Medical Education in Bengal Presidency, 1835 – 1945

Thesis submitted to Jawaharlal Nehru University in partial Fulfillment of the requirements for the award of the degree of

Doctor of Philosophy

By

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DECLARATION

I, Aishwaryarupa Majumdar, hereby declare that this thesis entitled "**Medical Education in Bengal Presidency: 1835 - 1945**", submitted by me for the award of the degree of Doctor of Philosophy of Jawaharlal Nehru University. This thesis has not been submitted so far in part or in full, for any degree of any other university.

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It is hereby recommended that the thesis may be placed before the examiners for evaluation.

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Acknowledgement

At the very outset I must pay my best regards and gratitude to Prof. Deepak Kumar, a historian with encyclopaedic knowledge, whose constant intellectual support, encouragement, expert guidance and inspiration could bring forth my dreams into reality towards completion and submission of my doctoral thesis at JNU.

I am whole heartedly conveying my deepest regards and respect to all the faculty members of "Zakir Husain Centre for Educational Studies", JNU, who provide me a stimulating academic environment and overwhelming support and constructive criticism. I must always remember office staffs of the Centre who were in every step kind to me.

I remember from depth of my heart the days I spent at Visva-Bharati especially at the Department of History, the abode of legendary faculties whose constant encouragement infused in my mind a sense of self-confidence. I acknowledge with deep reverence the lessons and encouragements that I received from Dr. Subhayu Chattopadhaya at every moment right from the beginning at History Department till date. His company is exhilarating to me always. I want to give special thanks to Prof. Bipasha Raha for her constant support and encouragement.

I am ever grateful to Dr. Rajshekhar Basu of Calcutta University who graciously extended his benevolent hands whenever and wherever I required for.

I want to give special thanks and my gratitude to Neelam Mam (Neelam Kumar) for her affection and love and also valuable suggestions for my work.

I am indebted to all the people from whom I got lot of lessons, assistance and help in day to day field work at Kolkata, Patna, New Delhi, Dhaka and London. I sincerely acknowledge the whole hearted support that I received from the staff of different Archives and Libraries like Sahitya Parishad, National Library, Centre for School of Social Sciences, Calcutta University, National Archive, Nehru Memorial Library, JNU Library etc.

The Calcutta Medical College, R. G. Kar Medical College of Kolkata deserves special mention. The faculty of those colleges helped me a lot while I was absolutely in the preliminary stage of my Ph.D work. I want to thank especially Dr. Shankar Nath and Dr. Shyamal Chakraborty, who not only provided me relevant materials but also gave me tremendous support to proceed in my work. My successful drive was at Bihar State Archive at Patna. Huge volume of untouched materials enabled me to reach to my goal towards fetching rarest materials available only at that Archive. The great personality of the Archivist and extending assistance to me by both the Librarian and the Archivist made my journey smooth.

I am very much thankful to the authority of Library of Dhaka University and Bangladesh National Archive where from I gathered enormous experience and relevant materials. The gracious attitude and assistance from the staff of those institutions (Prof. S. M. Saved Ahmed, Librarian, Dhaka University) are unforgettable. I wish to give special thanks to Prof. Ahmed Abdullah Jamal for his constant support and affection. My staying at Dhaka, working and interacting with the highly dignified persons there could not be possible without the cooperation of Suraiya Akhtar, (Associate Professor, Dhaka University) and her husband Md. Jahangir Hossain (Assistant Professor, Jagannath University, Dhaka). Suraiya didi, I am ever grateful to both of you.

My most adventurous experience was at British Library and Wellcome Trust Library at London. Rarest of the rare materials in my research subject were only available only at those libraries. Meticulous searching enabled me to reach to a noblest height.

I am very much thankful to Charles Wallace India Trust and Indian Council of Social Science Research for providing me much-needed financial support to visit abroad in connection with my research work.

In the gruelling days at JNU, friends played most important role in my life. Gokul (Gokulananda Nandan), Shounak Da (Das), Deba Da (Debasis Mondal), Mahashraddha didi, Mahashweta and Richa Priyamvada, Juhi Singh, Reem Shraf, Shivani Tamang and Marim Joice are such brilliant faces.

Similarly at the shining days at Santiniketan where I brought up, Kobid, Chakraborty, Suman Saha and Sreebarna Ghosh were my friend for all time.

How can a daughter narrate the prologue of her Baba and Ma right from her life-beginning till the present stage of life! I am speechless. My Bhai is my best friend, inspiration and what not. I convey my best regards to my parents-in-law whose silent support encouraged me in every step of my daily life. And Abhishek, the Angel in my life and the illuminator, keeps my days luminous and stands my side in every turn.

Acknowledgements are inherently endless and incomplete. I would remain ever grateful to many friendly and helpful people whom I do not name here. There are any errors despite my earnest efforts. All responsibilities are mine though.

Aishwaryarupa Majumdar

Contents

Chapters **Page No.**

Chapter I:

Introduction**……1 – 31**

Chapter II:

Modern Medical Institutions: Policy and Administration**…….32 – 78**

Chapter III:

New knowledge of Anatomy: Experiments through Surgical Operations**……79 - 121**

Chapter IV:

Alternative Medical Systems in Bengal Presidency **……122 – 144**

Chapter V:

Medical Education: Women Participation and Colonial Policies**……..145 – 176**

Chapter VI:

Response of the Indigenous Society: Reflections in Contemporary Journals**,** Literature and Media **……177 – 211**

Chapter VII:

Conclusion**……212 - 222**

Bibliography: **……223 - 247**

Chapter I

Introduction

The present work proposes to trace the origin and growth of western medical education in nineteenth and twentieth century Bengal Presidency (covering the geographical space occupied by the present four Indian states; Bihar, Jharkhand, Orissa and Assam and also Bangladesh) covering a period of more than a century. It also aims at analyzing the merits and demerits associated with this branch of education as well as the response it elicited from and the impact it had on the contemporary society of both the ruler and the ruled.

The history of the origin and development of western medical education, especially the institutionalized form of medical education in Indian context is comparatively a less explored area in academic scholarship. Colonial India, being a sub-continent, was full of diversity wherein each region had its own distinct nature of history and culture, which had led to a possible variation in regard to the implementation of colonial policy. Secondly, India had a vast tradition of existing medical systems and techniques nurtured in different political as well as socio-religious environments. With the advent of the British in India, the traditional knowledge systems of this part of the world were posited against an alien culture, and derivatives started to enter into almost every sector of the colonial fabric. The introduction of modern medical education was such a derivative, where even the influence of traditional knowledge could be seen alongside. However, it would be interesting to study, particularly from the British point of view of 'civilizing mission', whether the growth and development of modern medical system and dissemination India differed from that of the West, and also on what account.

This study would incorporate the institutional development of a new medical system, not only in Calcutta as the core of colonial rule in Bengal as well as India, but the peripheral areas are also under attention. With the development of institutions pedagogical improvement were also seen and the effect of advanced medical knowledge in the contemporary society was interesting. Knowledge as a power to the Bengalis to construct new identities and de-construct the old ideas was one of the major outcome of British

India's scientific progress and expansion. It will also deal with the other streams of medicine i.e. 'alternative medicine' (ayurved, unani and homeopathy) to identify the whole nature and condition of medical education in colonial Bengal. One of the major concerns of this work is to draw a link between the general growth of medical education and women's participation in it leaving the age old social prejudices and restrain. In terms of Indian response to this newness, the writings of the Bengalis in various vernacular journals on different medical issues are a vital part of such an endeavour. This is the only source which could provide information about the 'inner world' of a colonized society. Taking the year 1835 (establishment of Calcutta Medical College, hereafter CMC)) as the major land mark of the history of medical education in Bengal, this work would focus on the whole century and the subsequent century as well.

Another important change came with the appointment of a Health Survey and Development Committee called Bhore Committee in 1945. Apparently this work would try to conclude with the new changes and alteration that had brought into by the committee and the final recommendations it made for emerging independent India. Among numerous medical and health policies, the Health Survey and Development Committee, which is popularly known as the Bhore Committee, was the last large scale health survey planned by the British before independence. The Government of India set up this committee in October, 1943. The committee was chaired by Joseph Bhore, who was a senior civil servant. It comprised of eight British and sixteen Indian members. The committee put forward, for the first time, comprehensive proposals for the development of a national programme of health services for the country. It had two broad objectives; (a) a nationwide survey of the present position in regard to heath conditions and health organizations in British India; (b) recommendations for further developments[1]. It was mentioned in the report that a survey of the whole field of public health and medical relief had not been done till date. The government felt that there was a serious need to set up such a survey to make health plans for the post-war (Second World War) developments in India. Both short-term objectives (objectives which reasonably could be expected to be reached within a period of four to five years) and objectives which would necessarily require a longer

[1] Report of the Health Survey and Development Committee, Vol. I, Government of India Press, Calcutta, 1946 P. 1

period for attainment were under consideration of this survey[2]. The committee comprised of five Advisory sub-Committees dealing with different subjects; public health, medical relief, professional education, medical research and industrial health. The final report was published in 1946 in four volumes. It suggested a short-term project to be achieved over a period of ten years and a long-term plan to be put in place over a period of forty years with regard to the health services in the country.

It is needless to say that power of transfer was afoot. The final recommendations came in 1946 only. Naturally the British Government faced many challenges in setting up the framework of governance for different functions for the independent Indian State. The developments in the field of public health were one such important field of functions. Bhore Committee was not without its historical and political context. Its recommendations came in the background of the 'World Capitalism's' greatest crisis of the twentieth century; the Second World War. "One of the difficulties which the Committee confronted was that of finance. Financial considerations clearly cannot be ignored. Plans based on the assumption that ultimate funds would be available for recurring expenditure had little practical if they remained locked in the coffers of the government. On the other hand it was equally unwise to assume that expenditure on health administration in future would be limited to the sums which were expended in the pre-war years. It was desirable, therefore, to plan boldly, avoiding on one hand extravagant programmes which were obviously incapable of fulfillment, and on the other halting and inadequate schemes which would have no effect on general health standards and bring little return for the expenditure involved[3]."

Not only the economic conditions, created pressure on the committee before the publication of the Report, but there were other socio-political parameters added to it. The rising aspirations of the people, the collaboration between the ruling class and the Indian leadership and the continuance of the colonial governance paradigm did influence the recommendations made by the committee. The plans put forward by Bhore Committee gave adequate recognition to few of the very important and demanding health issues,

[2] Report of the Health Survey and Development Committee, Vol. I, Government of India Press, Calcutta, 1946. P. 2Ibid P. 2

[3] Ibid

which were (i) expansion of health services throughout the country, particularly in the rural areas, (ii) special provisions for the health and welfare of children and mothers, (iii) all-round improvement of environmental hygiene to produce healthy living conditions of the communities and (iv) making substantial increase in the food allocations to meet the standard nutritional demands of the people[4]. In keeping these broad plans under consideration the committee took the administrative districts as the basis for the development of health services as the districts were the smallest unit of administration and served an area with a population about 10,000 to 20,000. At each of the headquarters of the districts secondary and primary health units would be established.

Objectives and Research Questions:

The main objectives are to identify the nature of colonial domination in terms of the medical systems and educational ideas; to investigate the variety of social forces and interests that shaped the evolution of western medical education in Bengal Presidency; to study the emergence of different indigenous endeavours and initiatives for further development of medical education and their impact on the Bengali society; to examine the changing position of the new Indian doctors and the growth of medical profession; to see the emergence of new medical techniques as reflected in medical pedagogy of the institutions; to see the impact of the above on the society of Bengal.

The research questions to be explored are: What were the key factors responsible in convincing the colonial authority in India about the necessity of imparting western medical education? Did the institutionalized form of colonial medical education fulfill the aspirations of the rulers as well as the enlightened minds at the receiving end? How did the common people, accustomed to the traditional healing methods, i.e. 'alternative medicine' of the colonial period, perceive the introduction of western medical treatment? What was the approach of the colonial authority towards the 'alternative medicine' in Bengal Presidency? Recurrences of diseases and epidemics were grown enormously in the second

[4] Raja. K.C.K.E, Recent Development in the Field of Health in India, *The British Medical Journal*, vol. 1, no. 4650, Feb, 18, 1950, p. 387 – 392.

half of the nineteenth century. Were the medical curriculum and existing pedagogy sensitive to it? What were the major causes behind women's participation to western medicine and how far they were successful in acquiring the new profession? Was the introduction of modern medical tools and techniques a point of cultural contestation for the aesthetic-minded Indians initially? Did the modern medical tools and techniques gradually emerge as agent of empowerment for the common people of India, instilling among them a kind of confidence of defying illness and deferring death? How far did the contemporary literature helped to popularize medical education in Bengal?

Keeping in mind these broad objectives, separate chapters are thematically constructed. Research questions are answered with the flow of each chapter along with more particular and relevant questions. While giving a comprehensive view of western medicine and education in Bengal Presidency it is necessary to describe the causes behind selecting the area and time period of concern. This study aims to examine and re-search the development and expansion of medical education and new knowledge as well as technology in Bengal Presidency in the nineteenth and the first half of twentieth century. It also aims to know the nature of assimilation of an alien knowledge by the local people and its reflection in the contemporary Bengali society through the pages of the Bengali journals. The changed condition of the 'alternative medicine' and its further progress would also be an area of investigation of the present study.

Rationale of the Study:

Bengal Presidency is the locale of this work. The official and major commercial activities of the East India Company started in Bengal Presidency and later enabled to possess Bengal as their first ruling territory. Apart from the political importance, Bengal possesses the prestige of having the first western medical institution (Calcutta Medical College[5]). The city of Calcutta was probably the first 'imperial city' or 'science city' which

[5] Calcutta Medical College was the first western medical institution recognized by University of London in Asia and other scientific research organizations and educational institutions.

showed the early glimpses of cultural encounters of British period[6]. Jadunath Sarkar expressed that;

> "If Periclean Athens was the school of Hellas, the eye of Greece, mother of arts and eloquence, that was Bengal to the rest of India under British rule, but with a borrowed light which it had made its own with marvelous cunning. In this new Bengal originated every good and great thing of the modern world that passed on to the other provinces of India. From Bengal went forth the English-educated teachers and Europe-inspired thought that helped to modernize Bihar and Orissa, Hindustan and Deccan. New literary types, reform of the language, social reconstruction, political aspirations, religious movements and even changes in manners that originated in Bengal, passed like ripples from a central eddy, across provincial barriers, to the furthest corners of India"[7].

Colonial Bengal represents a part of a much larger project of colonial domination. By the beginning of the nineteenth century as the empire had more or less been won by the colonial power, Western science could partly push out indigenous modes of knowledge. According to some historians, it was an intellectual domination rather than only a physical control. But a detail and thorough investigation of not only the above mentioned time period but also the pre and post conditions of Bengal may show a unique and multi-dimensional character of the entire process as well as the impact of this intellectual domination. However, Bengal Presidency as well as Calcutta as the capital of colonial rule was not only huge in its territorial expansion but also represents enormous importance and glory in terms of colonial policy implementation, socio-political changes and development in almost every sector in British period.

The rationale behind taking nineteenth century as a major period of the study is the significance of nineteenth Century in the history of Bengal as well as India. Nineteenth century attracts the attention of all of us because of its unique character. This century had built a bridge between the intellectual tradition of the West and the East. Bengal was the first region in the Indian subcontinent, which bore the brunt of British political, economic and socio-cultural bend in nineteenth century and by absorbing it tried to shape a synthesis, which prevailed almost until the end of the British period. Throughout this century, Bengal

[6] Kumar Deepak, Calcutta: The Emergence of A Science City (1785 -1856), *Indian Journal of History of Science*, 29 (1), 1994, p. 1 -7.
[7] Sarkar. Jadunath, (Ed), *History of Bengal*, Vol. II, Dacca, p. 498.

had first witnessed encounter of culture and exchange of knowledge and interestingly, had sustained contacts between western science and Indian scientific tradition. Here the first educational establishment fashioned on western system was set up. Nineteenth century showed the path for the future development in medicine and along with an organized medical service (of the rulers) also a spontaneous trend was felt within the society for accepting western medicine as profession.

Twentieth century is marked by a huge diversification in medical education. Though by the end of nineteenth century medical institutions had already been established throughout India, but in the next century also important changes took place, for example, the establishment of private medical college in Bengal; the Carmichael Medical College in 1916. Bengal never lost its importance as the pioneer in medical field. A major political change that it experienced was the Swadeshi movement.[8] The after effect of the awareness it elicited among the Bengali people is noticeable. On the one hand, in this period the science colleges lost their popularity, but on the other, a trend had aroused among the young generation towards professional education. Number of students in medical profession thus gradually increased. Even in the changed political scenario after the capital transfer in 1911, the enthusiasm never declined, rather gained momentum in the coming decades. This was the condition of the indigenous people. Twentieth century witnessed vital changes on the official side also. Calcutta Corporation started working actively from this decade and had taken certain measures in public health. The role of Bengal Congress, as a part of Indian National Congress, would be an important issue in this regard. So finally, the way Bengal started flourishing in the nineteenth century, maintained in the same position and this had long term consequences in the twentieth century.

This work starts with the year 1835, the foundation year of Calcutta Medical College. The newness, that had already entered into Bengal confirmed and strengthened its position among the Bengali society through its institutionalized form. Without a proper medical institution and education programme it would have been almost impossible to spread an alien scientific knowledge so vastly among the Bengalis. And British also need proper trained and educated doctors to serve their huge territory. It has mentioned earlier

[8] Sumit Sarkar, *Modern India*, Macmillan, 1989.

that this study conclude with the recommendations of the Bhore Committee. It is not possible to describe the entire points of changes of medical education made by the committee, but we can look into the major ones of those, which marks its importance in the field of medical education and public health. The committee imposed the construct of a 'basic' doctor trained through 5.5 years of university education. It abolished the shorter licentiate qualification and disregarded the systems of indigenous medicine. But interestingly, the licentiates formed two-thirds of the country's registered doctors, and, together with the indigenous practitioners, provided the bulk of the rural healthcare. At the same time among the many other aspects of the committee report, its focus towards rural healthcare and development is mentionable here and on which it made strong recommendations also. It stated that health services should be located close to the people to ensure maximum benefit to the community and medical services should be free to all, without distinctions. It recommended that per 100,000 populations the minimum required ratio is: 567 hospitals beds, 62 doctors, 151 nurses etc. Though the committee tried to revise what British had neglected throughout their rule, but flaws and demerits are also an unavoidable part of it.

Existing literature: Situating the Present Study:

It is always required to keep the already written history of the particular topic or the area of study in the back of our mind for re-writing the history on the same theme. That is historiography. A historiography sets out the main points of that discussion, and serves to situate the present work within this larger context. It is necessary to know and discuss the range of debates and approaches of the topic. Historiography actually identifies the major thinkers and arguments, and establishes connections between them. In the same way the history of western medicine in the colonial India is also having a diversified historiography. For the last several decades it has been nurtured by various historians, who have argued on different areas of medicine from different angles. Disease and medicine, public health, medical institutions, medical education is some of those areas.

Though there is no dearth of secondary sources on medical issues, but it is noticeable that the history of medical education in Bengal Presidency and its consequent

impact is relatively a less-explored area. We can mention here about the monumental work of S.N. Sen[9] on scientific and technical education, which includes the history of medical education also. The accounts of Deepak Kumar, Zaheer Babur, Anil Kumar, David Arnold, Mark Harrison, Narain Hassan, Chittobrata Palit and Projit Bihari Mukherjee have also thrown considerable light on this subject[10]. The initial issue that comes in discussing the history of medicine is the nature of its introduction in Indian society and the consequent condition. This situation has described as 'medical encounter' in British India. The encounter phase is defined in this way that the colonial hegemony was so strong that the indigenous medicine became marginalized. But the acceptance of western medicine by the Indians was depended more on 'coercion than persuasion'[11]. Later on the studies on public health in colonial societies have done by several scholars. Emphasis has been on understanding the relationship between medicine and colonial domination. The concept of domination could be also explained in this way that power expansion policy of British entered into Indian society so far that, it enabled to rule even over human body. David Arnold described it as "colonization of the human body[12]". Recent works on 'colonial medicine' and indigenous response have reset the older ideas. Though apparently coercion attracts attention, but persuasion and gradual conviction to the 'colonial medicine' should not be neglected. In the words of the author "Western medical discourse functioned in several ways: as an instrument of control which would swing between coercion and

[9] S.N Sen, *Scientific and Technical Education in India 1781-1900*, INSA: New Delhi, 1991.

[10] Kumar Deepak, Science and the Raj, Babur Zaheer, *Science of Empire: Scientific Knowledge, Civilization and Colonial Rule in India*, Oxford University Press: New Delhi, 1998; Zaheer Baber, *Science of Empire: Scientific Knowledge, Civilization in Colonial India*, OUP: New Delhi,1998; Anil Kumar, *Medicine and the Raj, British Medical Policy in India, 1835-1911*, Sage Publications, New Delhi, 1998; Arnold, David: *Colonizing the Body, State Medicine and Epidemic Disease in Nineteenth Century India*, Oxford University Press, Calcutta, 1993; Mark Harrison : *Public Health British Indian Anglo-Indian Preventive Medicine 1859-1914*, Cambridge University Press, New Delhi, 1994; Narain Hassan, *diagnosing Empire Women, Medical College and Colonial Mobility*, Ashgate, London, 1969; Chittobrata Palit, *Hospital and Medical Education in Calcutta: The Beginning, India Pharmacol Society*, Calcutta, 1989; Projit Bihari Mukherjee, *Nationalizing the Body: The Medical Market, Print and Daktari Medicine*, Anthem Press, New York, 2009.

[11] Deepak Kumar, Medical Encounters in British India, 1820-1920, *Economic and Political Weekly*, Vol. 32, no 4, (Jan 25-31 1997), P 166-170.

[12] Arnold David, *Colonizing the Body: State Medicine and Epidemic Diseases in Nineteenth – Century India*, University of California Press, London, 1993.

persuasion, as the exigencies demanded, and as a site for interaction and often resistance"[13].

On the other hand rich corpus of studies has emerged on the histories of the indigenous medical systems in India. Brahmnand Gupta and Poonam Bala have played a pioneering role in this area[14]. There are works on especially unani medical system by Seema Alavi, Guy Attewell et al[15].

As we know initially British faced enormous problems due to their ignorance of tropical diseases and thus took several substantial remedial measures, the history of colonial diseases and public health has taken an important part in today's academic arena. The works of Mark Harrison and David Arnold have provided some of the best analysis of these connections[16]. The institutional history of medicine, which includes both the institutions of western and indigenous medicine founded by British and Indians respectively, is taken up by some historians. The history of institutions involves the ideas and evolution of medical education. Historians like S.N Sen., Anil Kumar, Newhart Queasier, Jayanta Bhattacharya, Jharna Gaurlay, and Chittobrata Palit have thrown light in this area[17]. In the related field of science studies, the works of Kapil Raj, S. Irfan Habib

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[13] Kumar Deepak, *Probing History of Medicine and Public Health in India: A Study of Encounters at Multiple Sites*, Kumar. Deepak and Basu Raj Shekhar (Ed) *Medical Encounters in British India*, Oxford, New Delhi, 2013.

[14] Brahmanand Gupta, *Indigenous Medicine*; Poonam Bala, *Imperialism and Medicine in Bengal: A Socio-Historical Perspective*, Sage Publication, New Delhi, 1992.

[15] Seema Alavi, *Islam and Healing: Loss and Recovery of an Indo Islam Medical Tradition, 1600-1900*, Permanent Black, New Delhi, 2007, p- 129-30; Guy Attewell, *Refiguring Unani Tibb: Plural Healing in Late Colonial India*, Orient Longman, Hydrabad, 2007 (sited in Projit Bihari Mukherjee, *Nationalizing the Body: The Medical Market, Print and Daktari Medicine*).

[16] Arnold, David, *Colonizing the Body, Imperial Medicine and Indigenous Societies*, Oxford, Delhi, 1989, *Science, Technology And Medicine In Colonial India*, Cambridge University Press, 2000. Harrison Mark, *Public Health British Indian Anglo-Indian Preventive Medicine 1859-1914*, Cambridge University Press, New Delhi, 1994.

[17] S.N Sen., *Scientific and Technical Education in India 1781-1900*; Anil Kumar, *Medicine and the Raj*' Newhart Queasier, *Science, Institution, Colonialism: Tibia College of Delhi, 1889-1947*, ('History of Science Philosophy and Culture in Indian Civilization', Ed by Umea Das Gupta, Vol. XV, Part 4, Person Education, Delhi, 2011; Jay anta Bhattacharya, *The first Dissection Controversy: Introduction to Anatomical Education in Bengal and British India*, Current Science, Vol. 101, no. 9, 10th November 2011; Gaurlay Jharna: *Medical Women and Female Medical Education in 19th Century India*, Education and Empowerment, Women in South Asia, Bethune School Praktani Samiti, Kolkata, 2001; Chittobrata Palit, Palit, Chittobrata: *Hospital and Medical Education in Calcutta: The Beginning, India Pharmacol Society*, Calcutta, 1989.

and Dhruv Raina have highlighted the 'domesticating Modern Science 'western Science' in South Asia[18]. In medicine particularly, the works of Mridula Ramanna, Kabita Ray, Achintya Kumar Dutta and others have similarly focused on South Asian practitioners of western medicine[19].

Though the above mentioned works situates medicine, public health, disease and medical education issues in proper context, however, any substantial discussion particularly on medical education in Bengal Presidency up to almost the end of British rule is still left out. Especially, the causes behind the various forms of changes in medical education in the twentieth century and its legacy in Bengali society are some essential areas which are yet to be explored properly. Many works have done on history of diseases and public health in the colonial period by different historians. But how the occurrence of such diseases in colonial period did influence medical education and its curriculum is a major question, without such enquiries the study of medical education is partly incomplete. Apart from the works on individual institutions and personalities in terms of their role in medical education, there are more scopes to work in this area. A comprehensive and collective study on institutions, personalities, Government rules and regulations, pedagogical changes etc. in Bengal Presidency is yet to be done to identify and the re-locate/re-situate the nature of colonialism, the nature and behavior of the new emerging professional group and their role in the society.

[18] Kepi Raj, *Relocation Modern Science: Curriculum and the Constitution of Scientific Knowledge in South Asia and Europe, 1650-1900*, Palgrave Macmillan, Basingstoke, 2007; Drub Riana and S. Iran Habit, *Domestication of Modern science" A Social History of Science and Culture in Colonial India*, Tulika Books: New Delhi, 2004.

[19] Mridula Ramanna, *Ranchorrslal Chotalal: Pioneer of Public Health in Ahmedabad*, ('*History of Medicine in India: the Medical Encounter',* Ed by Chittobrata Palit and Achintya Kumar Dutta, Kalpaz Publication, New Delhi, 2005); Kabita Ray, *Voluntary Associations and Public Health in Bengal 1900-1947*, ('*History of Medicine in India: The Medical Encounter'*, Ed by Chittobrata Pali and Achintya Kumar Dutta, Kalpaz Publication, New Delhi, 2005); Achintya Kumar Dutta, *Upendranath Brahmachariin Pursuit of Kala-Azar*, (*History of Medicine in India: the Medical Encounter'*, Ed by Chittobrata Pali and Achintya Kumar Dutta, Kalpaz Publication, New Delhi, 2005).

Introducing Medical Education in Bengal Presidency:

British stepped in Bengal much prior to the period we are talking about. James Ranald Martin while writing the medical topography of Calcutta showed very amusingly how and why Calcutta was chosen for their settlement. He observed that of all the European nations, who planned for distant settlements, British were least concerned about climate, public health and other medical issues as far as their site selection were concerned. Initially their focus was on commercial set up. Calcutta was chosen accidentally. Its founder Job Charnock (1689-90) used to enjoy his repose and *hukkah* under a shady three in a village called Kolikata (Calicotta) which along with two other villages (Gibindopur and Sutanuti) were purchased by him from the zamindars. It was the big shady trees which attracted Charnock the most[20]. As a result in spite of having more suitable and healthy places near to the sea and the Ganges, Calcutta was selected. In future the settlers had to bother lot of unhealthy conditions due to the existence of jungle and marshy lands. But notwithstanding the troubles British tried to make Calcutta favorable for them and considered as the "sister of England"[21].

As the new comers to this country and unknown to the environment the British settlers had to face and accordingly solved many health problems. Their job was not so easy due to their ignorance to the tropical climate, different types of diseases and the indigenous mode of treatments thus they were bound to bring medical men from England, to whom they were familiar with. Another major problem occurred when they realized that bringing medical men from their mother land was heavily expensive for East India Company. The ultimate solution from their side was to train Indians in their own way to assist them in the battle fields and in civil stations as well. Gradually Indians were started involving in western medical education, initially informally and later on with institutional degrees.

By 1835 the British had become almost the supreme colonial power and succeeded to consolidate their grip over Bengal. Their purpose was to maintain the political power

[20] Martin James Ranald, *Notes on the Medical Topography of Calcutta*, Bengal Military Orphan Press, Calcutta, 1837, p. 1 – 17 (British Library, from now onwards BL)
[21] Martin James Ranald, *Notes on the Medical Topography of Calcutta*, p. 4. British Library

and use it for profit. Medicine was one of the major tools of domination and at the same time certain useful experiments were also done. They had "result - oriented research" no doubt, but this also led them to introduce modern medical system in India[22]. It did dominate the colonized people, but several developments and advancements came out as offshoot of this domination. Here one can mention the statement of the author, *It may be argued that tropical medicine itself was a cultural construct, 'the scientific step child of colonial domination and control*[23]. The colonizer's intention could be divided into two parts; initially they thought of a better treatment for their own officials and soldiers and in the second phase they became involved in intellectual exercises to know more about the new environment, medicinal plants and diseases and experiments, all of which in course of time enriched their won medical knowledge.

The British as a colonizing power tended to implement their own understandings in regard to policy-making in every geographical space they dominated. It was in the same tune that the educational policy was introduced by them in India. General English education and western medical education in Bengal were started almost at the same time. The introduction of medical education by the British was actually a well-thought-out process with definite objectives. Even if it is admitted on one hand that the introduction of the medical system and education was guided by a need to promote an all-round general awareness about health problems and their treatment among the Indians, eventually leading to their alternative consciousness; there was also a propensity on the other hand to meet the needs and requirements of the colonial government which was more interested in strengthening their position and power over an alien territorial space. However, in practice, towards the end of the eighteenth century, the officials of English East India Company felt the need of an organized medical institution, run by the Government, for the medical

[22] Kumar Deepak: *Science and the Raj, A Study of British India*, 2nd edition Oxford University Press, New Delhi, 2006.

[23] Deepak Kumar, *Probing History of Medicine and Public Health in India: A Study of Encounters at Multiple Sites*, Medical Encounter.

learning of the native Indians[24], which might lead to awareness among the people as a natural corollary.

Before entering into a discussion of the established concepts and ideas regarding the introduction of western education in general and medical education in particular in a colony like India, a brief discussion on the history of British approach towards educational policy and its further developments is necessary here, within which the concept of an institutionalized medical education might be contextualized. As the English East India Company was basically a commercial corporation and its prime objectives were trade and profit, it initially pursued a policy of aloofness in every quarter of indigenous society and culture. However, because of a growing debate about a more responsible role of the Company in India, within the official circle as well as outside of it; the Company compelled to give up its non-intervention policy and started to take interest in spheres like society and culture of the colony. There was a constant pressure from various quarters, the Missionaries, the liberals, the Orientalists, the Utilitarians, which made the Company to take the responsibility of promotion of learning. The beginning of English education in India can be traced back only to the early nineteenth century. For the first time the British Parliament included in the Company's Charter a clause that the Governor- General-Council is bound to keep a sum of not less than one Lakh of Rupees per year for education of the Indians. The importance of the Charter Act of 1813 was that the Company for the first time acknowledged state responsibility for the promotion of education in India.

Now a serious problem had occurred around which the opinions were sharply divided. The problem was whether the Company should promote Western or Oriental learning. In the initial stage, the Company officials patronized Oriental learning because the most of the members of this Committee belonged to the Orientalist group. It cannot be denied that some of the Englishmen had the genuine desire to acquire and promote Oriental learning. Mention may be made in this connection that the "Calcutta Madrasa" was established by Warren Hastings (1781), the "Benaras Sanskrit College" by Jonathan Duncan (1791), and "Asiatic Society" by William Jones (1784). However, unfortunately there was a strong opposition to this Orientalist approach by the different groups in

[24] W.C.B Eatwell, *On the Rise and Progress of Rational Medical Education in Bengal*: Calcutta p. 17-18.

England; the Evangelicals, the liberals and the Utilitarian[25]. The new cultural thought that developed in England along with the Industrial Revolution was highly critical of the Company's monopoly trade. Post Industrial Revolution thinking saw little of value beyond modern western culture. The Evangelicals had a firm conviction in the superiority of Christian ideas and western institutions. Two great exponents of the Evangelical view were Charles Grant and William Wilberforce. Others who did not share Evangelical faith were also convinced of the superiority of western knowledge and one of the chief promoters of this idea was Thomas Babington Macaulay. However, Macaulay, the President of the Public Instruction Committee and Lord Bentinck, the Governor-General took the side of the Anglicists (the above-mentioned groups other than Orientalists) and Bentinck gave his ruling in favour of the promotion of western education in India. Persian was abolished as the court language and was substituted by English. Auckland, who came after Lord Bentinck as the Governor-General also believed in the need for the promotion of English education. He recommended establishing more English institutions in different areas throughout India. The General Committee of Public Instruction abolished in 1841 and its place was given to the Council of Education.

Calcutta Medical College was the first established medical institution (2nd February 1835)[26] by the British for the natives which signifies not only a simple victory of knowledge over ignorance, but also represents a much darker story of European conquest of Asia.[27] CMC was one of the earliest western fashioned educational institutions in India which proved to be the permanent knowledge generation and dissemination to the Indians till date and served as the father of al medical colleges then established. Till 1835 Sanskrit

[25] Those, who were in favor of continuation of the existing institutions of Oriental learning and promotion of Indian Classical Tradition, were called "Orientalists". The argument they put forward was that generally there was a prejudice among the Indians against European knowledge and science, so there might be complete rejection of western knowledge. Some of them were also interested to explore the Classical tradition and culture of this ancient civilization. It is of no doubt that the Orientalists were guided by some practical considerations. They wanted teach the Company Officials the local language and culture so that they would be better to their job. The other motive was to develop friendly relations with the elites of the indigenous society and to understand their culture.

[26] Calcutta Medical College, *The Medical College of Bengal*: an official account of this institution, Calcutta, 1839, p. 1-3.

[27] 175 Medical College Bengal 1835-2009: Commemorative volume, p-4-5.

College[28] and Calcutta Madrassa[29] were the institutions where indigenous medicine i.e. ayurvedic and unani respectively were taught to the native students. It is interesting to notice here that there were not a lot of differences between ayurvedic, unani and European views of physiology and disease till the sixteenth and seventeenth centuries. They all considered human organism to be governed by the balance of hormonal fluids and diseases occurred when this balance was upset. The only difference started taking place from sixteenth century onwards with the rapid progress in the field of anatomy and physiology in Europe. This actually converted into a big confidence amongst them (Europeans) that they alone had a full understanding of the fabric of a body. At the same time Europeans were also became concerned about anatomical ignorance of India much before they settled in Bengal. For instance in 1670s a French traveler, Francois Bernier, who was himself medically trained, wrote that Hindus "understand nothing about of anatomy. They never open the body either of a man or beast"[30]. Such critics began to be heard and became increasingly prominent over the years. Again it is clear that Indian medicine was seen as inferior to European medicine. But they never completely ignored it because of their urge as well as necessity to comprehend with Indian reality. It is yet to investigate in this study that how and to what extent this superior attitude of the colonial authority did influence the western medical education to the eastern learners.

Initially, Calcutta Medical College started its journey with miniscule infrastructure and small number of students. But its rapid growth in all respects was visible. One can mention here the remarkable event of Madhusudan Gupta's dissection of human body in 1836 (10th January). This paved the way for the orthodox Hindus to veer towards rational and modern scientific medical education in future. Within a short period, the students from different social groups, especially from the Brahmin sections, engaged themselves in human dissection activity. On one hand it was a positive side for the Hindus in terms of advancement towards modernity, on the other it was also a victory of the British over the Indian ignorance. Crossing all the barriers Bengali women finally became involved in western medical education and CMC gave them not only medical degree but also gave

[28] Purna Chandra Dey, Kolikata Medical College, *Bangoshree,* 1342 BS, 3rd year, vol. I, 5th issue, p. 568 and 774-75

[29] General Committee of Public Instruction, July 1823 to December 3rd, vol. I, p. 125, 132-33.

[30] *175 Medical College Bengal 1835-2009*, Commemorative volume, p.

them respectability and earning capability. This social change took little more time to take place in Bengal than the other provinces but proved to one of the most vital modifications in women life and their position in the society.

With the passage of time one could notice growth of non-Government medical institutions as well as institutions for 'alternative medicine' along with the government institutions in Bengal. Radhagovindo Kar, for instance started Calcutta Medical School. This was became Carmichael Medical College in 1916 in the association with other two medical schools. This was an interesting endeavour and a nuanced study would require exploring certain questions, such as whether the discriminative attitude of the colonizers affected the Bengalis in general and Bengali doctors in particular? If so, then how were they able to manage that situation? Was there any particular class composition in accepting or rejecting their views? These questions are to be addressed later in the different chapters according to their relevance in the present study.

The next major land mark in the development of education in India was Wood's Dispatch. Charles Wood, the President of the Board of Control, laid down the policy in 1854, which became the guiding principal of furthering the education programme of the Government of British India. The process of instituting new Committees and Commissions went on throughout the nineteenth and twentieth century. These Commissions and Committees were sometimes very influential in the sphere of medical education and disease eradication problems and sometimes less. The major among them were Hunter Commission (1882-83), Indian University Act (1904), Saddler Education Commission (1917-19), The Hartog Committee (1929), Sergeant Report (1944) etc. The biggest landmark in medical field towards the end of colonial rule was the Bhore Committee Report[31].

In October 1943, the Government of British India appointed a Health Survey and Development Committee to study the state of the public health in the country, and to recommend measures for the future developments. The committee was chaired by Joseph Bhore, who was a senior civil servant. It was comprised of eight British and sixteen Indian

[31] The Health Survey and Development Committee, popularly known as the Bhore Committee.

servants. Bhore Committee Report was published 1946 in four volumes. Though the transfer of power of India was imminent, the Indian British Government had to face a challenge for setting up the framework of the new independent Indian state that was to come into being. Provision of healthcare was one such important function[32]. As the first large scale medical and health project, the Bhore Committee, made by the British after almost two hundred years of its rule, had immense importance for the medical education and resolving the health issues in colonial Bengal and independent India as well.

The Bhore Committee Report was not something independent of any specific historical and political context. Its recommendations came in the background of the Second World War. On one hand, apprehensions about the emergence of the Communist movement and on the other the rising aspirations of the people of India actually paved the way for the British to plan for long term projects like health plans[33]. (Neil Brimnes).There was a considerable confluence of interests between the British ruling class and the leaders of Indian National Congress. And this collaboration dreamed for the continuation of colonial paradigm in India[34]. So, all these helped in shaping the recommendations made by the committee. In post World War days occupying a prominent position across countries in the developed world, Britain very consciously did not want to make the emerging Indian Republic an exception to this trend. It argued for free 'universal health care' to be provided by the state in these words:

> The idea that the state should assume full responsibility for all measure, curative and preventive, which is necessary for safeguarding the health of the nation, is developing as a logical sequence. The modern trend is towards the provision of as complete a health service as possible by the state and the inclusion, within its scope, of the largest possible proportion of the community. The need for assuring the distribution of medical benefits to all, irrespective of their ability to pay, has also received recognition.[35]

[32] Bikas Bajpai and Anoop Saraya, For a Realistic assessment: A Social, Political and Public Analysis of Bhore Committee, *Social Change*- 41(2)251-231, Sage Publication, New Delhi.
[33] Ibid.
[34] Ibid.
[35] Government of India, Bhore Committee Report: 1946, Vol. II, p 7.

For giving primacy to the needs of India's indigent sections (free health service), the committee had to change and alter the prevailing medical education system in many ways according to their convenience. Bhore Committee thus had a great significance in describing how the national as well as the international issues were merging into British policies in India. This committee had structured its ideological base upon two established models i.e. 'Welfare State' of Britain and the model of 'Health as a Right' that existed in Soviet Union. But it is noticeable that in following these two models, the British Government of India did not consider any role for the Indian traditional medical systems in the future organization of health services in the country. There was a continuation of the bias that the indigenous systems were unsuitable, because of their unscientific methods and stagnancy. Nevertheless, the practitioners of the indigenous systems of medicine continued to command and exercise control over large sections of lesser educated masses and the intelligentsia.[36] But mention may be made of in this connection that for the western medical system the committee planned for many drastic changes, which became the guideline for independent India. It would be discussed in detail later.

It is needless to say that transmission of knowledge involved educational institutions. Definitely the contents of their curricula also involved the reproduction of belief systems, cultural values, social forms, and political structures. In India, the traditional *guru-shishya* (teacher-student) system involved a personal tie between the scholar and his master, the oral transmission of knowledge, and the mastery of certain authoritative texts. With the arrival of the British, a new system of education based on transmission via the print word was established. Formal curricula, standardized textbooks, and impersonal examinations became the new norms. The contrast between these two systems was striking and a debate over their relative merits and over the language of instruction prevailed for years in both official circles and among the Indian literate classes. Seema Alavi has pointed out that with the introduction of lithographic printing in India, a wave of printed materials led to a contestation between the 'native' elite and the British rulers in their quest to uphold themselves as medical patrons[37]. Here one can question as

[36]Government of India, Bhore Committee Report: 1946, Vol. II, p. 455.

[37] Seema Alavi, *Islam and Healing: Loss and Recovery of an Indo Islam Medical Tradition, 1600-1900*, Permanent Black, New Delhi, 2007, p- 129-30.

to what effect did this contestation have on the development of medical education in the coming years of the nineteenth and twentieth century? Did it help, if so in what ways? Was the re-awareness for the indigenous medical systems from the side of the Bengali elites/educated class come out as a derivative of this contestation?

Apart from the above issues, the general idea about the contemporary scenario of medical education and its development in Bengal as well as in India raises some questions; particularly, why within a very short period, in comparison with the other sectors of education, medical education was more developed, became more sophisticated and acquired popularity among the indigenous people. Secondly, it is of no doubt that, British, was also over conscious about health conditions and with time became serious about medical education of the Indians. The reasons behind these developments have still not been explored in details. There will be attempts to find answers to these questions through the pages of the chapters which include diverse and relevant themes on medical education, public awareness and public health in Bengal Presidency.

