

**“I find thy cunning seeds, O million murdering Death”: Western Science, Indian  
Climes in Amitav Ghosh’s *The Calcutta Chromosome***

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**Abstract:** In *The Calcutta Chromosome* (1996), Amitav Ghosh redraws the contours of what is generally thought of as science fiction. Whereas science fiction is generally considered futuristic, this book goes back in time to unearth the goings on of a secret indigenous science clique in Colonial Calcutta. The book, by ascribing the discovery of a new chromosome to this gnostic secret organisation, questions the veracity of claims made by western scientists wherein they appropriated scientific research as solely their preserve. The book weaves in the story of Ronald Ross and his discovery of the vector of malaria. Creating a web of connections and cross connections, mixing fact and fiction with irreverence, the author makes a case for possible Indian connection to malaria research, a fact that has been pushed into a crater of silence. The book uses the conventions of science fiction to assert a political claim to scientific knowledge which is appropriated by the West not only to this end but also to make a wider justification for the rule of ‘west’ over ‘scientifically backward’ India. The story is told through the perspective of an Egyptian migrant scientist in contemporary New York who, though divided in time and space from Colonial Calcutta, is himself caught in the political machinations of the science organisation in which he works.

**Keywords:** Science fiction, colonial India, malaria parasite.

There have been sustained attempts within recent scholarship to highlight the sociological aspect of science and as David Arnold contends, it has now begun to evaluate science ‘less in terms of its self-declared aims and putatively objective interrogation of nature and more in terms of its internal ordering, social construction and cultural authority... it has become clear that science is a highly social activity, one that cannot be sealed off from the values of the society in which it is practiced’ (1). To further contextualize science in the matrix of the colonial milieu with its skewed power relations is to embark on a journey to unravel the dynamics of science and its intersection with socio-cultural, economic and philosophical underpinnings of the age.

This Day relenting God  
Hath placed within my hand  
A wondrous thing: And God  
Be praised. At His command,

Seeking his secret deeds  
With tears and toiling breath,  
I find their cunning seeds,  
O million murdering Death. (Ross “In Exile” 1-8)

These lines composed by Ronald Ross, the Nobel laureate British scientist and poet are inserted at the beginning of *The Calcutta Chromosome* (1996). Sufficiently packed with an underlying confidence characteristic of a Victorian scientist, these lines highlight his self-ordained divine mission to take on the ills of disease and mortality. However Ghosh's choice in inserting these here has a twin purpose: one, to achieve an ironic undertone to the grandeur of scientific enterprise in the Victorian times; and two, to write the present book as a subversive foil to the pervasive genre of scientists' biographies. Claire Chambers in the essay "Historicizing Scientific Reason in Amitav Ghosh's *The Circle of Reason*" elaborates upon the nineteenth-century popular trend of the writing of scientists' biographies wherein these personages were depicted as hardworking, sacrificing figures toiling hard for the sake of humanity. This, in part, owed to the ascendance Western science witnessed at that time and the corresponding sanguine regard science held in popular imagination. The present novel problematizes the convention by 'exposing' Ross as a fallible, ordinary man who stumbles into the profession quite by a quirk of fate. Additionally, all this plays out against the larger canvas of nineteenth-century colonial India when Western science was making inroads into India firmly predicated on the needs of ascending economic imperatives. As Gyan Prakash points out: '...science, in the colonial context was infused with a cultural authority as legitimizing sign of rationality and progress' (7). In many ways, science was thus, to become the most potent justification of the Empire itself. The Victorians were witness to the gradual shift from a romantic view of nature to a far more aggressive, utilitarian view that sought to extract material benefit from nature. It is this triptych that this essay explores by the means of a close textual analysis, with reference to the evolution of science as a discipline during Victorian times: the Colonial encounter, the utilitarian ethos and the 'clash' of two systems of knowledge.

*The Calcutta Chromosome*, recipient of the Arthur C. Clarke award for science fiction, conjures the milieu of Victorian times and explores the troubled relationship between Western and Indian science and scientists. Why the author chooses the genre of thriller to make his point about the existence of an alternate science could be essentially to ensure a level of involvement of the reader in the text so that Antar's and Murugan's quests inevitably become the quest of the reader. Towards the end, when in an appropriate dénouement the complex connections and linkages are resolved one by one, it does not give the reader a sense of satisfaction as expected, rather a feeling of gnawing fear of the possibility of such a cult being so close at hand that the possibility of the reader being unwittingly and unknowingly a part of the network is much too real.

