

## Amitav Ghosh's novel *The Calcutta Chromosome*: Historicizing western medicine in Colonial India

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**Abstract:** This paper analyzes Amitav Ghosh's novel, *The Calcutta Chromosome*, as a work of historiographic metafiction that critically examines the history of Western medicine and colonial scientific research in 19th and early 20th-century India. The novel fictionalizes the historical figure of Ronald Ross and his discovery of the malaria parasite's transmission, but uses this narrative to expose the hegemonic and coercive nature of colonial power. Ghosh challenges the grand narrative of British medical philanthropy by highlighting the institutional and financial motives (such as safeguarding European soldiers) behind the establishment of the Indian Medical Service (IMS) and the rise of 'tropical medicine.' The paper notes the official sidelining of native healing practices (Ayurveda and Yunani) following Macaulay's educational minute. Crucially, the novel introduces a parallel, 'silent' narrative of indigenous knowledge and occult practices—represented by characters like Murugan and Mangala—who manipulate mainstream research from the fringes, suggesting that Western scientific history is incomplete, filled with absences and hidden realities. Ultimately, Ghosh's work de-centers the Nobel Prize-winning narrative to explore the complex intersection of power, knowledge (as theorized by Foucault), and colonial control over the colonized body.

**Keywords:** Historiographic Metafiction, Colonial Medicine, Ronald Ross, Hegemony, *The Calcutta Chromosome*.

Amitav Ghosh, in his novel, *The Calcutta Chromosome*, brings in the story of Ronald Ross and his journey in the discovery which proved that malarial parasite are carriers of the deadly disease malaria. The novel charts the arrival of the groups of scientists in India and other colonies at different junctures in the 19th century and the early part of the 20th Century. It is shown as a necessary step to carry on research which was supposed to be prerogative of only the European scientists working in the field of medicine. Amitav Ghosh, brings in historical figures from the field of scientific research and presents them as character in the plot of the novel. Some of them have been obliterated from the history of British India as marginal figures unlike say Ronald Ross, who stands out for his singularly famous work on malaria. The novel introduces Ronald Ross as a fictional character although the readers are well aware of his existence as a path breaking scientist in the history of British colonial rule. The tone is reminiscent of a writer of a biography who wants to bring in as much objectivity to the matter as possible. However, both the historical verifiability and fictional imagination at two ends of the spectrum holds it into question. Are the characters in the novel merely historical or are they fictional: perhaps both.

The narrative goes into detailed account of the disease-malaria, its characteristics, its nature, the climate and geography where it is more likely to spread. The details of his life provided are historical but when Ghosh passes it on to the story/

fiction and he deliberately passes on wrong information thereby establishing it to be quasi-historical. This gives the reader a sense that what he/she is reading is not a biography but fiction. The scientist named Jauregg is introduced in the text when the central character, Murugan, explains Antar, another character, the context of the disease malaria, that: "malaria isn't just a disease. Sometimes it's also a cure". (*The Calcutta Chromosome* 46).

If we look at the history of colonial or rather western medicine in India it takes as on a journey of how British India despite all its efforts to introduce western medicine in India, took a long time to make inroad into the colonial state. Here the focus is twofold-one, the general medicine which was introduced by British in India as a method of curing the ill and second, the research that was pursued to heal certain epidemic diseases which killed the masses in great numbers. Amitav Ghosh primarily deals with the second issue in his novel *The Calcutta Chromosome*. Western medicine introduced by colonial rulers of British India, had a far-reaching sway over most of the colonial nations of Asia, Africa and Latin America.

Deepak Kumar, writes in his essay "Medical Encounters in British India, 1820-1920" published in the *Economic and Political Weekly* that, differences between the native systems of medicine and colonial medicine was harped on to establish the white supremacy. Kumar writes, "it was a double-edged weapon; it could 'distance' and 'universalise' simultaneously: one side emphasised the intrinsic difference between the two cultures while the other 'worked' for scientific hegemony.