Methodology of the Study:

The recent developments on the historical perception of education in modern India would formulate the structure of this study and also could act as the theoretical background for it. Though medical education has a unique character because of its military need and its direct encounters with the entire society, but it remained inalienable from the bigger aspects of general education. Nigel Crook has argued that throughout the colonial period the discriminative attitude of some sections of the ruling classes remained unchanged. The author asks a question that, "What are the principle functions of education and the transmission of knowledge and how are these illustrated in the history of people of South Asia?" and he gives the answer in the following way: "the rich and powerful seek to reproduce their position by transmitting the knowledge of their stable powers"[38]. On the

[38] Nigel Crook, The Transmission of Knowledge in South Asia- Essays on Education, Religion, History, and Politics, Oxford University Press, New Delhi, 1996.

other hand, Sabyasachi Bhattacharya raises some arguments on the changing situation of education in colonial India tempered by many variants of 'nationalist paradigm'. He observes that the educational ideas of the Indian nationalists were not same as the concept of philosophy of 'national education', which developed as an instrument of ideology in the hands of the ruling elite in the period of decolonization. The transmission of western knowledge in India faced a twofold contestation[39]. The first contestation involved the prime promoters of western education and the initial recipients i.e. the beneficiaries of English education, who adopted it mainly as the means of economic advancement. The second area of contestation was between the privileged groups of the native society and the under-privileged sections, i.e. the so called backward castes, tribal groups, products of vernacular education and many others within the Indian society itself. The same was the situation in the field of science education too. It has been stressed that Indian educated class faced a dilemma in both accepting and rejecting the western scientific education[40]. While total acceptance of an alien tradition was not easy, complete rejection of it was also almost impossible. Some were in search of a 'synthesis', where the rest had already been coerced to accept the superiority of western science. In keeping these opinions in mind some questions might be raised for further development of the present study.

In this study an initiation has been taken to re-examine the existing theories and debates which directly do not talk about medical education but relates it with the general attitude of the colonial rulers towards education and the humanity which was at the receiving end. Here one of the main intentions would be to situate medical education in the broader aspects of education state of affairs of contemporary Bengal. However, different changes were visible in the education sector, because of the rigidity in policy implementation with the coming of new Governor-Generals and Viceroys. But once knowledge generation started, it spread quickly among the general populace, defying the brakes that could be imposed on its natural momentum. As a natural characteristic of a society divided by caste, class and religion, it would have been impossible to build a pathway for education for all in an easy and smooth way. Contestation was agog, conflicts

[39] Bhattacharya Sabyasachi (Ed) , *The Contested terrain: Perspectives on Education in India*, Orient Longman, New Delhi, 1998, p. 3 – 5

[40] Kumar Deepak, Kumar Deepak: *Science and the Raj*

sometimes played crucial and affirmative roles and impacted on the history of education and medical education in particular in nineteenth and twentieth century Bengal Presidency.

This work, being an empirical study, has to depend mostly on the primary sources. The archival documents like Proceedings of the Home Department (Education Branch, Medical Branch, and Public Branch etc), Proceedings of Finance Department at National Archives of India; Proceedings of General Department[41] (Education Branch, Medical Branch, Miscellaneous Branch etc); Municipal Department (Municipal Branch); Political Department (Medical Branch); Judicial Department (Medical Branch) at the State Archives of West Bengal deserve special attention. The various printed reports produced by English East India Company as well as the British Government of India are other important primary sources[42]. Some examples of such reports are: Report on Medical Education on Vernacular Medical School, Report of the Council of Education, General Report: Public Instruction in Bengal, Annual Report on of Inspector General of Civil Hospitals, Report on Medical Laws and Legislation of Bihar etc. The private letters and correspondences of Governor-Generals, Dispatches from Court of Directors to the Governor-Generals and Viceroys, relevant papers of the British Parliament as well as Minutes of Parliamentary meetings in England would also provide valuable information. Reports of various education Commissions and the several Committees, formed by the British authority in colonial India from time to time, such as Health Welfare Committee Report, Committee on Medical expenditure in Bengal Report, Hunter Commission Report etc. should also throw light on the nature of education policy and the methods followed by the government to develop medical education in India in general and Bengal in particular. Government publications like *Bengal Medical Regulations*, W. Palmer, (Military Orphan Press) *Notes on the Medical Topography of Calcutta*, Martin James Ranald, (Military Orphan Press) etc are one of the relevant sources of this study.

Apart from these archival documents, I have consulted in details with a few exceptions, relevant contemporary books mainly written by British officials, missionaries,

[41] The Education Branch and the Medical Branch of the General Department and the deals with women education (medical education also comes under this) apart from the other issues.

[42] There were two types of Official Reports i.e. annually published reports and one-time reports, which were addressed to a specific problem.

surgeons, medical-men and visitors. Books are generally considered as secondary sources but the majority of the sources are primary in nature because of the time frame of the present work. Objective history writing profusely depends on primary sources like official documents, which provide actual happenings and bring out the intentions of the British authority. But in describing one's objective arguments it is also necessary to know about the mentality of general British populace who might not have been a part of the ruling authority, nonetheless they might have been agencies in the colonization process. In this case, the writings of the surgeons, other medical men, and few missionaries, who worked enormously for medical relief, are important to study for their views on medicine, medical education, and health condition. They acted as the sinews for the flow of knowledge and advanced courses and curriculum on medicine which was not within the understanding of the colonial bureaucracy.

The archival documents of the Medical Colleges and Institutions of Bengal Presidency are also very important for the present study, as they provide the history of new curriculum and pedagogy introduced by the British in those institutions. They also provide detailed chronological and numerical order of the students and faculty members, the class composition and the relation of the students with the teachers (especially British teachers) of institutions in Bengal Presidency.

The contemporary Bengali journals in circulation should be one of the main primary sources to study the period under review. Some of the prominent journals among those are: *Swastha* (1305 Bangabda), *Siksha O Swastha* (1320 Bangabda), *Pally Sanskar*, *Chikitsa Sammilani* (1884), *Chikitsa O Samalochok* (1895) *Chikitsak* (1297 Bangabdo), *Bijyan Darpan* (1882 BS), *Anubikshan* (1875), *Nabobarshiki* (1877), *Banga Mahila* (1875), *Bamabodhini Patrika* (1863), *Samachar Darpan* (1818), *Smbad Koumodi* (1821), *Sambad Bhaskar* (1839), *Tattobodhini Patrika* (1843), *Sambad Prabhakar* (1831) etc. The articles in these journals give an idea of the native society's response towards the introduction of modern medical system along with the difference in perception about it in urban and rural areas.

Apart from the secondary sources this thesis contains three types of primary sources; the official (archival) documents of the British period, primary books written by

the contemporary British personnel and the vernacular journals published in Bengal Presidency by that time. We have constructed the chapters based on available information and build up its main arguments by analyzing those information, concepts and inner debate of those sources. A meaningful comparison of all these sources could endow us with three dimension picture of medical education in Bengal Presidency; views of colonial authority, mentality of the British personnel related to medicine and the reaction of the indigenous people to this newness.

Frame Work of the Study:

The present study has elaborated upon the research questions mentioned earlier in relation to the history of medical education. The relevance of such questions lies in the fact that it contributes to a better understanding of the complex relationship between British colonialism, development of medical education, its assimilation by the Bengali people and finally the response of the indigenous society towards it. The study is divided into seven chapters, with each chapter aiming to raise questions of their own apart from the general questions.

The second chapter is **Modern Medical Institutions: Policy and Administration**. The focus of this chapter is on public and private initiatives for modern medical institutional education as well as the modern medical facilities in Bengal Presidency. The chapter identifies mainly with mainly the administrative development and policy implementation by the colonial authority on the institutions and consequent changes. By giving a short introduction of how and why British thought of giving medical education to Indians and the introduction of Native Medical Institution, this chapter explores the background leading to the formation of Calcutta Medical College in 1835. Calcutta Medical College holds enormous importance and consequence to the entire western medical education in Bengal as well as India. Giving the Bengalis a new dimension of knowledge and scope of profession, the institution built an excellent example of how colonial culture swiftly entered into the society putting into oblivion the already extant systems. A steady relationship was build up between the indigenous students and western

medicine within a short period. Advanced scientific medicine gave Bengalis strength and confidence, which ultimately resulted in the process of anti-colonial activities later on[43].

Calcutta Medical College and its outcome received much importance in recent writings. What has remained beyond the intellectual purview is the peripheral expansion of medical education. Calcutta was the core of all activities of British rule not only of Bengal but of India for a long time. Thus development in all respect was obvious over there. But peripheral areas started late but were gradually developing. Among all the comparatively small cities than Calcutta we have chosen Patna and Dacca here for discussion. This chapter shows the process of development of medical education and establishment of institutions by the British, in Patna out of need and in Dacca out of demand. The research questions addressed in this chapter are: What was the purpose of the establishment and nature of the colonial Government-initiated medical institutions in nineteenth century? What was the character of the new non-Government organizations? Was it a collective effort or individual initiative? Who were the people behind the foundation of non-Government centers of education in medical science? What was their motive behind such initiatives? Was there any question of difference of quality, governing body, recruitment perspective and affordability between Government and non-Government institutions? And finally what was the people's reaction to both of these institutions?

The third chapter is **New Knowledge of Anatomy: Experiments through Surgical Operations**. Medical knowledge was imparted through medical institutions among the Bengali pupils. But more advanced medical knowledge was started spreading through different experiment done by the British medical men and surgeons using new techniques especially on Indian body defying tropical surgical diseases. Leaving the territory of ayurveda and unani, the Bengalis reached to western medicine and found a unique feature of it which was absolutely absent in the pre-existing medical systems; anatomical knowledge. The concept of observation based diagnosis transformed into a new arena of treatment where practical experience of different diseases of different parts of bodies could be separated through dissection of human body. Morbid anatomy changed the

[43] Mahendralal Sirkar was a recipient of western medicine and later on he attached with Homeopathy medicine also. He in 1876 established *Indian Association for Cultivation of Science.* The nature of the institution was fully Indian, which shows a concept of nationalism by using modern science.

whole concept of medical science. Surgical diseases were being treating with successful operations where new technologies were used. Those surgeons who were continuously facing critical situations, sometimes fatal too, had to experiment for their own knowledge and better treatment. This chapter examines how the new knowledge and sophisticated techniques attracted the Bengali people and what was the result.

Another part of this chapter involved itself with the introduction of new courses and curriculum in the medical institutions throughout the nineteenth and twentieth century. How this new pedagogy (how much is possible to collect) was reflected in the society through the newly emerging professional group. It is very interesting to know from the writing of the British surgeons about their observation and experience of numerous operations performed by them and the analysis they had given. These experiments were carried out by the Bengali as well as Indian doctors in future to get more strength in medical field. Presently we are so much developed in medical science but the beginning of this advancement was not so easy what it sounds. We have presented the birth of 'modern' medicine in Bengal through the pages of this chapter.

As we know the classrooms consisted of students of different groups, (Europeans, Eurasians, Anglo-Indians and Indians and later on fixed the number of Ceylonese and Burmese), they might have experienced the new courses in different ways. So question arises that what was the nature of knowledge dissemination in the class rooms? How was the teacher-student relationship? If we focus on the contemporary politico-social condition of Bengal, we can notice that there was a wave of identity building among the Bengalis mainly to acquire a new character which would re-define their political identity also. Now the question is in what way the introduction of new courses and sophisticated medical technique played a role for the identity building (if it at all helped in professionalized form)? Despite the presence of the indigenous medical systems a considerable part of the society had accepted the new one. Initially it was limited into the urban areas and the western educated class only. With the passage of time slowly but steadily it was able to capture the confidence of the other sections of the society also. Touching body, especially for the women, leaving the concept of traditional midwives and usage of new medical technology definitely demanded different attention. Keeping these issues we can raise two

questions; how was the growth of this new advanced medical pedagogy in the peripheral areas? And did this mental change take place because it promised some satisfaction of empowerment?

The fourth chapter is **The Alternative Medical Treatment in Bengal Presidency**. British did not show much interest to sustain, promote or modernize the alternative medical sciences. Ayurveda, unani and also homeopathy, which used to be the lifeline to the common people of the country prior to the coming of the British steadily, did lose their importance. The term 'Alternative Medicine' means the form of medicine that does not feature in the main stream of western medicine. Alternative medicines exist in all cultures to some extent with their related fields, such as traditional medicines, indigenous medicines, folk medicines, holistic medicines and oriental medicines etc. Though the British did not take any initiative in the field primarily on their own, however, one can notice individual Indian endeavors towards establishing medical institutions from the second half of the nineteenth century.

This particular chapter tries to trace individually the condition of the above mentioned three 'alternative' medical systems during the period of the present study. Some relevant questions automatically come up for the detailed discussion on the issue. Why did the alternative medical treatments still remain alive and popular, among the common people despite the co-existence of the scientific and advanced western system of medicine? Was this rooted in their habitual love for tradition or did it originated from the question of affordability? How did the common people perceive the introduction of modern medical treatment in their daily life? What was the approach of the Indian elite to alternative medicine? Was there any difference in approach between the urban elite and rural elite, such as land lords, towards alternative medicine? (A famous literary piece by Tarashankar Bandopadhyay, *Arogyo Niketan* might be cited in this connection, where the author very aptly portrays the tensions between the two generations of a family, representing the alternative and modern medical methodology respectively). What was the nature of growth of the alternative medical institutions in Bengal throughout the nineteenth century?

We generally keep British answerable for not giving attention to the other systems of medicines in India. But we should also give an insight into the performance given by the

indigenous practitioners to sophisticate their own medical systems. Very few, if any, endeavour could be seen to experiment with the age old medical treatment and medicines to be given to the patients. Unfortunately we didn't have any institutionalized form of medical education, thus probably the courses, curriculum and mode of instruction were remained unchanged and also confined within a very small section of the society. Here religion played a vital role to control these medical systems. The traditional practitioners kept the authority of the entire medical knowledge in their hand only, not even given permission to the lower castes to study and culture it. This religious nature of the two indigenous medical systems in India actually hampered their normal growth and scientific development, which was unexpected from such old and rich medical systems. In the time of their origin probably no other medical science was so matured and scientific, but stagnancy made them back footed in comparison with the other scientific medical systems.

The fifth chapter is **Medical Education: Women Participation and Colonial Policies.** The focus of this chapter is on a vital issue regarding the introduction of medical education among the women in Bengal. Certainly it was a big shift in traditional society. After the Rig Vedic period, when women were allowed to touch the Veda and practice also, the position of women became degraded. After thousands of years the nineteenth century fortunately witnessed this freedom again for the women through western medical education. But this was of course a complex and lengthy process. Western medicine and its large acceptance by the Bengali people in nineteenth century had huge impact on the orthodox society and finally able to overcome the social constrains. We know that female education itself was in vulnerable position till the second half of nineteenth century; English educated women were marked as cursed and responsible for her husband's death in the society. However from such hard situation Bengali women started learning western medical along with their male classmates. Enormous work was done by the medical missionaries to enhance the urge to gain medical knowledge among women. Traditional midwives were trained. The place of instruction was not separated and they competed with the same course and curriculum with the male students. In this chapter I have looked into how this drastic social change; from illiteracy to human dissection were performed by the women in Bengal.

The major questions addressed in this chapter are; why the necessity to give medical training to women became prominent in this period? How this issue was nurtured by the colonial officers and Bengalis? Was there any internal demand or it was a total imposition? How much fruitful was the result of this new venture on the society? Was there any initiation from the women population in Bengal, if there how much hurdle they had to face?

The sixth chapter is **Reflections in Contemporary Journals and Media**. This chapter is formulated on the basis of the contemporary Bengali journals and media and their response to medicine and medical education throughout nineteenth century till the end of the British regime. Journals started to play the role of the mouthpiece of the native people of Bengal since nineteenth century. Vernacular as well as English journals on various issues and problems could be cited to understand the response of Bengali people towards British activities. The mentality of the intelligentsia, which is very much vital for the present study, could be seen reflected in many articles of those journals. At the same time with the introduction of printing machinery in India, print media started becoming stronger day by day. It might have also influenced the promotion of both western as well as indigenous medical systems among the Bengali people.

Indian response to British colonialism can be best understood in terms of a cultural encounter that was initially disturbing, even agonizing. The encounter also had within it the question of attitude (towards each other), an uneasy acceptance, and a quest for identity and finally, the seeds of decolonization[44]. This is very much true for the medical science too. The urge to comprehend the new medical treatment, tools and technology through education that the colonizers had brought into, and to assimilate them, definitely became the attitude of the Bengalis. The intellectuals became aware of the role of new medical system on the society and about medical profession in transforming/ altering/ securing the economy. There was certainly no dearth of persons who would mark the pros and cons in British medical system. But at the same time they also provided their alternatives. Not only the print media, but the other forms of Medias also started influencing people from

[44] Deepak Kumar, *Colony and Science: A Study or British India*, J. B. Das Gupta (Ed), *Science Technology, Imperialism and War*, Pearson Longman: New Delhi, 2007, p. 102

twentieth century specially. We can mention for example role of *Jatra* (Bengali drama), Folksongs, Bioscope and cinema etc. Here one can ask few questions: What are the psychological dimensions of a traditional society's response to a new scientific knowledge? What role did the journals and contemporary media play to promote the new system of medicine? How the 'alternative medicine' made its position in the writings of Bengali intelligentsia through the journals? What were the relationship and disparity between the urban writings and writings of non-urban places? How did the other forms of media influence indigenous people?

One important role of the contemporary journals was the writings about women education. Brahmo Samaj was very much supportive to this issue and when they had started publishing their Bamabodhini Patrika (1863); naturally it tried to promote women medical education too. But these journals were not unanimously supporting women to get medically trained. Therefore analyzing various journals we will be able to get a picture of the mentality of the contemporary Bengali intelligentsia on medical issues.

The final chapter is **conclusion**. The concluding chapter consolidates the findings and re-summarizes the arguments build up throughout the chapters. In situating western medical education in Bengal Presidency, the initiation of the colonial rulers for a new medical education and the counter reaction of the Bengali society have analyzed to show the major societal changes. We have divided the Bengali society into three sections i.e. direct beneficiaries of western education and culture, lower classes and rural based people and women, to find out the final outcome of western medicine in different stages of Bengali society. These three types of indigenous recipients had their own concept, demand and hurdles for medical science but were tightly linked with each other. The discussion will grow up with the help of a three dimensional views of sources and their criticism on these three groups under consideration. The three types of sources are the official documents, the writings of British medical men and missionaries and the contemporary journals. We have also tried to explain the nature of writing and different views in describing the importance and impact of western medicine on the Bengal society.

Limitation of the Study:

This study has few limitations in terms of area of concerned, time period and sources used in it. Taking the whole Bengal Presidency as the area of study is itself a challenging task to cover all the institutions of each place of entire Bengal Presidency. We have already mentioned that Bengal Presidency at that time includes present Bihar, Jharkhand, Orissa, Assam and Bangla Desh. Though western medical education started in Calcutta through CMC, but within a short period of time the other places of Bengal also started receiving medical institutions (colleges and schools) to meet the demand of the British as well as the indigenous people. It is not possible to write about all the medical institutions of a huge Presidency like Bengal. For this reason we have chosen the major institutions as samples to show the contemporary growth and condition of medical education. Calcutta Medical College cannot be ignored due to its enormous importance and role in western medical education. Apart from CMC, Patna Medical College and Dacca Medical College have been chosen to cover two major parts of Bengal.

Secondly, this work starts with the land marking year of 1835, the establishment of CMC, and ends with 1945, the publication of Bhore Committee Report. Since it covers more than one Hundred years with different themes of western medical education, it is imperative to emphasize on a particular period/ segment of time to maintain the unnecessary growth of the chapters. Major growth and development in western medicine and changes in the indigenous society have been shown throughout the period. The third major limitation of this study is not having medical expertise of the candidate. Many of the sources used here are the writings of many British medical men, which are pure medical science based. We have only taken the historical aspects from all those sources. Due to this reason detail discussion of medical science, meaning of few terminology, especially while talking about the shift from indigenous to western medicine, is not available.

Chapter II

Modern Medical Institutions: Policy and Administration

This chapter talks about the establishment of modern medical institutions in nineteenth century Bengal which paved the way for new and enhanced medical facilities and brought the participation of indigenous people to institutional medical education[1]. Both government and non-government initiatives for introducing medical institutions relating to the major changes and conceptual shifts in the society will be discussed here. Institutionalized medical education, for its diversified objectives and effects, is divided into two separate chapters. The present chapter will deal mainly with the administrative changes which occurred and regulations brought introduced during our period of study, and the second one will take care of the pedagogical development. A study of the medical institutions founded in the years prior to the Indian independence and those which are functioning actively even today, is unfortunately yet in a rudimentary stage. Most of the researches have dealt with public health issues, diseases and on Calcutta Medical College keeping its huge importance and contribution to medical field and society as well. Any discussion on western medical education in Bengal is baseless without a dialogue on CMC. But the overall growth of medical education was not confined within this particular institution only. In the vast territory of Bengal, a number of medical institutions sprang up within a short period and played very important role in medical sociology. Thus this chapter will try to construct the complete history of western medical education which started with the establishment of CMC in 1835 and flourished throughout the nineteenth and twentieth century till independence.

Colonization of a distant land required not only military strategy but more than that, which included the issue of preservation of health of the colonizers also. Moreover for ensuring proper commercial exploitation, health considerations also come up. The importance of health issues was paramount in designing colonial expansion right from the days of trading companies. Since eighteenth century, the European professionals, who

[1] 'Modern medical institutions' here means only western medical institutions.

came on different assignments, wrote about the health conditions in the tropics. The Company itself had established medical board to monitor health conditions and necessary requirements. But a constant resource of medical men from outside increasingly became an expensive proposition for the Company. So once the wars with Indian Princes were over and Company had established its rule over the larger part of India, it decided to introduce modern medical educations and train the local talents to make medical administrators (sub-assistant surgeons, dressers and apothecaries to the army)[2]. Thus, the Native Medical Institution came up in Calcutta in 1822-23. Gradually, with the passage of time, the gaps and flaws of this institution became prominent and the government realized the need of a better organized medical institution, which came in the form of Calcutta Medical College (CMC) in 1835. But the previous requirement of 'low cost' local assistants never disappeared[3]. They continued to be attached with each regiments and civil stations even after the establishment of Calcutta Medical College. The CMC had the facility of treatment as well as medical education in one place. But the initial elitist character of the modern medical education imparted in Calcutta Medical College and institution's limited infrastructural scope of providing medical treatment to the patients created a perfect setting for the later non-Government organizations and medical schools which sprang up during the late century. It would be an interesting initiative to study the British perception in the field of medicine in Bengal Presidency. It would not be foolhardy to argue that they hardly took any initiative later on, for spreading of medical education or widening the scope of medical treatment, after Calcutta Medical College. Interestingly, one can notice the changing paradigm of 'medical education for the natives' and the diverse conditions and different situations which prevailed in different parts of Bengal. In discussing these themes some relevant questions come up; what was the purpose for the establishment of the medical institutions? What was the nature of the colonial government-initiated medical

[2] Arnold, David. *Science, Technology and Medicine in Colonial India*, Cambridge University Press, Cambridge, 2000, p. 62.

[3] These led the British to look for low-cost helpers in hospitals and Indians were the best option. By 1812 two of them were ordered to be attached to each regiment and one or more to each civil station (Harrison J.: "The *Origin and Progress of the Bengal Medical College*", Calcutta, 1857, P. 2, Later this publication was included in the "Indian *Annals of Medical Science*", Vol. 5, 1958, pp 37-54). And two of them were ordered to attach with each regiments (Kumar Anil, *Medicine and the Raj*).

institutions in nineteenth century? What was the character of the new non-Government organizations? Was it a collective effort or individual initiative? Who were the people behind the establishment of non-Government centers of education in medical science? What was their motive behind such initiatives? Was there any difference in terms of quality, governing body, recruitment stipulations and affordability between Government and non-Government institutions? And finally what was the people's reaction to both types of institutions?

Existing Literature of this Chapter:

According to a common sociological definition, institution is a well-established and structured pattern of behavior or of relationships that is accepted as a fundamental part of a culture. Institutional history starting from Foucault's Discipline and Punish till today received lot of importance in structuring sociological bases in a developed society. Medical institutions were certainly a part of the historical process of institutionalization of education but describing them only on this basis in Indian scenario would be an oversimplification of the fact. First of all colonization of India was different from that of the other colonies of the British imperial system. Secondly India had a multi-cultural society, which was not unanimous in accepting the colonial customs. Thirdly along with several wars, British had to establish their rule and finally their culture in the soil of this colony. In a non-European society, where the concept of institution in the modern sense of the term was unknown to the common people, it was difficult for the British to create an infrastructure for institutionalized education policies and build up a pattern of behavior or establish relationships. There is an absence of a complete research on the whole institutional history of medical education in Bengal. But pieces of information can be found out from different writings of historians. S. N Sen probably provided us the first extensive work on medical education in India. He has covered almost every major institution in his writings[4]. But a detailed study still can be done. In *Science and Modern*

[4] Sen. S. N, *Scientific and Technical Education in India, 1781-1900,* Indian National Science Academy, New Delhi, 1991.

India: An Institutional History, c.1784 – 1947, Uma Das Gupta and her co-authors have shown the emergence of scientific institutions under the British rule and their significance in inculcating western scientific mentality and thought before the Indian minds, which ultimately helped them in their search for their own self identity. Calcutta Medical College was one of them[5]. Anil Kumar's excellent work on the introduction of medical education throughout the country is path making, because he showed how the initial attitude of respect towards the indigenous medicine, in spite of the epistemological differences, gradually lost its ground to the 'victorious' march of the British Army. 'Colonial medicine' according to Anil Kumar was defined on the basis of the concept of total subjugation of the Indian medicine under absolute supremacy of the west[6].

However though we have taken Bengal Presidency as a whole; the other medical institutions other than CMC should not be neglected. The introduction and evolution of CMC is an over-worked field of investigation. Mel Gorman, Jayanta Bhattacharya, Samita Sen and Anirban Das and others have shown extensively from different perspectives, the contribution of CMC in medical socialization, introducing new courses and pedagogy, experiments etc[7]. This chapter will try to examine the contribution of CMC again and the issues which were responsible for the emergence of peripheral medical institutions.

Calcutta Medical College:

> "…This medical school, however regarded, as respects its Instructive Establishment, its Hospitals, its Museum, or the number of patients and students who benefit by it, is now equal to some of the most ancient schools of Europe; yet so far I know it stands alone in

[5] Das Gupta Uma (Ed), *Science and Modern India: An Institutional History, c. 1784 – 1947*, History of Science, Philosophy and Culture in Indian Civilization, Vol. xv, part 4, Pearson Longman, Delhi, 2011.
[6] Kumar Anil, Medicine and the Raj: British Medical Policy in India, 1835 – 1911, Sage Publication, New Delhi, 1998.
[7] Gorman Mel, *Introduction of Western Science in Colonial India: Role of the Calcutta Medical College*, Proceedings of American Philosophical Society, Vol. 132, No.3, 1988, p. 276 – 298, Bhattacharya Jay anta, *The Genesis of Hospital medicine in India: The Calcutta Medical college (CMC) and the Emergence of a New Medical Epistemology*, The Indian Economic and Social History Review, 51, 2 (2014): 231 – 264, Sen. Semite and Das Anuran, *A History of the Calcutta medical College and Hospital, 1835 – 1936* in Das Gupta Umea (Ed), *Science and Modern India: An Institutional History, c. 1784 – 1947*, History of Science, Philosophy and Culture in Indian Civilization, Vol. xv, part 4, Pearson Longman, Delhi, 2011, p. 477 – 510.

this, that every advantage is freely given. Here no fees are paid! The finest medical education is freely offered gratis, to all comers; of whatever creed, of whatever caste, of whatever clime…All are equally welcome, equally rewarded, equally respected, if they do well.[8]"

Medical College Hospital (Photo, 247/2, British Library)

We know, the foundation of a native medical institution in India did not signify only a simple victory of knowledge over ignorance, but also represented a much darker story of European conquest of Asia. The journey of medical education in Bengal may be classified in the following manner; hospitals to medical schools and then medical schools to medical college. Health treatment started with hospitals. Gradually, as in the other sectors, Indians started involving into this learnt the basics of an alien medical system. The gradual demand of "low cost" Indian medical men compelled the British to think about a medical institution to train the Indians. Thus they gave the birth of native medical

[8] Webb, Allen. *The Historical Relations of Ancient Hindu with Greek Medicine: In Connection with the Study of Modern Medical Science in India*, A General Introductory lecture delivered at the Calcutta Medical College, Military Orphan Press, Calcutta, June, 1850, p. 4 (BL).

institution[9] to strengthen the basic learning of the Indians and for appointing them as hospital assistants, both in military and civil stations.

The first attempt for the introduction of a proper medical training was undertaken by Lord William Bentinck and his effort and long persuasion led to the passing of a government order for setting up a medical college in Calcutta. The resolution was passed on 28th January, 1835, which is observed as the Foundation Day of the College[10]. The establishment of the Calcutta Medical College in 1835 defined the history of medical science in India. It did provide the impetus towards 'modern medicine' and scientific medicine in the whole of Asia. Finally, British were able to enter into the official project of "Colonizing human Body" alongside their other motives in India; they became an agency for the dissemination of a new system of health care and treatment[11]. This was perceptible but not visible to those who got overwhelmed with the unknown but exciting elements of 'westernization' or modernity. It is of no doubt that every historical development has its own multidimensional causes and after effects could be seen from different angles. It would be better judged by searching the causes and effects all together.

Calcutta Medical College did not appear accidentally. It took several years to give medical education an organized official shape. We know that up to the year 1833, the earlier institutions (Native Medical Institution, Sanskrit College, and Calcutta Madrassa) were trying to impart medical education at per their strength and ability to fulfill the immediate needs. The 1830s brought enormous political as well as cultural changes in India. Modification and revision in almost every sector started with Lord William Bentinck's arrival in India as Governor- General in 1828[12]. Meanwhile, since 1800, intellectual turmoil in England had started with the emergence of the forces of Liberalism, Evangelicalism and Utilitarianism. Advocates of these tenets could be found in India, who

[9] Dey Purnachandra: '*Kolikata Medical College*,' Journal Bangashree, 1342 (Bangabdo), 1936, 3rd year, Vol. 1, p- 568.

[10] Boards Collection, 80187 – 80244, 1840 – 1841, Vol. 1892, p not found (BL).

[11] Arnold David: Colonizing the Body, *Colonizing the Body, State Medicine and Epidemic Disease in Nineteenth Century India*, Oxford University Press, Calcutta, 1993.

[12] Lord William Bentinck (1774-1839), who was Governor-General of Bengal (1828-33) and later of India (1833-35); He was a reformer of the Benthamite persuasion and is best known for his suppression of such practices as suttee, female infanticide, and ritual murder and robbery, Gorman Mel, *Introduction of Western Science in Colonial India: Role of the Calcutta Medical College*.

generally identified the Orientalists as their opponents. After years of debate in Parliament and Company circle as well as in the public sector, the situation reached its climax in the 1830s, leading to the famous Orientalist- Anglicist controversy. Anglicist view was to enhance intellectual, moral and material condition of India through introduction of English or European education. Whereas the Orientalists favoured the indigenous culture, stating that government should keep it intact and encourage its assimilation with European culture. Furthermore, the wealth of the Indian civilization lay in its classical languages, notably Persian and Sanskrit. But to the Anglicists, heritage of India was not worthy of consideration[13]. The man destined to take the final decision in this controversy was Lord Bentinck (1828-1833). The Court of Directors favoured economic policies for their own profits and health and education were never in the lists of priorities. Bentinck's first hand experiences in Calcutta and the other parts of Company's territories convinced him that something had to be done to alleviate the poor state of medical education and appalling health standards of the people. In 1833, Bentinck appointed a committee to report on the state of medical education in the native medical institution, Sanskrit College and in Calcutta Madrassa. The committee was also instructed to consider the question whether it would be expedient to confine the medical instruction to English lectures and to adopt the class books solely English treatises, by discarding Sanskrit texts altogether. This committee comprised of Surgeon J. Grant, J.C.C Surtherland (Secretary to the Education Committee), C.G Trevelyan (Deputy Secretary Political Department), Assistant Surgeon Spens, Assistance Surgeon Bramley, Marine Surgeon and Baboo Ram Camul Sen[14].

The members of the Committee toured various institutions i.e. the schools and colleges of Bengal to get a fair picture about the present conditions of medical education and the existing demands and requirements for formal medical education. They conversed with people from different ideological backgrounds, but the most interesting and effective response and evidence came during the unannounced visit to Duff's College. With Duff's co-operation, the Committee questioned the senior students of his College especially about the idea of a Government medical college for the Indians. The students responded

[13] Bandopadhyay Shekhar, *From Plassey To Partition And After: A History Of Modern India*, Orient Blackswan, New Delhi, 2004, p.66 – 75.

[14] Eatwell, W.C.B, *On the Rise of Rational Medical Education in Bengal, An Introductory Lecture*, Military Orphan Press, Calcutta, 1860.

positively to the questions regarding the handling a corpse for anatomical purposes, even while acknowledging that such actions would be contrary to the traditional beliefs of Hinduism. After having an affirmative response from the student section and observing the poor condition of existing medical education in the major three institutions, which had been exacerbated by the absence of a proper language training, paucity of books and other factors,. The committee in its report submitted on 20th October, 1834, said that, "knowledge of language we regarded as a 'sin qua non'… We wish them to be able to drink out of the fountain head instead of depending to allay their mental thirst with driblets of translation"[15]. The Committee recommended the establishment of a new medical institution on an extensive scale where the various branches of medical service cultivated in Europe would be taught at par to the approved European system.

Victory rested with the Anglicists. By the Government order of 28th January, 1835, the native medical institution as also the medical classes of Sanskrit College and Calcutta Madrassa were abolished with effect from 1st February, 1835, and a new medical College was founded for imparting instruction in the various branches of medical science on the most approved European system.

Age of Knowledge:

The door of the pioneering institution for western medical education opened in Bengal Presidency with Bentinck's approval of the recommendation of the Committee. Medical College of Calcutta (later known as Calcutta Medical College) with its fresh motives and features began with a limited infrastructure; a big theatre, capable of containing five hundred persons, apartments for the purposes of Practical Anatomy, a Laboratory, Museum, a Library and Hospital[16]. The College engaged one Superintendent and one Assistant; Dr. Bramley and H. Goodeve. Within few months it was felt that two faculties were not sufficient and W.B O'Shaughnessy was added to the instructive

[15] Eatwell, W.C.B, also cited in Gorman Mel, *Introduction of Western Science in Colonial India: Role of the Calcutta Medical College*.

[16] *The Medical College of Bengal*, 1839, p. 1 (document collected from BL, Tract 15, author, publication and place are not found)

establishment. At the same time the title of Superintendent was changed to Principal and that of the Assistants to Professor. The administration was initially in the hands of Europeans only[17]. Fifty students were to be admitted as foundation pupils. They were to receive a monthly stipend from Rs. 7 to 12 according to their seniority and merit from the Government. In addition to the first batch of pupils, the benefits of the new college were opened to all classes of the native youths between the age of fourteen and twenty with no distinction to creed or castes. One Christian joined, but no Muslims were in the first class. Subsequently, some Muslims became students but they always remained in small number. Most of the enrollees were local Hindus of the Brahmin and writing castes. The students were to be respectably connected. Ability to read and write English and Bengali or English and Hindustani was considered essential. The first examination for grant of certificates of qualifications to practice surgery and medicine or for admission into the service was to be publicly made by the Committee of Education[18]. Forty nine were selected in 1835 as foundation pupils. Most of them had their education were in the Hindu College, Hare's school and General Assembly's Institution. Some came from private institutions. Dr. Mountford Joseph Bramley was placed in charge of the institution on a salary of Rs. 1200 per month with Dr. Goodeve and Dr. B. O'Shaughnessy as his colleagues[19]. On leaving the College, the native graduates were to be employed as sub-assistant (SASs), in the discharge of duties of medical attendant in large dispensaries established in different parts of the country, on salaries ranging from Rs. 60 to 100 per month. There was, however, no compulsion to enter Government service and were free to establish them for private practice too[20]. Madhusudan Gupta, a vaidya, Professor of Native Medical Institution was transferred with two assistants from the Sanskrit College to the new Medical College. This illustrious band of teachers commenced their work on the 20th February, 1835[21]. On 5th August of that year, the official designation of Superintendent was changed to that of Principal. Two skeletons were purchased through Bathgate & Company of Calcutta for Rs.

[17] Eatwell, W.C.B, *On the Rise of Rational Medical Education in Bengal*, p. 20 – 23.

[18] Eatwell, W.C.B, Rational medical education, p. 20 – 23.

[19] Later Goodeve was appointed as the Professor of Anatomy and William Brooke O'Shaughnessey joined the Professor of Chemistry.

[20] *Report of the Medical College of Bengal*, 1839, Calcutta as sited in the Book *Chikitsa Bijnaner Itihas, Unish Satake Banglay Pashchatya Sikshar Prabhab* by Binaybhushan Ray, Sahityalok, Kolkata, 2005

[21] Eatwell, W.C.B, *Rational Medical Education in Bengal*, p. 20 – 23.

1500 and other anatomical preparations were imported from England. One Mr. Evans was appointed Curator of the newly established Museum. Under the direct supervision of Goodeve Practical Anatomy and dissection were regularly and systematically introduced, which was unavailable in the earlier medical institutions[22].

Anatomy is the scientific key stone to the study of medicine. But in Indian situation the deep-rooted national prejudice against the study of anatomy or dissection (touching of a dead body) was a great hurdle to pass. Dr. Bramley and Dr. Goodeve used to demonstrate illustrations of the parts of the human body, gradually replacing them by wooden and tin models of ship's brain and goats' livers for teaching. It took six months before Dr Goodeve first placed an entire dead body on the lecture table. Though, it created great excitement no doubt among the students but religious beliefs and superstitions prevailed in their minds. Bramley, for this reason initially instituted a course in elementary anatomy primarily concerned with Osteology, because it was obviously less difficult a task than dealing with the softer tissues. But that was certainly not the solution for the greater problem.

Pundit Madhusudan Gupta (1800-1856) played a vital role to push Indians forward for the proper anatomical knowledge. He has given the credit of the first dissector in India. On 10th January, 1836, Madhusudan Gupta with his own hands began to dissect a dead body in an outhouse of the College building. According to some accounts, he was assisted by four courageous pupils of his own, notably, Umacharan Set, Rajkrishna De, Dwarakanath Gupta and Nabin Chandra Mitra[23]. He tried to make Hindu, especially Brahmin pupils as well as a large section of the society rational and also helped them to go beyond all prejudices and superstitions. This became another landmark in the history of medicine in India, because it opened the gates of modern scientific medicine in this country. On this victory of Madhusudan Gupta, we can get several notes of approbation from different sections of the society including the then print media. For example in less than two years, Dr Goodeve was amazed to watch the rapid advancement of his students in this field. He remarked in his lecture on 1848 that his pupils had dissected more than 500 bodies and the magnificent rooms which had been erected four years earlier appeared too

[22] *The Medical College of Bengal*, p. 4 (document collected from BL, Tract 15, author, publication and place are not found)

[23] 175 Medical College Bengal, 1835-2009, Commemorative Volume.

small for his students who numbered around 250 youths, belonging to all nations, colors, religions and caste, comingling more like the homogeneous frequenters of a European School.

Another report from the Bengali journal *Sambad Bhaskar* (22 November 1856) mentions: "We feel profoundly sad for Gupta Babu's demise. Madhusudan Babu was the pioneer of the dissector artisans of this country. To the Indian people, especially Hindus, touching the dead body is an abominable question, better not to say anything of dissection … yet, on entering Medical College; he was the first amongst the Hindus to be engaged in the act of dissection. His precedence has encouraged other Hindus to become adept in sundry acts of dissection that Babu has taught them" (translated by Jayanta Bhattacharya)[24]. This unanimous notion of Madhusudan Gupta's victory over Indians' millennial long superstitions has been questioned by a recent scholar Jayanta Bhattacharya, in his article *The First Dissection Controversy: Introduction to Anatomical Education in Bengal and British India*[25]. He has questioned on the comment of David Arnold where he stated that "the momentous event (the first dissection) was duly celebrated, in rather militaristic fashion, by firing a fifty-round salute from the guns of Calcutta Fort William"[26]. From this statement the event seemed to be so important, something which was not less than a military victory. According to Bhattacharya, the dissection of a cadaver by any high-caste Indian was the first phenomenal step in the direction of modern medical education. It was perhaps one of the reasons why so much importance was attached to the first dissection and the individual dissector. In 1847, in a letter to the editor of Lancet, H.H Goodeve wrote that, "The most important blow which has yet been struck at the root of native prejudices and superstition, was accomplished by the establishment of the Medical College of Calcutta, and the introduction of practical anatomy as a part of the professional education of Brahmins and Rajpoots, who may now be seen dissecting with an avidity and

[24] Bandopadhyay, B. N (Ed), *Sambad Patrer Sekaler Katha*, Bangiya Sahitya Parisat, 1996 Kolkata, Vol. 2, p- 698.

[25] Bhattacharya. Jayanta, The First Dissection Controversy: Introduction to Anatomical Education in Bengal and British India, *Current Science*, Vol. 101, No. 9, 10 November 2011.