Ghosh sets the story in a charged Victorian milieu and depicts a struggle around the owning and appropriation of scientific research. The book also hints at the existence of alternate science(s) that possibly existed around the time. It is fascinating that the book should move through three centuries to tell the story of the malariologist Ronald Ross. Creating a web of connections and cross connections, mixing fact and fiction with irreverence, the author makes a case for possible Indian contribution to malaria research, a fact that has been historically pushed into a crater of silence. The book uses the conventions of science fiction to assert a political claim to scientific knowledge which is appropriated by West not only to this end but also to make a wider justification for the

rule of the 'west' over 'scientifically backward' India. However, amongst other objectives, the one aim in writing this book is Ghosh's intent in conveying the flip side of the import of Western science into India. Malaria research was a burgeoning field at that time and many eminent continental scientists were engaged in the arduous task of researching its cause. According to Arnold, the epidemic of malaria was instrumental at this point in creating a negative representation of Bengal (78). A well-accepted theory tied malaria to miasmatic environmental conditions found in the tropical countries. As an illustration, F.P. Strong in the 1830s admitted that he could not 'exactly explain how malaria was formed but he had no doubt it was produced most abundantly in those parts of Bengal which are not cleared of jangal (jungle), drained and kept clean.' Aided by a 'natural heat and moisture of the climate these generate a constant supply of malaria poison (quoted by Arnold 78). Additionally, Malaria was represented as a 'emasculating' disease that threatened reproduction, rendered individuals weak and sickly and so accentuated the division, already entrenched in colonial ideology and practice, between 'manly' and 'martial' races of the North and northwest and the 'effeminate' Bengalis' (Arnold 79).

The book opens sometime in the near future where a New York based Egyptian scientist Antar, stumbles upon the remnants of the old disused I-Card of his colleague L. Murugan. An Indian yuppie, he is an amateur scholar on Ronald Ross, credited with the identification of anopheles as the vector of malaria. Given his deep knowledge of the circumstances in which Ross worked, Murugan senses that something is amiss in the British scientist's laboratory. Building on cues collected and collated over a long span, he arrives at the conclusion that Ross was no genius but was pushed into the direction of this research by his petty laboratory assistants and menial workers. Ghosh's Ross is not a genius but a pampered, gullible son of a General who tries his hand at poetry and sundry professions before being pushed into Indian Medical Service on his influential father's insistence. The passages in which the life of Ross is recounted by Murugan are full of deprecating humour and show him to be rather "slow" in responding to the many cues that are spread out before him. In constructing Ross, Ghosh is creating a foil to the reverential scientist figure delineated in conventional biographies of the times. The author shows a possibility of the existence of an alternate system of science which is repressed and unrecognized. Ghosh conflates details from Ross' memoirs which are true with a fictional subplot of the existence in this time of a gnostic cult, and worships silence as deity. The reader is 'introduced' to the cult paradoxically through a long paean to silence by the celebrated writer Phulboni:

The silence of the city has sustained me through all my years of writing: kept me alive in the hope that it would claim me too before my ink ran dry. For more years than I can count I have wandered the darkness of these streets, searching for the unseen presence that reigns over this silence, striving to be taken in, begging to be taken across before my time runs out. The time of the crossing is at hand, I know, and that is why I am here now, standing in front of you: to beg- to appeal to the mistress of this silence, that most sacred of deities, to give me what she has so long denied: to show herself to me...' (Ghosh 28)

Mrs Aratounian, who is watching television in the presence of Murugan, a lodger in the guest house, later switches it off in disgust: "It's one of those beastly functions where everybody makes speeches" (107). What follows is a queer 'exchange' between her and Phulboni, the latter beseeching the former to be accepted as a disciple through parts of his public speech being aired on television. All along however, the situation is lost on Murugan. There are moments when Murugan is close to the uncovering her identity as the high priestess of the secret science cult. However is never able to comprehend it fully. The Vice President's unceremonious nap in the middle of the function is symptomatic of the larger ignorance to this alternate reality. Phulboni, seems to have had a brush with the secret organization as a young man and has ever since desired to be a part of it. His longing is like that of a desperate acolyte seeking the acceptance of a guru. Earlier, in an impulsive moment he had related his experience to Sonali's mother, a celebrated actress, his lover. This had done him in and through this speech he gives expression to this repentance and asks for forgiveness.

