French paranoia) as to the conjuncture at which the proposition came to them — the Company had recently been engaged in an onerous war with Tipu Sultan and Wellesley's backing of the private trade interest. See C. H. Philips, *The East India Company 1784-1834* (Manchester: Manchester University Press, 1961): 125ff.
- 44) Minute on the foundation of a College at Fort William in *op. cit.*: 359ff.
- 45) C. H. Philips, *op. cit.*: 131ff.
- 46) See B. S. Cohn, *op. cit.*: 529ff.
- 47) Herbert Hope Risley was one of the leading figures within Indian anthropology as well as an important figure in the administration of India. At various times in his career he was Director of the Ethnological Survey of the Indian Empire, Census Commissioner for the Empire, President of the Asiatic Society of Bengal, a trustee of the Indian Museum and President of the Royal Anthropological Society. Risley actually asserted that it is impossible in the Indian context to define where administration ended and science began. [Cited by C. Pinney "Colonial Anthropology in the 'Laboratory of Mankind'" in C. A. Bayly, ed., *The Raj, India and the British 1600-1947* (London: National Portrait Gallery, 1990): 256].
- 48) M. Foucault, *Surveiller et Punir* (Paris: Gallimard, 1975).
- 49) See, for instance, E. Stokes, *The English Utilitarians and India* (Oxford: The Clarendon Press, 1959).
- 50) See, amongst others, S. Sinha, "Is there an Indian Tradition in Social/Cultural Anthropology? Retrospect and prospect", Wenner-Gren conference on the Nature and Function of Anthropological Traditions, 1968; L. P. Vidyarthi, "The Rise of Social Anthropology in India", in K. David, ed., *The New Wind: Changing Identities in South Asia* (The Hague: Mouton, 1977). This question is indeed the very subject of C. A. Breckenridge & P. van der Veer, eds., *op. cit.*



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