[26] Arnold David, *Colonizing the Body*, p. 6, Also see, Gupta, B., In *Asian Medical Systems: A Comparative Study* (ed. Leslie, C.), Motilal. Banarsidass, Delhi, 1998, pp. 368–378.

industry which was little anticipated by those who know their strong religious prejudices upon this point twenty years since."[27]

Secondly, it has been mentioned earlier that the students of Duff's College (most of them were Brahmins) were completely ready practice dissection if opportunity comes. It means that the situation was almost ripe among some of the upper caste Hindus also getting rid of the so-called prejudices of Hindu orthodoxy. They welcomed the dissection act by Madhusudan Gupta warmly. But there was no mention of this event in his writings. Eatwell's report regarding this is very interesting. He stated that, "472 bodies have been distributed to the English Class; 549 to the Secondary Classes for the same purpose;110 bodies have been devoted to illustrating Lectures on Anatomy, 56 for Lectures on Operative Surgery".[28] It reveals that within the first ten years of CMC the total number of dissected human body by their pupils were 1187! But in contrary, as per Richardson's estimate, the dead bodies used for the Anatomical act in London (the first ten years' sources from 1832-33—1841-42 in London Hospitals only) were 135, 141, 194, 184, 209, 150, 168, 178 and 11o respectively.[29] These were the reasons that Madhusudan Gupta's act of dissecting a dead body got so much importance both in Indian society as well as in the official level. It was celebrated with gun salute. The victory over Indian's ignorance and their religious superstitions seemed to be a great victory over a huge territory to the British. It there was any mission for civilizing India, this particular act was great success for them even after such discussion about the remarkable incident and its great impact, it is very important to mention here that later Mahendralal Sircar also made enquiries as to who was the pioneer of dissection in Bengal. He got his information from two of the oldest medical practitioners and he wrote in 1872 that "Babu Rajkrishna Dey was the individual who was the first to plung the scalpel into the dead human body."[30] Principal Bramley's report about the first performance of dissection is also conveys the same information. He said that, "On the 28th October four of the most intelligent and respectable pupils, at their own solicitation undertook the dissection of the human subject and in the presence of all the Professors of

[27] Goodeve. H. H., *Lancet*, 1847, **I**, 190. Cited in the Bhattacharyya, Jayanta: The First Dissection Controversy: Introduction to Anatomical Education in Bengal and British India, *Current Science* Association, Bangalore, 2011.
[28] GCPI, 1859–1860, p. 147.
[29] GCPI, 1859–1860
[30] Hundred Years of the University of Calcutta, Calcutta, 1958

the College and fourteen of their brother pupils demonstrated with accuracy and nicety several of the most interesting parts of the body. Thus was accomplished through the admirable example of these four mature youths the greatest step in the progress of true civilization which education has yet effected."[31] In the 1844 after nine years of its foundation the Medical College of Bengal, the instruction of had become so complete that the College was enabled to frame its curriculum to meet the requirements of the Royal College of Surgeons of London, the University of London and Apothecaries Company. Two years later in 1846 it was finally recognized by those bodies[32].

Student taxonomy in CMC:

The students section of CMC was divided into four categories i.e. the stipendiary students, free students, Robertson scholars and Ceylon students. Here is given a short description of these four types of students to identify the nature of participation in the medical college. In conformity with the provisions of General Order dated 28th January, 1835, the number of **stipendiary students** admitted to CMC was limited to fifty and they would be receiving an monthly stipend of eight Rupees during the time allowed for completing their study and obtaining the certificate of qualification[33]. There was no such quality restriction for the applicants but primary requirements were to know English (read, write and speak) and ability to analyze a passage in Milton's Paradise Lost or Robertson's Histories etc. The student should be acquainted with the elements of Arithmetic, Algebra, Geometry and Natural Philosophy along with a certificate from the headmaster of the previous institutions by stating that they possess the required quality. After completing at least five sessions of study in the College students were allowed to present themselves for final examination (started 15th of March to 15th of April). Every student on leaving the College and passing the examination was given a Diploma and would be styled "Graduate of the Medical College of Bengal"[34].

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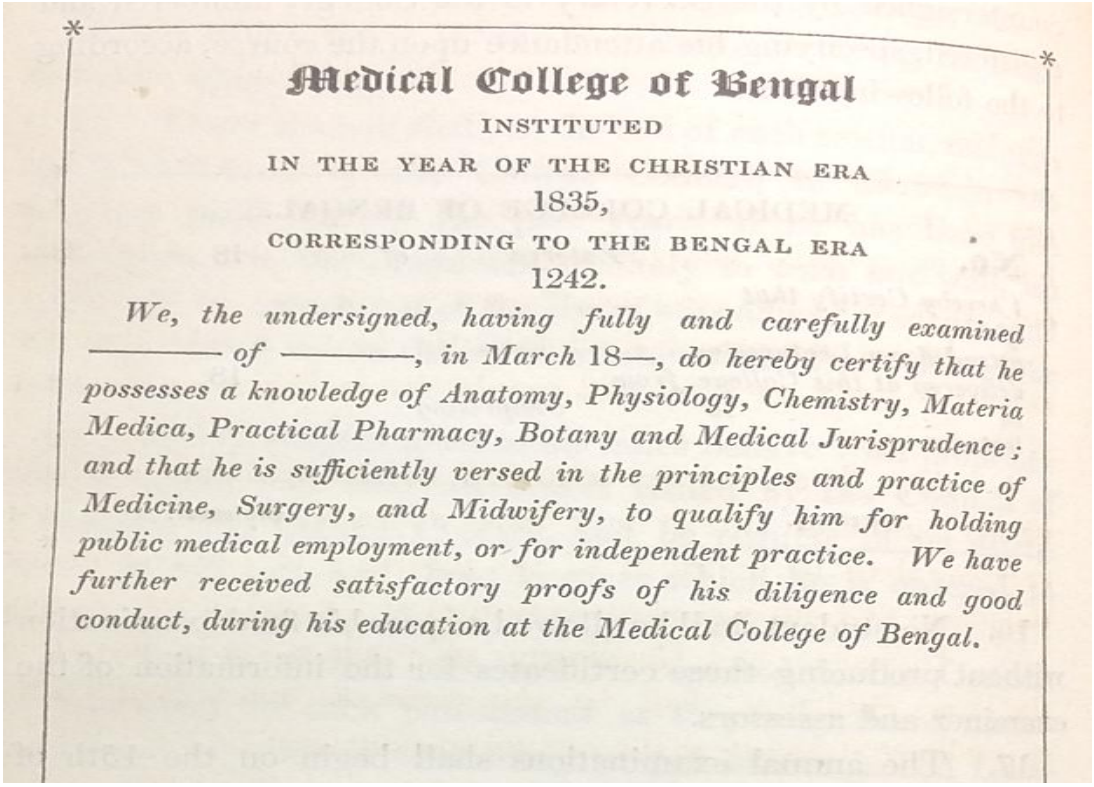
[31] Ibid

[32] Eatwell, W.C.B, *On the Rise of Rational Medical Education in Bengal*, p. 22

[33] Rules and Regulations of the Medical College of Bengal, (Printed by order of the Council of Education), Military Orphan Press, Calcutta, December, 1848, p. 4

[34] Ibid p. 7 - 8



Medical College of Bengal

INSTITUTED

IN THE YEAR OF THE CHRISTIAN ERA

1835,

CORRESPONDING TO THE BENGAL ERA

1242.

We, the undersigned, having fully and carefully examined ——— of ———, in March 18—, do hereby certify that he possesses a knowledge of Anatomy, Physiology, Chemistry, Materia Medica, Practical Pharmacy, Botany and Medical Jurisprudence; and that he is sufficiently versed in the principles and practice of Medicine, Surgery, and Midwifery, to qualify him for holding public medical employment, or for independent practice. We have further received satisfactory proofs of his diligence and good conduct, during his education at the Medical College of Bengal.

The Certificate of Diploma

The number of students admitted to the Medical College to obtain a complete education at their own expense was unlimited and called **Free Students**. In all matters of discipline, the free students would be subject to the same rules and regulations as the other students of the College. After completing the full course they were also provided the same Diploma as the Stipendiary Students[35]. In case of taking leave more than twenty four times during each session without sufficient cause; the students would be deprived of the privilege of contending for the prizes and other rewards bestowed at the end of the session[36].

The third category students were the **Robertson Scholars**. Mr. Robertson during his tenure as Lieut. Governor in Agra presented a sum of 2000 Rupees, to maintain four natives of the North Western Provinces, while studying at the Medical College of Bengal.

[35] Rules and Regulations of the Medical College of Bengal, 1848, p. 7 - 9

[36] Ibid.

There students maintained by his given fund were called Robertson Scholars. These medical students used to stay within the College and were permitted to attain any course or classes of Hindu College or any other schools they wish. The stipends of the students who obtained Robertson Scholarship were fixed at ten Rupees a month for four years. Apart from this they used to receive the usual College allowance of eight Rupees when they were admitted as stipendiary students. These students from different college of the North Western Province were examined by the authorities of their own college according to the standard fixed by the Medical College in Bengal[37].

The students came from **Ceylon** were the residents of a building designed for this purpose only within the College ground and amenable to the general discipline of the institution. The Government of Ceylon gave the expanse of these students educated in Calcutta for service in that Colony. The system of these students in the College was little different than the others. They had to organize a mess and the accounts of the mess, servants' wages were paid from the Secretary's Office which was not supposed to exceed the Government allowance. Every day after the evening gun-fire the presence of the students was ascertained by a roll call by the Staff-Sergeant and they were not permitted to be absent without special leaves. But the rules and regulations regarding lectures, attendance, examinations were as same as the stipendiary students of the College[38].

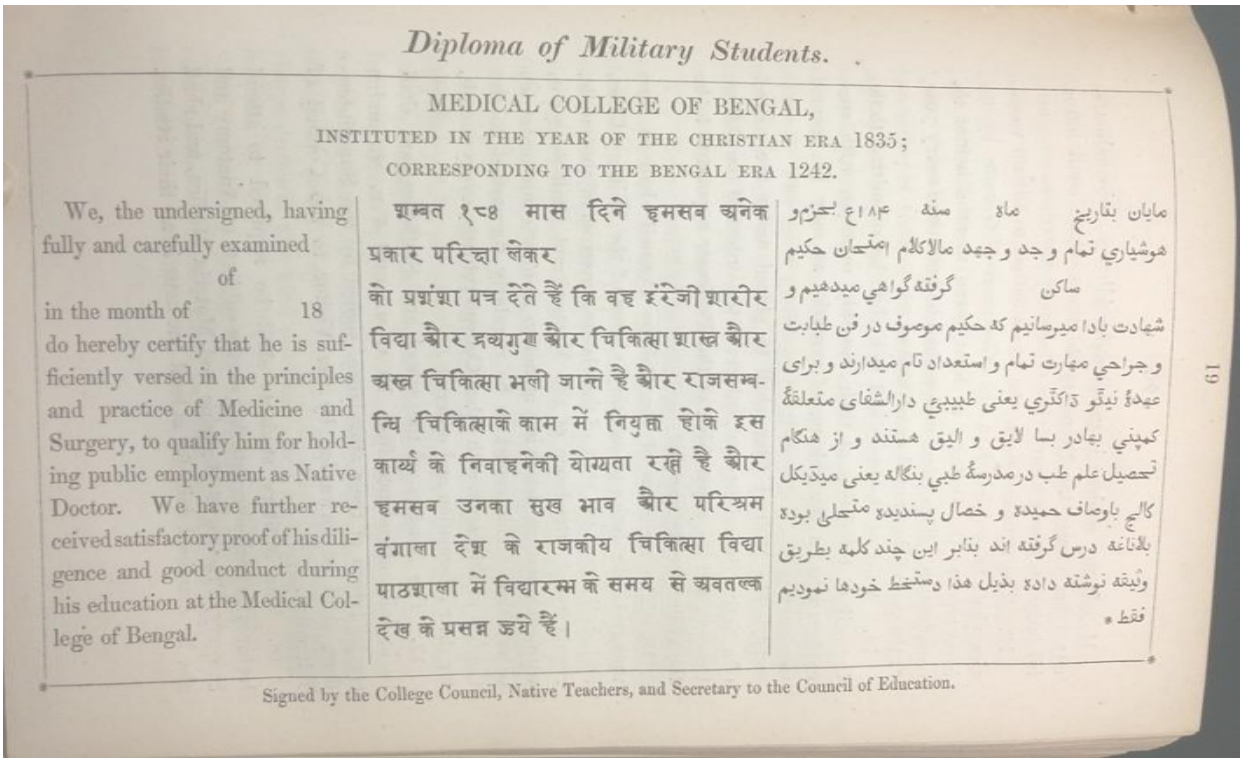
Apart from the above mentioned four categories of students in CMC, two other groups of students were attached to this institution i.e. the students of the military class and the student apprentices. The secondary or the **Military Class**, attached to the Medical College, started in 1839 by the General Order, dated 12th August, 1839, Fort William[39]. It was established for the education of the native doctors with a condition to serve the Government not less than seven years with a pay of twenty Rupees in the civil stations or garrisons and twenty-five Rupees in the field. The students were regularly enlisted as soldiers and were considered as subject to the articles of war for the Government of the native army. This class was consisted of one hundred students on the pay of five Rupees

[37] Ibid p. 7 – 11 - 13
[38] Ibid. 13 - 14
[39] Rules and Regulations of the Medical College of Bengal, 1848, p. 15

per month[40]. The qualification required for the admission to military class was the ability to read and write Hindustani language in the Devanagri or Persian character. Their capability had to be certified by any interpreter to a native regiment and also further ascertained by examination before the examiners of the College of Fort William. Hindus and Muslims were equally admissible. Though qualifications were same, but a preference was given to the sons or near relatives of native officers and other respectable persons in the service of the Government. Candidates from Assam and Arracan were especially considered for the admission[41]. The period of study of military class was three years but college council had the authority to recommend those who were sooner found fit at any time to the Subordinate Medical Department.

The examination system was divided into two sections i.e. at the end of every academic session an examination of all the students was held by the College Council and the final examination (to enter into the service) was again conducted by the College Council but separately in each department by the concerned Professor. The native teachers were instructed to present in the final examination to interpret in cases of difficulty or misapprehension. Every passed native doctor was given a Diploma according to the form sanctioned by the Council of Education, engrossed on parchment and written in English, Persian and Hindi[42].

[40] Annual Report of the Medical College of Bengal, 1844 – 45, p. 11
[41] Rules and Regulations of the Medical College of Bengal, 1848, p. 15.
[42] Ibid 17 – 18.



Diploma of Military Students.

MEDICAL COLLEGE OF BENGAL,
INSTITUTED IN THE YEAR OF THE CHRISTIAN ERA 1835;
CORRESPONDING TO THE BENGAL ERA 1242.

We, the undersigned, having fully and carefully examined of in the month of 18 do hereby certify that he is sufficiently versed in the principles and practice of Medicine and Surgery, to qualify him for holding public employment as Native Doctor. We have further received satisfactory proof of his diligence and good conduct during his education at the Medical College of Bengal.

शम्बत १९४ मास दिने हमसब अनेक प्रकार परिक्षा लेकर को प्रशंशा पत्र देते हैं कि वह इंरेजी शरीर विद्या और द्रव्यगुण और चिकित्सा शास्त्र और अस्त्र चिकित्सा भली जान्ते है और राजसम्बन्धि चिकित्साके काम में नियुक्त होके इस कार्य्य के निवाहनेकी योग्यता रक्खे है और हमसब उनका सुख भाव और परिश्रम वंगाला देश के राजकीय चिकित्सा विद्या पाठशाला में विद्यारम्भ के समय से अवतलक देख के प्रसन्न ऊये हैं।

مایان بتاریخ ماه سنه ۱۸۴ع بحزم و هوشیاري تمام و جد و جهد مالاکلام امتحان حکیم ساکن گرفته گواهي میدهیم و شهادت بادا میرسانیم که حکیم موصوف در فن طبابت و جراحي مهارت تمام و استعداد تام میدارند و برای عهدهٔ نیتو ڈاکٹري یعنی طبیبي دارالشفای متعلقهٔ کمپني بهادر بسا لایق و الیق هستند و از هنگام تحصیل علم طب درمدرسهٔ طبي بنگاله یعنی میڈیکل کالج باوصاف حمیدهٔ و خصال پسندیدهٔ متحلی بوده بالذاته درس گرفته اند بنابر این چند کلمه بطریق وثیقه نوشته داده بذیل هذا دستخط خودها نمودیم فقط ۰

Signed by the College Council, Native Teachers, and Secretary to the Council of Education.

19

Diploma of the Military Students

Calcutta Medical College opened an opportunity to admit students for **Apprenticeship** in the Bengal Subordinate Medical Department in 1847. The age limit of the students for apprenticeship was 14 to 18 years. The candidates had to appear for an examination before the committee composed of two medical officers and a passed interpreter to check their knowledge of English generally including orthography and English writing from dictation. They were examined for simple arithmetic and colloquial knowledge of Hindustani[43]. The course of education in the college, as sanctioned by the Court of Directors during two years, comprised the teaching of anatomy, dissection, materia medica, pharmaceutical Chemistry, the practice of medicine and surgery, and especially the clinical instruction in connection with the two last branches. After the two years duty and due examination the apprentices were drafted to European Regiments or to the General Hospital. Gradually they used to receive promotions as Assistant Apothecary

[43] Rules and Regulations of the Medical College of Bengal, 1848, p. 22 – 23.

or Assistant Steward. These Apprentices had uniform according to their attachment to different department[44].

Situation after the emergence of Universities:

The establishment of Universities in India as in the other streams of education brought significant changes in Medical education also. The three Universities of Calcutta, Bombay and Madras were established by the Act ii, xxii and xxvii of 1857. It took three years to materialize the University programme after the sanction of the 1854 Dispatch (Wood's Dispatch). The first step was the constitution of educational departments with Directors of Public Instruction, Inspectors of Schools and Colleges and other officers. For the Bengal Presidency, including Bihar, Orissa and Assam (the jurisdiction of the Calcutta University extended further as to include North-West Frontier Province and Burma), four inspectors were appointed. The Government constituted a Committee to regulate the courses, academic regulation and administrative purpose. The inclusion of a fairly large number of members from the Church bodies was significant and set the trend of Art Faculty. But professional interests were safeguarded by a few medical men and army engineers.

The Preparatory Committee appointed for sub-Committees for consider the question for instituting courses of study for the two degrees recommended by the Governor-General in Council, in each of the following subjects; Arts, Sciences, Law and Medicine and Civil Engineering. The Governor-General in Council conveyed to the Committee the suggestion made by the Directors that there should be two degrees in each subject, and as in the University of London, students should get the opportunity of taking Honors. Thus for the professional faculties of medicine, provisions were at first made for the degrees of Licentiate of Medicine and Surgery (L.M.S) and Doctor of Medicine (M.D). Later the degree of Bachelor of medicine (M.B) was also included. On the structural side, the Senate was constituted of the Chancellor, and as many Ex-officio and other fellows. The first meeting of the Senate was held on 3rd January, 1857. The Senate divided itself into four Faculties, Arts, Law, Medicine and Civil Engineering. The following were the

[44] Ibid

members of the Medicine faculty; Lt. Governor of Bengal, Kenneth Mackinnon, Henry Walkar, Thomas Thomson, Fredrick John Mouat, Alexander Grant[45]. The executive government of the University was vested in a Syndicate.

On the recommendation of the faculty of Medicine, the President of the Faculty was appointed by the Syndicate as 'ex-officio' President of the Board of Examiners in Medicine. The Syndicate resolved that, "the minimum standard of competence which would entitle a candidate to the first Licentiate Examination in Medicine and Surgery, be left for this year (1860) to the board of Examiners in Medicine."[46] It was also decided that certificated granted all persons above the Licentiate would be designated diplomas and the certificates granted to Licentiates would be called Licenses. Though M.A Examination of under Calcutta University was first held in 1861, but in medical stream the M.D Examination was held for the first time in the year 1862. Chandracoomar De became the first M.D of Calcutta University. Throughout the nineteenth century the University got nine successful students who were awarded by the Doctor of Medicine (M.D); Chandracoomar De (1862), Mahendralal Sirkar (1863), Jagabandhu Basu (1863), R.W Carter (1865), Bhagabatchandra Rudra (1880), Ramprasad Bagchi (1887), Nilratan Sarkar (1890), Suresprasad Sarbadhikari (1891), Hemenchandra Sen (1895)[47].

The Senate at its meeting on 8th August, 1864 adopted the recommendation of the Syndicate that the minimum attendance of lectures should be seventy-five percent of the total number of lectures delivered. There was a relaxation also in the case of severe illness, in which the minimum was to be reckoned on the entire period of continuous study which an undergraduate was required to prosecute under the regulations of any Faculties. During the academic year 1872-73 again certain important changes had occurred regarding the courses of study and examination. The faculty of Medicine raised a point on which the Syndicate was also in favor of that the first examination in Arts should be substituted for the Entrance Examination as qualification for the admission to the first L.M.S Examination. They also decided that every candidate for the second M.B. Examination should in addition to the present subjects, be examined in one of the following subjects

[45] Rules and Regulations of the Medical College of Bengal, 1848, p. 22 - 27
[46] Rules and Regulations of the Medical College of Bengal, 1848, p. 22 - 27
[47] Ibid

selected by himself; Chemistry, Botany, Comparative anatomy and Zoology and Physiology. In the year 1875 it was decided that the first Examination would allow meritorious students of any Vernacular School of Medicine to appear at that examination on certain conditions. The rates of fees as it stood at the close of the period of 1875-1882 for the different examinations of medical branch of the University were as follows; Entrance Examination Rs. 10, First Licentiate Examination in Medical and Surgery Rs.5, Second Licentiate Examination, Medical and Surgery Rs. 20, Bachelor Examination in Medical and Surgery, First Rs. 10, Bachelor Examination in Medical and Surgery, Second Rs. 20, M.D Examination in medicine and Surgery Rs. 100[48].

The most distinguished graduate of the Calcutta Medical College in the nineteenth century was Mahendra La1 Sircar (1833-1904). He studied at Hare's School but his predilection for science led him to the Medical College, where he was from 1854 to 1860, earning the Licentiate in Medicine and Surgery after a brilliant student career. In his second year he gave at the request of seniors and the concurrence of the professors a series of lectures on optics as applied to ophthalmology. The University of Calcutta granted him the M.D. after he passed first in the 1863 examination, being only the second such recipient. So important did he believe the potential of science for all India that he founded the Indian Association for the Cultivation of Science in 1876. Later he found some fineness in Homeopathy transformed into it.

Proliferation of Institutions: Government and Non-Government Initiatives

Prior to the foundation of the additional medical schools in different parts of Bengal Presidency, the Calcutta Medical College was the sole institute in Bengal Presidency where the native students were taught the western mode of medicine.[49] From 1840s the students from Dacca and the other parts like Patna had started to attend the classes of Calcutta Medical College with scholarships. It is earlier mentioned that there were two types of medical courses at that time. In one of them, all the courses of medicine

[48] Rules and Regulations of the Medical College of Bengal, 1848, p. 22 – 23
[49] Sinha D.P; *The Educational Policy of East India Company in Bengal Up to 1854*, pp 170-3

(allopath) and surgery were taught to the students. Here the medium of instruction was English. But the second course was very selective and the medium of instruction was Bengali. The scarcity of good book and practical knowledge (especially full anatomical knowledge), made this course incomplete and unfinished.

Calcutta Medical College was physically not sufficient to meet the academic interest of the huge population of Bengal Presidency. The condition of public health also demanded more qualified doctors. Entrance Examination of Medical College after the establishment of Calcutta University, growing cost of education etc. drew limitation to medical education for all, when on the other side demand was really high for education. Thus popularity towards Bengali classes (started in 1852) was noticeable in this period. With this growing popularity, demand and other troubles, the focus of the Government diverted towards producing more scopes for medical education. This sudden student hype both in CMC and in the vernacular classes ultimately compelled Bengal Government to think more seriously about that issue, because the situation was becoming out of control. For instance, in 1872, the total students of Medical College were 1226, and among them 635 were belonging to the Bengali class alone[50]. First decade of the twentieth century witnessed a considerable eagerness between the students to enrich themselves by the knowledge of English and asked for up gradation of their schools to a degree level also. For these reasons the latter half of the nineteenth century and first half of twentieth century witnessed a considerable growth of medical schools in different parts of Bengal Presidency. We will try to find out the history of all these medical schools in connection with the bigger story of medical socialization and counter reaction of the indigenous people of the Bengal Presidency. Some of these medical schools gradually turned into medical colleges also.

The colonial Government decided to shift the vernacular classes of the Medical College to the new locations along with opening up some new medical schools. It was also planned that geographical importance was under consideration of the Government.[51]

[50] Kumar Anil, *Medicine and the Raj: British Medical Policy in India, 1835-1911*, Sage Publications, New Delhi, 1998
[51] ibid

Therefore the Bengali class was shifted to Campbell Medical School at Sealdah[52] (1873) and was given the name 'The Vernacular Licentiate Class'. Medical College generated another medical school at Dacca (1873-75). Two more schools were established at Patna named *Temple Medical School* (1874) and another at Cuttack (1876). The Military class of Medical College was transferred to the Patna Medical School[53].

A Committee was appointed to investigate and prepare a comprehensive curriculum for the vernacular classes. In 1878 a proposal submitted by the Committee and was approved by the Government of Bengal. Greater emphasis was given to acquisition of practical knowledge, clinical surgery, medicine and midwifery[54]. Another set of regulations was passed through a resolution by the Government on 1894. The main features of the resolution were;

- Special restrictions were imposed on the admission to the schools at Patna and Cuttack for those who were not the natives of Bihar and Orissa respectively.
- Attention had given to the requirement of at least an elementary English knowledge of all candidates for admission to a medical school.
- Bonds engaging scholarships holders and free students to serve Government for a certain period, if called upon to do so were to be enforced in future.
- A stipend of Rs. 7 per month was sanctioned for each female student at a medical school[55].

The Role of Language in Medical Socialization:

We know that Calcutta medical college alone took the responsibility to impart western medical education before the foundation of the additional medical schools in different parts of Bengal[56]. Initially it started with a three years course with English as the medium of language. Meanwhile a secondary or military class was formed to instruct

[52] Sealdah was a suburb of Calcutta.
[53] *DPI Report*, Bengal, 1873-1874, Calcutta, p. 57.
[54] National Archive of India, Department-*Home*, Branch-*Medical*, July, 1880, No. 29
[55] *DPI Report*, Bengal, 1894-95, Calcutta, 1895, p. 87.
[56] Sinha D.P; *The Educational Policy of East India Company in Bengal Up to 1854*, p 170-3

Native Doctors. The Medical Board planned to improve the poor condition of medical education in the earlier educational institutions through CMC, but the students from upper class Bengali families and their high aspirations started restricting to join them to the primary hospitals in military bases or civil stations. So the need for the Native Doctors as dressers, assistants suddenly faced a severe crisis. Thus there was an immediate demand for a special training, which can also be called 'partial medical education' to meet up the crisis. The plan for this kind of secondary class was formed by Dr. B. O'Shaughnessy. This involved a lower level medical education through any of the vernacular languages as the preliminary education of the intending pupils would not warrant the methods of the English class. In August 1839, the General Department sanctioned the formation of a secondary school in connection with the Medical College. The order took effect from 1st October, 1839. Fifty students were selected for the first batch with a monthly allowance of Rs. 5. The students were required to read and write their own language. They also had to live in the College precincts and amenable to a certain extent to the military law of this class. Madhusudan Gupta, Nabakrishna Gupta and Shibchundar Kumar were appointed as the faculty. In 1843 Madhusudan Gupta was made the Superintendent and thus given the charge of the whole military class. The period of study was prescribed for four years. This was the 'holy' beginning to include students in medical education going beyond the upper class of Bengal as well as beyond the territory of the city 'Calcutta'[57].

Hospitals in different places had been acting as one of the preliminary places of knowledge as far as medical education for the common people was concerned. The second half of nineteenth century started with a new urge to keep hospitals in a vital position. A gradual redirection and regeneration of the same motive towards making vernacular language as the medium of instruction also occurred during this period[58]. The two tire medical education became three-tire in 1852–53 academic session when the classes were re-planned to start again in Bengali language. Four hundred applicants were presented

[57] The majority of the students of the military class were from North Western Province and they were mostly Muslims. DPI Report, Bengal, 1850 – 51, n 35, p 80. See also (1855 – 56, 1859 – 60).

[58] The Native Medical Institution was started (1822-23) with the motive to train Indian talents Western medicine in their own language i.e. Bengali. The motive was to meet the need of the military demand of medical assistants in their regiments. But Indian medical systems (ayurved and unani) were also been taught in that institution. Later it was abolished and the whole concentration was transferred towards English education.

themselves for the interview out of which forty were selected. Qualifications for selection and curriculum of study were the same as those of the Hindustani class[59]. Noticeable here is the remarkable participation of students and the sole reason behind this was of course language and also the lower standard of this course. Now the question comes that how the hospitals became important in this time of juncture? As the Bengali class was already in a high demand, the success of it was also mentionable. For instance the total strength of students at CMC in 1872 was 1226 of which the Bengali class alone accounted for 635 students. This growing demand and as well as huge participation compelled the authority to transfer this class from CMC to separate locations attached with 'regular, well-attended and well functioning' hospitals nearby[60]. These hospitals became the precursor for new medical schools in Calcutta and gradually for the peripheral areas of Bengal Presidency.

A two-fold force was responsible behind the introduction of vernacular medical schools in the peripheries of Bengal. One was certainly the demand for low grade doctors for military bases and unfortunately inadequate supply from the military class and therefore their non-refusal for more opportunities. But the other one was within the society. The colonial science by then could able to reach to the mind of the receiving end. But were they still remained as the end of all colonial aspects? The answer should be no. The periphery (if West was the core as the motherland of 'modern science' or western science) now started the process of slow and cautious fusion of traditional and Western thought towards the rejuvenation of native society[61]. The first effort towards institutionalizing Indian interest in Western science was Mahendra Lal Sircar's Indian Association for the Cultivation of Science (IACS 1876). But other initiatives were also come up in to small levels but with larger effects. Calcutta Medical School (1889) and Borishal Medical School (1892) were the two extremely important examples in this context. These schools were opened by individual initiatives. Dr. Radhagobindo Kar and Aswini Kumar Dutta were the founder members of these schools respectively.

[59] DPI Report, Bengal, 1852-53, 1853, p 61, Calcutta.
[60] Kumar. Anil, *Medicine and the Raj*, P 48
[61] Chakravorty. Pratik, *Western Science in Modern India: Metropolitan Methods, Colonial Practices*, Permanent Black, New Delhi, 2004, p. 1-26.

Huge attraction towards the Bengali class reminds us of the same circumstance after the establishment of Hindustani class in Calcutta. For both the classes the common reason seemed to be same, use of vernacular language. In the case of the former one, not only the Bengali people, but also the students from North Western Province came in a large number. Here distance did not make any obstacle. But we know that the scenario changed after the beginning of Agra Medical School (1853)[62]. This proved that the demand was not only for medical education, but was for medical education in their language. In Bengal Presidency the public opinion was in favor for opening up the Bengali class from long ago. But by reverse, this Bengali intelligentsia was totally in support of English education in the initial days of this century. Why this contrast picture became evident? Of course it was not complete rejection, but a prominent inclination to adopt the new knowledge within their cultural sphere superseded the earlier concept of total Europeanization.

Government Initiatives:

Here I have to bring the periphery question with Dacca and Patna example. But we have to start with Campbell Medical School because it was the first initiative by the Government in this period to start the new course for local students but in a low standard.

Campbell Medical School (1873):

Campbell Medical School was the outcome of a matured situation of high demand for Western medical education in Bengal Presidency. Vernacular class was started by the Government to meet this demand, but it was of low standard than the original one. Here class of CMC was divided in two sections, i.e. Bengali class and Hindustani class. With the passage of time and growing interest on vernacular medical education, the Government compelled to think for separate locations of these classes. Bengali class was transferred to Campbell Hospital at Sealdah. Later this school was named Campbell Medical School after

[62] Home Department, Pub, 17the December, 1870, No. 17(A), National Archive of India. Cited from Anil Kumar, *Medicine and the Raj*

Lt. Governor George Campbell. After four years of the establishment of the new school, the old Allopathy class was abolished and they concentrated on the training of vernacular medical licentiates. Two-three years later it was decided that the students aspiring for vernacular medical education should know English language of a primary level. And at the time of admission they had to provide a certificate sighed by any Principal or Superintendent of a Government or Government affiliated school[63]. The passed students were intended to be either hospital assistants as Sub-assistant Surgeons or village doctors. To become an independent practitioner, the students required to receive additional instruction at some hospital. Dr Walker, the Inspector-General of Civil Hospitals and Dispensaries of North Western Provinces wrote about these hospital assistants that,

> "I think that in all possible cases a Sub-Assistant Surgeon ought to be appointed to the charge of a dispensary. The education of the Native Doctors makes him a tolerable surgical assistant, but it is not intended to qualify him to be an independent operator; and it must not be forgotten that any popularity which a dispensary acquires in a neighbouringhood invariably results from the quick and certain benefits of a bold but discriminate surgery.[64]"

Anatomy, Meteria Medica, Chemistry, Medicine, Surgery, Midwifery and Medical Jurisprudence were formed as a part of course. But the instructions were elementary and theoretical. For instance, Anatomy was taught without practical classes and Physiology was also neglected. In Chemistry, the teaching aimed at imparting an elementary knowledge of the chief elements and their main compounds, acids, alkalis and chemical laws and some amount of pharmaceutical Chemistry. Kaney Lall dey[65] was in favor of strengthening the course of Chemistry by including practical work in the laboratory, such as tests of acids, identification of salts etc and he tried to convince colonial Government for such improvements. In Medicine much time was devoted on diseases peculiar to European

[63] West Bengal State Archive, Department *General*, Branch *Medical*, 1877, July, No. 6, File No, 55. Kolkata

[64] Quoted by Assistant Surgeon Kaney Lall Dey in his ' Memorandum on Vernacular Medical Education' in the Report on Medical Education at Vernacular Medical School, Sealdah, 1879, Appendix B, viii (hence-forward to be referred to as Memorandum), cited in Sen S. N, op.cit note no 8, I Chapter 2.

[65] Kaney Lall Dey was the faculty of Calcutta Medical College. Later he joined as the Chemistry teacher in Campbell Medical School.

countries but rare in India. So the knowledge was not useful to the doctors who were coming out of that school. In Midwifery children's diseases were hardly included. Finally the three years course was insufficient for a proper and total medical knowledge. In keeping all these defects the Government decided to reduce the number of students of the school and to make their training more practical. Thus by 1882-83 numbers of students of that school was reduced and diploma degree was started giving to the top ranked students. In 1894-95 the duration of study had increased to four years.

The improvements and alterations made to Campbell Medical School were applied to the other schools also.

Peripheral Condition of Medical Education: Patna and Dacca:

The second half of the nineteenth century was flooded with new knowledge and experiments in the history of science education in Bengal Presidency. Medical education flourished amongst them with its individuality and special characteristics. Here we will see the amplifying process of medical education in the peripheral areas of the Presidency and it's after effects in the society. In discussing this issue few simple but significant queries come, i.e. what does 'peripheral' areas mean in this context? Did this phenomena exist in India even before the British rule or was distinguished by them with new experiments? However the concept of core / centre and periphery is a spatial symbol which describes and attempts to explain the structural relationship between the advanced or metropolitan core and a less developed periphery which is especially based on the economic condition and dependency of one place or country on another. But it also assumes that the underdevelopment is not a simple descriptive term that refers to a backward and traditional economy, but rather a concept rooted in a general theory of imperialism.

We can find two folds of core and peripheral relationship in British India. One of course was England with her central power of imperialism and India as her periphery. The other one was rather more interesting with its indistinct but effective role in Indian society; the towns used by the British from their initial days of trading activities became centre or core places of India from nineteenth century onwards and the neighborhood places

remained periphery. We will focus on the second type of core and peripheral areas to find out the similarities or dissimilarities between the nature of the first and the second type as far as the imperialistic attitude for medical education is concerned. One of the first examples was certainly Calcutta with its rapid economic growth and development in each sector[66]. With British attention on one place the other cities in Bengal Presidency like Dacca, Patna etc became less important. 'Periphery' in terms of growth and progress in economy, society, culture, and political importance of a particular place and stagnation of the others became prominent from late eighteenth century onwards. We know that in ancient times *Patliputra* i.e. Patna was one of the major centers of education and knowledge generation in India. Dacca used to be the capital of *Suba Bengla* in Mughal period[67]. But gradually these places lost their glory and became the subservient of Calcutta. The rejuvenation of these cities would be very interesting to note.

Journey from a Medical School to Prince of Wales' Medical College:

Temple Medical School (hereafter TMS) of Patna was a direct result of Government response to the demand for medical education in Bengal Presidency. It started on 23rd June, 1874. Surgeon-Major Boys Smith was the first Superintendent in academics of this school. The Hindustani or the military class of CMC was transferred to this school and thus the lectures were delivered in Hindustani language[68]. The initial necessary requirements like accommodation, class rooms, books etc of this school were looked after by the Government in communication with the local civil authorities[69]. The Junior Secretary of the Government of Bengal, S Cotton sanctioned a total Rs. 5000 for the necessary accommodation[70]. Instead of erecting new buildings it was ordered to utilize the

[66] The British started the urbanizing process in Indian subcontinent from Calcutta only after getting the Diwani in 1765, but the urbanization process was started in nineteenth century only. As a result Calcutta witnessed the major and rapid development in each sector.

[67] Karim, Abdul: *Dacca the Mughal Capital*, Asiatic Society of Pakistan, Dacca, 1964, p. 6-8.

[68] General Department, Education Branch, B Proceedings, no, 527 from H.J.S Cotton to the Commissioner of Patna, February, 1875, Bihar State Archive (hereafter BSA)

[69] General Department, Education Branch, B Proceedings, no, 527

[70] General Department, Education Branch, File no. 122, A Proceeding, 1875 (from H.J.S. Cotton to the Commissioner of Patna), BSA

Mission House compound for the accommodation purpose immediately. Cotton further stated that the classes would be transferred to Patna in the end of the year1875[71]. Initially it was decided to attach the medical school with Bankipore Dispensary which had 50 to 60 beds. According to Campbell Brown this initial arrangement of the dispensary would be sufficient for the chemical instruction for the new school and the lecture arrangements were also not bad. They planned to enlarge the accommodation and other facilities according to necessity and demand. [72]. They did not prepare any separate lecture room for the new students of the school. The students had to go to a separate College for some lectures (the name of the college was not mentioned) which was about a mile from the hospital. Shortage of dissection room in the hospital and also need for larger dead-house compelled them to think about making temporary sheds for dissection purpose[73].

TMS was started with six members as faculty apart from the superintendent; one demonstrator of anatomy, two native doctors, one chemical assistant, one anatomical assistant and one injector. Dr. Smith made a scheme for the school and fixed six subjects for this course; Anatomy, Surgery, Chemistry, Medical Jurisprudence, Meteria Medica and Medicine. But Campbell Brown added two more to it i.e. Physiology and Midwifery. He tried to combine Physiology with anatomy class and gave the fourth sub-assistant surgeon the responsibility to teach midwifery. Thus the course of the school became rich than the earlier one[74]. Nandolall Ghosh (teacher of Meteria Medica and Chemistry, Nagpur School) and Doyan Chunder Shome (teacher of surgery, Agra School) were appointed as faculty in TMS. Brown fixed s monthly stipend for the 'native medical pupils' i.e. Rs. 4 per month and they had to come through a competitive examination for that. The other rules and regulations of the students like preliminary examination, course of instruction, fees and final examination etc were followed as per the rules of Calcutta Vernacular Medical School[75]. The rates of fees in every year, set by J. Crawfurd., were: Rs. Two for entrance

[71] General Department, Education Branch, File no. 122

[72] General Department, Education Branch, File no. 122 Letter from Campbell Brown, the Surgeon General, Indian Medical Department to the Secretary to the Government of Bengal, General Department, December, 1873, pp 1. BSA

[73] General Department, Education Branch, File no. 122, December, 1873

[74] General Department, Education Branch A Proceedings, 1873, pp 2, BSA

[75] Ibid, A Proceedings, 1873, pp 3, BSA

examination, Re. one for first year, Rs. two for second year, Rs. three for third year and Rs. ten for License[76].

However the participation of students in TMS provides us a different story than Calcutta. Towards the end of 1870s a large number of Muslim students started applying for this course in Patna. Among 165 students three fourth of them were Muslim. This was quite unusual in terms of Muslim participation in higher education in Bengal Presidency. It is known that Muslims were reluctant in accepting higher education offered by the British Government or rather their accepting process was slow than the Hindus throughout the India. But according to the Government officials and observers, this attitude was not only due to the intense interest of the Muslims, but a negative attitude of the higher caste Hindus of Bihar for medical education. This made a difference in the ratio of Hindu – Muslim participation[77]. Here lies the difference between the Core and the periphery. The Hindu society in Calcutta was interested and enthusiastic about medical education from the initial stage and they were the majority in CMC and the other medical schools, where the periphery proved the opposite. Now the question comes that whether the modernization process through education which was started from Calcutta was still limited in nature in terms of awareness and logical thinking of the general populace?

It is necessary to discuss the question of quality of the school here to give a proper picture of medical education throughout Bengal Presidency. The quality of the TMS was low of course in terms of courses and syllabus, infrastructure, accommodation, medical tools and equipments and also in number of faculty members than the medical college. Thus it is expected that the standard of the students would also be low than the students of the college. It is true that the medical schools were opened up to produce local assistants, not good doctors. There was gradual process of modifying and uplifting the standard of the medical school and finally it reached to the status of a college in 1925. The journey from a medical school to a medical college of TMS was not easy. It was impeded several times in different circumstances. The 1905 instance for making TMS a college is important here. Babu Saligram Singh's speech delivered on 31st March, 1905 gave an apparent picture of a

[76] General Department Education Branch, File no. 125, A Proceeding, July, 1874, letter no 2329, (from J Crawford to the Commissioner of Patna), BSA

[77] Report, Administration of Bengal, 1875-76 (VII Instruction of Education), page 425, BSA

demand to raise TMS to the status of a college[78]. He sent the petition to the Inspector-General of Civil Hospitals for consideration. But in reply the Inspector-General replied in negative tune and gave three major points in support of this argument; basically he was worried about the standard of education in Bihar and gave an example of the ratio of F.A examination pass out students in 1904. The number of Bihari (resident of Bihar) students was 72 against the 1882 students in Bengal proper. Furthermore he said that only ten natives of Bihar had been studying in CMC for the last five years and among them only three were successfully passed the final examination. Out this example he wished to mean that the present standard of education in Bihar did not seem perfect to start a university degree course there. Opening of a medical college did mean to compromise with the standard of education in the college. Not only was the standard, the Inspector- General was also concerned about the expected expenditure for the establishment of a proper medical college because as per his observation the infrastructure of the existing medical school was actually inadequate in terms of faculty, buildings, laboratories, museum, classrooms etc. as well as the condition of the hospital attached to TMS[79].

This was quite enough for a Government officer to express his negative attitude towards giving TMS the status of a college and also it was a signal to make the lower standard of education of Bihar more apparent in front of the natives. But in reverse Babu Saligram Singh showed few very solid loop holes in the system itself. He stated that it was regrettable and doubtable that from the birth of CMC till date there was not a single Bihari Assistant Surgeon in Government service. According to him it was not due to the 'incapacity or inaptitude' of the Bihari students that they were failed to enter into the Government service. It is possible to improve this condition if the Government would bring opportunities and advantages to the doors of the Biharis. Regarding the expenditure issue his opinion was that proper distribution of money in education sector was not made by the Government in Bihar[80]. Though there was a strong demand to give TMS a status of college within the society with their own explanations and expectations but unfortunately

[78] Municipal Department, Medical Branch, File no. 25/7, issue no 137 T.M, no 3, 13th April, 1905 Letter to the Inspector-General of Civil Hospitals, Bengal, , BSA

[79] Municipal Department, Medical Branch, File no. 25/7, 28th April, 1905, Darjeeling, Letter from Inspector-General of Civil Hospital, Bengal to the Secretary to the Government of Bengal, BSA.