As far as the implementation and acceptance of western medicine is concerned. David Arnold in his book, *Colonizing the Body* writes: "Western Medicine is often seen as having had only a superficial impact on India, confined to the small "enclaves" of the army and the European community in India and, even as late as the 1940s and 1950s as having made little impression upon the beliefs and practices of the great majority of Indian population" (4). Arnold further states that there are contradictory claims that western medicine is also seen as one of the "most powerful and penetrative parts of entire colonizing powers, one of the most enduring, and, indeed destructive or distorting legacies of colonial rule in India and many other parts of Asia, Africa and Latin America." (4)

These contradictory claims of the influence of western medicine or the complete failure of it brings the point across that western medicine was indeed enforced by the British colonizers on India as on most of these other colonies of the British Empire. Without looking at the consequences that western medicine would have on the subjects, the British administration brought in doctors, practitioners, researchers through the body of the Royal Society of Medicine to carry on their research and experiments on the Indian populace. Although there was resistance in the form of complete distrust of western medicine and the reliance on *Ayurvedic vaidyas* and *Yunani Hakims*, yet after a point in the early point of the 20<sup>th</sup> century, the British administration was successful in building up hospitals and dispensaries to carry out the plan of implementing western sciences and medicines in the Indian subcontinent.

David Arnold studies the complex socio, political, historical and ideological stance of the colonial state administration in dealing with diseases and its cure in British India. Arnold understands the colonial state's use of the physical being to establish the agenda of the hegemonic state, a state which could be understood in

light of the theoretical understanding formulated by Michel Foucault in *Discipline and Punish, The Birth of the Clinic* and *Power/Knowledge*. From a close study of the influence of western medicine in India Arnold writes that “colonial rule built up an enormous battery of texts and discursive practices that concerned themselves with the physical being of the colonized (and, no less critically, though the interconnection is seldom recognized of the colonizers implanted in their midst). Colonialism used or attempted to use the body as a site for the construction of its own authority, legitimacy, and control. In part, therefore, the history of colonial medicine, and of the epidemic diseases with which it was so closely entwined, serves to illustrate the more general nature of colonial power and knowledge to illuminate its hegemonic as well as its coercive process.” (*Colonizing the Body* 8)

In order to establish the legitimacy of the research on epidemic diseases the environmental and climatic reasons are stated. The term ‘tropical medicine’ was formulated in order to define the late eighteenth, nineteenth and early twentieth century studies and medicine in the specific environmental advantage of tropical landscapes and warm climates. Climate-hot, humid and conducive for the germination and proliferation of certain life-threatening epidemic diseases paved way for successful experiments to be carried out in India.

Another reason behind the nineteenth century focus on western models of medicines rather than the texts on Ayurveda by Susruta or Caraka or the Yunani medicine was the administration’s decision to form on western medicine propagated by T.B. Macaulay in his “Minute on Education” (57). By categorically comparing all branches of knowledge and Indian thought to that of the west as a whole, Macaulay had concluded that only if western English education is implemented than it “will expand the intellect of man” (57).

So, with this western medicine started to be taught in institutions in India side - lining texts like that Indian healers Susruta and Caraka. Moreover, IMS was set up in the mid eighteenth century to “provide medical assistance for the armies of the English East India Company. The recruits under the IMS were employed in wide range of civilian and military duties in hospitals, mental asylums, prisons, they also supervised dispensaries, staffed medical schools and research institutes, and also directed the sanitary services. (62)

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Ronald Ross, the historical figure drawn from a fictional point of view is shown as an officer of the Indian Medical Service. (*The Calcutta Chromosome* 45). Herein lays a three-fold overlap in terms of (i) the portrayal of the historical figure of Ronald Ross, (ii) a fictional narrative, the vast array of history of IMS, describing both Ross and his works, existing till date and (iii) that of Ronald Ross’s own autobiographical account of his life in his memoir.

Murugan tells Antar that by noting down each and every minute of his life in his memoir, Ronald Ross wants to say it all the people. Murugan tells Antar. “You’ve got to remember this: this guy’s decided he’s going to re-write the history books. He wants everyone to tell know the story like he’s going to tell it; he’s not about to leave any of it for grabs, not a single minute of he can help it” (*The Calcutta Chromosome* 44). The speaker wants us to believe that the story about Ronald Ross life and works which is narrated here is right out of the history written by him and so the claim of veracity is made. Thus, the unfolding of the discovery of malarial parasite in front of us is real, although we are aware that he is a

historical figure and the narrative is fictional, hence the story could not be taken as utterly factual. There has to be elements of fiction within the story of his life.

Murugan describes Ronald Ross' life even the minute details as though he has seen it himself. We know this is not the case because the intervening gap is that of a century. Murugan arrives in Calcutta a century after Ronald Ross arrives in Calcutta in 1895.