Ghosh reveals that reading through Ross' memoirs, he has sensed the presence of a shadowy character, a permanent fixture in the backdrop of Ross' laboratory. (Chambers Interview 31). This man was identified as Lutchman - a lab boy who did innocuous jobs like maintaining lab equipment and sweeping the premises. He is first introduced as a lab boy pottering around in Ross' laboratory. He doubles up as a domestic help who runs errands for Ross and thus has access to his personal space. However Ghosh contends that Ross was naïve enough to admit at certain places in his memoirs of the bearing he had on the outcome of the research. Lutchman is a character who springs up in varied avatars as an important member of the cult. Through Lutchman and his many avatars, the book presents its critique of the Western idea of stable individuality. Individuality is an area sacred to the West and showing 'Calcutta Chromosome' as a facilitator of immortality at the expense of individuality is an important idea in the book. Lutchman's multiple identities exist not only across time periods, but his name Lutchman can be pronounced in a variety of ways. On a visit, one of Ross' friends, J.W.D. Grigson, a linguist, notices the fact that Lakhan is a variation of the name which is rendered differently depending on the dialect: so it could variously be articulated as Lakhan, Lutchman, Lakshman, etc, and this specialist knowledge gave him enough reason to believe that he the man is not from these parts. When he confronts Lutchman on this, he does not give a satisfactory reply, rather, gets cagey and aggressive. Later in his persistence to get to the bottom of the truth he follows him to the servant quarters and notices a gleaming railway lantern lying on the window sill of his room. When questioned about its presence, Lutchman asks him to follow him if he wanted the answer. He follows Lutchman on the railway track and is almost killed by the approaching train. So terrified is he with this incident that he decides to leave the matter and proceed to Secunderabad on the next available train. Through the incident what becomes clear is that there are forces at work that do not allow Grigson, at that point, to get to the bottom of the truth as far as Lutchman's identity and affiliation with the secret society is concerned.

Lakhan resurfaces later through the writer Phulboni's narrative – a set of stories called *The Lakhan Stories*. In one of these, he is presented as the Dalit orphan who finds refuge at the railway station and upon finding opposition from the upper caste manager is

almost killed. He, however, turns the aggression back on the railway manager and kills him instead. Years later, when Phulboni visits the same railway station as a young trainee and chooses to stay there all by himself, he undergoes an almost surreal experience. Here Lutchman's gleaming lantern resurfaces and appears to move around supernaturally. The dust-laden mat which he finds there bears the imprint of a hand with one thumb missing. Lutchman, too has a thumb missing. Conflating the detail of the missing thumb with the fact that he is shown to be a low caste is powerfully reminiscent of the story of Eklavya from the *Mahabharat*. The low caste tribal boy beseeches the guru Dronacharya, who is the guru of Pandavas to be his guru in the sport of archery. On his refusal, he makes his clay statue and takes him on as his guru. On getting to know of this, the guru asks to be paid his *guru dakshina* and would not settle for anything less than Eklavya's thumb, so as to render him powerless in front of his favourite *kshatriya* pupil Arjun. This story underscores the fact that it takes the sacrifice of a low caste Eklavya for a high caste Arjuna to emerge. Ghosh, by splicing in the reference of low caste Lutchman hints at the discrimination spawned by the power structures as far as dissemination of knowledge is concerned. Like Eklavya, they are not part of the mainstream Western knowledge systems and create their own parallel academy in the shadows. Whether it is Mrs Aratounian who is a white woman in Calcutta or the statue makers of Kalighat, these people exist on the fringes of the Calcutta society.

Lutchman makes yet another appearance as Lucky, in the part of the novel set in New York of the future. Here he appears as the companion of Tara, who is Antar's neighbour. He comes across as a constant companion, a fact that launches Antar into speculation regarding what really is the relationship that the two share. He does not have any clear answers until one evening a squall wreaks destruction in Tara's apartment. From his apartment window Antar sees Lucky cleaning the mess and later Tara performing an elaborate genuflection. It is at this point that the relation between them comes out clearly as one between guru and acolyte. Tara indeed is yet another *avatar* of Mangala, the high priestess of the cult.

However, as the narrative progresses this clutch of people at Ross' laboratory seem to be part of a bigger network and by the end such is its extent that all the principal characters are unwittingly in its grip. What Ghosh insinuates is the presence of a larger, organized reaction against Western science which has not only taken on an extremely instrumentalist orientation but also, in spite of its avowal of universalism, undertaken exploitation of the colonies as a collaborator of imperialism. The mention of societies like Theosophical Society and Spiritualist Society is a pointer in this direction. Both these were India-based societies, vehement critics of the culture of materialism that western science had ushered in at the cost of the spiritual dimension. They claimed that in doing so Western civilization was headed in the direction of crass materialism. They intended to right some of these vices and go back to ancient religions of Hinduism and Buddhism as sources of a holistic worldview. Even though these societies, despite their enthusiasm, remained marginal and esoteric, it is vital to consider them as representing some sort of a reaction to the excesses of western science and its astronomical ascent at this time.

Given Ghosh's antecedents and his rigorous grounding in Subaltern Studies, it is evident that his motive in writing *The Calcutta Chromosome* was to highlight the inequities inherent in the encounter of Western science and Indians. A nuanced understanding of this power play informs his depiction of scientist figures and situations highlighting this exchange. His subversion of the much celebrated scientist Ronald Ross is achieved through a caricatured, irreverent delineation. Murugan's is upheld as the narratorial voice as he is shown passionate in his interest in Ross but not completely eulogizing. In fact his many jibes and tongue-in-cheek accounts undercut the excessively laudatory vein of scientists' biographies.