[80] Municipal Department, Medical Branch, File no. 25/7, p. not found

was not considered by the Government initially. With the passage of time the scope and standard of TMS increased and finally in 1925 it turned into a medical College. After the establishment of Prince of Wales Medical College, the TMS was shifted to Darbhanga.

The Prince of Wales Medical College (hereafter PWMC) was opened on 1st July, 1925 to commemorate the visit of Prince of Wales to Patna in the year 1921. With the new construction of cold storage plant (it was capable of turning out one ton of ice daily) and quarters for the Professors by the Public Works Department the college started with some existing detached buildings separated over an extended area. Apart from that one dissection room and one chamber (kept at a temperature of 22 degree for vaccine and bacteriological specimens) were provided to the college[81]. The anatomical museum contained a collection of human skeletons and bones anatomical preparations, fine wax models and diagrams. This had a lecture room of its own. The medico-legal block of the college had a postmortem room, demonstration rooms and lecture theatre. The Pathology and Physiology Department were separated in a different building. The ground floor was occupied with experimental Physiology, Pathological museum, mounting room, two lecture theatres, engineering workshop and artist's room. Chemical Physiology, Morbid Histology, Research and Bacteriological laboratories were situated in the second floor. Pharmacology, Biology and Organic Chemistry departments were housed in an old school building.

Course of study and teaching standard of PWMC were satisfactory in terms of its range and quality. Gradually it had increased according to necessity. The college started with six major subjects; Biology (Prof. S. S Choudhury), Anatomy (Prof. H. Hyder Ali Khan), Organic Chemistry (Dr. Bagchi as chemical Analyst of the Public Health Laboratory), Physiology (Dr. B. Narain and Dr. Prasad), Materia Medica and Pharmacology (Dr. T.N. Banerjee as the faculty of Pharmacology with Dr. P.C. Ray as senior demonstrator), Pathology (Junior assistant S.P. Verma). Surgery, Midwifery, Medical Jurisprudence, Hygiene and Public Health and Medicine were introduced later on[82]. Many more faculties, demonstrators and assistants in different stream started joining

[81] Annual Report of Prince of Wales Medical College Patna, Superintendent, Government Printing, Bihar and Orissa, Patna, 1925, BSA

[82] Annual Report of Prince of Wales Medical College Patna, 1925

from the next year, 1926. Thirty one students were admitted to the college in the first year by the selection committee. Among the total students thirteen were Hindus (Bihari), six were Muslim, five were Oriyas, five were Domiciled Bengalis and two were Aborigines[83]. In the first year twenty two students were succeeded the M.B.B.S. examination. One casual student joined the class for three months from the beginning of the third term and worked in Practical Anatomy. The average daily attendance of the students was 24.7% during the first year.

The next few years witnessed some significant developments in the course, curriculum faculty and other sectors of the college. Sir Norman Walker visited and inspected the college in 1926 as the representative of the General Medical council of the United Kingdom along with two local private medical practitioners, Dr. R.N. Chakraverty and Dr. Ali Ahmed. Government sanction for extension of Pathological Laboratory, establishment of the Department for Anti-rabic treatment, introduction of post-graduate training, plot sanction for botanic garden were the major initiations taken for the this newly established medical college[84]. All the departments started working from the year 1926 and 76 students were transferred from CMC to this PWMC in the same year. It is great to notice that within a very short time the teachers, students and of course the governing body became so enthusiastic that few students were sent to Bangalore for training in midwifery[85]. With the gradual growth of medical equipments like microscope, Pathological specimens, extension of more departments like bio-chemistry, bio-physics, extension of laboratory and library, facility of hostel and staff quarters PWMC started its journey for more betterment in coming years[86].

Foundation of Mitford Hospital and Dacca Medical School:

The best examples of diffusion of knowledge towards the peripheral areas are the Dacca Medical School and the Temple Medical School. Though the amiable history of

[83] Annual Report of Prince of Wales Medical College Patna, 1925
[84] Ibid
[85] Ibid
[86] Letter from the Inspector-General of Civil Hospitals, Bihar and Orissa to the Secretary to the Government of Bihar and Orissa, Local Self Government Department, no. 7901/E-138-28, Patna, 18th August, 1928.

these institutions, the contemporary social aspects of medical education other than the core areas like Calcutta could come out. Interestingly the story behind the foundation of a medical school in Dacca was different from the other medical schools established in 1870s. Student accommodation difficulty in CMC was not the sole reason to give birth of Dacca Medical School (DMS). The situation from in which it was born is noticeable here. It was also the socio-economic, geographical and of course the cultural forces which morally helped it. In this regard one should remember that the consciousness of the native people played an important role. Therefore there was a both sided pressure for a new medical school; Government wanted to release the added burden from CMC and the people demanded better educational opportunity which would be more convenient to them. But even before that the premise of western medical treatment among the people was already made by the Mitford Hospital in Eastern portion of Bengal. It might be an incomplete history, if this paper would discuss the history of DMS without the history of Mitford Hospital.

Mitford Hospital, the ever large-scale health institute in a western sense in the eastern portion of Bengal, was established on the first of May, 1858, Dacca. Just three months after its establishment Queen Victoria took over the rule of India from the hands of the East India Company. Born in this historical year, Mitford Hospital itself had turned to be a historical landmark in forthcoming days. Dacca, a tattered city, holding back the last faint rays or even none of its former glorious days, was reigned by hunger, impoverishment and malignity. Most of the local crafts got extinct or in the verge of becoming extinguished since the East India Company's regime set forth and the 'drainage of wealth' had begun. This nullified jobs, money and food Dacca gradually became an inferno[87]. The British having found Dacca terribly unworthy of residing immediately felt an urge to establish hospitals there.

In 1803, the first hospital in Dacca, the 'Native Hospital' was founded as a branch of Native Hospital of Calcutta. The Government allowed a grant of Rupees 150 per month for the hospital. To make the hospital thrive local tycoons and some other Europeans donated the sum of Rupees 20,000. This was created chiefly for the poor, so that it was not

[87] Dani, *A.H: Dacca, A Record of its Changing Fortunes*,

capable of serving a good number of patients. James Taylor, a British Civil Surgeon, remarked in his *A Sketch of the Topography and Statistics of Dacca* about the condition of the hospital in 1830s that the hospital could only keep forty patients at a time. It had an 864 sq. feet ward and two 8 feet broad verandas. An average of 2160 patients got admitted to the hospital every year. This condition did not fit with the purpose of the establishment of such a hospital exclusively for the poor people. The only good thing was that with the initiation of Magistrate, Mr. Henry Walter and Mr. J Grant the department of dentistry and the outer ward had opened recently. Interestingly the major portion of the patients were 'beggars', 'incapable men', 'strangers' 'boatmen and helmsmen' etc and they came from more or less different village areas.

Here the most noticeable part is the terms used by James Taylor about the class composition of the patients and their trend of origin. It proves several things. First of all, the poor condition of public health of these places other than the city areas like Calcutta. It was under developed and neglected. Secondly, the major portion of the patients of the hospital was from poor and uneducated background. Now the question comes that whether the treatment procedure of the educated and relatively affluent families differed from the poor section? Is the answer of this question is hiding into a more broad and complex question of societal condition and political underdevelopment? Is it a question of city based growth of every aspect like health issues?

Unfortunately the condition of this hospital was not satisfactorily good. Realizing that the Native Hospital was induced by gross medical ineptitudes, the contemporary rulers decided to found another hospital capable of admitting at least hundred more patients. Taylor established such a hospital in Dacca with two new outdoor dispensaries in 1839 with almost a solo initiative that succeeded at eclipsing the drawbacks of Native Hospital to some extent[88]. In this very important juncture of time, Government announced for the 'Mitford Bequest Fund' for East Bengal. Though initially there was no plan to utilize this

[88] Asaujjaman Mohammad, (Ed) *Company Amole Dhaka*, pp 299

fund for a hospital but later Governor General Lord Dalhousie (1848 – 1856) took this decision[89].

According to *The Dacca News* the amount of the grant of Robert Mitford[90] was five to six Lacks of Indian Rupees[91]. After a long debate regarding the proper utilization of the fund between the local elites, the Municipal Committee and in the official level, the Commissioner of Dacca finally sent all these proposals to the Governor General in 1851[92]. In 1852, 4th October, Dalhousie took the historical decision to set up a hospital with more facilities, which according to him would be the best utilization of the fund for the native people of Dacca. In 1858, 31st May, Mitford Hospital was inaugurated with great joy in Dacca city[93].

Dalhousie planned to situate a medical educational institution also in Mitford Hospital, so that some preliminary knowledge could be given to the local students. And this was the footing stone of Dacca Medical School which came into existence in 1875. In 1880s, the Bengal Government decided to hand over the duties concerning Mitford Hospital to Dacca Municipality. This act of transferring of duty had content concerning law and order.

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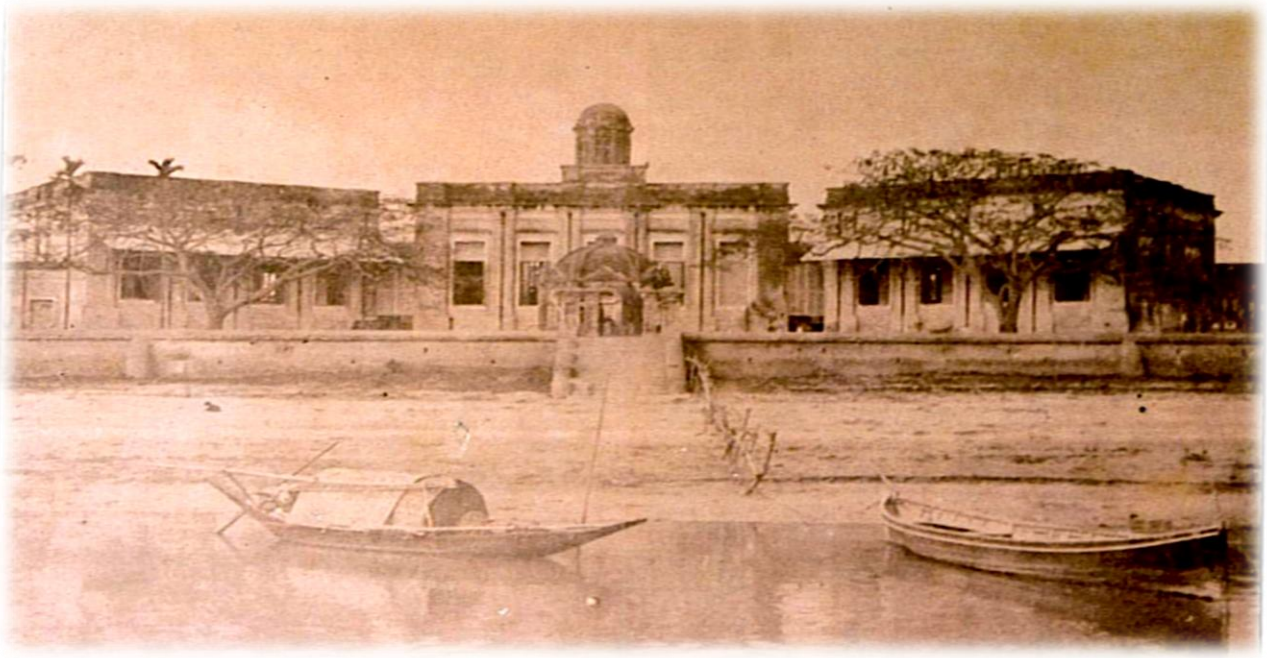
[89] Ahamed Sharifuddin, *Mitford Hospital O Dhacca Medical School: Itihas O Oitijhyo*, Shahina Rahman Press, 2007, p. 19

[90] Robert Mitford (born in 1782) was the District collector of Dacca, who later became the Judge of Provincial Court of Appeal and Circuit of Dacca (Bengal Medical Department Proceedings, January 1864). He came to Dacca on September 1816. He was a sibling of the famous Mitford family of County Northumberland.

[91] *The Dacca News*, 26th April, First Issue, P. 1, cited from *Mitford Hospital O Dhacca Medical School: Itihas O Oitijhyo*, by Sharifuddin Ahamed, Shahina Rahman Press, 2007, p. 18-19.

[92] Ibid.

[93] Bengal Municipal Proceeding, July, 1886 (p not found) National Archive of Bangladesh (hereafter NAB). Interesting to note here that even before the establishment of Mitford Hospital there were two more hospitals of Western medicine. *Native Hospital* and *Government Charitable Dispensary*, run by the Government and private initiative respectively.



Mitford Hospital

Foundation of Dacca Medical School:

Prior to the introduction of the western mode of medicine, the *Hakims* and the *Kovirajs* were the sole refuges of public health issues. Even in 1830s, there were nine Hakim families and sixty nine *Koviraj* families in Dacca city only[94]. It is easily understandable that in spite of the introduction of the western medical system, a big portion of the people showed their dependency and trust on the indigenous mode of treatment. But by contrast from very early stage of the introduction of Western medicine in Bengal, a large number of people had been showing their interest on Western medical education also. For instance, among the Indian students of CMC a notable portion was from Eastern Bengal, especially from Dacca. It is earlier mentioned that the vernacular course in Calcutta was in all respect inferior to the main course of CMC. Here the point is, in spite of all these back draws of the Bengali course, the students of Dacca were used to admit themselves there only. If anybody examines the reason behind this, could understand one very simple but most important angle. First and foremost, their consciousness guided them to obtain better education in Calcutta. But financial ineptitudes of the majority of the

[94] Wise. J: *Notes on the Races, Castes and Trades of Eastern Bengal*, (publication and page no. not found)

populace deprived the new generation from quality medical education in CMC. On the other hand, the distance from Dacca to Calcutta and the geographical obstacles due to the presence of huge number of big rivers kept the majority of the inhabitants aloof and indifferent from the facilities of Calcutta. Thus felt the need for a new option in this side of this presidency.

Here a question comes that despite knowing the fact that Bengal Presidency was area wise a big province, the facilities of education were not necessarily spread out. Till 1916 there was only CMC, which alone had the supreme authority to make doctors with Honours degree. Gradually, medical schools were established in some places like Patna, Dacca and Cuttack. It is noticeable that Dacca was the city where not only the people of East Bengal but the people from Assam and Tripura were also used to come for job, education health treatment etc. But the opportunities were not up to the mark.

Dacca Prokash published in 1863 that in this crisis moment Dacca really needs a medical educational institution to give the local students good opportunity[95]. Civil Surgeon of Dacca and the Magistrate supported this proposal. They added that according to necessity and utility the course and curriculum of this institution should be restricted to a preliminary level[96]. But this plan was adjourned up to 1873. In this year, when there was an outburst of pupils in the CMC, Lieutenant Governor Sir George Campbell (1871 – 1874) announced the foundation of two new medical schools in Patna and Dacca along with the Campbell Medical School in Calcutta. According to Campbell the Dacca Medical School (here after DMS) would be able to serve one Crore and thirty Lacks of people of East Bengal and Assam[97]. The course, curriculum, mode of instruction and the amount of fees of this new school were fixed as it was prevalent in the Bengali Class in CMC. After a three years course the students would be permitted for private practices. In 1875 the *Calcutta Gazett*e (14th April) published an article on the syllabus of the DMS. It was like this[98];

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[95] *Dacca Prokash*, 4th June, 1863, (22 Jaisthya, 1270, p not found

[96] *DPI Report*, 1868-1869, (CCCXXXII), 10th July, pp 50, IOLR (BEC) cited in *Mitford Hospital O Dhacca Medical School*, by Sharifuddin Ahamed, Shahina Rahman Press, 2007, p. 263.

[97] *Letter from Bengal Government to the Indian Government*, 1873, 18th August, BEC, December, 1873, File no, 72-36, 214, NAB.

[98] BGDP, *Education Branch (Medical)*, February 1879, File—LVII, No 1, p not found, NAB

First Year	Second Year	Third Year
Anatomy	Anatomy	Anatomy
Chemistry	Chemistry	Chemistry
Meteria Medica	Meteria Medica	Meteria Medica
Dissection	Dissection	Dissection
Practical Pharmacy	Medicine	Medicine
Surgery	Surgery	Medical Jurisprudence
Medical Jurisprudence	Midwifery	Midwifery

Midwifery was kept optional subject in the preliminary years.

On 9th April 1875, the Bengal Government officially declared the foundation of Dacca Medical School. *Dacca Prokas*h wrote that not only the whole city but even the people of remote areas of East Bengal would be affected by this decision[99]. Fifty four students from Campbell Medical School (Calcutta) were transferred to DMS. The Bengal Government gave fifteen more free students for the first year. It was decided that the students should pass the examinations like Vernacular Scholarship, Minor Scholarship or the University entrance Examination[100].In the first year the school admitted 384 students. The monthly fee was three Rupees. The classes were taken in a local school called 'The Normal Surgeons were appointed as professors. They were Dr. Kashi Chandra Dutta (taught anatomy and surgery), Dr. Surya Narayan Sinha (taught medical jurisprudence and therapeutics), Dr. Durgadas Roy (taught medicine and midwifery) and Dr. Priyanath Bose (taught meteria medica, pharmacy and elements of chemistry)[101]. The first three had a salary of Rs 250 while the last had a salary of Rs. 100 only. Besides them, there were two

[99] *Dacca Prokash*, 1875, 10th January, (BS- 27 Poush, 1281), p not found

[100] *BGDP, Education Branch (Medical),* June 1875, File- 31, 34, 36, Vol-1, NAB

[101] According to *Dacca Prokash* Durgadas Dutta, who was previously appointed to the Nagpur Medical school might be transferred to DMS for additional Professor, Dacca Prokash, 10th January 1875, (BS—27 Poush 1281), pp 475.

demonstrators for anatomy, two helpers for the professors of anatomy and meteria medica and a clerk[102].

There were tests for the students at each year after the sessions were over. The eligibility criteria for the final examination in the third year were; Students who had not attended more than one fourth of the numbers of total lectures were not eligible of attending the tests; Students who had missed more than one eighth of the total classes taken in the Mitford Hospital would not be permitted to attend the tests; Students who could not dissect corpses satisfactorily (every student had to dissect the first twelve of the total thirty two dissections) were not eligible for the tests and slackers were strictly prohibited. Finally the students with less than 50% marks were considered as failed. Unfortunately, during 1875 to 1879, the medical school had admitted 526 students and out of them only 84 did manage to pass[103]. The next ten years statistics of students' admission and the pass rate are like this[104];

Year	New Admission	Percentage of Pass in the Final Examination
1880-1881	46	17
1881-1882	75	14
1882-1883	66	16
1883-1884	53	34
1884-1885	75	31
1885-1886	83	37
1886-1887	127	44
1887-1888	88	40
1888-1889	60	60
1889-1890	60	39

[102] *Report on Vernacular Medical Schools of Patna Dacca and Cuttack,* BGDP, Education Branch, 1879, Bundle 12, p. not found

[103] *Mitford Hospital O Dhacca Medical School,* by Sharifuddin Ahamed, Shahina Rahman Press, 2007.S

[104] The Yearly Reports of the Superintendent of Dacca Medical School

Before the permanent building of the medical school was to be made, the Government proposed a temporary building with the two lecture theatres (each spacious enough for two hundred students), a museum, a laboratory, a library and a room for the Principal. There were also proposed rooms for dissection and postmortem with capacities of four hundred and one hundred and fifty respectively. By 24th August 1889, the permanent building for the Dacca Medical School was built. It was mainly funded by donations both public and private ones. People of Eastern Bengal donated the sum of Rs. 64,000. The Raja of Bhawal, Rajendra Narayan gave Rs. 20,000; Raja Suryakanta Acharya of Maimansingha donated Rs. 10,000; the Zamindar of Dacca Babu Raghunath Das donated Rs. 15,000. In this way there were plenty of donations for the new medical school. DMS became Dacca Medical College in 1st July, 1946.

Non-Government initiatives:

The second half of the nineteenth century witnessed few non-Government initiatives for establishing medical institutions. The demand for western medicine among the Bengalis including the people of mofussils created interest and desire to the initiators. Calcutta Medical School, College of Physicians and Surgeons of Bengal, Borishal Medical School was the major instances.

Calcutta Medical School:

With the initiation of Dr. Radhadovindo Kar the Calcutta Medical School was started in 1887. Initially it followed the course and curriculum of Campbell Medical School. This School did not have attached hospital due to financial crisis and the students used to go for practical classes in Chandni or Meyo Hospitals. With the permission human dissection was started in 1889-90. Initially it started with eight students and it reached to six hundred in 1899. Dr. Radhagovindo Kar, Dr. Jagabandhu Basu, Dr. Nilratan Sircar were the faculties there. The Commission for medical education in vernacular languages reported that the faculty quality and number of students of the School was remarkable. They also said that some of the students were gaining knowledge without allowance, but

there existed individual efforts for prizes and stipends[105]. Albert Hospital was founded in 1897 for the betterment of the School. Some of the names of the students of that School who passed the licentiate examination were Sashibhushan Basu, Benimadhab Basu, Madanmohan Dutta, Baradaprasad Nandi, Surjanarayan Dutta, Radharaman Sarkar, Benimadhab Das Shratchandra Mukherjee, Saradaprasad Das et al.

College of Physicians and Surgeons of Bengal:

Medical Association of India raised a fund in remembrance of John Martin Coats and decided to establish a medical college in Calcutta in 1895[106]. They formed a committee to decide the rules and regulations for the college. The College was started in 13th January, 1896. Dr. Jagabandhu delivered the first lecture in the inaugural session. He explained the necessity and importance of the non-Government schools and colleges. The then journals had published this speech and widely discussed about it. For instance *Indian Nation* published that Calcutta needed such initiations of medical institutions. The Government established Calcutta Medical College at a time when the people of Bengal were not conscious and did not feel the importance of western medical system. Thus there was no initiation from within the society. Though Government took that decision for advancement, but it was not always useful to the ordinary people. The non-Government initiatives which included ordinary people also, thus demanded patronage from the ruling authority. If the college had good faculty, proper instruments and substantial students, it should get the affiliation from the Calcutta University also. They mentioned that if the arts colleges could get the affiliation, then why not medical college[107]?

In 16th November, 1896 a journal, Indian Medical Record published an article regarding the results of the non-Government medical schools and colleges. The editor of that journal wrote to the Secretary of Campbell Medical School that in spite of having low quality instruments and inadequate facilities, this college had been giving permission to the students for free practicing. On the basis of that complaint, the Secretary wrote a letter to

[105] General Department, Education Branch, April, 1885, no 1-2

[106] *John Coats*: Indian Lancet, 1st August, 1895, p 79

[107] *Occasional Notes*, The Indian Nation, 10th February, 1896, vol.- xix, no 6, np

the Inspector-General of Civil Hospitals about the poor condition of these institutions. He mentioned that they did not have even anatomical room for practical classes. He appealed for a proper supervision on those institutions. The Inspector-General gave permission to the students of that College to take admission in the vernacular medical schools through examination[108]. Till the end of nineteenth century the situation regarding the non-Government medical educations was in a dilemma which was solved in the year 1916 with the establishment of the Belgachia Medical College.

Barishal Medical School:

Aswinikumar Dutta was the founder of the Barishal Medical School in 27th June, 1892. He wrote a letter to the Secretary of State and mentioned that the school was established in 1892 with a desire to produce trained medical practitioners, who could serve the Barishal and the rural areas of the place. The foundation students were 116 under the supervision of Dr. Tarinikumar Gupta, a private practitioner and this school was following the rules and syllabus of the Government medical schools. Aswinikumar appealed for government help for further betterment of that school. The Secretary of State dispatched the letter to the office in Dacca. Commissioner of Dacca agreed with him and sent it to the State Government and again it was dispatched to the Inspector-General of Civil Hospitals[109]. The Inspector of Civil Hospital was not happy with the proposal and pointed out some problems of establishing such medical school in Barishal. He mentioned that there was no necessity to open a medical school in Barishal, because of the Dacca medical school in that region. He also said that the private medical schools were of low quality due to inefficient teacher, inadequate instruments and the pass out students could be harmful to the society for their less education and practical training. The Education in Charge of Bengal Presidency refused to support the school financially and also mentioned that Government would not give affiliation to the students.

[108] Roy BinayBhushan: *Chikitsa Bigyner Itihas*, Sahityalok, Kolkata, 2005, p. 138.
[109] Education Branch, Education Department, March, 1893, no- 22-23

But Aswinikumar Dutta did not leave his hope for the advancement of the school. He again wrote a letter to the Inspector-General of Civil Hospitals re reconsider the proposal. In response to the letter the Inspector-General ordered to the Secretary of Municipal department that the first year pass out students of Barishal Medical School would be permitted to get admission in any of the vernacular medical schools in Bengal Presidency, but they had to pass in a special examination. But the second year students would not be permitted to take admission in second year in the vernacular medical schools[110].

One of the significant developments in the field of medical education in the first half of twentieth century was the Belgachia Medical College, which was the first successful effort for establishing private medical college in Bengal Presidency. The major initiation came from Dr. Radhagovindo Kar, who established Calcutta Medical School in 1887. The Calcutta Medical School merged up with the College of Physicians and Surgeons in 1903 and was called 'Calcutta Medical School and College of Physicals and Surgeons of Bengal' then onwards. The new institution was a combination of four years school course in vernacular language and five years college course in English[111]. The Medical Bill Came in 1911. Before that the Government requested all the non-Government medical institutions to work together, so that the private institution could get the affiliation from Calcutta University and the Medical Board. The Government finally decided to support financially the institution in Belgachhia. In 5th July, 1916, Belgachia Medical College was established with the affiliation of the university. Later in 1919 the name was changed as Carmichael Medical College. Radhagovindo Kar became the Secretary of that college and remained in the same post till the end of his life (19th December, 1918)[112].

[110] Education Branch, ibid June, 1894, no- 10-11

[111] Dr. Subir Kumar Chattopadhyay: *Nirab Biplabi, Chikitsak o sikshabid Dr. Radhagovindo Kar,* journal *Janamat*, nd, np

[112] Some of the books written by Radhagovindo Kar were: *Sankshipta Sharirtattva, Vishak Suhrid, Stree Roger Chitrabali O Sankshipta Tattva, Sankshipta Shishu O Bal-Chikitsa, Sankshipta Bhaisajya Tattva, Kar Samhita, Vishak Bandhu, Rogi Poricharja* etc.

Conclusion

Two types of peripheral relation did exist in India at that time; the mother land as the centre of all the power and India was its periphery. The other one was inter - peripheral relationship of Indian cities like Calcutta as the core of economic, political and cultural developments and the small towns like Patna and Dacca. Both Patna and Dacca had had their own characteristics and uniqueness in terms of gradual growth in the latter half of the nineteenth century as the peripheral areas of Bengal Presidency. The establishment of medical schools in those areas reveals a contrasting picture of knowledge diffusion. Temple Medical School was a direct result of Government effort to reduce the pressure on CMC due to a high demand for medical education among the Bengalis and others (as pupils used to come from central province also) as well. Though they tried to spread these opportunities evenly in the other parts of the Presidency, but it was the after effect of official intervention and popular demand. The small hospitals of Bihar got impetus due to this step. Within fifty years degree course was started and thus was born the Prince of Wales Medical College. In contrast the situation of Dacca was slightly different than Patna. There was a medical consciousness already existing among the people. It was not about education only they gave thrust on sanitation, vaccination and public health issues also. We can mention about the popularity of *Dacca Prokash* journal among the public which published from the very beginning (1863) many good and interesting articles on different medical issues. This created more awareness because of the vernacular language of the journal and made the philanthropists more enthusiastic to force the Government[113]. Not only the intellectual class but the less educated poor people were also involved into this process. The awareness and demand in health, hygiene, domestic health, public health and education eased the process of transferring medical facilities towards this area including educational institutions. Before the establishment of Dacca Medical School people used to come to CMC which again remind the medical authority about the limited space and equipment of the college. Though we are talking about the Government initiative for

[113] *Dacca Prokash* published an editorial in 1869 after the report of Catcliff, the Government official appointed for making a thorough sanitary improvement plan for Dacca, where they had shown their own demands and need for sanitation of the city. They had provided their plan for this sanitary improvement. This proved that how much conscious the people had become at that period.

medical schools to spread up the opportunity and also due to the demand from the masses, but according to Anil Kumar the British were more conscious about their own need of native assistants to the military bases and the upper class and caste Hindu students of CMC started opposing the compulsion of joining to the military bases.

However this cyclic process of demand out of middle class consciousness and need and supply out of un-fulfillment of aspirations of the masses at a particular place was unique in nineteenth and twentieth century history of medical education impartation in peripheral areas. Though the Government had her own perception behind the establishment of medical institutions in these areas but what attracts us more is the better understanding of need and implementation of western medicine partly emerged from within the indigenous society.

Calcutta Medical College was not sufficient to meet the academic interests of the huge population which gave the birth of medical schools in different places and later on medical colleges as well. It is not the consciousness or responsibility on the Government side which acted as a catalyst for the establishment of medical institutions in the peripheral areas but it was the result of a pressure from a progressive or restless society. Rather we can say that a constructive mentality was seen among the Indian people. Starting from the event of Madhusudan Gupta the so called Indian orthodox society could overcome their prejudices and came forward towards the 'modernization' process. In the latter half of the nineteenth century this phenomena became more prominent through these small institutions in the even smaller towns or cities. Here small city can described as more orthodox than the core area, because all the enlightenment process was naturally started from the core or central area only. Even in these areas and cities in which the local guardians gradually understood the necessity and benefit of the new rational education. The orthodox social 'institutions' finally gave up their tenacity and of course the young generation did not waste time to understand their bright future in accepting the newness in every sector of education, including medicine.

History tells us that it had been a natural historical process that a superior power conquered and dominated the other one with arms and technology. The use of gun powder brought Babur victory against Ibrahim Lodi. In the case of British it was not only the

higher technology which they had used in conquering many places initially, but their advanced scientific knowledge which helped them in colonizing the Indians. Knowledge gives strength, power and confidence. After a certain time when Indians became educated, how British wanted them to be, the situation reversed. The new knowledge generated consciousness, logic and power among Indians to ask question against colonial authority's activities. Indians now learnt to present grievances and demands, this time as they wanted to perceive themselves.

Chapter III

New knowledge of Anatomy: Experiments through Surgical Operations

"When then we consider, how elevating is the study of Anatomy and Physiology, and the Natural and Physical sciences on which the whole art of medicine is based, how exalted are the notions which those sciences give of the wisdom and power of the Omnipotent Creator of Universe:- when we reflect how incessantly are the best qualities of man's moral nature called forth in the exercise of the profession of medicine, and when we finally bear in mind how inestimatable is the benefit conferred on the community at large by the exercise of that profession, we are finally justified in saying in the words of those who promoted the foundation of this institution (Calcutta Medical College), that in the Medical College there has been established 'a moral engine of great utility and power', not merely useful in supplying the wants of the State, but instrumental in elevating and at the same time benefitting the people of the country at large"

W.C.B Eatwell[1]

The present chapter tries to look into the new experiments done in medical field with the growth of new and sophisticated technology in Bengal Presidency. Although experiments were taking place in every branch of medical science, but here the main focus will be on the anatomical knowledge and related technology. The use of new knowledge through the surgical cases and operations would be discussed here to show the practical usage of anatomy, medical technology and experiments in medical institutions. The nature of utilization of advanced medical knowledge through minor medical tools in the class rooms and pedagogical changes of the newly established medical institutions would be another constituent of this chapter. New anatomical knowledge, different experiments, changes in curriculum and pedagogy and the growing popularity of clinical surgery revealed that the entire population of Bengal (of course exceptions were there) was deeply affected and influenced by these scientific changes. The data used in this chapter are taken from the writings of medical missionaries, surgeons and medical men of Bengal

[1] Eatwell. W.C.B, *On the Rise and Progress of Rational Medical Education in Bengal* (An Introductory Lecture in CMC), Calcutta, 1860, p. 27.

Presidency who served at the Surgeon General's office and also as the faculty of newly formed medical institutions. For example we have taken few books like *An Atlas of Anatomical Plates of the Human Body* (1849) written by Freder John Mouat, *Clinical Surgery in India* (1865) by Joseph Fayrer, *Military Surgery* by J. J. Cole, *Surgical Diseases of India* (1840) by F. H. Brett, *Operative Surgery in the Calcutta Medical College Hospital, Cases and Comments* (1885) by Kenneth McLeod etc. Few Reports are also important in this regard like *Report on the Investigation of cases of real and Supposed Poisoning* (1841) by O'shaughnessy, *Report of Surgical Operations* (1846) by Dr. J. Esdaile etc. These writings and reports are arranged and analyzed chronologically to show the nature of a developing knowledge and its consequences for the society. These sources provide numerous examples of real cases and practical experiences of the surgeons who handled physically rare and complicated medical cases and also witnessed the societal changes. Mention may be made of in this connection that very few works have been done on this particular topic and there is dearth of secondary sources.

Prelude to the Introduction of New Courses of Medicine:

The history of scientific and technological development does not mean a mere story of machines, scientific discoveries and their monotonous functions for productions. Scientific development engages a larger aspect of socio-cultural and economic interests of the people where politics certainly plays a vital role. We know that medicine was functional as a colonial tool ensuring a better survival of the British personnel, but new technological discoveries and researches in medical field had enriched medical science and thus gave the colonial rule slow but more steady control over Indian subcontinent. The British medical professionals, who involved and devoted themselves fully to medical profession, utilized the growing knowledge not only to serve their countrymen but also to enrich and empower the newly recruited Bengalis in this profession, served general populace and enjoyed the success of their medical carrier over here. Therefore second half of the nineteenth century witnessed mental attachment and co-existence between the British medical men and the new Bengali professionals. In spite of having strong but delicate relationship between British medical professionals and the colonial authority, they

showed proper respect and faith on the indigenous medical group. It is true that medicine was used as a tool for colonization, thus an indirect link could be felt between the British authority and the masses also through the rules and regulations but with the passage of time it was overtaken by a keen relationship between the British medical professionals and the local professionals as well as the patients. Rules and regulations of the colonial Government and its direct implementation on the institutions and medical students have more or less been discussed in the earlier chapters. But how the medical science and treatment actually touched the indigenous professionals and general populace through its superior technology and progress, deserves special emphasis.

A long view of history can reasonably argue that the discoveries of science were a more potent force for social change than any other factor operative in human affairs. So we can assume the significance of technological development of medical science for a colonial state in this context. As the colonization process and industrial revolution started almost at the same time, technological development always guided us to think about commercial needs and economic relations of the two (colonization and technological development).[2] This might be true for land mark technological developments like exotic seeds, the railways, the telegraph, steamship etc. which were transferred to India from the west. But the difference between these technologies and the medical technology could be clearly distinguished in terms of their origin, implementation and its result or after effect on the contemporary society. The disparities could be pointed out in this way; Educational importance of medicine (Medical education was one of the earliest science education started by the British in their colony out of special needs in 1820s through medical institutions in Bengal), its practice and researches, out of all the scientific and technological education, was more strong and capable as it was able to reach out to the majority of the population very swiftly, steadily and effectively within a very short time. Irrespective of all social divisions, people were involved either as patient or as professionals. Another interesting cause was that the tropical country like India had given the British more research opportunities in the medical field than the other scientific areas.

[2] Macleod Roy, Kumar Deepak (Ed): Technology and the Raj: Western Technology and Technical Transfers to India: 1700 – 1947, Sage Publication, New Delhi, 1995.

This ‘dual engagement’ distinguished the unique character of western medical science in India[3].

While keeping these matters in mind few examples should be discussed. From the days immemorial in a traditional society like Bengal, women were considered to be the symbol of purity. But scientific growth in medical field brought revolution in this orthodox society and gradually women body also became open for medical experiments. New tools and techniques and preventive medicine were brought in and affected strongly through clinical treatment and successful operations of the earlier prohibited parts of the body. Mortality reduced and brought a wave of medical education among Bengali women. The patriarchal society had to accept the newness. Now question emerges that how and why did the larger part of the society accept this change? Was the introduction of modern medical tools and techniques a point of cultural contestation for the aesthetic-minded Indians initially? Did the modern medical tools and techniques gradually emerge as agent of empowerment and gave confidence to the common people of India, instilling among them a kind of confidence of defying illness and deferring death? Or there were any compulsion or coercion? These questions are easy to ask but tough to answer. But surely these questions may guide us to explore some new aspects of the history of scientific and technological development in medical field in colonial Bengal.

The second phase of the innovations in medical science and technology in Indian context was how the new techniques and knowledge were imparted in the class rooms and what impact it had on the newly emerging professional group or to the society. Numerous developments in medical field of the West, produced much before than the East, were started dispersing through class rooms, dissection rooms, laboratories in the medical institutions, especially in CMC, by the colonial medical men and surgeons after 1835. Gradually, medical knowledge gained momentum and the process of its circulation was fast among the recipients. Human dissection, which was absolutely prohibited in Hindu religion, had performed in Calcutta for the first time by an upper caste Hindu. Anatomical knowledge could ignite medical students very much and they proved to be excellent

[3] Arnold. David, The New Cambridge History of India, *Science, Technology and Medicine in Colonial India*, Cambridge University Press, Cambridge, 2000, p. 57 – 91.

surgeons in future. So numerous medical knowledge of the west, produced much prior to the east, was dispersed through medical classrooms, dissection rooms, laboratories in Calcutta by the colonial agents and forces and gradually these ideas gained momentum and started circulating among the recipients. In this context one can say that Calcutta became a site for knowledge circulation in the nineteenth century. Now the question arises, whether Calcutta was to prove itself a site for knowledge generation or not? Fundamental investigations were already done; organized thinking and researches were being promoted by the colonial authority of that time, but could medical knowledge be produced independently or autochthonously? We know that recurrence of diseases and epidemics were grown in proportion in Bengal in the second half of the nineteenth century. But whether the medical curriculum and existing pedagogy was sensitive to it? These questions can be answered by providing some examples of the operations or surgeries performed by both the British and Bengali doctors in CMC initially and in the other institutions later on. Surgery not only showed technological advancement in medical science but also gave an indication of new researches which faced boldly the need to defeat the tropical diseases which probably started in Calcutta first after the military phase of colonial rule.

Western 'Rational' Medicine, Indigenous Recipients

With the passage of time as the need for both treatment and experiments received impetus, new (to Indians) and more sophisticated courses of medical science were introduced in the CMC and other medical institutions. This process of evolution of new courses and curriculum went on till the end of colonial rule. The new condition of medical education and the consequent empowerment of the facilitated students made by the experimental attitude of the British were not simple in terms of their implementation and impact. They had to face different social and political hurdles, but finally overcame. Not only the Bengali medical students, but the British medical men who were mainly the faculty in CMC and other medical schools and hospitals, also had to triumph over lots of boundaries. They were always accountable to their higher authority on the growth and

actual condition of medical science in Bengal as well as India[4]. Even till 1830s the British Surgeons were not given proper respect as good doctors from their motherland. The medical practitioners in service of East India Company were recognized as 'butler' and the Surgeon in charge was considered as subordinate to a 'black-smith'[5]. Therefore in proving their potential and capability and also to show the right decision to accommodate local people in 'their' medical science, these people had to suffer a lot. However we will discuss here how these British medical men not only rightly proved themselves in front their countrymen but gained confidence on the Bengali medical professionals and showed their respect towards them.

It is not feasible to discuss all the developing branches of medical science in these short pages and without an expertise in medicine. But analyzing the historical importance of anatomical knowledge in Indian scenario it has intended to elaborate two major courses of western medical science in Bengal i.e. the introduction and evolution of anatomy and surgery (surgery is intertwined with anatomical knowledge) and also the impact of these two developing branches of medicine on the Bengali society. There are three major causes in choosing this as the major focus of this chapter. Firstly, Indian subcontinent was controlled by the British authority by wars initially and military regiments needed proper health treatment in which surgery was the most necessary to take care of the wounded soldiers. Surgeons were attached with every military regiment and they had to face difficult surgical cases as well. Secondly, Indian society was habituated with their own medical treatments of ayurveda and unani, which didn't have proper teaching of Anatomy and Physiology, thus ignorant about proper surgical knowledge too. So it was anatomical and physiological knowledge which made a major distinction between the indigenous and western medical science and gave a novel dimension to medical science and education to the Indians. And thirdly, anatomy and surgical knowledge have direct and intense relationship with technological development in medical science.

[4] Fayrer. Joseph, *Clinical Surgery of India*, John Churchill & Sons, London, **MDCCCLXVI**, p. 2 – 3.
[5] Bhattacharya Jayanta, *The Genesis of Hospital medicine in India: The Calcutta Medical college (CMC) and the Emergence of a New Medical Epistemology*, The Indian Economic and Social History Review, 51, 2 (2014): 231 – 264,

Practical knowledge of surgery was started spreading among indigenous people right from the days when the East India Company planned to attach local people as assistants in military hospitals and battle fields as well. There was no theoretical knowledge of course for those assistants but standing beside the surgeons during operation they used to learn techniques of surgery practically but partially. Initially medical training for natives was absolutely military in nature whose purpose was to produce useful assistants to the military regiments. Later on Native Medical Institution also followed the surgical practices of the earlier hospitals and started regular clinical training in the contemporary hospitals[6]. The students mostly visited the Chadni Chalk Hospital for practical classes[7]. But dissection of human body was not performed in this school and the only practical information given on the subject was obtained from the dissection of lower animals[8]. Dr. Tytler (in charge of Native Medical Institution) introduced Anatomy, Pharmacy, Medicine and Surgery as the basic courses of the students[9]. According to Tytler "no small recommendation of Anatomy, that it has a most powerful influence in counteracting prejudices that arise from birth, or station, or caste, by demonstrating that, however mankind may differ in their externals, their internal organization, is the same"[10]. But this practical knowledge was not complete as there was no provision of dissection by the students until CMC started practical anatomy classes for them.

The birth of scientific medicine or 'hospital medicine' was associated with the introduction of Calcutta Medical College and hospital in 1835[11]. The history of CMC and its progress has been already discussed in the second chapter. But relating to CMC's introduction many other aspects which ultimately altered the nature and future of medical science in India are yet to be mentioned. The Orientalist nature of the British in treating the

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[6] Bhattacharya Jayanta, *The Genesis of Hospital medicine in India*, p. 1227 – 1232.

[7] Bandopadhyay Brajendranath: '*Sangbad Patrer Sekaler Katha'*, Vol. 1, 1344 *Bangabdo*, 1938, Calcutta, P-36.

[8] W.C.B Eatwell: *On the Rise and Progress of Rational Medical Education in Bengal*, Calcutta, 1860, p.