Historiographic metafictions use a technique whereby certain dates which are relevant to a certain historical epoch are either shown from a different perspective or their dates are postponed or advanced to create a metafictional distancing from the original dates. This technique helps in giving this idea to the reader that what they are reading is fiction and not history. In *The Politics of Postmodernism*, Linda Hutcheon defines this in relation to Bertolt Brecht's alienation effect (84-85). While getting engrossed in the narrative the reader tends to treat each and every aspect of the character as historically verifiable. When a character from the novel like Murugan claims that Ross's life is recorded in history minute by minute this Ronald Ross is both the Ross who lived physically and also the Ross whom Ghosh was drawn from a completely fictional point of view. Ghosh' purpose is not to recount his life but to place Ross in the context of colonial medicine. So, rather than being a historical narrative it tends to be a historiographic metafiction which deals with history and historiography to explore not only the presence but also the absences in history.

Now if we could roughly divide the text into two distinct categories –(i) Western medicine and its practice and (ii) Native healing processes, in which there are occult practices, worship of Gods & goddesses, séances, and such other practices.

Here the interesting twists to the plot comes when it shows how the native healing practices survive the onslaught of the western medicinal practices by developing survival strategies like using scientific experiment and their subsequent discoveries for their purpose. The subliminal practices were on the fringes. And the term he uses for the fringe, marginal medicinal practices of the natives is termed as 'Silence'.

The purpose is to show how despite the brouhaha over western medicine, there was thriving native medicine which always remained on the fringes even through the common man really took to it.

In the previous discussion we have seen how western medicine under the umbrella of IMS (Indian Medical Science), had a stronghold over epidemic diseases, there research and cure in the colonies of the various European mercantile companies and their empires. The credit for the path breaking research in Malaria is vested in Ronald Ross. However, he had to struggle to even get hold of the material, samples of research because the French and the American in John Hopkins were the key scientists in this field. And as suggested in the novel as well as history written by scholars O.P. Jaggi and even the IMS Gazette, the Englishmen were not allowed to get their hands on malaria research or for that matter any research pertaining to tropical epidemic diseases.

Amitav Ghosh not only explores the currents and cross currents that existed in the mainstream East India Company supported medical research but also the parallel existence of Eastern medicine in the early colonial period to the early 20<sup>th</sup> century breakthroughs in various researches that changed the way in which such medicine existed and flourished. The immediate beneficiaries were of course the sol-

diers and officers affected by diseases in the various colonial enclaves like officer's colony or the jail and such other enclaves of British or other colonial officers.

This concern for the native healers and their parallel existence has been introduced to bridge the gap between the observation, objective reality and the unobservable, the hidden reality below the surface. This has been explored through the character of Murugan himself.

The introduction of the idea of parallel healing practices is done through the inclusion of element of thrill: a journey that Murugan embarks upon in a *whodunit* fashion.

Murugan's sudden disappearance from New York leads Antar, his Egyptian friend, and his computer, Ava, on a journey to find out the whereabouts of Murugan. Murugan is then traced in Calcutta frantically running on a street to reach Rabindra Sadan to accomplish what he considered a pilgrimage – a visit to Ross's memorial. Just as he reached Rabindra Sadan he heard a voice loud and clear which spoke these words.

“Every city has its secrets”, the voice began, ‘but Calcutta, whose vocation is excess, has so many that it is no more secret than any other. Elsewhere, by the workings of paradox, secrets live in the telling: they whisper life into humdrum streetcorners and dreary alleyways.... But here in our city where all law, natural and human, is held in capricious suspension, that which is hidden has no need of words to give it life; like any creature that lives in a perverse element, it mutates to discover sustenance precisely where it appears to be most starkly withheld – in this case, in silence’.” (The Calcutta Chromosome 21).

Murugan's interest was not limited to the works of Ross he was equally or more interested in "his notion of the so-called 'Other Mind' a theory that some person or persons had systematically interfered with Ronald Ross's experiments to push research of malaria in certain direction while leading it away from others." (The Calcutta Chromosome 31)

He had earlier written a piece with what the narrator describes as "the unfortunate title 'An Alternative Interpretation of late 19<sup>th</sup> Century Malarial Research: Is there a secret theory?'"(31). It was met with lot of hostile reception as his earlier article entitled, "Certain systematic discrepancies in Ronald Ross' account of Plasmodium B'."

Here lay the inception of the plot into a scientific thriller. While Murugan's interest in the secret history of research compels him to reach Calcutta after having persuaded his company life watch to create a small research project in Calcutta to allow him to reach Calcutta on August 20, 1995 to commemorate what "Ross had designated as 'World Mosquito Day' (32). He soon disappeared after having reached Calcutta on what his boss term as "wild- goose chase" (40)

Two parallel narratives run in this plot. One the narrative of Ronald Ross and the history that encapsulate the entire colonial medicine practitioners and its relative phenomenon, the second one, where fictional characters like Murugan, Lutchman, Mangala, Urmila, Antar and others appear to explore the silent practices of the time.