Further, the presence of Indian laboratory staff points toward their contribution to colonial science of which there is very little acknowledgement. There are depictions of gory violence, incomprehensible customs, machinations and secrecy of the Indian cult, all of which have an obfuscating effect on the real purpose of the author. Ghosh chooses to pitch the people of the secret cult in utter silence. At one level it helps because the silence of the cult becomes a reason for its seeming absence. However, apart from imparting secrecy to the cult, he also somewhere makes them appear more 'oriental' than required. For instance the entire semiotic of blood and gore when it comes to the decapitation of the pigeons used in experiments by the cult which is in stark opposition to the 'gentlemen scientists from Europe' who seem to rely on well stained slides. The mix of chanting and elaborate religious rituals along with their practice of science and medicine is again playing to the western image of the orient.

In the episode where the American scientist Elijah Farley visits Cunningham's laboratory, he discovers the 'unnatural' behaviour of the laboratory staff. His conviction leads him to the discovery of this 'other science' being practiced in the anterooms while Cunningham is absent. His worst fears turn out to be true when their images are captured on the surface of a steel tumbler while he has his back on them:

...his eyes were arrested by a scene that was now unfolding behind him. The assistant, who had gone over to fetch a tray of slides, was whispering with the woman in the saree. It was soon clear that it was he, Farley, they were talking about: the distorted reflections of their faces seemed to take on a grotesque and frightening quality as they nodded and pointed across the room. (124)

It is this perspective of Farley looking at the images on the glass that Ghosh adopts to tell this tale. It is oblique, at times distorting, imparting a grotesqueness to the picture. While one can argue that this fits in wonderfully well with the thriller-suspense thread in the book, it can equally be claimed that it does some amount of damage to the political claim about the presence of science and rationality in pre-colonial India. The story of science in India is presented soaked in the imagery of blood and gore, antechambers and secret passages revealed in smoky prayer rooms filled with heartless acolytes on a mission. The by now ubiquitous question: Can the subaltern speak? is turned on its head because herein the equations change and the subalterns seem to be embracing silence rather than being forced into it. The anticipated struggle of Western

science and Indian thus is never openly staged. Instead the book becomes escapist and further ventures into the territory of the supernatural thriller.

Perhaps it is unfair to subject creative writing to prescriptive designs. Nevertheless, the politics that the book rests on is undercut by obfuscation of these very pertinent issues. One can also surmise that it could be Ghosh's endeavour to take skepticism to another level and in his refusal to show the struggle he is advocating: the indirect subversion of the very standards of discipline set by the Western academy. The British are caught in a design they have no knowledge of and thus their stature is greatly reduced. Further, Ghosh's depiction of the subaltern too is fraught with skepticism. It does not stick to poor-brown-woman; instead in the various time frames, it also includes a diasporic white woman Mrs Aratounian and a rich builder, Roman Halder. One can conclude that the book is replete with a consciousness of the power play in science; however, it presents the plot with skepticism to an extent that the seams of the narrative are undone even as they are being stitched together.

### Works Consulted and Cited

- Adas, Michael. *Machines as the Measure of Man: Science, Technology and Ideology of Western Dominance*. Ithaca: Cornell University Press, 1989. Print.
- Arnold, David. *The New Cambridge History of India: Science, Technology and Medicine in Colonial India*. Cambridge: Cambridge University Press, 2000. Print.
- Banerji, J. "Bengali Braid: Review of *The Calcutta Chromosome*." *Indian Review of Books*. 5.9 (1996): 2-3. Print.
- Chambers, Claire. "Historicizing Scientific Reason in Amitav Ghosh's *The Circle of Reason*." *Amitav Ghosh: A Critical Companion*. Ed. Tabish Khair. Delhi: Permanent Black, 2003. 36-55. Print.
- . "The Absolute Essentialness of Conversations: A Discussion with Amitav Ghosh." *Journal of Postcolonial Writing* 41.1 (2005):26-39. Print.
- Ghosh, Amitav. *The Calcutta Chromosome: A Novel of Fevers, Delirium and Discovery*. New Delhi: Penguin, 1996. Print.
- Goh, Robbie B.H. "ThePostclone-nial in Kazuo Ishiguro's *Never Let Me Go* and Amitav Ghosh's *The Calcutta Chromosome*: Science and the Body in the Asian Diaspora." *Ariel: A Review of International English Literature*. 41. 3-4 (2011): 45 -71. Print.
- Prakash, Gyan. "Science between the Lines." *Subaltern Studies IX*. eds. Shahid Amin and Dipesh Chakarvarty. New Delhi: Oxford, 1996. 59- 82.Print.