[9] Sen S. N, The Pioneering Role of Calcutta in Scientific and Technical Education in India, *Indian Journal of History of Science*, Vol. 29(1), 1994, p. 41 – 47.

[10] Tytler, John. *The Anis ul Musharrihin, or Anatomist's Vade-Mecum*, Calcutta, 1830, Cited in Jayanta Bhattacharya, *The Genesis of Hospital medicine in India*, p. 1227 – 1232

[11] Ackerknecht, E.H, *Medicine at the Paris Hospital 1794 – 1848*, the Johns Hopkins University Press, Baltimore, 1967, cited in Bhattacharya Jayanta, *The Genesis of Hospital medicine in India*.

indigenous medical systems (they found similarity of the mode of diagnosis between western and indigenous medical systems initially) almost disappeared with a new approach to show superiority through 'their' medical science, thus started rejecting the indigenous one, by the third decade of nineteenth century[12]. An interest of gaining knowledge from the *hakims* and *kavirajas* by the western medical men was seen till 1820s and 1830s but simultaneously they were critical too of the indigenous mode of treatment due to ignorance and negligence of anatomy and surgery. Gradually, criticism overpowered and after getting political authority and freeing itself from humoral pathology (which was similar to ayurveda and unani) western medicine showed a tendency to dismiss indigenous medicine and its practitioners, as if they were unqualified[13]. Partially supporting this argument we can again criticize that these thousands years old and enormously rich indigenous medical systems were left un-experimented and less cultivated for years. The dilatory attitude of the indigenous medical men called gradual flinch to its scientific growth. On the other hand western practitioners attached huge importance to clinical observation and use of postmortems to their medical science from the early nineteenth century. Contemporary British writers claimed that their study of morbid anatomy, which was prohibited in indigenous medicines, made them clinically objective and rational[14]. So to some extent the colonial practitioners were right in their condemnation of the indigenous medical systems after a certain time of their rule over India.

Introduction of institutionalized form of western medical science for the natives and their acquaintance with anatomy and surgery occurred exactly at the same time in Bengal in 1835. And from 1836 even upper caste Bengalis started performing dissection and learning proper anatomy. Interestingly condition was not same in England. Though this medical science came to India from England only but England herself was not prompt to human dissection and morbid anatomy due to its religious strict restriction for supplying bodies for anatomical observation. Private anatomical schools existed in London from at least the early eighteenth century and highly advertised through different presses but no

[12] Arnold. David, Colonizing the Body, p. 43 – 60
[13] Ibid p. 43 – 60
[14] Arnold. David, *Colonizing the Body*, p. 43 – 60, also cited in Bhattacharya Jayanta, *The Genesis of Hospital medicine in India*

mention was ever made that dissection was ever carried out[15]. Lane gave an example of an anatomy school owned by William Hunter (1764) in Covent Garden, which was shifted to Great Windmill Street two years later, earned lot of popularity in the country. Hunter used to deliver 112 lectures over a period of fourteen weeks and frequently had a hundred students. In 1775 the course comprised two introductory lectures, fifteen on operative surgery, eighty on anatomy, twelve on midwifery and three on making 'preparations' and embalming. It is quite natural that in giving a proper training on anatomy and surgery to the students Hunter certainly needed substantial numbers of cadavers for dissection purpose. But unfortunately he had to warn his students against talking about their anatomical work for the fear of public dispute and unrest[16]. It is evident that anatomy or the use of cadavers was prohibited in the country. Till 1802 the term 'practical anatomy' was not officially noted as a feature of anatomy courses in the London hospitals. Surprisingly even after getting the better result of anatomical knowledge in medical science England couldn't leave her social taboos to re-use cadavers where as the other countries of Europe were much ahead in this respect[17]. By reverse Indian society didn't have any restriction of cadavers and so medical practitioners had not to face any constrain to collect human body for dissection, but unfortunately had a late start.

Madhusudan Gupta (earlier ayurvedic teacher in Sanskrit College, Calcutta and later joined in CMC as a native teacher) as an Indian first dissected human body in 1836[18]. He ignited Bengali students to come forward for a more rational and scientific way of medical science and was totally successful as we can see that within a very short period not only Bengal the whole India started learning practical anatomy[19]. The gradual marginalization of social constrains over dissection enabled the students to know more deeply about the human body, especially after dissection much detail picture of the organs

[15] Lane. Joan, *A Social History of Medicine: Health, Healing and Disease in England*, 1750 – 1950, Rutledge, London, 2001, p. 11 – 31.

[16] Lane. Joan, *A Social History of Medicine: Health, Healing and Disease in England*, p. 11 – 31.

[17] Bhattacharya Jayanta, *The Genesis of Hospital medicine in India*, p. 1227 – 1232.

[18] Bose. Debasis, *Madhusudan Gupta*, Indian Journal of History of Science, 29 (1), 1994, p. 31 – 40.

[19] The issue whether Madhusudan Gupta was the first Indian dissector or not is a much debatable issue now a days as Dr. Jayanta Bhattacharya has shown few points which makes this incident little vague. Bhattacharya mentioned that though from the writings of others it is evident that Gupta dissected for the first time with four of his students but Gupta himself never mentioned about his historical act (*The Genesis of Hospital medicine in India*, p. 1227 – 1232).

became prominent. Now they understood the third dimension of the body, as opposed to the earlier concept of two-dimensional ides of the body taught in ayurvedic and unani systems of medicine[20]. CMC provided laboratory, dissection room for practical anatomy and additionally new instruments of investigations like thermometer, stethoscope and new modes of physical examination like inspection, palpation, percussion and auscultation were introduced. Another important dimension was the introduction of time as an ordering variable in the construction of clinical cases. In the words of Jayanta Bhattacharya, "…gradually the 'seasonal time' of indigenous Indian medical practice transformed into the clinical time of western practice"[21].

Anatomical Knowledge for the Military Class:

A dearth of medical text books for the students of the secondary or military class was felt by the authority from the time of the introduction of CMC. It had been a long time that any effort was made to improve this situation. While Native Medical Institution was active, the Superintendents like Breton, Tytler et al initiated to translate few medical English text books into Indigenous languages[22]. After that no initiation was taken for providing authentic text books in vernacular languages in the medical institutions. We can see a long gap of almost two decades to re-think and re-initiate to prepare vernacular medical texts. A book called *An Atlas of the Anatomical Plates of Human Body* was prepared for the military class attached to CMC in 1846. The only available vernacular works on western medicine of that period, besides the translation of the *London Pharmacopoeia*, a Bengali translation of a manual of Anatomy and an Arabic version of *Hooper's Anatomist's vade-mecum*, were imperfect and merged with the monographs of Tytler and Breton[23]. After a certain time these books became out of print and were not

[20] Bhattacharya Jayanta, *The Genesis of Hospital Medicine in India: The Calcutta Medical College (CMC) and the emergence of a New Medical Epistemology*, p. 241.
[21] Bhattacharya Jayanta, *The Genesis of Hospital Medicine in India*, p. 242.
[22] Anon. Liberality of the Indian Government towards the Native Medical Institution of Bengal, *Oriental Herald*, Vol. 10, 1826, , P- 18

[23] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body*, Bishop's College Press, Calcutta, 1849, p. i- xi.

worthy of reprinting and also consisted of insufficient information for the military class. One very important point comes out from the introductory writing regarding the language used in this book. It is mentioned that the old books were translated from English to Hindustani language (Hindi) and few were in Bengali. But this Atlas was written both in English and Persian for better understanding of the students. The cause behind choosing Persian was religious; the majority of the students of military class were non-Hindus and out of Hindi knowledge[24]. From this information we can understand the class composition of the military class and it is understandable that after the introduction of such class student majority shifted from Hindu to Muslims which again engage another part of the social history of medicine in Bengal Presidency.

This text book of military class was divided into five sections namely, the Osseous System, the Vascular System, the Brain and Nervous System, the Organs of Sense and Voice and the Viscera. Due to space limitation we have given a short view of selected plates and drawings and their minimal description from each of the mentioned sections. In the first section, Osseous System (plate one and two), the principal bones of the body have been figured and briefly described. Not only the classifications, arrangements, major functions and importance of bones of a human body were shown but at the end of this section an organic structure of bones has been given too;

Cartilage insoluble and soluble in Hydrochloric acid: and vessels…… 33.26%
Phosphate of lime…… 52.26%
Fluate of lime……. 1.00%
Carbonate of lime……..10.21%
Phosphate of magnesia……. 1.05%
Soda…… 0.92%
Hydrochlorate of soda…… 0.25%
Oxides of iron and manganese, and loss…… 1.05%

100%[25]

[24] John Mouat. Freder. i- xi.
[25] John Mouat. Freder, p. 36.

Here we can distinguish between the courses of western medicine and the indigenous systems. Diseases were treated, medicine were given by the Vaidyas and Hakims but were ignorant about such organic detail of human body. The major reason behind their lack of knowledge was possibly the absence of scientific experiments and urge for new knowledge among the teachers of ayurveda and unani. The medical tradition of India became stagnant as far as scientific growth was concerned. Very few new courses were added to the process of medical training of these medical men over here. Maintaining tradition and belief were more important to the indigenous medical men than to re-search and experiment on them. Until and unless practical examples were set up in front of the society, even the recipients were also in dilemma to accept the other/new medical system leaving their own habits.

Plate three from the second section (vascular system) shows the chief arterial and venous trunks of the body. Veins are an important part of the circulatory system of human body which is responsible for returning deoxygenated blood back to the heart after arteries carry blood out. Apart from describing the different body-veins and their function this section also introduced the students about the nature and properties of blood which was important to treat a patient. It describes like this; when blood "first drawn from vessels in which it circulates, it is an adhesive fluid, of a homogenous consistence, of red colour, of a slightly saline taste, and in the human subject of the temperature of about 98 degree F. Its specific gravity is 1,.050; when allowed to rest it rapidly begins to coagulate, separating itself into two distinct parts, of which one, the red part or clot, floats in the other, a yellowish fluid termed the serum"[26].

The relative composition of blood appears to vary at different periods of life, and in different morbid states of the body. The proportion of nitrogen increases as age advances, and there is more fibrin in the blood of an adult than in that of an infant. "In cholera the proportion of albumen and red globules is greater than in the healthy state, while that of fibrin, saline matters and water, is less; the salts being in some cases entirely wanting"[27]. It seems that apart from the general clinical knowledge this anatomy course also tried to

[26] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body*, p. 77.
[27] Ibid p. 78

make the diagnosis easier for the students of the military class by giving practical examples relating different diseases.

Plate four is one of the examples of the nervous or cerebral system of human life. The nervous system presides over all the leading functions and has been linked to a tree, of which the brain forms the root, the spinal cord the trunk and the nerves the branches[28]. Plate five is one of the examples of the fourth section i.e. the organs of sense and voice. "There are five organs specially designed and adapted to convey sensations or perceptions of impressions to the mind. They are the eye, the ear, the nose, the tongue and the skin, comprising the organs of sight, hearing, smell, taste and touch, and constituting the external sense. The proper functions of these organs are to admit the influence of things without the body and by means of the connection of their respective nerves with the brain, to excite in the mind a condition corresponding with the exterior impressions"[29].

Plate six is one of the examples of the internal organs of the human body (The Viscera, section five). The viscera generally include the digestive, circulating, respiratory and genitor-urinary apparatus, together with the brain, spinal cord and the organs of the senses. The viscera of human body are contained in three great internal cavities; cranio-spinal, the thorax and the abdomen[30].

[28] Ibid p. 79 – 80 and 137 – 139.
[29] Ibid p 141 – 142.
[30] Ibid p 141 – 194.

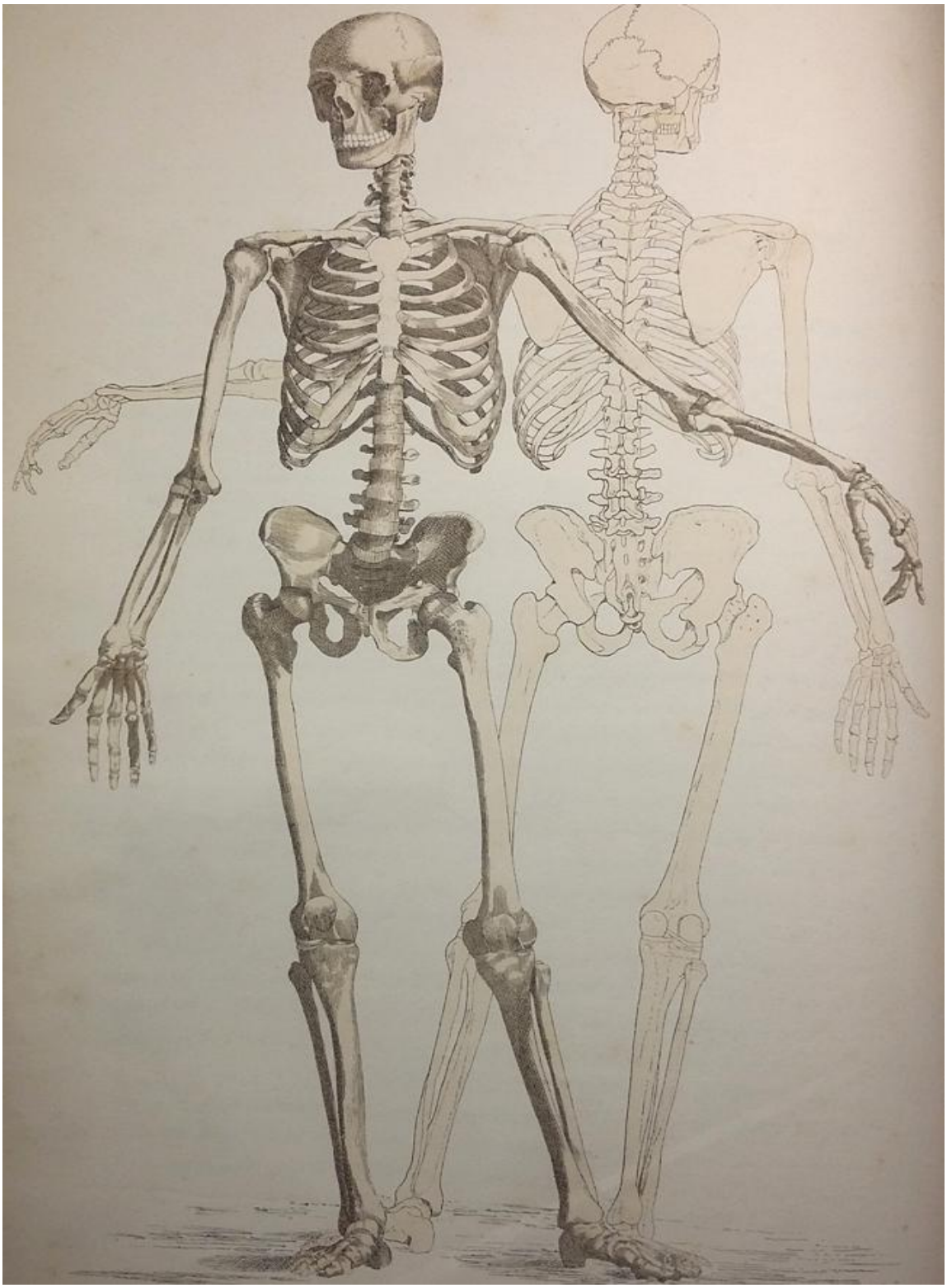

Plate: 1

In this drawing (drawing no1) an anterior and posterior view of human skeleton is seen. This consists of a head, neck, trunk, and extremities, the whole composed of 197 bones, exclusive of the teeth, bones of the ear, and other similar accessory bones. Each section of the skeleton and their division and sub-divisions are explained. Added to this an analysis of these separate divisions had given which was taken from an 'excellent' work of Dr. Jones Quain's *Elements of Anatomy*[31].

[31] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body*, p. 1 - 3

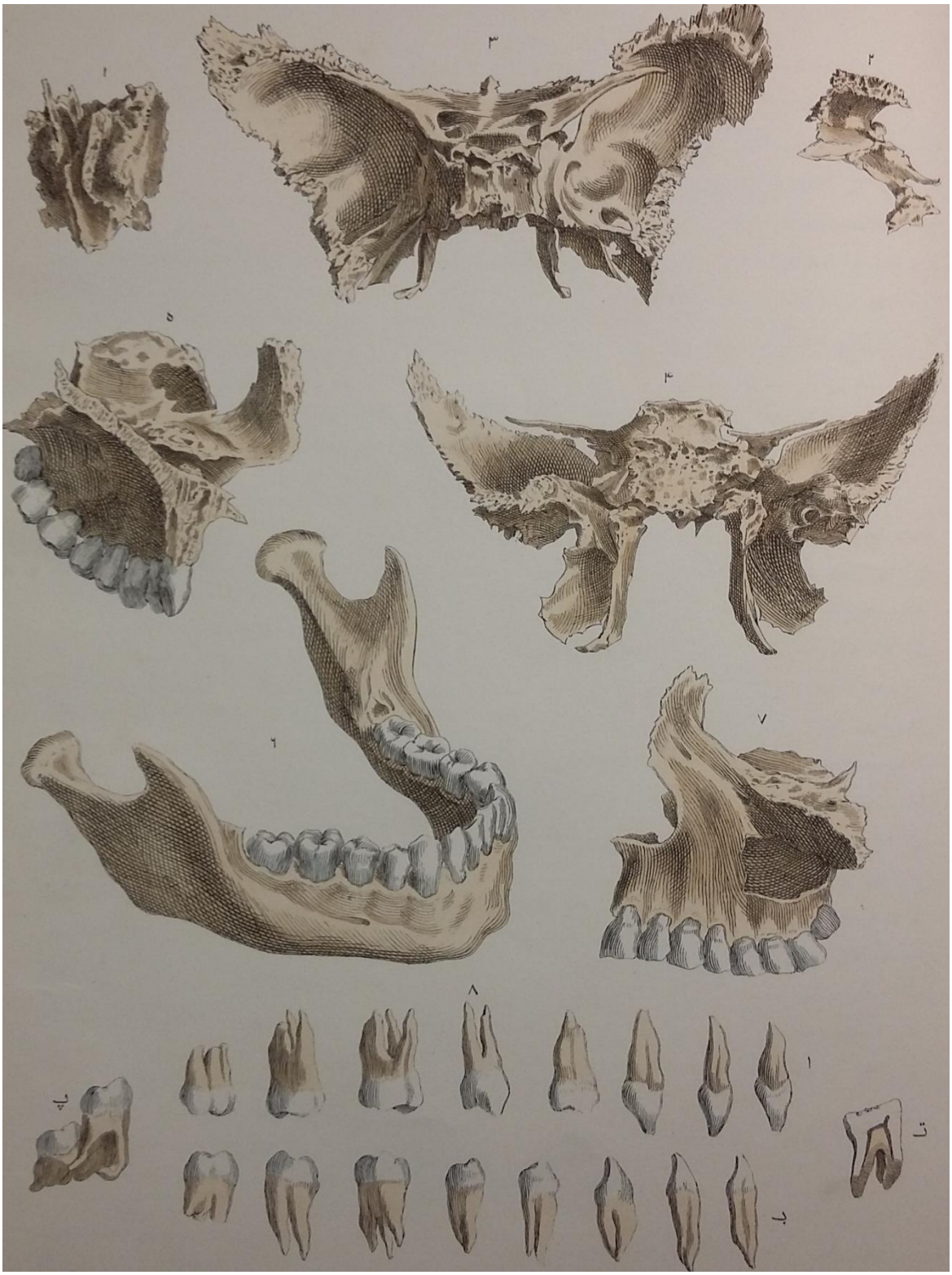

Plate: 2

This plate (Plate no 2) consisted of the drawings of the ethmoid, sphenoid, palate, superior and inferior maxillary bones and the teeth. A full description of position, function and utility of those bone and teeth is given along with a few examples[32].

[32] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body*, p. 17 – 21

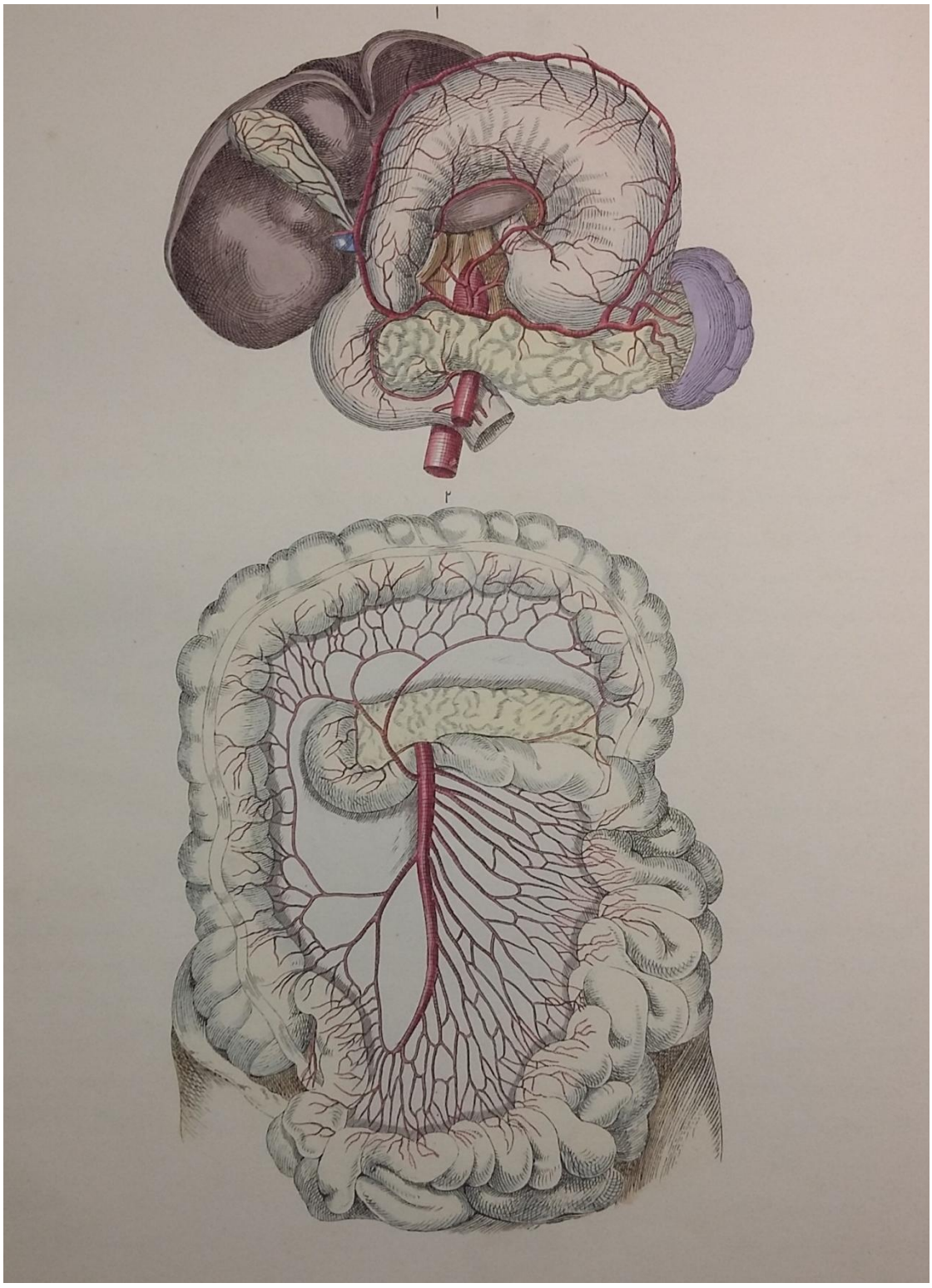

Plate: 3

This plate (drawing 3) has two figures; the first figure is of the under-surface of the liver with the gall-bladder attached, the stomach, duodenum, pancreas, and spleen and their arteries. Also a portion of abdominal aorta or vain and the commencement of the superior mesenteric artery are seen. Figure shows the delineation of the large and a portion of the small intestine, the pancreas, mesentery, and trunk and branches of the superior mesenteric artery[33].

[33] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body, p.* 51 - 52

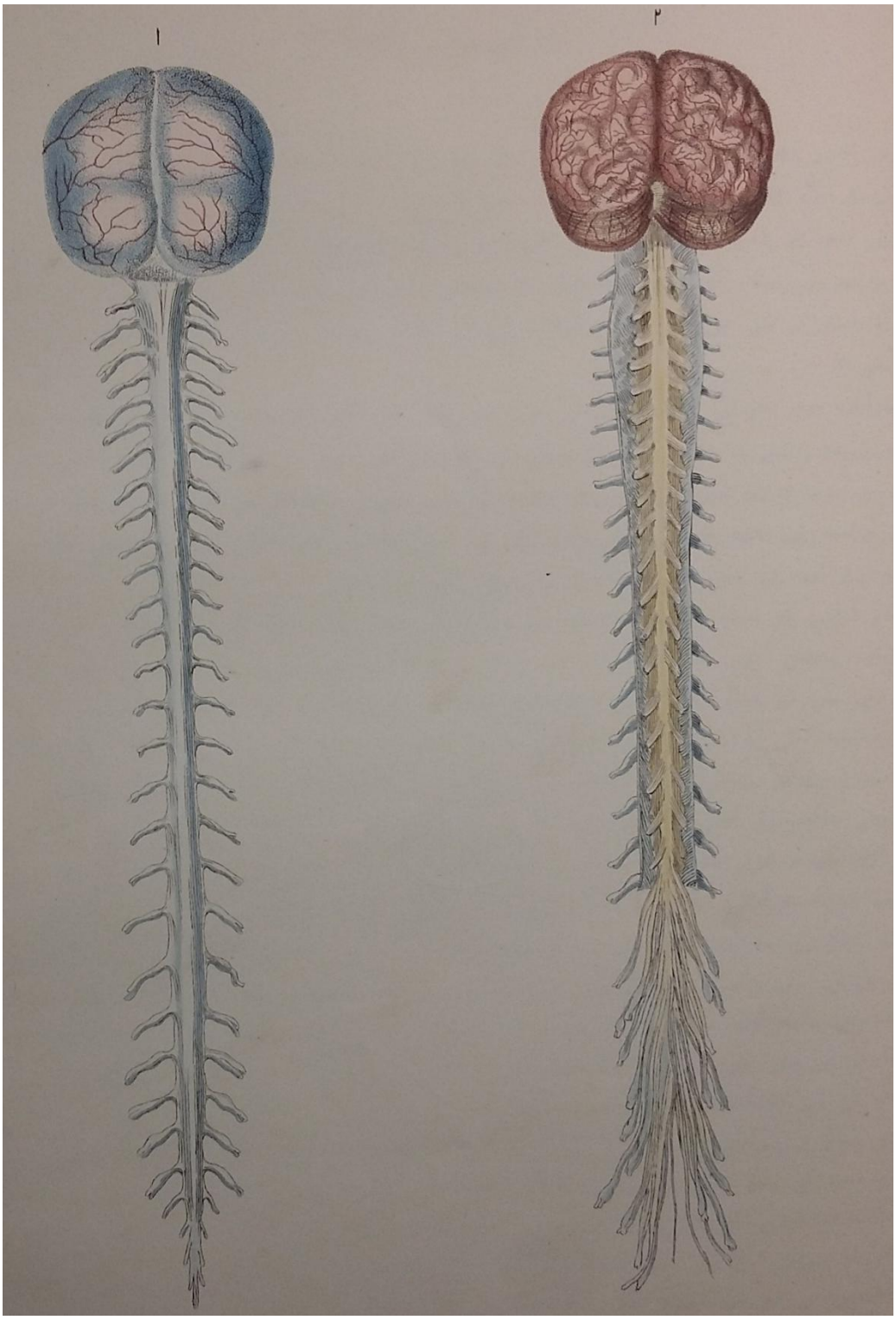

Plate: 4

This plate (drawing 4) is about the nervous system of human brain. The central part of the nervous system is composed of the *spinal marrow*, which is contained in the spinal canal and of the *encephalon*, which is enclosed with the skull. The two together are frequently denominated the *cerebro-spinal axis*, and in a full developed man and average weight of nearly four pounds apothecaries' weight.

Plate no 4 delineates the brain and the spinal cord forming the cerebro-spinal axis. There are two figures. The first one represents the posterior aspect of the brain and the spinal cord by the dura mater. The second figure exhibits the same parts with the dura mater removed from the brain and spread open along the spinal cord, bringing into view the pia mater covered by a thin transparent membrane termed arachnoid[34].

[34] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body,* p. 81 - 84

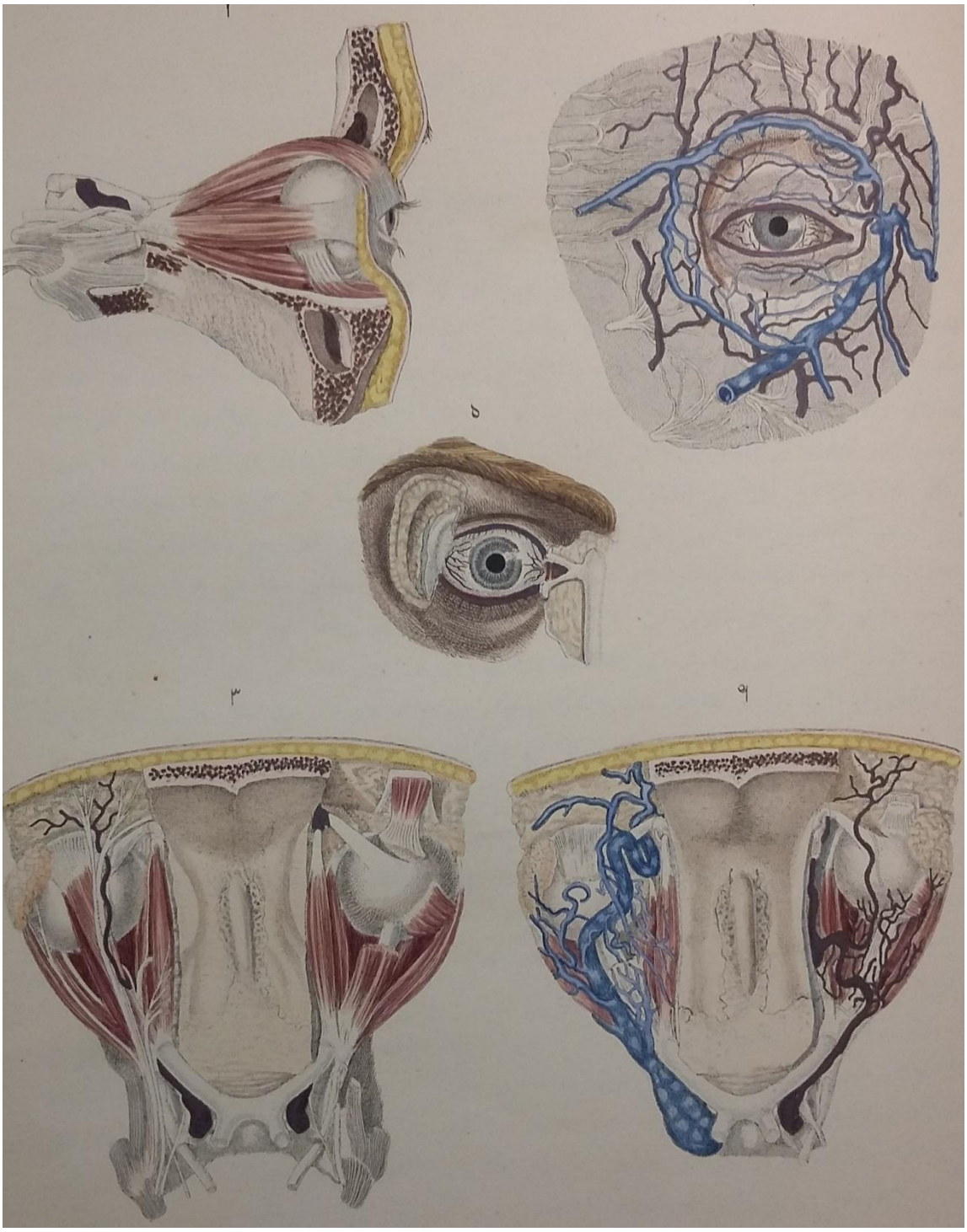

Plate: 5

This plate is intended to illustrate the muscles, vessels and nerves of the orbit and eye, as well as the anatomy of the lacrymal passages.

Figure one is the view of the eye in front, with the lacrymal passages dissected.

Figure two is the vertical section of the right orbit, exhibiting in profile the globe and muscles of the eye. The section has been made through the centre of the superciliary ridge.

Figure three shows a front view of the eye, displaying the vessels and nerves of the eyebrows and eyelids.

In the figure four the eyes are seen from above by the removal of the roof of the orbits. On the left side are shewn the course and distribution of the veins, on the right side those of the arteries. The entrance of the optic nerves, their commissures, and the cribriform plate of the ethmoid bone, are also exhibited.

Figure five gives the same view as the preceding, showing on the left side the distribution of some of the nerves of the orbit[35].

[35] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body,* p. 143 - 149

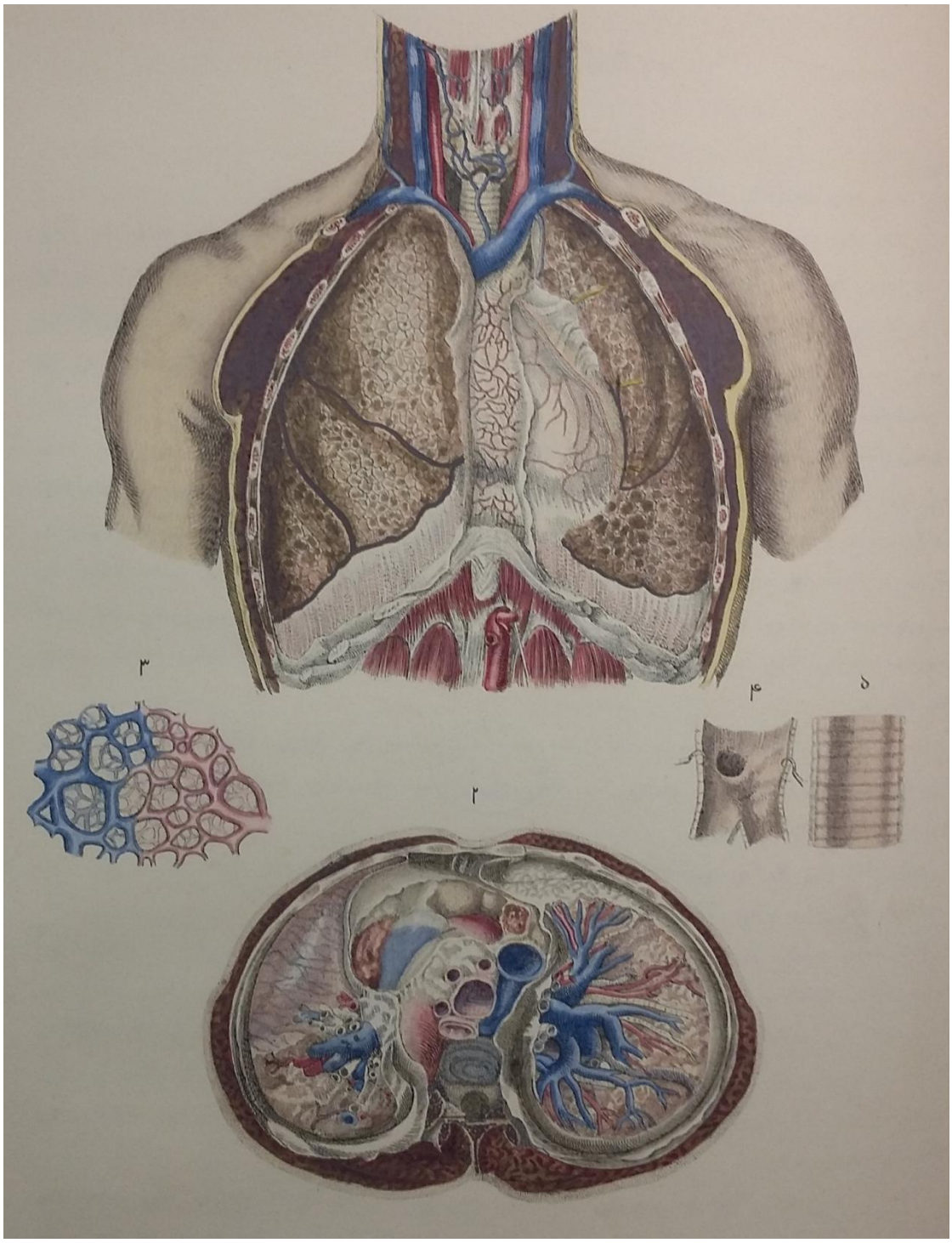

Plate: 6

This is the anatomy of lungs. Figure one shows the contents of the thorax seen in their natural position, from and front. The interior wall of the chest has been removed. The right lung is seen in its natural position and relations; the upper lobe of the left lung is held back to bring into view the summit of the heart and the entrance of the great vessels. The heart is seen enclosed in the pericardium. The anterior mediastinum is shown entire.

Figure two is the horizontal section of the thorax, showing the heart and lungs invested in their proper coverings. The heart is seen fitted in between the two lungs, the lower lobe, of which a part is wanting, exists only on the left side. On the right a portion of the three lobes is exhibited. The pericardium is removed from the middle of the heart, showing superiorly its reflection over the great vessels, which are divided. This section also exhibits the contour of the costal pleura and of the central division, showing the manner in which the costal pleura become reflected over the lung.

Figure three is a portion of the pulmonary tissue, consisting of the capillary, air and vascular tubes, magnified to fifty times their natural size.

Figure four is the longitudinal section of the bronchial tube, showing the trachea-bronchial constrictor muscle.

Figure five shows a section of the bronchus exhibiting the longitudinal yellow fibres[36].

[36] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body,* p. 197 - 203

Following the theoretical knowledge the students of the military class were bound to attend the lectures on anatomy each alternative day and they were examined for at least one hour every day on the knowledge they gained through the lectures. During each dissecting season, the senior students under the instruction of the Superintendent were allowed to dissect human body and by rotation the other students were also received this opportunity[37]. The anatomical demonstrations were almost as perfect and similar as the English class of CMC. Though the military class was not equal to the main class of CMC but was not at all neglected because of the importance of practical anatomy for medical profession. It is mentioned in the book *An Atlas of Anatomical Plates of the Human Body* that; "For the native pupils, translations will doubtless be hereafter prepared, which will, it is hoped, not only furnish them with the most recent and accurate information, but place them in point of sound practical knowledge, as nearly on a level with their more highly educated contemporaries, as can be accomplished through the medium of their own vernacular language"[38].

Evolution of Courses and Curriculum in CMC

The Calcutta Medical College opened with the basic courses of medicine and gradually more branches introduced. The causes may be the need for both treatment and experiments and also the growing demand in India for education. So the evolution of courses in Calcutta Medical College throughout the Nineteenth century is important in describing a complete history of medical education in Bengal Presidency.

The chronological order of development of the departments of Medical College was as written below;

Anatomy (1835), Physiology (1835), Medicine (1835), Forensic and State Medicine (1845), Anaesthesiology (1847), Dentistry (1861), Pathology (1871), Eye (1880), Obstetrics and Gynaecology (1882), Surgery (1900), Radiotherapy (1910), Pharmacology (1920), Dermatology and STD (1930), Chest and Respiratory Medicine (1946), Paediatric

[37] *Rules and Regulations of the medical College of Bengal*, Military Orphan Press, Calcutta, 1848, p. 20-21.
[38] John Mouat. Freder, *An Atlas of Anatomical Plates of the Human Body,* p. 279 – 281.

Medicine (1946).Calcutta Medical College was started with four teachers, who were given the charges of the five departments, namely Surgery, Medicine, Anatomy, Chemistry and Meteria Medica. The course of study as developed in the English class of the Calcutta Medical College during the initial years of its existence, were fully reflected in the rules and regulations of the College.

Anatomy:

Strong social prejudice prevented Calcutta Medical College to introduce human dissection until Pandit Madhusudan Gupta dissected a human body and utilized it in his lecture in 1836 (10th January). This day will ever be remembered in the history of medicine in India. The teaching of Anatomy was enforced by using goats' liver, sheep's brain and two human skeletons, brought from London through the Bathgate Company in these days[39]. After that event it was decided that in the first three years of their studies the students were required to attend anatomical lectures and demonstrations and perform dissection during the dissection season from November to March. The classes were used to take place on Tuesdays, Thursdays and Saturdays at 3 p. m during the season. The lectures covered general and descriptive anatomy of the human body and the physiology of its various parts and organs. The students of practical anatomy were divided into five classes, each under the guidance of monitor who used to be selected by the Professor of the Demonstrator from among the senior students. The number cases were allowed for the dissecting class was fixed in the ratio of one case for every two students. For the teachers also the department used to provide three cases, a second hand capital case for exhibiting all operations on the dead subject, a post mortem case and a number of spare saws, injecting syringes etc[40]. An administrative change occurred in 1857 that a non- clinical department would not be allowed to associate himself with a clinical department but one could became in charge of two non-clinical departments. So the Professors of Anatomy,

[39] *175 Years of Medical College of Bengal*, Commemorative Volume, Kolkata, 2009, p- 45

[40] Sen S. N: *Scientific and Technical Education in India, 1781-1900*, Indian National Science Academy, New Delhi, 1991, p- 289.

who were till then associated with other substantial posts, got separated. For example, Dr. Pearson continued to be the Professor of both Anatomy and Physiology.

Physiology:

In the initial stage Physiology was taught as a discipline only not as a separate department. Between the years 1835-1845 Prof. H.H Goodeve used to teach Physiology, in addition to his various other commitments. Prof. (Dr.) J.T Pearson took over charges from Goodeve in 1845 as "Prof. of Physiology, Comparative Anatomy and Zoology". In 1872the subject Physiology became an independent discipline. Prof. (Lt. Col.) J.E Ewart was the first whole time Professor of Physiology, though he had been serving the department since 1862. The last European Professor of the department was Prof. 9Lt Col.) Mac Gilchrist who served this department between 1925 -1928 (the rapid growing subject of female hormones was his special area of interest). He had a big hand of re-shaping the syllabus, modernizing it and rewriting practical notebooks for the students. After his retirement Rai Bahadur Dr. Satish Chandra Banerjee officiated as head of the Department for some time. Prof. (Dr.) Premkumar De was the first Indian to be appointed as Professor through the Public Service Commission. He served between 1932 and 1948.

Among the Indian teachers, who could not become Professor, but demand honorable mention was, Dr. Charubrata Raymahashsya, Dr. L.M Ghosal, and Dr.Chandi Charan Chatterjee. Dr. Chandi Charan Chatterjee, who never achieved a chair superior to that of a demonstrator, wrote a text book on Physiology which remained extremely popular for decade throughout India and abroad after his untimely death at the age of 42 years[41].