There are multiple times when there is an interaction of the historical character with the fictional. Like the scene where Elijah Mouree Farley (scientists of John Hopkins University) both historical & fictional at the same time interacts with Lutchman. DD Cunningham, another such character interacts with Lutchman, while Elijah is forced to leave the station after having led to a near death experi-

ence and Cunningham is forced to leave for Madras via Rampur, a mysterious place which is mentioned again and again in the novel.

Here, I need to introduce certain key concepts that help us in our understanding of how 'western' medicine got legitimized in order to sideline the native healing methods that existed for ages. Projit Bihari Mukharji gives detailed historical analysis of western medical practices, its politics and its fall outs in his work, *Nationalizing the Body: The Medical Market, Print and Daktari Medicine*. He explains how the very act of "nationalization of the body" was a process" which actualized the nation by vernacularizing 'western' medicine" (*Nationalizing the Body* 28). What it ensured was that the western texts were written in 'vernacular languages' and became important official source in the practice of the western medicine among the Indian *daktars* (28). Thus, western medicine reached the Indian common man through these vernacular texts and quacks unqualified doctors or *daktars* as they were addressed.

Another aspect of western medicine was that the proliferation and spread of western medicine had a certain purpose which was political in nature: "not merely as a liberationist project directed against the colonization of the body but also one to establish new hierarchies of domination." (Pg. 28).

Till the time Lutchman appears in the narrative, Ghosh attempts to give a chronological account of Ross's discovery leading to the Nobel Prize in medicine, almost in a synchronic manner on the lines of how the history of colonial medicine has been written. Ghosh brings in a small rupture in the historical narrative by focusing on scientist who have been side-lined in history and more so from public imagination.

Till this point *The Calcutta Chromosome* almost seems like a historical novel, however, the points where he digresses from the general understanding of western medicine – as a saviour for the poor and diseased natives is where he this novel turns into a fabulative text. Ghosh's fiction brings the internal and external dynamics that lay within the promotion and practice of western medicine in India. It was not a philanthropic, humanitarian act but rather a very complex field of the interplay of power of the colonisers that lay in the working of physicians under the IMS or even the projects that the British government took over during the 19th century and 20th century in India. The increased cases of patients with epidemic, less among the general native population and more among the British soldiers living in enclaves and railway settlements forced the British government to divert its finances towards the practice of western medicine

Michel Foucault in his book *The Birth of the Clinic* writes how the entire discourse of medicine surrounds round the idea of the normative versus the abnormal deviation – the discourse plays out in the concept of healthy as different from the ill. He writes:

"Medicine must no longer be confined to a body of techniques for curing ills and of the knowledge that they require; it will also embrace a knowledge of a *healthy man*, that is, a study of *non-sick man* and a definition of the *model man*." (*Birth of the Clinic* 34)

Foucault writes: "Whether contagious or not, an epidemic has a sort of historical individuality, hence the need to employ a complex method of observation when dealing with it. Being a collective phenomenon, it requires a multiple gaze; a unique process, it must be described in terms of its special, accidental, unexpected qualities." (*The Birth of the Clinic* 25)

This kind of research, say in the context of the 18th and 19th century studies on epidemics, being carried out in countries like India with a tropical climate had its forward and backward linkages to the funding and proliferation of medical research in the colonies and the colonial government of the British as well as the other Europeans. Thus, the entire field of the research and its impact of the treatment of epidemic diseases in the colonies were centred round the discourse of the power of the colonial state and government over the subject of its colonies. The army enclaves, the hospitals, the medical services, the settlements all of these served the purpose of western medical research in the colonies. The epidemics were routing the army men as well as the officers posted in the colonies such as India, Malay, Burma, and other countries leading to a threat to the empire building. This also led them to turn the natives into guinea pigs who did not even an iota of knowledge about what was being done to them.

In *The Calcutta Chromosome* Ghosh's strategy works in re-imagining certain aspects of colonial medicine which has not been documented in official history. While most of the texts offer a grand narrative of the British philanthropic mission of eradicating epidemic diseases in India, Ghosh looks at how this entire discourse of colonial medicine was not a one-dimensional story of the Nobel Prize winning endeavour of Ronald Ross. Without offering definitive answers Ghosh teases the reader to explore what lies within the domain of colonial medicine endeavours and how the arena has been explored neither in official historiography nor in political discourses.

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