Medicine:

Dr. Henry Goodeve was appointed to the chair of Anatomy and Medicine in 1935 and he appeared to be the first Professor of Medicine, though there was no separate department of Medicine at that time. Medical College Hospital (MCH) was opened in the

[41] 175 Years of Calcutta University, p. 48

session 1852-53. Originally it was designed to accommodate 350 patients, 100 reserved for the Europeans and rest for the Indians. 116 beds were reserved for women and children. Out of the 234 male beds, 144 beds were reserved for medicine, 90 for surgery and 50 for midwifery[42]. This course was provided for the students of the third and fourth year. In the beginning of the summer session, the classes were taken twice in a week generally on Tuesdays and Thursdays between 2 to 3 p.m. The course covered the general history of each disease, its pathology and plan of treatment. Lectures were normally delivered on the cases occurred in the hospital[43].

In the time span of 1841 to 1933 there were 21 Professors of Medicine (Lt. Col. Bromford, Prof Lukis, Prof. Calvert et al). All of them were belonged to Indian Medical service and all were British. The last European Professor of Medicine was Lt .Col E.H Vere Hodge and Professor Surya Coomar Dooveve Chukerburty was the first Indian Professor of Medicine and Meteria Medica. He was in the department as a Professor from 1867 to 1874. Lt. Col J.C De was the first Professor of Clinical Medicine (1929). Professor M.N De later on became Professor of Medicine and he was belonged to Bengal Medical Service.

Chemistry:

The Chemistry course was formulated in its relation to medicine. This contained of simple elementary substances, the laws of chemical affinity, combining proportions, nomenclature, notation etc. The Chemistry Professor was provided with a chemical assistant for the practical class. The normal classes of Chemistry use to take place thrice in a week, on Mondays, Wednesdays and Fridays and one special class was taken by the chemical assistant on practical and experimental Chemistry twice in week. Indents for apparatus, preparations etc were generally drawn on the Company's Dispensary.

[42] 175 Years of Calcutta Medical College, p. 55-56.

[43] Sen S. N, *Scientific and Technical Education*, p- 250

Botany:

The Botanical course consisted of two parts, the structure, physiology and form of vegetables and artificial and natural system as represented by Indian plants. Each Indian natural family was reviewed with special reference to general and individual medical and economic properties. This course was laid down with the idea that the students could notice pointedly to those families in which vegetable remedies were to be looked for. Diagrams, drawings and living specimens were used for the lecture and for practical and firsthand knowledge the senior students required to visit Botanical Garden in Shibpur[44].

Surgery and Minor Surgery:

Surgical knowledge, due to ruling necessity, was as important as the basic information of Anatomy in medical education of that period. At the time of its establishment along with the other four subjects or Departments, Surgery was one of them. Principles and practice of surgery, including the disease of eye, formed the subject of lectures twice in a week, on Mondays and Wednesdays. Apart from the lectures one lecture on an important case which occurred in that week was provided on every Friday. In the winter season with the dissection performances the students were given a course on operative surgery. After having that class the students were to perform on dead subjects the several operations of surgery. A course of minor surgery was also given to the students. The courses the subjects as follows:

- Manipulations required in the dressing of wounds and ulcers, with special references to their treatment by bandage.
- Minor operations of surgery, i.e. bleeding, cupping etc.
- Adjusting of fractures, with various mechanical contrivances, including various forms of bandages.
- Reduction of dislocations by the pulleys and the suppression of haemorrhage by compression and ligature and

[44] Sen S. N,

- Mechanical treatment of poisons and the use of stomach pump with the means of restoring suspended animation from drowning etc[45].

Midwifery:

The Midwifery course included a description of the female organs of generation, with their physiology, the phenomena of labour natural and preternatural, with the operations of midwifery, diseases belonging to the pregnant state and to women after delivery, Diseases of infants and diseases belonging to the female system unconnected with pregnancy. The lectures of this course were delivered during the summer season between June to November thrice in a week on Tuesdays, Thursdays and Saturdays. The classes were illustrated from time to time by the cases of the hospital. The students received certificates taking charges of cases of labour in the female hospital and 1882 onwards of the Gynaecology Department[46].

Meteria Medica:

Meteria Medica and Therapeutics were the subjects with which the Medical College was started. This course include a detailed account of the history, natural history, nature properties, preparations, uses, does etc. of all the officinal articles used in medicine and derived from the mineral, vegetable and animal world. This course also included a few lectures on medical jurisprudences which were not covered by Meteria Medica. The lectures were delivered thrice in a week on Mondays, Wednesdays and Fridays at 3 p.m.

Forensic and State Medicine:

Medical Jurisprudence was not in the curriculum of study for the first few batches in Calcutta Medical College. In 1845, the system was re-modeled and Dr. F.J Mouat was entrusted to teach Medical Jurisprudence. In 1850, an independent chair was created and

[45] Sen S. N, p- 250-251

[46] Sen S. N, p- 250-251

Dr. C.T.O Woodford became the first Professor (1850-1860). During this period, Dr. Norman Chevers wrote a valuable treatise on the subject, which became the College textbook. After the affiliation of Calcutta University, Medical College started arranging 50 lectures of Medical Jurisprudence because then L.M.S Part II required student passing Part I to attend Jurisprudence courses. In 1868, this course was added to Native Vernacular classes. Dr. Mackenzie became Professor in 1879 and continued till 1894. He did the original work on changes in dead bodies in and around Calcutta, which is accepted as the guideline in establishing time since death in Courts of Law. The Science of Dactylography was started in Bengal and the first Finger Print Bureau was started in Calcutta in 1897, with active help of the Professors of Medical Jurisprudence. The medical degrees of Calcutta University were recognized by the Central Medical Council of Great Britain in 1892. In 1906 L.M.S Course was abolished and M.B degree was introduced from 1906. Henceforth, Medical Jurisprudence was included in Part II of the course. Though the Professor of Medical Jurisprudence was also the Police Surgeon of Calcutta, the medical students got an opportunity to attain post-mortem classes at Calcutta Morgue (1920, Carmichael Medical College). in 1939 separate Police Surgeon Post was created but the Professor of Medical Jurisprudence was ordered to continue as Officer-in –charge of Calcutta Police Morgue and Bhawanipur Mental Observation Ward[47].

Anaesthesiology:

Bengal Presidency holds the proud privilege of being the first in India where for the first time a surgical operation was performed under ether anaesthesia. Dr. R O'Shaughnessy was the operating surgeon, who was the then Professor of Surgery. The operation took place on Monday, March 22, 1847. In the earlier days, teaching of anaesthesia and duties of anaesthetists were under the control of the department of Surgery. A full-fledged department was created in September, 1960. The earliest document showing the inclusion of lectures in anaesthesia for the undergraduate students could be traced in the "Rules of Medical Faculty of the Calcutta University, 1906". In the syllabus of

[47] 175 Years of Calcutta Medical College, ibid, p. 53

Surgery, mention has been made that there will be instructions on the administration of anaesthetics and also the students were expected to administer 10 anaesthetics during their course of 4th classes. It is interesting to mention here that in Gear Britain teaching of anaesthesia for undergraduates started much later than India, only in 1918.

First chloroform anaesthesia was successfully administered by Simpson in Edinburgh on 15th November, 1847 and in India 12th January, 1848. From that time onwards and for the next 80 years, chloroform became the sole anaesthetic displacing ether completely. In 1880 there was a first instance of pre anaesthetic medication in India. Dr. Alexander Crombie of Medical College Hospitals, Calcutta, used hypodermic injection of Morphine before chloroform to make the subsequent anesthesia smoother and which can be reduced the dose of chloroform needed for a particular operation. In 1920 a post of anesthetist was created in this College and Dr. Nihar Nag was appointed to the post[48].

Dentistry:

In May 1861 Dentistry as a special subject was introduced in Medial College and a separate department was set up. Dr. J.P Smith was appointed to the post of Lecturer. The Professorship was in Dental Surgery was established in 1864. Dental classes were made compulsory for the military students in 1893. Initially the department was six-chair clinic with a Professor at the top and three Honorary Visits and two Honorary Clinical Tutors and an Anesthetist to administer short gas anesthesia for extraction[49].

Pathology:

The General Order (No. 370) published on 1867, ordered for a Department of Pathology, which came into existence in the year 1871 on 4th April along with the Department of Physiology. For special teaching in Pathology, the post of Resident Physician and Prof. of Pathology was sanctioned. Assistant Surgeon J.F.P. Mac Connell

[48] 175 Years of Calcutta Medical College, ibid, p. 76

[49] Ibid, p- 63

joined in this post. It should be mentioned here that the Pathology Museum, set up afterwards and it grew into one of the finest Pathology Museum in the world in the early part of the Twentieth Century[50].

Eye:

The Department of Ophthalmology of Medical College was better known as the Eye Infirmary in the pre-independence period. Long before the establishment of the college there existed a small Eye Infirmary in Calcutta which was shifted to Calcutta Medical College in 1880, with twenty patients. Before independence the post of Professor of Ophthalmology Department was reserved for IMS. Names of some of the early Professors are given bellow; Sir James Ranald Martin, FRS, FRCS, 1817-1839, Dr John Jackson, FRCS, FRCP, 1845-1855, Dr. N.C Macnamara, FRCS (IMS), 1870-1874, Dr. H. Cayler, FRCS (IMS), 1874-1886, Dr. R.G Sanders, FRCS (IMS), 1886-1901[51]

Obstetrics and Gynaecology:

Midwifery was a course in Calcutta Medical College from the very initial days of its Existence. But Obstetrics and Gynaecology as a Department took place on 19th April, 1882 only by the initiation of Sir Ashley Eden, Lt. Governor General of Bengal. The need for a maternity hospital stressed the fact that there was no such department for treatment as well as option for practical experience to the students. Eden realized it very soon and inaugurated the Department before he left India[52].

Department of Surgery:

Up to the 1860, very little could be ascertained about Surgery (as a department) in the college. From the records available it appears that there were only two surgeons in the

[50] 175 Years of Calcutta Medical College, ibid, p- 50

[51] Ibid, p- 81.

[52] 175 Years of Calcutta Medical College, ibid, p. 78.

Medical College for classes and in the Hospital too between the years 1860 to 1894. One of these occupied the Chair of Surgery and was designated the First Surgeon and the other occupied the Chair of Anatomy and was designated the Second Surgeon. During this period the two Surgeons had separate Surgical Wards each having sixty beds under its charge. I the year 1900 the Department of Surgery was established in Medical College. But till the end of Nineteenth Century there was only one Operation Theatre which accommodated both the First and Second Surgeon. Later on, as time passed, the Department increased with more Operation Theatres, Surgical Wards and large numbers of qualified Surgeons.[53]

Surgical Diseases and Operations:

Surgery received greater importance in India mainly for two reasons; from initial days military need (from colonizer's side) and later on indigenous society's need, which was felt and included by the British. It is very interesting to note here that despite interacting with a new form of medical science i.e. surgery (in western fashion was totally unknown to the colonized society), within a very short time the indigenous society not only accepted it, but started producing sophisticated doctors and surgeons also. These Bengali doctors, who passed out mostly from CMC, started scattering throughout the country and performed very well in all kinds of common and rare surgical cases. With the establishment CMC, in 1835, almost all the branches of medical science had flourished in Bengal and Bengali students proved as good and responsible practitioners as the British medical personnel. Among all the branches of medicine, Anatomy, Surgery and Surgical Pathology became more prominent as operative diseases were palpable in the society. Therefore the journey of surgeries, which started in the battle fields in India, now took a different dimension, where the society got involved into it. As the Bengal Presidency was huge in its territorial expansion and it is not possible to cover all the hospitals of each place, I have taken Calcutta as the sample area to explain the surgical cases.

[53] 175 Years of Calcutta Medical College, p- 65.

With the passage of time as the surgical operations had shifted from military nature to civil nature, similarly it adopted the technological advancement and fineness also. Numbers of operations thus increased rapidly. While discussing surgical operations two vital issues come up i.e. the statistics of operations and elucidation of these by means of brief abstracts of cases. Here we will take up the former one to show the contemporary condition in Bengal. The later one demands medical expertise indeed. Few publications, made by British doctors and surgeons, had recorded the growth of operative surgeries in Bengal Presidency. They followed some particular method to explain this important issue and if needed had criticized those methods also with reason. The surgical operations were named and classified on a pathological, therapeutical, or anatomical basis. "In other words according to the disease or diseased condition for which the operation is performed; according to the nature of the operative procedure adopted for the relief or cure of the injury, disease or deformity which it is employed to remedy; or according to the part of the body which is the subject of the disease or the seat of operation"[54]. This classification was laid down in the Appendix to the *Nomenclature of Diseases*, drawn up by a committee appointed by the Royal College of Physicians of London, which was published in 1869. But later on this method of classification was criticized by K. McLeod (Professor of Surgery in CMC) also in saying that this method was neither comprehensive nor perfect[55]. A statistics of operations performed in Calcutta Medical College Hospital of the first three months of the year 1879 has been given to show the variety of diseases and its treatment through surgeries and death rate.

Description of Operations	Number of Operations	Died
I.---Operations of the eye and its appendages		
1. Excision of upper eyelid for malignant tumour,	1	0
2. For fistula lachrymalis and lachrymal obstruction,	1	0
3. Excision of the eyeball with the rest of the contents of the orbit,	1	0
	3	**0**

[54] Mcleod. Kenneth, *Operative Surgery in Calcutta Medical College Hospital*, J & A Churchill, London, 1885, p. 1, (Wellcome Library)

[55] Mcleod. Kenneth, *The Principles of Rational Medicine*, Thacker, Spink &Co. Calcutta, 1892, p.2

Total		
II.----Operations and arteries.		
1. Ligature of temporal artery,	1	0
III.----Operations on joints.		
1. Dislocation of high-joint reduced,	2	0
2. Compound dislocation of knee-joint reduced,	1	1
3.Extention of stiff joints shoulder:		
Shoulder,	1	0
Elbow,	2	0
Knee	3	0
	1	0
4. Incision of knee-joint,		
Total	**10**	**1**
IV.--- Operations on bone.		
1. Partial excision for necrosis,	**3**	**0**
V. ---Amputations:--- A. For injury		
1.Primary of the shoulder joint,	1	1
2. ” of the forearm,	2	0
3. ” of part of the hand	5	0
4. ” of the thigh,	1	1
5. Secondary, of the arm,	1	0
6. For spreading traumatic gangrene, of the thigh,	1	1
B. For disease.		
7. For malignant disease, of the arm,	1	0
8. ” ” ” of the forearm,	1	0
9. For caries of tarsus, of the ankle (Syme’s operation),	1	1

Total	**17**	**4**
VI.---Removal of tumours:-- A. Malignant.		
1. Scirrhus of Mamma and axillary glands,	1	1
2. Epithelioma of penis,	3	0
3. Sarcoma of neck	2	1
4. ” ” ” lower jaw,	1	1
B. Non-malignant.		
6. Fibro-cartilaginous of cheek,	1	0
Carried over	**9**	**3**
Brought forward	9	3
7. Fibroma of lower jaw,	1	0
8. Lipoma of cheek,	1	0
9.” ” ” thigh,	1	1
10. Enlarge axillary glands,	1	0
11. Vascular tumour of right eye-row,	1	0
12.” ” ” thigh,	1	0
13. Elephantiasis of scrotum,	28	5
14. ” ” ” labia,	2	2
15.Cystic tumour of neck,	1	0
16. Condyloma of anus,	1	0
17. External and internal piles,	2	0
18. Polypus of rectum,	1	0
Total	**50**	**11**
VII.----Removal of foreign bodies.		
1. From nose	2	0
2. From pharynx,	2	0
Total	**4**	**0**

VIII.--- Removal of calculi.		
1. Vesical, by lateral lithotomy,	2	0
2. Do., by lithotrity,	3	0
3. Urethal, by urethrotomy,	1	0
Total	**6**	**0**
IX.---Incisions.		
1.Tracheotomy	7	4
2. For strangulated hernia----		
(a.) with opening sac,	1	1
(b.) without opening sac,	1	0
3. For radical cure of hernia (Wood's opration,)	3	0
4.For atresia oris,	2	0
5. For stricture of rectum,	1	0
6. For fistula in ano,	1	1
Carried over	**16**	**6**
Brought forward	16	6
7. For anal fissure	1	0
8. Perinaeal section,	3	2
9. For large abscesses,	19	3
10. For haematocele,	5	0
11. For carbuncal,	2	0
Total	**46**	**11**
X.--- Reparative oprations.		
1. For cicatrix after burn of forearm and hand,	1	0
2. For cicatrix after operation for scrotal elephantiasis	1	
3. For hare-lip,	1	0
4.For phimosis----circumcision,	2	
5. For hypospadias,	1	0
		1

Total		0
	6	**0**
XI.--- Operation not classed.		
1. Hydrocele tapped and injected,	2	0
2. Nerve- stretching,	3	1
Total	**5**	**1**
Grand total	**151**	**28**

[56]

The Calcutta Medical College Hospital was the biggest hospital in Calcutta where the majority of operations were performed and recorded systematically. Most of the patients of this hospital were the resident of Calcutta or surrounding districts. According to the British medical officers and surgeons of the hospital there were certain reasons behind the diseases occurred mostly in Calcutta and its suburbs. The most important and visible of them was the geographical location of the city. Calcutta was situated near the base of Gangetic delta. The climate was hot, moist and eminently favourable to the growth of different diseases[57]. Unfortunately more dangerous was the over-crowdedness of the city and its surroundings (worst), unhealthy areas of habitation, massive sanitary defects and ill-habits of the people[58]. The city was divided into two major parts i.e. the southern part of Europeans and the northern part of the indigenous people, which was more extensive and

[56] Mcleod. Kenneth, *Rational Medicine*, p. 2 – 5.

[57] Martin. James Ranald, *Notes on the medical Topography of Calcutta*, Military Orphan Press, Calcutta, 1837. P. 73 – 105. (Wellcome Library)

[58] Simpson. W. J, A *Note on the Sanitation of Calcutta*, publisher and date are not found. (Wellcome Library)

most populous. There two sections of the town were separated by an intermediate zone inhabited by 'poor Europeans', Anglo-Indians, Jews and Armenians. The death rates of ten years (1871 – 1882) were 29.3 % per 1000 among the population, 14% for the Europeans and 35-40% among the Indigenous people[59]. The principal causes of mortality in Calcutta were fevers, bowel complaints, cholera, chest diseases, phthisis, tetanus and trismus. Infant mortality was excessive. Children under one year were dying at the rate of 427 per 1000[60]. From the above data it is abundantly clear that the condition under which the inhabitants of Calcutta, especially the indigenous people, habitually lived, were no means favourable to health and life and this fact must be taken into account in considering the results of the surgical treatments. The condition of the hospitals was also not up to the mark. The surroundings of the hospitals were very unhealthy due to the existence of crowded and filthy bazaars, slums, arrangements for the conservancy and drainage of the building its neighbourhood was imperfect, which was not health and one, rather harmful for serious operations[61].

The food habit of the indigenous people was also responsible for more sleekness and critical health situations. Foul water, use of oil and spice in food etc. were not encouraging for a vigorous physique, good health, longevity and strong vital resistance. Thus the author stated that "The native of lower Bengal is physically of feeble type. His temperament is of the fibrous or bilious type with a strong nervous element in the higher classes and a lymphatic tendency in the lower. The races of Upper India exhibit arthritic feathers, but these are entirely absent in the organization of the Bengalis"[62].

However, before these criticisms would influence the indigenous people, they became more habituated with the comfort and satisfaction of western medical treatment and needed surgeries. "The confidence of the natives of India, who resort to European hospitals being greatly increased by successful surgical operations…[63]". The contemporary condition of the indigenous people was that, they neither totally accepted nor fully rejected

[59] Mcleod. Kenneth, *Operative Surgery*, p. 7, 8
[60] Ibid
[61] Mcleod. Kenneth, *Operative Surgery*. P. 10 – 12.
[62] Ibid P. 13.
[63] Brett. F.H, *A Practical Essay on some of the Principal Surgical Diseases of India*, S.L. Hyder Medical Journal Press, Fort William, 1840, p. iii.

the western medicine. Out of many reasons one strong factor, which generated interest and magnetism towards the new medicine, was the growth of successful surgeries of rare diseases. A growing confidence on western medicine was thus seen among the common people. There was initially no coercion from the colonizers' side to treat under their medical science, but partial compulsion was brought in by the incompetent and to some extent incomplete treatment of the indigenous medical systems. The British was able to give assurance and gained confidence of the indigenous people, not by fighting or forcing, but by providing them more opportunities in medical education, treatment, professional success and social status.

Conclusion:

As we know the classrooms consisted of students of different groups, (Europeans, Eurasians, Anglo-Indians and Indians and later even number of Ceylonese and Burmese), they might have experienced the new courses in different ways. If we focus on the contemporary politico-social condition of Bengal, we can notice that there was a trend which made the Bengalis to acquire a new character which would re-define their political identity. Once the indigenous people received the better treatment from the western medical practitioners, they started believing strongly about taking western medicine as profession. Institutionalized medical education gave opportunity to do so. The new courses and curriculum ultimately gave the new medical students confidence and feeling of superiority and enhanced social status. Despite the presence of the indigenous medical systems a considerable part of the society had accepted the new one. Initially it was limited into the urban areas and the western educated class only, but slowly and steadily it was able to capture the confidence of the other sections also. Touching body, especially for the women, leaving the concept of traditional midwives and usage of new medical technology definitely demanded different attention. We can ask that did this mental change take place because the new and advanced technologies promised some satisfaction of empowerment. Probably yes. Successful operations and use of new technology paved the way to win more popularity among the indigenous people.

While discussing the newness of operative surgery in Bengal (to the indigenous people) along with the growth in medical science and technology, it is necessary to state the condition of the British medical practitioners, who engaged themselves not only to serve the colonial authority but to serve the local people too. It is very unfortunate to know that the contemporary British medical-men were not always happy and pleased with the paid attention by the authority as well as the medical board in England. With a sorrowful tone it was stated by J Fayrer in the annual meeting of The Bengal Branch of The British Medical Association (Calcutta, 18865) that it was only those, who had reaped the benefits of the labours given by the British surgeons for the betterment of health, had appreciated their work.

> "It appears to me remarkable how little the subject of surgery in India has attracted attention in the west, how little seems to have been drawn from a mine so rich in produce. This may be, no doubt, attributed, to a great extent, to the isolated and scattered position of the medical men in this great country and to the paucity of Indian journals on medical science in which they might make their labours known. But yet no one can turn to the pages of the Journal of the late Medical and Physical Society of Bengal, the 'Pathologia Indica' of the late lamented Allan Webb, the works of Brett, Martin, Twining, Chevers, Morhead, Carter, and others, the 'Indian Annals of Medical Science', or the journals of Madras or Bombay, without being convinced that Indian has fairly contributed its share to the annals of surgery and pathology"[64].

This condition of the British medical professional was not expected, who had spent the best years of their life in India and served people without hesitation. The indigenous practitioners, who thoroughly grasped medical science and performed well, were also in the same way deprived of receiving proper respect. This professional miss-communication and isolation, in the words of Fayrer, were harmful for growth of scientific knowledge[65].

[64] Fayrer. J, Clinical Surgery in India, John Churchill & Sons, London, MDCCCLXVI, p. 3.
[65] Ibid, p. 4

Chapter IV

Alternative Medical Systems in Bengal Presidency

This chapter examines the condition of alternative medical systems in Bengal Presidency during the time period of this study. Alternative medicines i.e. ayurveda, unani and homeopathy, never received the status of main stream medical systems by the British and gradually faded out from the indigenous society also. Prior to the British rule the entire country was depending on the indigenous mode of treatment (ayurveda, unani, tibb, different tribal medicine etc., except homeopathy), but with the passage of time all these medical systems lost their importance among a large section of the society and became alternative. Here I will shortly discuss the degraded condition of these alternative medicines and will also try to explore the reasons behind this sudden fall.

Alternative medicine can be divided into two broad types of medical system i.e. indigenous or traditional medicines and homeopathy. The traditional medicine of India did not mean any single system of cure. It consisted of different therapeutic system of cure, namely ayurveda, unani, siddha, tantric and folk or tribal medicine etc[1]. These treatments of healing were deeply related with the culture and climate of this country. Whereas homeopathy came from outside, but didn't receive similar response, popularity and governmental support as like as the other one i.e. allopathy. Unani was also not originated in this country but was practiced and evolved over a long period of time and became the mode of treatment for a large section of the society (mainly of the Muslim population). This chapter proposes to look into the changing condition of alternative medical systems in Bengal after the advent of western medical knowledge in Bengal. Mention may be made of in this connection that all these traditional medical systems were nurtured in different cultural milieu, linked with separate religion and practiced within different caste, class and particular sections of the society. Thus each of them demands separate and comprehensive study to concentrate on the diversified mode of effects and counter response from the

[1] Pahari. Subrata, *Travails of Traditional Medicine*, Palit. Chittabrata, and Dutta Achintya, (Ed) *History of Medicine in India: The Medical Encounter*, Kalpaz Publication, Delhi, 2011, p. 219.

indigenous society. Nevertheless, this attempt has been made to discuss about the alternative medicines in one space to show the broad and deep effects of western medicine in the society and to make a synthesis between British superiority and indigenous response towards protecting tradition, without which the medical history of colonial Bengal is incomplete.

Except few minor conflicts and contradictions between ayurveda and unani, there was a peaceful coexistence between the diverse systems traditional of medicine in India for a long time. But they never witnessed as big defy as it appeared after the coming of the British with new a medical system. British came with the strength of 'capitalist enterprise and economy', which was fully backed by power of the 'modern institutions of governance'[2]. The prime symbol of modern European society was science. Medical science, which could very easily entered into the society, was enabled to transform many traditional thoughts and habits of the people. Sixteenth to eighteenth century medical practice in Britain was quite similar to that of the traditional medical practices in India. In earlier days, western medical knowledge was based on body humours. Therefore initially British found the indigenous medal systems similar to them[3]. In Bengal the British took non-intervention policy, which restricted them to involve into cultural sphere of the indigenous society and impose official rules on them. They used to suggest their officials to consult with the local medical men, if needed[4]. Not only that there was an early attempt to 'bring India and its newly discovered arts, science and history into a closer and more intelligible relationship with western knowledge'[5]. But the earlier attempts were replaced by the emerging awareness of science, medicine and their practical advantages[6]. Political

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[2] Banerjee. Madhulika, *Ayurvedic Pharmaceuticals: Contesting Economic Hegemony*, Bala. Poonam (Ed), *Contesting Colonial Authority: Medicine and Indigenous Responses in Nineteenth- and Twentieth-Century India*, Primus Books, Delhi, 2016, p. 31.

[3] Pearson. M.N, *The Thin Edge of the Wedge: Medical Relativities as a Paradigm of Early Modern Indian-European Relations*, Modern Asian Studies, Vol. 29, no.1, 1995, p. 141 - 70, cited in Bannered. Madhulika, *Ayurvedic Pharmaceuticals: Contesting Economic Hegemony*, p. 31 – 32.

[4] Jaggi. O.P, Public Health and its Administration, Vol. 4, Delhi, p 71.

[5] Arnold. David, Science, Technology and Medicine in Colonial India, Cambridge University Press, Cambridge, 2000, p. 35.

[6] Baba. Poonam, *'Nationalizing' Medicine' The Changing Paradigm of Ayurveda in British India*, Bala. Poonam (Ed), *Contesting Colonial Authority: Medicine and Indigenous Responses in Nineteenth- and Twentieth-Century India*, Primus Books, Delhi, 2016, p. 1 – 2.

changes in Bengal also played a vital role in introducing English language and education and abolishing the vernacular one.

Translations and compilation of indigenous medical texts were done by the British in the initial days. Benjamin Heyne attempted a literal translation of a medical compendium known as *Kalpastanum*, and later tried to make an extract from it, but after many trials he gave up[7]. One of the main causes was the poetical style of writing. While writing on traditional medicine of India, the British often took help from the indigenous medical men. Wise asked Abhaycharan Trakapanchanan and Madhusudan Gupta for helping him in writing one of his books on Hindu medicine[8]. But this task was not easy for the British, even after having the necessary knowledge of language. Arnold stated that "Frustration with the nature and content of ayurvedic and unani texts and inability to render them into a form suitable for use by western medicine was one reason for turning away from literary sources to living information"[9]. It shows that the earlier attempts to acquire knowledge from traditional medicine and transform it into use to western medicine, gradually faded away. As the British lost their interest, they, later on, never tried to interfere deeply into it and also there was no initiation from the colonial authority to retrieve these systems from their ancient state (as the British considered indigenous systems as unscientific, which never came out from its ancient past).

The Native Medical Institution was established for supplying 'native doctors' taught through the vernaculars and through translations of English textbooks. There was a parallel instruction of indigenous medical systems. This nature of giving medical instruction to the Indian students through both the systems gave us a concept of peaceful co-existence of the western and indigenous medicine in Bengal. David Arnold argued that this apparent support for the indigenous medical systems was a misrepresentation of the fact that with the establishment of Calcutta Medical College in 1835 the Orientalist policy of patronizing and learning from indigenous medicine was replaced by the intolerant

[7] Arnold David, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-century India*, University of California Press, London, 1993, p. 50 – 51.
[8] Ibid
[9] Ibid

Anglicist policy[10]. But he says that "The function of Calcutta Native Medical Institution was never to promote indigenous medicine (which anyway formed a secondary part of the curriculum) as an equal or alternative to the western system, but to 'train up a class of native practitioners who would employ suitable native medicines with skill'. Offering instruction in Ayurveda and Unani medicine was also a ploy to attract recruits from Vaidyas and other with a tradition of medical practice. Once recruited, it was assumed that they would come to recognize the superiority of western medicine, even if they use cheap 'native remedies' instead of costly imported drugs in their professional work"[11].

Establishing superiority, managing finance and 'civilizing' indigenous people were a simultaneous process. Western medicine did perform well and provided many newness and sophistication in medical science, but that didn't signify the other's absolute unscientific nature and un-usefulness. The mixed attitude of the Bengali people towards the traditional medicine sometimes brought hindrance in the way of improvement too. There was very less patronization from the indigenous society for 'their' medicine, rather they adopted the new one to improve health condition, which was much easy.

Ayurveda:

Having an impression of the reciprocal attitude of both British and Indians towards western medical system, one section of the Hindu society felt disturbed and annoyed, not only on the alien rulers but also on the liberal Hindus. They were conscious and confident about the richness of the indigenous medical systems and to make people more aware about it, the students of Vaidya caste of Sanskrit College appealed to the Secretary of Public Instruction to arrange a separate ayurvedic class for them. They submitted the demand in the form like this;

> "The students belonging to the medical caste of the Hindus have the choice, instead of entering the classes of Logic (Nyaya), to attend the medical lectures of Sanskrit as well as of the English lecture on medicine, and they do not study the law (Smriti). As their object was to follow the profession of their fathers, they cannot be wished to acquaint themselves with the Hindu practices of physic and with sort of medicines

[10] Arnold. David, Science, Technology and Medicine in Colonial India, p. 61 – 65.
[11] Ibid

> most easily obtainable and most generally used in this country, on which account the study of Sanskrit books becomes indispensable to this class."[12]

They had an apparent notion that the Hindus were having a medical system, which was rich and ancient. So the alien system of medicine was useless to them. Better to explore the existing one in spite of culturing the other. India would be blessed in doing so and on the other it certainly would made Hindus proud. They demanded a separate course of ayurveda in Sanskrit College for the Hindus specially. The application was submitted in June1826. Dr. Wilson and Tytler both granted the request of the students and made a report on the importance and need of ayurvedic education India and presented it to the Government. The General Committee agreed with the proposal and the classes were subsequently formed under the charge of Dr. Tytler. Class was started from 1827 onwards. Kaviraj Kshudiram Bisharad became the ayurvedic teacher with a salary of Rs. 60. The new course started with 7 students only. The mentionable names of the initial students were Nabakrishna Gupta and Madhusudan Gupta.

Though it started as an ayurvedic course but the European system was not completely excluded from it. 'Susruta' and 'Charak Samhita' were used as the basic textbooks. For the English classes the some of the text books used included Hooper's 'Anatomist's Vade-mecum,' 'Physician's Vade-mecum and Surgeons' Vade-mecum', 'Thompsons's Conspectus of the Pharmacopea', Fyfe's 'Manual of Chemistry' and Conquest's 'Outline of Midwifery'. Apart from these text books, the tracts prepared for the students of the Sanskrit College were also used. Furthermore, these tracts were also translated into Sanskrit and Bengali and Pundit Madhusudan Gupta was granted a sum of Rs. 1000 as honorarium for translating Hooper's 'Anatomists' Vade-mecum'. Gradually, the Secretary of the College, W. Price himself delivered lectures on anatomy with the help of the 'Bengali translation of an English Treatis on Anatomy'. Tytler also demonstrated the students the bones of human skeleton and some soft parts of animals. From a memorandum dated December 10, 1828, it can be noticed that the anatomical lecture room of the College was designed and fitted up in accordance with the advice of Tytler. The furniture was purchased as he suggested. For example

[12] Brajendranath Bandopadhyay: *Kolikata Sanskrita Collejer Itihas*, Vol. 1 (1828-1858), 1948, Kolkata

A Text Book Almira 8/4 ft. with lock and key complete	70-
A Bookcase 9/4 ft. with lock and key complete	30-
4 Square Teapoys @ Rs. 5	20
6 Toon wood arm chairs @ Rs. 5	30
4 Teakwood School Benches 8/13 ft. @ Rs 10	40
A Punka 12 ft.	15
A Cast iron Furnac and Boilers, Ladls, Tongs and Hammer	16
The total was	Rs. 221

After three years of hard and fruitful work in Sanskrit College, Khudiram Bisharad compelled to leave his position as well as the institution due to ill-health. On 24th April, 1830, a report was published in the Secretary paper of Sanskrit College that;

> "The Secretary to the Government Sanskrit College begs leave to suggest to the Committee the propriety of making some definitive arrangement with regard to the situation of Pundit of the Medical Class. Khooderam, the present incumbent, was unable to attend the College during the greater part of last year in consequence of severe illness. He has again been absent for some time past from the same cause, and the nature of his disease does not want the expectation that his health will ever b so far re-established as to enable him t discharge effectively the duties of his office. It may also be remarked that the medical pupils are now far advanced beyond what their present Pundit can teach them which renders it the more imperative that a successor be permanently appointed. Under these circumstances, the Secretary would recommend that Madhusudan Gupta, the head student of the class, a zealous and intelligent young man who has always had charge of the class in the absence of his principal, and who is in every respect highly qualified for the situation, be nominated Medical Pundit in the room of Khoodeeram... This arrangement to take effect from the last proximo."[13]

[13] Khudiram Bisharad established "Vaidyak Samaj" in Kolkata.in 1831. Initially, Babu Bhairabchandra Basu provided his house for regular meeting and member's gathering of the establishment in Jorasanko. General degradation of ayurvedic system due to lack of knowledge and other factors relating to its growing unpopularity among the Indian youths played the vital role behind his plan to establish such a foundation exclusively for ayurved shastra. Khudiram Bihsarad started this institution with a desire that vaidyas from different places with different knowledge background would gather at one place, which might help the old system to become more effective to the society by discussing complex theoretical matter and also by exchanging one's knowledge to another. Gradually they started discussing the new type of diseases and its

As a result of this Madhusudan Gupta was selected to take the charge of Vaidya classes in Sanskrit College. Though this change was slightly unsatisfactory to the other pupils of that class but Madhusudan Gupta continued with his new kind of teaching. He started training the pupil through Western method. Gradually the students of medicine started learning anatomical knowledge using dead bodies which made a great impact on the Hindu society[14].This was surely a development towards a matured society, but the religious prejudices had not yet completely abolished from the society as they continued interrupting the full fledged learning process of the medical students.

David Arnold criticism on superiority from Science, technology and medicine page 35. ….That British took care of traditional medicines but it was a comparison between superior and inferior……..

Under the supervision of Dr. J. Grant and Nabakrishna Gupta, a small hospital was established towards the end of 1831. It was planned for treatment of patients and also for clinical instruction of the students. The moving sprit behind the establishment of the hospital was Ramcamal Sen. It was planned on the cheapest possible scale accommodating thirty patients. Grant wrote about the hospital and its opportunities that "There have occurred also good opportunities of inculcating of lessons of practice of physic and showing the effects of European remedies coming under the various heads of Laxatives, purgatives, Emetis, Tonics, Astringents, Resolvents, Anodyne etc. which have had beneficial result of inspiring the minds of the alumni with the greater confidence in European remedies the more they came to (think) about them; so that they often prefer these for themselves or friends for whom I am frequently consulted... By means of a little Hospital the lessons acquired in the lecture room and in the book are better understood and remembered and the students acquired at the bed side of the sick (in the immediate vicinity of the lecture room) habits of observation, of the studying symptoms, of forming

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remedial process and also the new invention of important medicine (*Kolikata Sanskrita Colleger Itihas,* First volume, 1824-1858, Calcutta, 1948)

[14] Long J.: *Vernacular Education in Bengal*, Calcutta Review, 1854, Vol. 22, p.329.

conclusions and of presenting readily. It is in fact that indispensable part of their systems of education."[15]

It is evident from the above discussion that though spread of ayurvedic system, keeping it alive and an inner protest towards the western medicine were the initial purpose of the Vaidya classes in Sanskrit College, but somehow the European system became prominent with its practical implementation under the European superintendence. Here comes the question that everything was guiding and controlled by the Europeans and there was no strong response or firm objection from within the society. Actually the matter originates with the question that whether the Indians themselves were at all interested in learning the ayurvedic system or only to assert themselves in front of the British they asked for it. Secondly, the persons who could patronage the indigenous system were also confused with the two sided systems of medicine and sometimes they desired to be with the European one.

Unani:

Apart from the, Western medicine and ayurvedic system, one distinct medical system was in practice in India from long ago. That was unani system of medicine, specially practiced among the Muslims. The development of unani system was different in nature in comparison with the former one. This system, as an official subject, had first started in Calcutta Madrassa. Exact date of the foundation of unani class in the Madrassa is a debatable issue, but probably appeared earlier than Sanskrit College. We can assume from the letter of the Secretary of the Calcutta Madrassa, M. Lamsden, that it was started towards the end of 1823. Lamsden was the moving force behind the whole process. He appointed Hakim Abdul Majid as the instructor of the medical class. Formerly, there were two posts, one for teaching medicine and the other for looking after the health of the students, and both the posts were held by Abdul Majid. After his discharge from Madrassa due to his joining in the anti Government Party, the medical class was temporarily

[15] Sen, S. N, *Scientific and Technical Education in India*, 1781-1900, Indian National Science Academy, New Delhi, 1991.

suspended. By the request of D. Ruddell, the Secretary of Madrassa Committee, on June 30th, 1826, Maulavi Zoolfukhur Ali was recommended by the Medical Board for appointment to these posts of Hakim and Lecturer of unani Medicine on a salary of one Hundred Rupees. Being the assistant of Breton he more or less followed Breton's method at the Madrassa.

Calcutta Madrassa started providing regular medical training from July 1826 onwards under the lectureship of Zoolfukhur Ali[16]. Mainly he gave emphasis on the syllabus and text books of Native Medical Education and on the basis of that he arranged first examination on 24th January which was taken by Dr. Breton, Superintendent of Native Medical Institution. But medical education was not compulsory there. Only interested students used to come forward for the course. Breton requested the Government to provide all the text books of Native Medical Institution to the Madrassa, so that the student could coup with the new medical knowledge as well as their own medical system and it would ease the teaching process[17].

He even arranged a student from Native Medical Institution to help Zulfukhur in teaching Anatomy in European system. In 1828 he took the second examination for the second batch. And on 20th January, 1830 with the help of Tadd, Breton started annual examination for the first time in Madrassa. According to Breton, the progress and the way the students had achieved medical education both European and Islamic was very satisfactory. He urged the Government to encourage pupils by giving those better teaching materials and other opportunities. Mean while after the death of Dr. Breton, Tytler was appointed the Superintendent of Native Medical Institution and in response to the request of the Madrassa Board, he prepared a report and submitted it to the President of Madrassa

[16] Zoolfukhur Ali worked for sometime under Breton to assist him in preparing translations of medical works into the native languages for the Native Medical Institution. In recommending him to Ruddell, Breton stated that, " But Zoolfukkhur Ali has one advantage over his professional Brethren, in having witnessed the system and plan of teaching adopted in the Native Medical Institution from having assisted me several months in drawing up in Hindoostanee Medical Tracts for the use of the natives. Understanding the system, I pursue, he can whenever he pleases, make use of any of my works (for they shall always be accessible to him) for the tuition of his Medical Class..." as cited in S,N Sen, *Scientific and Technical Education in India* by, Indian National Science Academy, New Delhi, 1991.

[17] General Committee of Public Instruction, July, 1823 to 3rd December, p-568-573

Board, Ruddle, on 1st February 1831, which was very relevant regarding the development of medical education in that institution. In that report he initially praised the medical skill of the students, which according to him, was unexpected from them as they were not sufficiently equipped with standard books, proper training in each division of medicine and well evaluation process. He mentioned that the students were well acquainted with the knowledge of Pharmacognosy through the books written on Arabic language but having lack of knowledge in Anatomy and Physiology. The main reason of this was some error in the Arabic books readily available to them.

Tytler mentioned some shortcomings of Islamic as well as indigenous mode of medical knowledge. First, according to him, the major portions of Indian books on medicine were the facsimile of Galan's views. They had only translated it into vernacular languages. And even the whole views of Galan were not translated. It consisted of two parts i.e. Anatomy and Physiology. Because of apathy in Anatomical knowledge, they deliberately omitted the first part. Thus only the Physiological portion could not give a complete description. He further stated that, maximum views of Galan had in these days forsaken from the rational medical science. Secondly Galan's book did not have the most important parts of medical science like Surgery, Midwifery and child treatment after birth. In the translation they tried to take the portion which they understood necessary for them. As a result the information about medicine preservation and its practical implementation had disowned from their translated version. In the same way ignorance about Pharmacognosy almost brought a disaster to that rich system. At the end he suggest the Translated (in Arabic) version of Anatomists Vademecum, Anus-ul-Mosharraheen, for the students to manage the situation.

From the result of the examination of December 1831, it was evident that till that year the number of medical students in the Calcutta Madrassa was 16. The report of Tytler of 1833 told that the number increased 20 that year. But Tytler complained that the students were often memorizing the matter without understanding the logic. He understood that the existing system in Madrassa was neither able to give a proper understanding of European Medical system not it could provide their indigenous system. It would be better to give the pupil the opportunity to learn first their own system and then gradually they

might became aware about the limitations of it and that would generate interest about the European system. In response of Tytler's suggestion the Secretary of Madrassa Board, I. H. J. Ousley replied that the former Committee was not properly interested in giving medical education in Madrassa. Now they would be more conscious about the course and teaching and would concentrate on systematic medical education. But unfortunately like the other medical institutions in Bengal, medical classes of Madrassa were suspended from 1835 onwards. Till the establishment of Calcutta Medical College in 1835, medical education existed in Madrassa only as an optional Paper in fourth class.

Homeopathy medical treatment in nineteenth century:

In the history of India, nineteenth century is the critical moment for the modification of Age. At this very time India acquainted with the social, cultural and financial thoughts and sentiments of Western world. No deviation happened in the field of medical science also. Though discussion on the method of Allopathic medical treatment under the patronization of government was started, simultaneously Homeopathy Medical treatment was introduced under the perseverance of private organization. A precise discussion is made at the following literary composition.

No authentic information is available on the fact as to when Homeopathy Medical treatment was initiated in this country. A rumour was there that at first one German physician visited India for the purpose geological investigation. During his staying at Bangladesh he distributed Homeopathic medicine among the servants and other poor people. One missionary of London Missionary Society named Dr. Mulens distributed such type of homeopathy medicines at Bhawanipore area for a long period. Mr. Samuel Booking, a retired surgeon, founded one homeopathic hospital at Tanjore in the year 1847. In the 1839 Dr. John Martin Honigburger, one homeopathic doctor of Germany recovered Maharaja Ranjit Singh from illness adopting homeopathic medical treatment. Mr. Dilator, judge of district civil court, distributed homeopathic medicine free of cost among the cholera affected people of Diamond Harbour. Dr. Cooper and Dr. J. Ratherford, working at Fort William, took the profession of homeopathic physician after their retirement from

service. Similarly, Mr. H. Raipar, one retired soldie, also arranged for distribution of homeopathic medicine free of cost at Coolie Bazar area of Khidirpore[18].

Homeopathy: Foundation of Hospital

Mr. C. Febry Tanear, one French homeopathic physician, came to Kolkata in the Year 1851 and with the support of Sir John Hunter Litrar, the then Deputy Governor of Bengal, took a plan to open one hospital and one charitable nursing centre at Kolkata. The proposed working plan of the program was published in November, 1851[19]. Admission of patients was started on 17th March, 1852. Yet it could not get support from the citizen up to the expectation. One native resident of Kolkata greed to offer one big house for inauguration of homeopathic hospital but that proposal could not be implemented. On the other hand owing to economic crisis that very hospital and nursing centre were closed down just after one and half year from its opening[20]. During that period a very residents of Kolkata were familiar with homeopathic medical treatment. Usage of homeopathic medical treatment was confined only among few soldiers and non-military government servants[21]. The very hospital was founded at Battala area, on the eastern part of Chitpur. Mr. Kalidas Dutta and Mr. Shyam Sundar Mitra were appointed as Secretary and Mr. Motilal Gupta as assistant Physician. There was nice arrangement of medical treatment for ten patients only at that hospital. One Brahmin cook was engaged for preparation of diet for the Hindu-sick people. No patient took admission there within first twelve days from the inauguration of the hospital. Only a very few took the opportunity of medical treatment from Outdoor. The matter relating Medical College Hospital was unknown to the native people. Still Dr. Tanear devoted medical treatment very carefully to those very few number of patients. On being encouraged from the instances of the recovery from illness of the indoor and outdoor patients, gradually number of patients increased. No bed of the hospital remained vacant on next six months. In an average hundred people used to get the opportunity of availing

[18] Ghosh Sarat Chandra: *Life of Dr. Mahendra Lal Sircar* (2nd edition), Hahnemann Publication, Calcutta, 1935, pp 32 – 34.
[19] Ghosh Sarat Chandra: *Life of Dr. Mahendra Lal Sircar* , p 34
[20] *The Late Homeopathic Hospital in Calcutta*, The Calcutta Journal of Medicine, Vol. IV, Nos.2-6, 1871, p. 139.
[21] *The Late Homeopathic Hospital in Calcutta*, p. 140

medical treatment from the outdoor of the hospital daily. Total eighty five patients were treated at the hospital during the first six months. Out of those eighty five patients, seventy two patients were returned home after recovery totally. Only seven people were under treatment there beyond the period of six months. One thousand two hundred ninety one patients got the opportunity of medical treatment from the outdoor of the homeopathic hospital. Out of the 1291 patients, nine hundred ninety six became fully recovered from illness. Conditions of the two hundred ninety five patients remained unrevealed. Due to scarcity of space, surgery of any critical disease could not be held there.

It has been discussed earlier that one native resident of Kolkata agreed to offer a big house for that hospital. In case of availability of the same, it was pre-planned that various medical treatments including surgery with the aid of the method of Hypnotization under homeopathy would be initiated. Dr. Tanear used to attend the patients of that hospital for two hours daily. Dr. Motilal Gupta, ex-student of Medical College, worked as his assistant for last four months. In lieu of that none of the doctors used to take any salary from the organizers. In case of solvent condition, it was decided to appoint assistant physicians for twenty four hours. In that case, number of patients could be increased at that hospital. Still the number and type of patients who were recovered from that very homeopathic medical treatment are enlisted below:

Name of the disease	**No. of patients recovered**
Asthma	22
Eye defect	14
Enlargement of spleen	18
Prolonged Bronchitis	13
Diarrhoea	9
Dysentery	10
Prolonged Dysentery	18
Indigestion	38
Fever	53

Gout	61
Gonorrohoea	20
Cholera	18 (out of 21)

Dr. Tanear was very much expert on the treatment of Leprosy patients. He treated thirteen Leprosy patients with the homeopathy method. Of these thirteen, six were released from hospital after recovery and four remained under treatment. From amongst the patients of the hospital, fifteen were attacked with *Lepra tuberculosa*. Out of these fifteen, three were recovered and eight remained under treatment. Leucoderma was a great obstacle before the physicians. A few of such patients attacked with Lencoderma were cured with the help of homeopathy at that time. They were at least thirty in number. Out of thirty, two were recovered completely and sixteen remained under medical treatment. Rest stopped the treatment in the middle part of the same.

An account of the expenditure of the hospital is given in the table below taking assistance from the editorial description (from 1st March to 30th September, 1852):

Subject	**Cost in rupee-anna-pie**
House rent	343-12-0
Salary of the servant	409-0-0
Furniture	80-7-0
Books, Literature and Writing aids	47-3-0
Native foods	115-4-6
Cost on dispensary	142-2-3
Cost of the organization	145-12-9
Other expenditure	30-0-0
Total Cost	**1313-10-3**
Amount of subscription	2118-0-0
Collected subscription	1823-12-0
Expenditure	1313-10-3

Amount of excess money	**510-1-9**[22]

Hereafter, it came to know from the news published on January, 1883 at the Calcutta Journal of Medicine, that well-to-do persons of Mumbai called a meeting on the issue of foundation of a homeopathy hospital there. On being encouraged with this news, one reader wrote a letter to the editor of the magazine expressing his willingness to take responsibility of founding one homeopathy hospital at Kolkata. In that letter the residents of Kolkata were mentioned comparatively more selfish and that of residents of Mumbai as more skilled. As such, neither the government took initiative for building one homeopathy hospital at Kolkata nor the non-governmental organizations took any effort on the matter. Yet population of Kolkata was much more than others and the residents of Kolkata were benefitted with the homeopathic treatment. On the other hand due to lack of energy, the supporters of homeopathic treatment failed to effort for building one homeopathic hospital there[23].

It is needed to mention here that Sri Mahendralal Sarkar on his own initiation founded one homeopathic dispensary at his own house for treatment of the poor people free of cost. The dispensary started its functioning in the month of July, 1869. Some information is enlisted below:

Year	No. of patients
1869 (July – Dec)	891
1870 (Jan – Dec)	2149
1871 (Jan – Dec)	4139
1872 (Jan – Dec)	6901
1873 (Jan – Dec)	9808
1874 (Jan – Dec)	36386
1875 (Jan – Dec)	41425[24]

[22] *The Late Homeopathic Hospital in Calcutta*, p. 143 - 148

[23] Correspondence, Vol. XI, No. 2, February, 1883.

[24] *Public Neglect of Homeopathic in Calcutta*, Vol. I, 1883

Watching gradually the rising number of patients up to the year 1873, the above noted tabled information was published in the "Calcutta Journal of Medicine", January and February edition, in the year 1874 for attracting the attention of the general members of public with the sole intention of building one homeopathic hospital at Kolkata. But no response was received from people on this score up to two consecutive years. So with a view to attract the attention of Government as well as general members of public, the related information for the year 1874 and 1875 were again published in the July edition of the Journal of 1876. At this stage, *Hindu Patriot* admitted the necessity of founding one homeopathy hospital and published their comments. Still no response was received from Government till 1883[25]

***Educational Institution*:**

When the homeopathic medical treatment held such poor condition, at the time in the year 1878, one homeopathic school was founded in Kolkata with only seven to eight students. Duration of study of the school was from night 8.00 to 10.30 hours. For a special ground the school was closed down very soon. No reaction was formed in the mind of the people for closing down this school as the newly founded homeopathic school itself failed to attract the attention of general members of public[26].

On 15th January, 1883 one homeopathic school was established in Dhaka. At the beginning though it was started with seven students only but its student strength increased to one hundred thirty eight within one year. Major number of such students passed school level examination. A few took admission here after failure in passing English Entrance Examination. A few students took admission after passing school level and Minor Examination. Duration of the course in this school was three years. At the beginning there was no class-wise division. With the students passed first year examination in the year January 1884, second year class was started. And the new students who took admission in the year 1884 were placed in first year class. Science of medicine, Instrumental science,

[25] *Public Neglect of Homeopathic in Calcutta*, Vol. I, 1883

[26] *Kolkata Homeopathic Bidyalaya*: Hahnemann, Vol. V, No 1, 1290 BS, Cited from *Chikitsa Bigyaner Itihas* by Binay Bhushan Roy

Drug/Medicine, Physiology and Midwifery were found in the course of homeopathic school. For special disadvantage, dissection of animals was used to teach Anatomy to the students. One charitable dispensary was opened tagging with the school on 7th April, 1884. Names of Pareshnath Mukhopadhaya, Kunja Bihari Bhattacharya, Rebati Mohan Dutta and Purna Chandra Sen were found in the list of teachers. They all were honorary teachers. Mr. Hajgar was engaged as the administrator[27]. On the other hand, "Kolkata Homeopathic Vidyalaya" was founded on 15th February, 1883 at 80, Biddon Street. Objective of foundation of Vidyalaya was explained in the invitation card as to remove the shortage of medical facility among the group of physicians and general members of public. Main objective of foundation was to expand the knowledge of science on homeopathy and of homeopathic treatment. Admission fee was Rs. 2 and monthly tuition fee was also Rs. 2 only. Following subjects were taught in English by the Professors as noted below:

Name of the Professor	Subject	Day
Sri P. C. Majumdar	Botany	Monday
Sri B. N. Basu	Physiology	Wednesday
Sri M. M. Basu	Medical Science	Thursday
Sri N. Sunlazer	All subjects	One day

Classes were scheduled to be started at evening 4.30 hours[28]. At the beginning forty students were admitted to that class and on being encouraged the organizers started Bengali classes also in addition to English. But the matter of grief is that owning to misunderstanding between Dr. Mohinimohan Basu and Pratap Chandra Majumdar, the school divided into two parts. Dr. Basu founded "Bengal Homeopathic School". It was stated in its invitation card that under the supervision of Sri M. M. Basu, M.D., L.R.C.P., returned from America, Bengal Homeopathic School has been opened at 45, City College Building where lessons on Materia Medica, Anatomy, Physiology and Practice of medicine were being taught. This school was divided in two parts – English and Bengali. Sufficient knowledge in these two languages was the criteria for admission in this school. Monthly

[27] *Kolkata Homeopathic Bidyalaya*
[28] *Anusthan Patra*, Vol. I

tuition fee and admission fee were both Rs. 2 only. In addition one clinical class was also opened separately at 34, College Street Building. Everyone was allowed to attend the lectures on a monthly fee of Rs. 1 only.

From the annual report it is learnt that its student strength rose to fifty four within one year. In an average, thirty five students used to attend the classes. The classes were usually closed during summer. Apart from English book, books written by Basanta Kumar Datta were taught there. Yet any student bought any other book before his admission was allowed to follow that book also. Classes were scheduled to be held o very Monday, Wednesday, Thursday and Saturday in each week from 4.00 to 6.00 in evening. Many Scholars of that period used to lecture on science there. On 1st October, 1896 the great scientist Acharya Prafulla Chandra Roy delivered an exciting lecture on Carbolic acid at City College hall before the students. The winter session was started on 9th November. At that time Father Lanfo gave inaugural speech before the students. As per ruling and guidelines of the institution the students who took admission during the month of November were allowed to sit on examination in the month of June[29].

In 1930, on the prize distribution ceremony Acharya Jagadish Chandra Bose gave lecture on Plant Theory[30]. Different kinds of information are now available from different magazines of that period. In this regard one special news was published in one of the magazines is reproduced below:

"It is needless to say here that homeopathic medical treatment has been infiltrated in Kolkata. For this purpose three to four schools have since been established, out of which the school founded by Dr. M. M. Basu is the best. Its classes are taken at City College building. For teaching homeopathy in Bengali one school is also running at 3, Mirzapur Street building. Its functions are also being performed very nicely. Heads of this school have built one hospital also. To cope up with the expenditure of the hospital, they desire to get 1 Paisa only it is extremely urgent for all of us to encourage this effort whole-heartedly"[31].

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[29] *Homeopathic Medical School*, Indian Mirror, October 8th, 1896.
[30] Ghosh Sarat Chandra, *Dr. M M Basu*, Hahnemann, Vol. II, 1347 BS. P. 69, cited in *Chikitsa Bigyaner Itihas* by Binay Bhushan Roy
[31] Homeopathic *Haspatal*, Bmabodhini, 1292 BS. (1885), P 99

On behalf of Dhaka Homeopathic School, one office magazine named *Homeopathic Pracharak* was published at that time. Among the discussed subjects in that magazine, especially mentionable article was detailed discussion on the medically treated patients. Its annual rate of subscription was Rs. 3 only. Additional charge was levied for separate issues. Postage charges were being paid separately. Details of criticism published on the said magazines during that period are as follows:

"The writers are publishing the magazine with utmost care and devoting best effort. Homeopathic students must be benefitted to a great extent on this magazine regularly. Page marks of each article published in that magazine were printed distinctly and uniquely so it became troublesome for the readers for understanding the matter. As the written articles were incomprehensible, it is much difficult for general members of public to understand if the same is not written in simple form."

Teacher and Doctor:

A discussion is held below on the persons under whose constant effort homeopathy got extended in this country.

Rajendralal Datta: Rajendralal was born in 1818 at the most reputed data family of Bahubazar, Kolkata. His father was Parbati Charan Datta. After schooling from David Dramond's school, he took admission in Hindu College. From Hindu College he was admitted at Medical College. In the year 1864, Dr. Berine, the then famous homeopathic doctor came at Kolkata. After being acquainted with him, Sri Datta found attraction to homeopathic treatment and gradually became famous. Observing his success in homeopathic treatment, Dr. Mahendralal Sarkar took the said profession. Among the renowned persons who recovered under his homeopathic treatment were Radhakanta Deb, Maharaja of Jaipur, Umesh Chandra Ghosh and Ram Krishna Paramahansa dev. He became familiar with Ishwar Chandra Vidyasagar through this homeopathic treatment and he consecrated Vidyasagr in this medical treatment. He used to exchange letters with

Charles E. Norton, resident of America, for his loving affairs with homeopathy. Sri Datta expired on 5th June, 1889[32].

Mahendralal Sarkar: After qualifying in L.M.S. examination in the year 1860, Mahendralal started practicing allopathic medical science. He stood first in M.D. examination in 1863 at the beginning he was critic of homeopathic medical treatment but later on following the medical treatment method of Rajendralal Datta, he found attraction to Datta's homeopathic treatment. Thereafter studying minutely the famous "Margans' Philosophy of Homeopath", he changed his opinion and devoted to the homeopathic treatment method and for wide publicity of homeopathy he started publishing one magazine named "Calcutta Journal of Medicine"[33].

Mohini Mohan Basu: Mohini Mohan was born on 24th March, 1850 at Poysiddhi village of Maimansingh district. Anandamohan Basu of Raingla was his elder brother. After completing his studies at Maimansingh and Dhaka, he came to Kolkata and got admitted in Medical College. After studying there for a little period, he went to England in 1876. Glasgow University was his first destination for studying Allopathy and then went to America and started studying at "New York Homeopathic Medical College and Flower Hospital" and procured much knowledge on homeopathic medical treatment. After returning to Kolkata in the year 1879 he devoted himself in homeopathic treatment. He founded "Kolikata School of Homeopathy" jointly with Pratap Chandra Majumdar in February, 1883 (as per Saracchandra Ghosh year of foundation was 1889, but as per advertisement in Hahnemann Magazine it was 15th February, 1883). But owing to differences in opinion within a very few days, he established "Bengal Homeopathic School" separately. He expired on 18th August, 1907. Thereafter both the institutions joined with the new nomenclature as "Calcutta Homeopathic College and Hospital". It is now situated at 265-266, Acharya Prafulla Chandra Roy Road.

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[32] *Bharat Barshe Homeopathic Chiitsar Sarbo Prothom Pathoprodarshok O Procharak Dr. Rajendralal Dutta* by Sharat Chandra Ghosh, Hahnemann, Vol. I, 1346 BS PP. 11 – 26

[33] Chandra Sharat: *Dr. Mahendra Lal Sircarer Jeeban Katha*, Hahnemann, Vol. II, No 22, 1347 BS, p. 65-79.

Pratap Chandra Majumdar: He was born on 1879 at Chikhalia village of Pabna district. At the student life he continued his studies at the house of maternal uncle at Kolkata. After completing his I.A. examination from Vidyasagar College, he took admission at Medical College. But owing to physical illness he compelled to stop his studies for a short period. But later on he qualified in that subject. But at the time of staying at Varanasi for recovering from his ill health, he was attracted to homeopathy after observing skillfulness in homeopathy of Loknath Maitra and afterwards he devoted himself on that profession. He had vast proficiency in Materia Medica of Homeopathic medical treatment. Before qualifying from Medical College, he wrote a Medical Book named "Homeopathic Pratham Chikitsa". He founded "Calcutta School of Homeopathy". On being invited from American Institute of Homeopathy for participating in World Medical Congress, he joined the program, and read the essay named "India is the hot bet of Cholera and Malaria". He was elected as the Vice-President of that medical congress. The famous "Hearing Medical College" honoured him with the degree M.D. He had vast proficiency in curing diseases. Once he cured Devendranath Tagore from a "incurable" disease. Rabindranath Tagore was attracted to homeopathy after observing his father's recovery through homeopathic treatment[34].

In addition to this, many other famous Indian and foreign doctors were engaged with homeopathic medical treatment in Kolkata.

Conclusion:

Indigenous system of medicine and practice was almost intact till the end of eighteenth century. The next century brought varied alterations in terms of popularity or acceptance (by the new generation and the British) and was confined within a very small section of the society. One of the main causes was certainly of its stagnancy and lack of experiment for more scientific growth. This negligence was not always from the indigenous people, but also from the British authority. Before entering deep into the social affairs the Europeans sometimes turned for help from the indigenous medical men (vadya

[34] Majumdar M. D. J. N: Dr. Pratapchandra Mjumdar, Hahnemann, 1347 BS. Pp. 257 – 263, 321 – 328.

and hakim). They didn't hesitate for seeking help as they had a belief that local doctors would be more familiar and careful about the climate causing diseases and also indigenous drugs suitable for those diseases[35]. Problem occurred while translations of the indigenous medical texts were tried by the British. These texts were often hard for the British to obtain and difficult to render into intelligible English (even after taking requisite help from the indigenous medical men). They stopped this process. Many of the texts were thus simply discarded as 'worthless'[36]. David Arnold argued that "the shift away from texts was also indicative of a growing disparagement of Indian medicine, a tendency to see it as a form of folk practice, founded on superstition and 'empiricism' rather than professional training and a literate tradition"[37].

Though western medicine started spreading rapidly among the urban and gradually to the non-urban people, but indigenous medicine didn't rubbed from the society. There were contestations between different social groups, religion and different generation regarding the adoption of western and rejection of indigenous medicine. On one hand the orthodox society was not interested to change their habits, faith and old beliefs, and was not aware of the newness that had already become popular in terms of its implementation and utility, and on the other liberal and English educated people accepted it. Conflict between two generations was also seen[38]. It is earlier stated that there were constant contestations and conflicts regarding western medicine in the society, which started with initial understanding between the British and the indigenous educated people. Gradually such conflicts entered into the society with new forms and different nature of effects.

The contemporary journals were much involved in this issue and played a vital role. The response of the indigenous society had been seen through the pages of these journals, which also became a good source of information to the rest of the society. They took up different topics on medical treatment, public health and other related issues and started writing regularly. Not only through the institutions, but vernacular writings started

[35] Crawford, D. G. *A History of Indian Medical Service, 1600 – 1913*, Thackers and Co, Vol. 1, 1914,

[36] Wise, T. A, *Contemporary on the Hindu System of Medicine*, 2nd edition, Trubner and Co. London, 1860, p. iii – xix.

[37] Arnold. David, *Colonizing the Body*, p. 50 – 51

[38] Here the novel Arogyoniketan by Tarashankar Bandopadhyay shows the conflicts and arguments between two generations, father and the son, regarding adoption of indigenous medicine and western medicine.

giving informal education to the people (it has explained later in the chapter VI with detail reference). For example the journal *Sasthya* had often discussed on different diseases like Small Pox or Malaria and their measures. Interestingly they discussed about the treatment of such diseases in allopathy as well as ayurveda and homeopathy. Another major focused area was women and child health. This had been the most neglected areas in our country. First of all Bengali language brought a large portion of Bengalis into the realm of such education and secondly, the journals could reach out to the grass root level of Bengal the basic information about health problems and medical issues.

From the above discussion it can be argued that a mixed mentality and attitude were seen among the indigenous society about the introduction of western medicine and its effect on the traditional medical systems. British hegemony was clearly felt in the nineteenth century. But by reverse a different nature was reflected through the efforts made by the local people to preserve and restore their self-respect and revive the original tradition as well. The associations also played a substantial role in this period to mix up the two completely different methods and techniques.

Chapter V

Medical Education: Women Participation and Colonial Policies

Historically Bengal Presidency had the first hand advantage of experiencing the implementation of policies by the British Government in every sector. The modern approaches to policy making gave a new shape to the society. In this context, education also benefitted, medical education was no exception. But in imparting medical training to the women, it was not Bengal which acted as the pioneer. Madras Presidency played the pioneering role in this field by giving permission to the female students for attending medical classes in Madras Medical College in 1875[1]. This chapter intends to sketch a history of women's involvement and participation in the realm of western medical sciences in mid nineteenth and twentieth century Bengal Presidency. In establishing the intricacy of this issue, some pertinent questions are raised. Why the necessity to give medical training to women became prominent in this period? How this issue was nurtured and by whom? Was there any internal demand or it was a total imposition? And finally what and how fruitful was the result of this new venture on the society? Taking the time period from the second half of the nineteenth century, this chapter will try to provide in a chronological order, the entire narrative on women's medical education in Bengal Presidency.

The colonial discourse on Indian civilization was full of criticism in many ways. The women's question was very much prominent amongst them because women's condition was taken as the symbol of standard and status of a society[2]. The degraded and poor condition of women was marked with many social rituals and superstitions like child marriage, 'Sati' System, female infanticide, illiteracy, system of 'Purdah' and very importantly the poor condition of health and mortality during child birth due to ignorance of proper medical training. The condition of health was really poor. There was a constant

[1] Scharlieb, Mary, Reminiscences, Williams and Norgate, London, 1924, p. 29.

[2] Sinha, M. Colonial Masculinity: *The "Manly Englishman" and the "Effeminate Bengali" in the Late Nineteenth Century*, Manchester University Press, Manchester, 1995, cited in Bandopadyopadhyay, From Plassey to Partition and After: A History of Modern India, Orient Blackswan, New Delhi, 2004.

effort of 'civilizing' this country by a group of missionaries not only from England but also from other parts of the world. Though the patriarchal attitude gave whole authority to the male populace for protecting the female, leading to a lot of restrictions and discriminations, but in the field of medical education and health awareness females themselves took the pioneering role. In this short chapter, we will try to look into this complex relationship between male authority and pioneering women in this country. According to the chronology and major changes in this field there will be few thematic divisions and subdivisions.

Initial Endeavors: The Pioneers of Medical Wakefulness among Women

In the late nineteenth century there was a constant growth of charitable missionary works all over the country seeking to provide medical relief to the women. Initially their aim was evangelical, but Christian charity played a considerable part in it[3]. Gradually, these non-medical and medical missionaries started spreading education to women and made them conscious of the health standards. In the words of Scharlieb "medical mission work indeed constitutes not only the most attractive exposition of the work and aims of the Good Physician, but it is also the foundation of the truly educative and statesmanlike endeavours which are made to draw into one state ancient, spiritually minded India, and the modern materialistic west"[4]. It has been alluded before that behind the introduction of western medical education in India in general and Bengal Presidency in particular there existed some political reasons and social demands from the side of the colonizers. Gradually it was accepted and adopted by the colonized as well. But the women's issue was somewhat dissimilar and special. Much before the government's initiative for the introduction of medical education for women, it was the missionaries who thought of it and gave proper importance to this issue which gradually attracted the government and the

[3] Gourlay, Jharna. *Medical Women and Female Medical Education in 19th Century India*, Education and Employment: Women in South Asia, Bethune School Praktani Samiti, Kolkata, 2001, p. 120.

[4] Scharlieb, Dame Mary. Editorial Note, in Balfour Margaret. I and Young Ruth, *The Work of Medical Women in India*, Oxford University Press, London, 1929, p. xi. (BL)

conservatives in the society as well. It was really not easy for the outsiders to mingle with the indigenous society because at that point of time men were reluctant to share their domestic matters with alien persons and kept their female counterparts absolutely restricted. Endless, efforts and devotion of these medical missionaries slowly but firmly could influence the society about the necessity of immense care of the women health and their education.

The 'Oriental Zenana' was described by the imperialists as the repository of unhealthiness due to 'airless' and 'sunless' condition and they also epitomized the poor sanitation and unconsciousness among people[5]. The proponents of Victorian England were aware of the condition of women in the colonies and this critically informed its internal institutional policies. The introduction of medical education and training to women was not easy even in England because of gender differences. Interestingly, those in the British society, who were not in support of women's medical education, could understand the importance of providing medical aid to Indian women[6]. The result was a constant flow of medical women throughout India. Most of the missionaries came to India as 'zenana' missionaries and they worked in different parts of the country. The first qualified medical women came to India in 1869 and were followed by others. After the opening of London School of Medicine and Royal Free Hospital in 1877, British medical women became a formidable presence[7]. It was not a simple endeavour for these medical women to work in this country, not only because of its vast territory but also they had to face a social dilemma and it was hard to reach out to the disadvantaged women. Gendered segregation reached such dangerous proportions that even if a lady dies she would not be permitted to consult to a doctor (at that point of time doctors were male only). This attitude was highly criticized by the imperial bureaucracy and the English civil society.

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[5] Burton, Antoinette; *Contesting the Zenana: The Mission to Make 'Lady Doctors for India' 1874 – 85*. In Kumar Neelam (Ed), *Women and Science in India: A Reader*, Oxford University Press, New Delhi, 2009, p. 21-54.

[6] Jex –Blake, Sophia; *Medical Women: A Thesis and its History*, Hamilton & Adams, London, 1886, Wellcome Library. Also cited in Burton, Antoinette, *Contesting the Zenana: The Mission to Make 'Lady Doctors for India' 1874 – 85*

[7] Balfour Margaret. I and Young Ruth, *The Work of Medical Women in India*, Oxford University Press, London, 1929, p. 15. (BL)

Non-medical missionary involvement started decades before the advent of the western medical missionaries to India. They were not medically trained but the multitude of women's health problems appealed to them and they also realized that it was useless to initiate male doctor's entry into the secluded world of the zenana. Blafour and Young described the initial endeavours on the part of these non-medical missionaries, particularly the adoption of different strategies to penetrate into the inner world of the Indian women. Medical books were borrowed from their doctor friends. The vacation period was used to gather necessary information about homely medicine, consult with friends and also search for 'haunting' hospitals to pick up medical accessories which would be used in serving women in the overseas settlements. There were reports of, one missionary woman disguised as a nurse, who tried to enter into her brother's clinic in a famous hospital. Gradually many institutions emerged, which started providing short term medical training to the missionaries. Many of them took hold of these advantages and returned with new and fresh knowledge and with a definite zeal for medical work. For example, Miss Hewlett who came in 1877 and took the charge of Amritsar Dais' School (the local/ existing midwives), and also trained Indian girls as assistants in mission hospitals[8]. Though this was not a long lasting programme, since the young teachers were not experienced in practical midwifery, but it gave birth of a serious class for 'Dais' in Amritsar. It was opened by the Civil Surgeon Dr. Aitchison in 1866 which became the well known Amritsar 'Dai' School under the supervision of Miss Hewlett of the Church of England Zenana Missionary Society[9]. It took more than a decade to locate women's health problem and mortality because of the untrained local midwives, who were employed by the government. In 1885, there was a response from the Government side to take serious action in stopping the malpractices of Dais in the households of India. This indirectly involved the Municipality and local boards to take care of this delicate issue[10].

[8] Balfour Margaret. I and Young Ruth, *The Work of Medical Women in India*, Oxford University Press, London, 1929, p. 14, 20, (BL). For more detail about the medical missionaries (South India) see *Medical Missionaries at Work: The Canadian Baptist Missionaries in the Telugu Country, 1870 -1952*, by Raj Sekhar Basu, in *Disease and Medicine in India: A Historical Overview*, edited by Deepak Kumar, Tulika Books, New Delhi, 2001.

[9] ibid

[10] General Department, Education Branch, p. 643, (BL)

These missionary women were succeeded by or sometimes associated with trained medical women after 1877. Gradually they started searching for Indian nurses due to dearth of trained medical women. Dr. Mary F. Seeley came to Calcutta in 1873 and helped to establish a hospital there over, but died very shortly in 1875[11]. Miss Fanny Butler (M.D) was the first qualified medical women sent to India by England in 1880 and worked in several places including Bhagalpur and Calcutta in Bengal Presidency[12]. Though the prime motive of the medical missionaries was to give medical aid and provide health care to Indian women, but gradually education them and give them medical training for assistants, nurses and proper midwife also became a part of their mission.

The state of Women in the Contemporary Society:

There were two levels of initiatives for women medical education i.e. initiatives taken by the non-Indians because of the deteriorating health condition of women and the initiatives from the indigenous society. In fact, these may have compelled the Government to take a firm decision on this issue. Though both the initiatives were somewhere connected by its result and after effects but they differed in thought process, nature and implementation. This importance of this dual process will be clear in the context of the discussions on the contemporary socio-cultural and political condition of the Bengal Presidency. The introduction of English education had brought about a change in the cultural profile of the Bengalis. Here we will start with the general state of women's education and the society's ignorance about the health condition of women. The consequences of these encouraged the possibilities of starting women's medical education. It is of no doubt that not all the women from every sections of the society were equally involved and benefitted from this new venture. But all women irrespective of caste, class and religion were in need indeed.

[11] Gourlay, Jharna. *Medical Women and Female Medical Education in 19th Century India*, Kolkata, 2001, p. 121.

[12] Tonge. F. M, n.d *Fanny Jane Butler: Pioneer Medical Missionary*, Church of England Zenana Missionary Society, London, cited in Jharna Gourlay.

"The problem of creating a class of qualified female medical practitioners to attend upon native women in terms of adroitness was itself embedded in a quagmire of difficulties. Firstly, in a country where the customs and traditions had prevented the women of the upper classes from seeking medical succor from qualified male practitioners, the entry of women in their place was itself a matter of contestation from the point of view of patriarchy. Secondly, there had been efforts from time to time to address what has always been felt to be a pressing issue, though immediate solution was not forthcoming from the side of the government. The government's reticence in this direction was to a large extent a matter of its procrastination in introducing serious innovations into the conservative domain of medical practice. Finally, the paucity of funds was also to a large extent responsible for the feeble response on the part of both the government and the native elites[13].If we go back to the early days of the nineteenth century when actually the Government had started involving into the educational matters (Charter Act 1813), there had neither any mention of women's education from Government side nor was there any internal voice within the society on this issue. With the passage of time, many changes occurred in the mentality of Bengalis, many people came forward to 'reform' the society and many were still in the mood of criticism. But, all these changes came only after the commencement of western (English) education and its gradual popularity. Women's participation in medical education and profession was highly related to the entire social transformation going on at that period. But, it is true that medical education in professionalized form was one of the early western influences on women.

Bengali society was not homogeneous. The social customs and rules were varied due to the existence of different religious groups and subdivisions within each religion. Indeed, rather than castigating the social customs, the superstitions and prejudices for all purposes had restricted and constrained women within a very small precincts of their household. Of course there were exceptions, which were in miniscule in number. We have several works on women's condition of the contemporary period in recent days and they have focused on issues of gender discrimination, patriarchal oppression, and dearth of women voices etc. All these discourse on nineteenth century women's condition in Bengal

[13] Female Medical Education in Bengal, Calcutta Gazette, 31st December, 1885, (BL).

Presidency were very much true and some bit morbid and unfortunate too. In the present discussion, these same issues and their relations with medical education, it would be relevant, particularly if we take some examples of what the earlier scholars had observed and written about it.

In the book named, *The Work of Medical Women in India,* the authors (Margaret Blafour and Ruth Young who were directly involved with women health issues and education in the earlier days), started with a short description of the contemporary social condition of women and the obstacles they had to face in achieving their mission. They compared the social conditions of the ancient period with the contemporary period and privileged on the issues of caste, idolatry, enforced widowhood, suttee or child marriage. It was stated that women in the early Vedic period used to hold a good position in the society; they used to take part in religious ordinances and also composed the finest hymns. According to the authors 'It was not until later, as the Hindu religion developed among the Aryans, that the women began to lose their original position of freedom. Manu, one of the early law-givers, is reported as saying, 'he who does not pay his debt is born again as a slave, a servant, quadruped, or a women' and again a woman must depend on her father, husband, sons, kinsmen or sovereign, but must never govern herself as she likes"[14]. Purdah was established after the Muslim invasion in India, partly as one of the most recognized principles of Islam and partly to protect the women from foreign invaders. Gradually many Hindus also adopted it for the same reason[15].

The worst part of purdah system was its restriction in consulting a male doctor during the period of pregnancy. Messages were forwarded by the husband and servants to the male doctor. If there was a case of cataract operation, the doctor had to remove it through a hole cut in a sheet. The other treatments were more or less done by local midwives including childbirth, where normal deliveries were definitely handled by them, but not the critical cases. Thus there was a huge rate of women and child mortality and untimely deaths[16]. The other side of this picture that has been alluded to is the lack of sensitivity on the part of the males section towards providing proper medical treatment to

[14] Balfour Margaret. I and Young Ruth, *The Work of Medical Women in India*, p. 1 – 12. (BL)
[15] Ibid
[16] Ibid

their female counterparts, who were left to die without any medical aid and support. For example, Mary Scharlieb wrote in her *Reminiscences* about a woman in Madras Presidency who preferred death with 'agony' than to be 'disgraced' by her family and society by having remedy from a male doctor[17]. Nobody questioned this brutal practice of patriarchy.

This was not the end. The contemporary society restricted women from gaining the benefits of education. Instead of empowering them through education, the society was more conscious to protect the customs and superstitions. Purdah or the restriction on free mixing was mediated through the constructed virtues of 'good family', purity and question of pride[18]. Husband's death was related to literacy of women and co-education in school was also prohibited. There was a fear in the society that education would lead to independent thinking, competition in the workforce, and finally, "disintegration of cultural norms"[19]. The intersectionalities of class and caste were very strong at that time in Bengali society. Women from upper caste and class families did not participate in educational programmes, nor appeared before male doctors. But there was no restriction among the lower class and caste families and the so called tribal population[20]. The indigenous midwives (dais) were considered as low in standard because they did not believe in the norms of the purdah system. Such convergences of caste and class normative impeded women's efforts to gain the entitlements of basic education. Thus, it was quite obvious that they couldn't imagine medical education as an avenue for their livelihood.

Before proceeding further on this issue, it is imperative to discuss the contemporary condition of medical education in England herself. In the book *Medical Women*, Sophia Jex-Blake, as a medical women expressed the degraded condition of midwives and medical education for women in contemporary England. According to Sophia in thirteenth-fourteenth centuries, women as medical professionals or midwives used to hold good

[17] Scharlieb, Mary. Reminiscences, Williams and Norgate, 1924, p. 29-31. Also cited in Balfour and Young. (BL)
[18] Forbes, Geraldine, Women in Colonial India: Essays on Politics, Medicine and Historiography, Chronicle Books, New Delhi, 2005, p. 121 – 140.
[19] Ibid. p. 101 – 120.
[20] Gourlay, Jharna. *Medical Women and Female Medical Education in 19th Century India*, p. 119.

position and respect in the society and also were attached to the royal families[21]. But, unfortunately in the later recent period, women lost their glory and after the appearance of men-midwives the importance of women midwives lessened. Women were regarded as incompetent and misfit for this profession[22]. Midwives were looked down upon as jobs for the lower classes of women till the end of 1850s[23]. The British women who medically educated themselves didn't find proper respect and position in their society. Whereas, the acceptance the opportunities to serve as nurses and doctors in the medical missions in India and the other overseas settlements somewhat relaxed them and gave them the deserved position and mental solace[24]. Here we can understand that the British society also was very much similar to the Indian society in imposing restrictions on women for medical education and accepting their enhanced social position. But when the question of giving missionaries the permission to work in Indian society as medical missionaries came, the state adopted a very liberal and progressive stand. Now, the question can be raised whether this was a part of their attitude of recognizing the archaic and primitive social contours of India, which could only be altered through the logic of the civilizing mission. Undoubtedly, this philosophical statement of the colonizing power, offered a modicum of space for women medical personnel to look for opportunities in different parts of India. The dimension of medical training received in spatial terms is also a query that has been raised very little in the academic circles. The other question is that whether gender discrimination along with the idea of depriving women from secular knowledge accounted for the incapability and powerlessness of women in a colonized setting.

However the superstitious practices and male ignorance in India appealed to the western missionaries and made them sympathetic towards women condition. They started their relief work in their own ways. Simultaneously, there was a wave of women's education among the western educated Bengalis from the mid nineteenth century. Both the processes started almost simultaneously but from internal side still there was no initiative

[21] Margared Cobbe was the first English midwife, whose account had been found, had a salary of ten Pound from the Crown in 1469. In 1470 she was attended the Queen of Edward IV at the birth of his son and in 1473 special provision made for her rights and privileges, Sophia Jex-Blake, *Medical Women*, p. 15 – 17. (BL)

[22] Jex-Blake, Sophia, *Medical Women*, Oliphant, Anderson & Ferrier. (BL)

[23] Gourlay, Jharna. *Medical Women and Female Medical Education in 19th Century India*, p. 118.

[24] Kumar Neelam (Ed), *Women and Science in India: A Reader* (Introduction), Oxford, New Delhi, 2009.

to educate women in medical knowledge. With the passage of time a new intelligentsia developed, which imbibed the liberal Western cultural values and ethics and the virtues of English education. They later prepared the foundations which were needed to launch movements for the reform of social institutions and religious perceptions inherited from the past It is true that education helped individuals in gaining consciousness and to imbibe the benefits of liberal thought, all of which encouraged the educated Bengali minds for social movement, social change and transformation in their endeavours for a more moderate society. So we can notice that the missionary activities, social changes and the question of women education (as a part of social movement) were going on together. It probably started with Henry Vivian Derozio and his Young Bengal student group talking loudly for social changes like prohibition of caste taboos, child marriage, *kulin* polygamy or the ban on widow remarriage etc[25]. But even before that suttee was banned by Government regulation in 1829 with Rammohan Roy's enormous effort. As this mentality and effort was confined within a small section of western educated Bengalis that too within the territory of the city Calcutta, it was not expected that it would be impacting on the other parts of the Presidency within a short period. The Hindu Widow Remarriage Act came in 1856 and Iswarchandra Vidyasagar was the main propagator of this act. Rammohan, Vidyasagar and other reformers also looked to the colonial state for 'a piece of legislation'[26]. As a result the larger masses were not very much influenced and continued practicing their age old habits, which lessened in course of the succeeding decades.

Subsequently, while the missionaries were working in the ground level to solve the practical problems of women health, there were other serious issues which were debated by the *bhadrolok* intelligentsia of Calcutta. This dual effort somehow slowly could change the situation. Brahmo movement was the most notable reform movement in the nineteenth century. It was started in Bengal and shortly encompassed other regions all over the country. The movement was characterized by reformist zeal in socio-religious sphere and an irresistible upsurge towards educational and intellectual activities. Brahmo activists were not unanimous about women's education issue. Some people (Keshab Sen, Umesh

[25] Bandopadhyay Shekhar. *From Plassey to Partition and After: A History of Modern India*, Orient Blackswan, New Delhi, 2004, p. 139-180.
[26] Ibid.

Chandra Dutt etal) preferred women to be educated for not being a good scholar, but to be good wives, mothers, daughters etc. Thus, they favoured a check in women's freedom in choosing subjects. But, the radical Brahmos (Ananda Chandra Khastagir, Dwarakanath Ganguly, Shivnath Sastri et al) were in support of equal opportunities of education for both males and females. Progressive Brahmo reformers like Durga Mohan Das and Dwarakanath Ganguly were in support of women medical education[27]. Gradually consciousness increased among people and under the influence of such reformers, their relatives too felt the urge to enroll in the medical classes also, thereby gaining the social acceptance from the larger Bengali society.

According to Sujata Mukherjee, the public opinion of the Brahmos was in favor of women participation in medical education. Their argument was in favor of preparing female doctors to support women's general attitude of disinclination to male doctors[28]. On one hand it was positive for female medical education but on the other it had a negative streak too. If we talk about the development and advancement in the condition of women separately, then it was a good effort to produce women doctors. But if we raise the question of societal improvement regarding women's individuality, position, power, equality and free mixing right, then the interpretations could be more critical of this apparent liberal ambience. There was not much of a great effort to influence the society to shred aside the traditional barriers and restrictions on women's individuality in terms of ideas and their own decisions. At the same time, women while receiving medical training, failed to get other opportunities favouring the removal of impediments to gender inequality. Actually women were never seen as individuals. Very interestingly the entire male section of the society tried to be the custodians of females, who were still considered to be effete and incapable of standing to social challenges.

[27] Mukherjee, Sujata Gender, Medicine and Society in Colonial India: Women's Health Care in Nineteenth and Early Twentieth Century Bengal, Oxford University Press, New Delhi, 2017, p. 38 – 63.
[28] Ibid p. 38 – 63.

The Making of Early Indian Medical Women

It has been asserted by some scholars that most of the older researches had focused on the prominent female doctors (Indian and non Indian) and neglected the 'lady doctors' or the hospital assistants who were the primary recipients of western medical education and had acted as carriers of western medicine to the mofussil areas of Bengal Presidency[29]. These 'lady doctors' had a lower social position and status and were never able to enter the main stream. In order to draw a clear picture of growth in women's medical education in the late nineteenth and twentieth centuries, it is necessary to talk about the early medical women from the native classes in Bengal, who were the predecessors of full-fledged Indian women doctors. By that time, the Bengali society had gained strength and there was strong encouragement from some quarters in favour of women's education. Subsequently, the Government of India understood the necessity of employing a large number of women medical professionals for the improvement of women's health problem in the country. Another question under their consideration was the increasing cost of deploying medical women from England to meet the social demands. Thus, it was decided to provide training to those women who's 'home was in this country'[30].

Before going into the details of social consciousness and governmental efforts, there have to be discussions on the establishment of the Dufferin Fund in 1885, whose single major objective was to provide medical aid to women. It directly influenced the spread of medical education all over the country. This fund in the words of Balfour and Young was "not a political or social, but a purely humanitarian organization"[31]. It was Queen Victoria's wish and order to Lady Dufferin (1883) to think about what could be done for remedy matters relating to medical relief of Indian women. She took pains in disseminating the information received on the deplorable condition of women's health in India and appealed for sympathy and financial support from the socially enlightened

[29] Forbes, Geraldine. *Women in Colonial India: Essays on Politics, Medicine and Historiography*, Chronicle Books, New Delhi, 2005, p. 122.
[30] *Review of Education*, Calcutta, 1888, p.282, cited in Jharna Gaurlay.
[31] Balfour Margaret. I and Young Ruth, p. 35. (BL)

classes of Britain and India[32]. Despite, criticisms and obstacles, within a very short period of time, she organized the Dufferin Fund or the National Association for supplying Female Medical Aid to the Women of India to support women health and medical education, training programmes and scholarships.[33]. By the first half of twentieth century, several zenana hospitals and dispensaries financed by Dufferin Fund were set up and training programmes were started for women. The district boards tried to collect funds to build women's hospitals in places other than Calcutta in collaboration with Dufferin Fund. As per plan, the British women doctors, nurses and Graduates of CMC were recruited, but a serious problem occurred when these medical women refused to serve in the mofussil areas, forsaking their better salary and opportunities in the Calcutta hospitals.[34]

In this juncture, government's initiative for medical training also increased, though not manifold. "In order to facilitate the acquisition of a knowledge of medicine by native women who, it is hoped, may practice in the larger villages of mofussil under the same conditions and among the same class of people as the Hospital Assistants trained in the vernacular medical schools of Calcutta, Dacca, Patna and Cuttack, the Director of Public Instruction propose to establish in the Campbell Medical School a vernacular class for female students"[35]. This was probably the first step for separate medical education for women, which was thought by the government in Bengal Presidency. Proposals to include female students into Campbell Medical School in vernacular classes began much before but serious efforts to set up vernacular programmes for women started only after the Dufferin Fund was instituted[36].

Taking the issue of little access to formal education of women into consideration, the Director of Public Instruction proposed to reduce their qualifying standards for

[32] Queen Victoria came to know about the poor health condition of women in India and their social barriers for better treatment from a message sent by the Maharanee of Punna (a native state in Central India). Maharani requested Miss Beily to convey her messege to the queen. Miss Beily was a medical missionary in Lucknow to treat the Maharanee as she was suffering from a painful internal disease.

[33] Balfour Margaret. I and Young Ruth, p. 33 – 36.

[34] Forbes, Geraldine. *Women in Colonial India: Essays on Politics, Medicine and Historiography*, p. 121 – 140.

[35] General Department, Education Branch , Calcutta, 18th November, 1887, p. 649 (BL)

[36] General Department, Education Branch, March, 1879, Proceedings of the Lieutenant – Governor of Bengal, (West Bengal State Archive), cited in Geraldine Forbes, *Women in Colonial India, Essays in Politics, Medicine, and Historiography*, p. 121 – 140.

admission. It was fixed that either the women had to pass the upper primary scholarship examination or an examination to be held at the beginning of each session. The later one included three subjects i.e. reading and explaining a Bengal book like Raj Krishna Mukherjee's *History of Bengal*, dictation writing from an easy Bengal book and arithmetic based on easy functions and simple rule-of-three[37]. The age limit was 16 to 23 for the three years course and to make the course more attractive Government announced ten scholarships (Rs. 7 per month, where as the male students used to receive Rs. 5), and a special prize of Rs. 18 for the best female student of the each class. The time period of the course and the other regulations were same as the male students but few benefits were given to women like front seats in the class rooms were separated, a portion of Dissection room was screened-off, night duty was not given to women and also an omnibus was provided to the female students for communication. In 1887 the Secretary of Government of India, A. P. Macdonnell ordered the local governments and administration bodies to ensure their active role in providing scholarships and stipends to female students also (male students were already under such scheme) in the medical schools. In order to give more impetus to women's participation in medical education and to generate women's as well as the wider society's interest in this respect, it was decided to increase the number of scholarship and stipends. The government was aware of the considerable progress of female medical students in the Presidency towns. But to encompass the mufassil areas also it was necessary to involve the municipality and the local self governments in this matter[38].

In 1888, the Campbell Medical School began its journey to train women for hospital assistants with fifteen students which included Brahmo, Hindu, native Christian and Eurasians. The first Muslim student was admitted in 1891. After 1896, when this became four-year programme, the number of Hindus, Brahmos and Muslim students declined and the number of native Christian and Eurasians increased[39]. By 1913, 28 had passed as hospital assistants and sub-assistant surgeons from the medical school[40]. Gradually these trained women were placed in good position in the mafussil hospitals. Few

[37] General Department, Education Branch , Calcutta, 18th November, 1887, p. 649 – 650 (BL)
[38] Municipal Department, Medical Branch, No. 7/432 – 442, Simla, 14th August, 1887 (BL)
[39] Forbes, Geraldine, *Women in Colonial India, Essays in Politics, Medicine, and Historiography*, p. 121 – 140.
[40] Home Department Proceedings, no. 124, 1914, page not found (BL).

of them were also engaged in private practice[41]. Indeed, the native and official objections had given way to a situation, which was favourable for the enrollment of women in medical training courses and in taking up medicine as a profession. But the peripheral areas remained a little neglected, something which was accepted by the government officials. Bihar and Orissa had two such institutions in Bankipur and Cuttack respectively but Assam did not have a single one where women could be trained and there was no example of a single Assamese woman, who had been admitted to the medical course[42].

Social transformation in Bengal Presidency in many aspects was felt during the last years of nineteenth and early twentieth century, but question still remains that how far this intellectual influence reached out to the inner regions of the Presidency? It is true that a considerable number of applications came for medical training courses from all the sections of the society but it was confined within the urban territorial limits. The peripheral areas remained out of this l awareness and lagged far behind in the urge for education in general and medical education in particular.

Equal Medical Education: Indigenous Efforts and Government Involvement

"…not only the men of India have awakened to the enormous benefit of humanity that skill in this particular branches of medical science…, but that also the women of India are speedily recognizing and adopting the benefits that accrue to them thereby in their hours to difficult travails, in the rearing and healthy management of their children and in the treatment of the particular ills to which they are so often the unfortunate heiresses"[43]. This was the statement made by a renowned doctor about the changing situation of women in Bengal Presidency. Though it took more than a decade for the Government to enroll women officially in medical courses after the Nilkamal Mitra's petition for admission of

[41] Home Department Proceedings, no. 124, 1914, page not found (BL
[42] Ibid
[43]Dimmock, H.Peers, (I.M.S, Prof. of Midwifery, Grant Medical College, and Obstetric Physician, J.J Hospital), Presidential Address, Transactions of the First Indian Medical Congress held at Xavier's College, Calcutta, 24th to 29th December, 1894, p. 411 (Wellcome Library).

his granddaughter to the hospital assistant course in 1875, but changing attitude of the society and few Government officials towards women medical education was noticeable. Bengal Government started thinking seriously to give equal opportunity to women in medical education. This process was of course not easy for them because of several obstacles from different official circles. With the passage of time many Government policies came and along with that individual initiatives ultimately altered the situation of women's medical education in Bengal; equal medical education for women started. The story behind this journey is significant to discuss in this regard to reveal the level of difficulty Government as well as women aspirants had to face in this process. We have already talked about Campbell Medical School which was established later to the commencement of women participation in CMC. But the process which actually made this drastic societal change possible is important here and few of Bengali reformer's effort could give a more interesting input to this story.

Nilkamal Mitra wrote a letter on this issue to Mr. Barnard, the Secretary of Bengal. He desired to get opinion of Lt. Governor on the problem of admission of women in medical science stream through that letter[44]. The main focus of the letter was, if any Hindu lady wanted to appear before the examination after completing her medical education successfully and she qualified in the said examination, whether Diploma would be awarded to her or not. He expressed his views that women should be given special relaxation to attend the classes of all subjects where attendance was mandatory for the students. Yet same procedure of taking examination on the consciousness of the studied subjects would remain unchanged in the cases of women too. But women should be allowed before the examiners for examining them only of Bengali lessons to ensure their competency in medical science. If she successfully qualified in the examination, she should be awarded Diploma Certificate as it was done in the cases of male students. But after qualifying in the same examination, the lady student would not be bound to join any government job[45]. The main objective behind raising such questions was to ensure his granddaughter's admission to the Calcutta Medical College (her granddaughter means daughter of his own daughter) for studying medical science in Bengali medium. The husband of his granddaughter,

[44] General Department, Education Branch, January, 1875, B Proceedings, no. 1, p not found, WBSA
[45] Ibid

Manmathonath Datta was then a third year student of CMC. In that case the girl could take lessons from her husband sitting at home. Another question was if she could complete her study within two to three years, then like the male students of Campbell Medical School whether she would also be allowed to get the opportunity of having Diploma in medical science.

As she was living behind the curtain it was not possible for her to mix freely with the male students of the Medical School. Yet she was agreed to take note from the professors on attending the classes sitting separately behind the curtain. In medical science, dissection of a dead body was one of the main parts of the entire course. She herself was willing to be expert in that subject. It was expected by Dr. Nilkamal Mitra that his granddaughter would be allowed to dissect human body in a separate room sitting with him (grandfather) or her husband. Reasons as he stated in his letter was that during those days dissection of few parts of the dead body was censorable in the society. He also confirmed about his experience in dissection of dead body during three years long student life at CMC.[46] In the year 1875 the girl was fifteen years old. She could very easily read and write Bengali and was able to understand any book published in Bengali too. Though she had very little knowledge in English, yet did not want to write in that language. But it was expected that she would gradually learn English for development of her knowledge. In the same letter Manmathonath Dutta conveyed his consent for learning of medical science of his wife[47]. The letter was sent to the Education Director. Based on that Dr. Woodford and Dr. Siverse, the Education Director, sent a report to the Government discussing thoroughly on medical science education of women. But unfortunately Dr. Siverse was against women's medical education. Hence his report was tuned against rendering medical science of women. He suggested waiting till eagerness was increased on medical education upon the women. The Education Director expressed his opinion that there would be no other way but to wait forever if the advice Dr. Siverse had to be followed. In this regard, the Director positively commented that, "if any women from a well-to-do family expressed eagerness in this subject, then she should be helped from all respect. Because she was a

[46] Roy Binaybhushan: Chikitsa Bijyaner Itihas Unish Shatoke Banglay Pashchtya Shikshar Probhab, Sahitya Lok Publication, Calcutta, 2005.
[47] General Department, Education Branch, B Proceedings, No 1, 1875.

woman living behind the curtain and I must extend my assistance to her in all respect. To assist such rich women would be more fruitful than to any other woman coming from lower status. As such considering the willingness of the applicant I must request Mr. Woodford to take much more initiative in this matter and he will be also informed that the Government is very much willing to make success of the endeavour experimentally. I have disused the matter Woodford. He also nourishes the same opinion with me"[48].

This was the condition of Government initiative for women's medical education in Bengal. On one hand when the society was still in a vulnerable condition, only a microscopic section of the society became conscious towards equal education and scope for women and most importantly few women was able to show their carriage to learn medical science and willing to choose it as their profession; the Government didn't respond properly. The struggle went on.

On 18th February, 1875, the Principal of Calcutta Medical College, Dr. Norman Severse conveyed his opinion in writing on "Education of medical science to women" to the Education Director. He stated that he desired to wait for expansion of medical science for women until the native women expressed their eagerness themselves for learning of medical science to make them more careful and sincere. Instead of that no fruitful result could be expected from a lady living behind the curtain. Owing to his dignity of the post he had to hear snare of words but this type petition came to him for the first time[49]. In expressing his personal opinion, Dr. C. O. Woodford, Superintendent of Campbell Medical School, said that it was almost impossible to arrange any special lecture room for noting lectures of professors sitting behind the curtain for a lady whatsoever her eagerness on education of medical science. But a separate seat could be arranged for her. At present separate arrangement might be done for post mortem[50].

On 5th April, 1875, the Secretary Bengal Government informed in writing the Director (Education) that Lt. Governor desired to convey consent on the letter of Babu Nilkamal Mitra. The secretary also requested the Director (Education) in conformity with

[48] General Department, Education Branch, B Proceedings, No 2, April, 1875.
[49] Ibid
[50] General Department, Education Branch, B Proceedings, B Proceeding, No 4

the letter of Babu Mitra that necessary arrangement for the lady for her joining in lecture and post mortem should be made after discussing the matter with the Principal of Medical College and Superintendent of Campbell Medical School. Separate arrangement surrounded by curtain should be made in such a way that she could take class note easily. In case of arising any undesirable difficulty in making such arrangement, Lt. Governor expressed his desire to adopt all types of opportunities for successfully implementing this examination. Dr. Woodford had already intimated that he would arrange separate room for post mortem. The Secretary again requested to make all necessary arrangements properly. After taking medical education if this lady or any other lady became competent, then she must be given opportunity to sit on the examination and if she qualified in the examination she would be honored with Diploma. Lt. Governor also desired that there was no need to maintain rules and regulations rigidly in attending lecture room. The competency of professional knowledge of the lady candidate must be accepted at par with the other examinees. Her examination could not be rejected on any plea citing ruling like attendance in classes[51].

Afterwards, on 13th March 1879, Rakhaldas Mukherjee and a few other persons placed one report before the Education Director. It was stated there that six Bengali Women were willing to take admission in Campbell Medical School at Selah. But the guardians of those candidates opposed the proposal. At this situation they thought that it would not be judicious to make any more arrangement[52]. On 5th May, 1882, Mr. Alfred Craft, the then Education Director, wrote a letter on women's medical education to the Principal and college council of medical College. He wrote that if a group of women doctors got the authority to enter into the inner apartments of house, then the sorrows and distresses might be removed. So the native women and others who qualified in entrance examination should be given opportunity to be educated in medical science (L.M.S.). The Principal moved this recommendation of Mr. Craft at the meeting of the council. Four members among the five who remained present in the meeting opposed the recommendation. The reasons were firstly no demand on the medical education for women was raised separately. Still if it found to initiate adopting any arrangement, then one

[51] General Department, Education Branch, B Proceedings, No 5, April, 1875.
[52] Ibid, March, B Proceedings, No 1 and 2, 1879,

medical Science College should be built exclusively for the women and secondly in lieu of that the necessity might be met up by extending the current midwifery. In addition to that the then Principal-in-Charge of Medical College discussed the matter separately with the councilors. The result was that all the councilors opposed to decrease the standard value of the entrance examination. Many of them were of the opinion that there was no need at all for women's medical education. And many of the members expressed their opinions that women were incompetent for medical science examination. In fact in Bengal, in 1882, Ellen Barbara d'Abreu (born in Dacca to an Anglo-Indian family from Patna and Nagpur) and Abala Das (1864-1951, daughter of the renowned Brahmo reformer Durga Mohan Das who later married the scientist, Jagadish Chandra Bose) passed the First Arts and Entrance Examinations, respectively, from the Bethune school and approached A. W. Croft, the Director of Public Instruction in Bengal, to get admission at CMC. Unfortunately they were not permitted to take admission in the College and thus had to go to madras[53].

From the above discussion the prime issue comes up that the Bengal Government was till then not unanimous, rather was in dilemma about women's equal medical education and also reluctant about their capability. Though few people agreed of giving medical education to women but their aim was to make good midwives or good hospital assistant not a good doctor in the society. Some Government official clearly expressed that better to give medical training to those women who belonged to a well of family and thus neglecting the prospect of the non-urban and lower class women in medical science. However this problem was little resolved with the arrival of the Principal, Kotes' return after expiry of leave and Mr. Croft placed before him the report of Medical College council. In reply, he gave his opinion in favor of arranging separate sitting room and dissection room for the women[54].

By this time the first woman graduate of Calcutta University, Ms. Kadambini Bose, applied for admission to Medical College. As such, nothing became hindrance for her admission in medical education[55]. She passed all the examinations in second class and took

[53] Mukherjee Sujata, Gender, Medicine and Society, p. 47.
[54] Roy Binaybhushan: Chikitsa Bijyaner Itihas Unish Shatoke Banglay Pashchtya Shikshar Probhab, Sahitya Lok Publication, Calcutta, 2005.
[55] Karlekar, Malavika, Kadanbini and the Bhadralok: Early Debates over Women's Education in Bengal, Economic and Political Weekly, Vol. 21, No. 17, April 26th, 1986, p. ws25 – ws 31.

admission to CMC. The College Council Board was somehow reluctant to give her admission, but couldn't resist the growing demand in the society. Kadambini received a scholarship of Rs 20 per month and started attending the classes of CMC[56].

Initiation of the discussion was happened from the letter of Mr. Alfred Croft, the Education Director. He wrote letter to the Principal of the Medical College on 5th May, 1882. It came to knowledge from that letter that guardians of two to three women who qualified in entrance examination placed applications before the Education Director for studies concerned subjects relating to L.M.S. at Medical College of their own daughters. Those women were also desirous for studying medical science. Depending on that very letter the Education Director wanted to know from the Principal whether the Principal and his council would face any discomfort to implement physically that very satisfactory subject. After careful consideration of the social circumstances of the locality he said that well-educated women doctors were absolutely necessary for the large number of Indian women to save them from painful life and pre-mature death. The number of omen candidate qualified in the Humanity stream at the University was especially mentionable and hopefully it would increase to a large extent in future. In case of getting opportunity for entry in Medical College, these women would be benefitted towards profitable and favorable livelihood. So it was urgently necessary to discuss the subject of their admission as soon as possible. There was no doubt to consider that eagerness for taking education in medical science would be increased day by day. The question which was raised for consideration of the council was that the periphery of such application for medical education of women was practically extended to a large extent though at that very moment it was two or three only. Whatever it might be, as per pre-condition, eagerness of at least two women for studying medical science was absolutely necessary and at that moment the condition was fulfilled.

As per current practice of that time, the candidates have to pass F.A. examination for appearing in L.M.S. examination. In this respect special as well as temporary arrangement for women may be adopted. As a result the women who passed the examination would be eligible for studying at Medical College[57]. On 10th June, 1882 the

[56] Mukherjee, Sujata, Gender, Medicine and Society, p. 50.
[57] Ibid

temporary Principal of Medical College Mr. R. Harvey wrote a letter to the Education Director saying that all the members of the college council opposed to relax the standard of education for women students. In their opinion opportunity for admission of women in medical science would not be desirable. Opportunity to the boys and girls for studying together was subject to protest. In the opinion of the members there would be every possibility of losing character if they were allowed to study together.

Separate school and hospital should be built for the women if they were permitted to study medical science. As per their opinion there was no demand of female doctor among the native people. The need of lady doctor would be fulfilled if the midwifery and education related to female and infantile diseases were extended satisfactorily.

After returning from foreign, Mr. Kotes, the Principal of Medical College certainly expressed his personal opinion to the Education Director. Based on the experience he gathered by visiting medical schools of Switzerland and France, he told that mental; strength of professor and students could not be degraded by co-education. Rather presence of gents and lady doctors in the same classroom and hospital exerted bright influence on everybody. Yet there were some such diseases in surgery and mode of farming human body where the women students' presence would not be judicious. One separate school should be built for this subject. But the medical schools of America, Ireland, France, Switzerland and Madras did not take this arrangement as final.

In that report, it was promised to provide separate rooms for women for post mortem and their rest. Yet Kotes did not confine his remarks within this periphery. He wrote a letter to the Principal of Madras Medical College on 16th October, 1882 to have his opinion on the matter. The Principal of Madras Medical College replied to this letter on 24th October. It came to know from there that eight women were studying there at that time. Following subjects were examined at the time of their admission: Dictation of thirty lines from any book of famous English writer; English grammar and essay at par with entrance examination and History and geography Mathematics. Seats were kept reserved for sitting in the class. The girls had to serve the patients of the hospital as per with other students. No trouble was formed for co-education there. The women had the option to join the classes of surgery and the formation of body. There was no room for dissection for the girls. There was no harm found in mental strength for co-education. For the first two years

they had to serve the females and the infants. They used to take training from their assistants on the matter till they fulfilled the demand. Separate rest room was arranged for them in college and hospital. No fees were being taken for rendering education to them and Government used to supply text books to them.

The Secretary In-Charge of Government wrote a letter to the Education Director on 29th June, 1883 about the then current position of medical science education in respect of women. It was stated in the letter that the questions regarding medical education of women were placed before Lt. Governor, Thompson. After analyzing the questions in details, the Lt. Governor commented that no other arguments other than the arguments given by Dr. Kotes, Harvey and Anderson would be listened. Hence after considering every aspect he cancelled the report of college council and supported the argument for medical science education of women. Yet he opposed to fix the education level for admission of women. He gave the responsibility on the proposal of sitting arrangement, curtain and restroom for women on the Principal[58]. Thompson further said that it was a shame that fully qualified female students had to go to Madras for taking medical education and Bengal Government and the Council of CMC kept mum. Here two factors helped to secure this. Firstly, Maharani Swarnamoyee donated a sum of Rs. 1.5 Lacs to the government for the purpose of medical science education of women. The government built a residential hostel for the women using that money[59]. As a result the need for the women who expressed their willingness for studying Medical Science residing at Kolkata was removed. On 25th February, 1885, the Education Director recommended two proposals in a letter, one of which was related to Medical College and other on Eden Hospital. Both the proposals got support from Government. It was mandatory for the women to pass in the entrance examination for studying at Medical College. The other proposal was related to making arrangement for midwifery education at Eden Hospital. Secondly, Sir Waltair D'Suza agreed to give stipend at the rate of Rs. 200 (two hundred) for three years depending on the Dufrin fund relating the concerned subjects[60]. One of his primary conditions was to help European and Eurasian women in medical science education. In his opinion, there were a good number of women available in that category, who was willing to study medical

[58] General Department, Education Branch, 1883, No 1/8, July.
[59] Balfour Margaret. I and Young Ruth, *The Work of Medical Women in India*, p. 102 - 122. (BL)
[60] Ibid

science. But problems were formed before them for the condition of qualifying the entrance examination. Hence, if the condition on entrance examination was lifted then they would come forward for studying medical science with pleasure. They were as a whole educated. Owing to different reasons for non-fulfillment of the announced conditions, the women were being deprived from medical science education. In this connection, at the report of Dufrin fund it was stated that there was no dependency on qualifying University entrance examination for studying medical science at Madras. Though separate examination was being taken for judging their eligibility. So, Sir Waltair D'Suza proposed to take same arrangement at Bengal like Madras. The Lt. Governor wanted to take opinion on the said proposal from the Education Director[61].

On 16th February, 1886, Dr. Kotes, the Principal of Medical College placed the following report before the Education Director. It was stated there in that Madras Education Department arranged to take alternative examination of entrance examination. Most of the members of the college advised to continue only the entrance examination after three years of closing that very examination. A few members of the council recommended taking examination through a special committee because the main objective was to judge the intelligence of the lady student and whether she possessed the quality of understanding the lessons of college. Those lady students had to study with the lady students of the University who possessed license and degree, as the professors had no time to take separate classes. There was no separate arrangement for curtain between gents and lady students at America and Ireland. Separate sitting arrangement was arranged for gents and lady students at Madras. The lady students of Madras were also unwilling to sit beyond curtain. The Education Director-In-Charge Mr. C. H. Tonay opposed the proposal. In his opinion the doctors were the fittest persons to take the examination instead of the Education Department. Because the main intention for taking the examination was to judge the educational level of the women who came to study medical science and their competency to going through books relating to medical science. On the other hand, it was disgusting for the aged women who were as a whole educated but unqualified in entrance examination to study along with other lady students in a crowded environment. On the

[61] General Department, Education Branch, 1886, February, No 1, File no 3.

other hand, he also opposed to continue the entrance examination only lifting the proposed examination. In his opinion it was better to continue the proposed examination[62].

By this time, certificate class had already been started at Medical College on the above noted first and second subject. The professors of that institution used to give lecture in English for being not familiar with the native language. As a result that class was confined only among the European and Eurasian women. That very kind of women would confine their medical practice in big cities only. But there would be scarcity of native women for medical treatment in big villages. So he advised to start one class in Sealdah Medical School for medical science education in mother language.

During continuation of Certificate class, the standard of education for admission of the regular students could not be lower than F.A. Certificate Examination. As such they did not agree to accept the lady students qualified in entrance examination for studying in that class for admission in the regular class joined with Medical College. Instead of that, the members expressed their opinion to transfer those lady students to Sealdah. They suggested that the class might be opened as an alternative to the vernacular class. The candidates had to pass entrance examination for admission.

The Education Director commented in this respect that in case of giving effect of the said recommendation the lady students of licentiate and Certificate classes had to study inn native language. But owing to lack of knowledge in Bengali of the European and Eurasian ladies, they would face trouble in accepting lessons in the classroom. It would be troublesome to continue Certificate class jointly even in pursuance of the recommendation of the council if it was tried for reading English in that class. So, the Education Director recommended for continuing temporarily the Certificate class in Medical College. In that case, the lady students of medical College will be required to pass in entrance examination for admission there. In the second part the council recommended for dividing the course of study in to three to four years. The education director consented acceptance of that recommendation. In the third part, the council had discussed on the course of the syllabus. The Education Director consented in that proposal also. After thorough discussion, the following proposals were accepted in the next council meeting on 9th April for fixing rulings on promotion: No candidate will be allowed to get the opportunity for studying if

[62] General Department, Education Branch, March, 1886, Nos. 2-4, File No. 31.

she got less than 10% marks in any two of the three subjects in the first year test examination; A student had to secure at least 33% marks to pass the second and third year examination. In case of failure in any two or one subject out of the three and in case of getting less than 25% marks, the candidate had to appear again in the examination on the next year. Again any lady student if failed in the examination after securing 25% marks or less marks then she will be allowed for promotion in the next class. But she had to give examination again in the failed subject at the time annual examination of that year. She would be given right to attend the lecture on the subject in which she failed. She would be punished like appearing in the main examination if she failed two pass the examination again; the lady student had to follow of the rulings framed in previous year for qualifying in the examination after fourth year. Yet she would get a fresh chance after six months on the very subject in which she secured less than 25% marks. In that case, she had to produce letter of proof regarding her admission in hospital for prolonged six months[63].

The Secretary-in-Charge of Bengal wrote a letter to the education director on 6th May, 1891, on the subject of problem of syllabus. It was stated therein that in the opinion of college council it was troublesome for the lady students to follow the same syllabus and appearing in examination. Because the level of acquiring knowledge by the lady students was not of the equal level and their level of education was also incomplete. On completion of their education their knowledge was not up to the satisfactory level. In spite of obeying the truth of the above comments the Lt. Governor was not agreed to consider the decision of the council towards lifting the Certificate class from medical College. Because the lady students were residing at the Swarnamoyee hostel adjacent to the college and it was very easy for them to reach hospital ward and Eden Hospital. Instead of that, it was more troublesome for them for going to and coming from Sealdah Campbell Hospital. Keeping same opinion with the Education Director, Sir Charles Elliot was in favor of continuing Certificate class at medical College. In lieu of current method of examination for admission, he expressed his opinion in favour of giving opportunity to the lady students who qualified in the entrance examination and obtained Australian Certificate. He became

[63] General Department, Education Branch, July, 1881, nos. 1-2.

agreed to extend the period of study up to four years considering the incensement of standard of education[64].

One Mrs. D. Mukherjee wrote a letter to the Principal of the Medical College on 7th November, 1894 for studying medical science. She distinctly admitted in her report that she could not pass the entrance examination of Kolkata University. Hence she requested the Principal to consider her prayer especially because her main motive of life was to reduce the sufferings of native women by taking the profession of physician. This came into her mind much earlier when she was living with her husband in a distant insanitary district. She used to give medical services to the women of that locality taking the assistance of two books. One was "Domestic medicine", written by Moore and another was "Index of diseases" written by Mr. Tonner. At that time, she fixed her mind that she could take effective steps if she was allowed to study medical science. Yet a very few native women were interested in taking this profession. Later on, from the little working experience she gathered by devoting service at Lady Duffrin Hospital she could understand that it would be a very dangerous experiment to adopt the medical profession luxuriously without obtaining full knowledge in medical science. Thereafter she decided to acquire knowledge on medical science after studying medical science with utmost care and patience taking admission in Medical College. Yet everything was dependent on the favourable consideration of the Principal and her time and energy on fulfillment of her target.

Hence, she appealed for obtaining the following opportunities in support of the above statement: To give her right for studying medical science as a regular student without passing the entrance examination or without appearing in any other examination as per rule; To get opportunity for attending lectures on all subjects and to attend hospital and also to get Diploma after completing Certificate Class and study; To exempt her from the responsibility of paying excess amount of fees as it was mentioned in ruling number five and seven of the proposed agendas of the College.

She demanded those facilities for her financial hardship. Because her husband was a priest of Church of England and they were to maintain their family with a very poor income. Her primary intention was to serve the poor women without any remuneration. So,

[64] General Department, Education Branch, July, 1881 no. 3

she will be obliged if her petition was accepted. The College Principal sent this petition to the Education Director to allow Mrs. Mukherjee for admission in Certificate Class. The educational standard of Mrs. Mukherjee was very well. Previously her father was Hindu. Later on he joined in Baptist Mission. Her mother was an Irish lady. She studied in European School up to Sixth standard and was on the responsibility of Women's Boarding School in Baruipur for 8 years. The petition was written by her personally and it could be considered that she had the capability of reading in Certificate Class without passing University Entrance Examination.

Depending on this letter, Mrs. Mukherjee was allowed to be admitted in the Certificate Class of Medical College[65]. The Superintendent of Campbell Medical School raised a proposal on 28th September, 1898 to establish one woman Compounder class. Supporting the proposal, the Superintendent of the group of Civil Hospitals of Bengal commented that women, specialized women compounders and experts in cleaning the wounds were essentially required for the women's hospitals. Otherwise, the plan of Lady Duffrin would be destroyed in respect of the "women beyond curtain". He expected that the Duffrin fund committee could also consider the proposal. This proposal of Dr. Gibbon, the Superintendent of Campbell Medical School, was also supported by Lt. Governor. As per his proposal the prescribed fee of Rs. 4 for the admission of women was also condoned. Lt. Governor recommended that in case of availability of scholarship earmarked for licentiate class that should be used for the lady compounders. Yet in case of necessity, she will be returned to her main stream of work[66].

In the mean time, the following proposal became the topic of discussions at the Government level: After passing the compounder ship from Campbell Medical School the women awarded with stipends had to work under Government for a stipulated period. But the Inspector of the Civil Hospitals and the Superintendent of Campbell Medical School opposed that proposal. They commented that in case of accepting that proposal mandatorily there would be constraints in participation of women in compounder class[67].

On the 5th of May 1882, Mr. Croft asked the Principal and Council of the Medical College about their opinion on the admission of females to the CMC classes. He urged

[65] General Department, Education Branch, January, 1895, B Proceedings, 80-82.
[66] Municipal Department, Medical Branch, April, 1889, Nos. 24-25.
[67] Ibid, B 229 & 224

that they should be admitted on the ground of the great alleviation of suffering which would probably result if there were a body of qualified practitioners to whose admission to zenanas there would be no objection. He added that if the Medical College classes were thrown open to females, a career of usefulness would be provided for those ladies, native and others, who were passing the University examinations. Mr. Croft proposed to recommend to the university the admission of female candidates if they passed the Entrance examinations[68].

Despite all these social discriminations and discouragement, female medical education continued to flourish. The first beneficiary of the new rule was Kadambini Basu, one of the first female graduates in India, who later married the Brahmo reformer Dwarakanath Ganguly. In 1883 Kadambini entered the Calcutta Medical College and was awarded the GBMC degree in 1886.[69] Instead of the MB, as she had failed in one part of her final practical examinations. Professor R.C. Chandra failed her in medicine. It was generally believed to be a vindictive gesture because he was opposed to the inclusion of women in Calcutta Medical College. A scholarship of Rs.20 per month was announced by the government to every female student for her tenure of five years[70]

Conclusion:

Women health is a newly born debatable issue in this country. Since time immemorial health condition of women was almost same as of nineteenth century, because the treatment was dependent on either ayurved or unani system throughout the country. Very limited advancement and modification took place in these systems. Nobody questioned its methods or the way of treatment and took any interest to raise the issue of poor condition of women health or mortality and never tried to solve it. The major reason behind that was undoubtedly ignorance of about any other better options of treatment. It

[68] Mukherjee, Sujata: *Medical Education and Emergence of Women Medics in Colonial Bengal*, Occasional paper, IDSK, Kolkata, 2012.
[69] Karlekar Malavika, *"Kadambini and the Bhadralok*," p. WS-25-31
[70] Meredith Borthwick, The Changing Role of Women in Bengal, 18491905, Princeton: Princeton University Press, 1984, p.323.

was only after the western encounter in India people became aware of a second method which in many ways proved superior to the existing one. When the global concept of women health care, consciousness of public health and sanitation etc. (including education) brought into this country by different personnel assigned in different projects, the question of poor health condition and mortality of women became prominent. The indigenous people found reason to protect and improve the sate of women health. This was a time when already a trend of spreading education among women was started taking place in Bengal Presidency. It was not at all a simple and trouble-free process, but certainly this ripe condition of the society, had made the process little easy for the medical science to penetrate into the sphere of the 'protected' world of women.

However women health improvement started with the endless effort of the missionaries which gradually spread among the Bengali women as well. The most important aim of the missionaries in was to work on preventive medicine i.e. care of women before, during and after childbirth and child welfare movement and in this process they were supported by the British enormously. Sir Charles Pardey Lukis, in his inaugural lecture at London School of Medicine for Women, stated that the chief object of women's medical work in India should be; the safety of India's women in childbirth, the recognition and treatment of antenatal disease, training of nurses and midwives, infant welfare household hygiene etc. this attitude proves that neither in England nor in India initially women were recognized as individual good doctors, but identified as helpers of the other poor conditioned women only[71].

With the passage of time we can notice the same concept prevailed in India for those women who took medical education. An important feature of women education was the utility of such professional course in practical life. One of the prime causes of opening the door for medical education for women was the need of women doctors to treat women only, as if it was a charitable work for them. But back of mind everybody knew that it should be a good profession of women in this country. How far this became true? After getting the midwifery training, women didn't find immediate faith of local people and

[71] Scharleib, Editorial Note, p. xi.

'remunerative employment or aids from dispensary funds'[72]. It was very unfortunate that in spite of a great demand and gradual supply of medical women after a certain time, these women couldn't receive the opportunity to be a proper professional in all respect. This was related to poverty of course. Men were free to join Government jobs and private practices and earned respect, faith and good money from the society. The case was not same for women. It is true that Government gave free medical education, stipends and good scholarships to female students and made them capable and competent. Afterwards when they practically faced the society, where poverty usually played the prime role and where these female doctors were actually needed, found it was impossible to acquire a good professional and social position as far as remuneration was concerned. Not only the midwives, the hospital assistants and later on graduated from CMC faced the same problem when they were placed in the rural areas and non-urban hospitals in different parts of Bengal Presidency. Another problem was Purdah or Zenana culture, which was related with good and respectable families. Others, who were out of such social customs, were considered as impure and non-respectful. Social customs became the symbol of elitism and civilized. Thus many upper class and caste families restricted their female members for acquiring medical knowledge. But in spite of several social, economic and religious hurdles women in Bengal, with the support of few enlightened section of the society, could able to enjoy the warmth of western medical education.

Gramsci's theory of hegemony is perhaps right for the Indian society as far as medical education was concerned[73]. There was, even after "coercion" from the state, "spontaneous consent" from the society ultimately made western medicine successful to superpower the other systems. Acceptance and adoption by the indigenous people rather than imposition shows a positive side of this process of drastic change in medical sociology in Bengal. But whether this positive attitude was out of an absolute interest of the people to gain knowledge of an alien system or was it a blind trust to be treated more effectively? None of the points could be discarded but not fully accepted also. Being the unprivileged, due to the absence of patronage for indigenous medical systems, the

[72] Hoggan, Frances Elizabeth, *Medical Women For India*, The Journal of the National Indian Association, Bristol, October, 1882, p. 8

[73] Arnold David, *Colonizing the Body: State Medicine and Epidemic Diseases in Nineteenth-Century India*, University of California Press, London, 1993, p. 240 – 289.

contemporary society was slightly bound to accept the only one prominent medical system at that period. In contrast of rapid growth in terms of technology, sophisticated drugs and many others of western medical science, the indigenous systems were almost untouched and forsaken by the society. Though it was never vanished but deemed due to the negligence from both the side; state and society.

Chapter VI:

Response of the Indigenous Society: Reflections in Contemporary Journals, Literature and Media

This chapter intends to look into the introduction of western medical education in Bengal from a different angle and examines the response of the indigenous people towards western medicine. Leaving the territory of British official documents, the contemporary Bengali journals, literature and media are the major sources of this chapter. The impact of western medicine (education and treatment) and emerging professional group on Bengali society was huge. The response within the society towards western medicine was well manifest through the pages of those vernacular print media, literature and other forms of social media of the contemporary period. But why we should take this theme as a part of this research work? The rationale behind taking these Bengali sources in a serious frame of mind is the role of the society in making history and the reflections of a society in these contemporary journals. These journals, periodicals, newspapers, literary works and media could give an insight into the minds of the Bengali intelligentsia as well as it could reveal the response of the ordinary people towards different forms of colonialism. Thus they might become an important source to construct a comprehensive history of western medicine in Bengal Presidency. Research works on various journals regarding medicine and medical education are less in number. Though it has caught the attention of some historians recently, like the *Nationalizing The Body*[1], *Health and Society*[2] etc but systematic and meticulous re-work is still possible. The aim of this chapter would be to re-visit the pages of the early journals and re-consider the analysis already made by those journals on the new medical knowledge, its development, research, their effect on the society and other related problems as well.

[1] Mukharji Projit Bihari: *Nationalizing The Body, The Medical Market, Print and Daktari Medicine*, Anthem Press, London, 2012.

[2] Basu Pradip Kumar (Ed): *Health and Society in Bengal, A Selection from Late 19th-Century Bengali Society*, Sage Publication. New Delhi, 2006.

Colonization in the medical field was an extremely important process as far as medical education in Bengal was concerned. It had wide-ranging results. We do talk about the newness that was brought by the British in this field. But is it not relevant to discuss the different psychological dimensions of a traditional society in this context? Is it not important to know the response of the society to a new scientific knowledge? Can the response be seen through the pages of contemporary journals? Certainly, one cannot deny that the journals started playing the role as the mouthpiece of the native people of Bengal since nineteenth century[3]. Vernacular as well as English journals[4] on various issues and problems could be cited to understand the response of Bengali people towards British activities, especially regarding medicine and its practice. The mentality of the intelligentsia, which is very much vital for the present study, could be seen reflected in many articles of those journals. At the same time with the introduction of printing machinery in India, print media started becoming stronger day by day. It might have also influenced the promotion of both western and indigenous medical systems among the Bengali people. It will be discussed in detail later in this chapter.[5] Apart from that few other forms of social media like drama, *Zatra* (different from of drama), and folk song etc. are also mentionable here. In this regard, literature is very important. Writer's pen sometimes reveals the socio-cultural and political state of a society. Therefore the reflection of a society's own voice through the variety of social media is a relevant source of history. Some vital but so far neglected areas and issues are questioned here. What is the rationale behind giving importance to Bengali journals, periodicals and literature? How far did the contemporary literature and media help to popularize (if it did at all) western medical education in Bengal? What were the psychological dimensions of a traditional society's response to a new scientific knowledge? How the 'alternative medicine' made its

[3] The first Bengali journal was published in 1818 from Serampur, Bengal called *Samachar Darpan* (*Samachar Darpan*, 1818, Serampur, pp1). Another journal was published within fifteen days of the publication of the former one called *Bengal Gazette*, by Gangakishore Bhattacharya. There is an unsettled debate regarding the exact publication date of both the journals.

[4] At that point of time, Bengali intelligentsia from different parts of Bengal Presidency seriously involved themselves with these journals either through organizations or by individual efforts.

[5] It is very unfortunate to state that the early journals are on the verge of extinction today. It is really a high time to take serious interest on those valuable sources. One can consider the time factor behind the ruined condition of the journals but it is very disturbing to see the present condition of such valuable data.

position in the writings of Bengali intelligentsia through the journals? What were the relationship and disparity between the urban writings and the writings of non- urban places? How the other forms of social media and literature did influence indigenous people? These are some essential questions, which would be nurtured in this chapter keeping in mind the socio-economic and political condition of contemporary Bengal.

Though the discussion of historiography is already done in the very first chapter, some detailed analysis is still possible. Pradip Kumar Basu (Health and Society) talks about the period 1850 onwards till the end of the nineteenth century with special reference to the medical journals only. Still, there are many scopes to work further. Firstly, the journals were started publishing much earlier and were vocal about medical issues also. Secondly, the non-medical journals were seriously engaged with such topics too. So we should not ignore all these types of journals. There is almost no work on the English journals especially. This could be another area of focus regarding medical issues.

Journals or periodicals publication in the Bengali language was a new phenomenon to the Bengalis started in early days of the nineteenth century. It was an essential and far-reaching progress in the field of Bengali language and literature. There was no proper prose literature in Bengali language before the nineteenth century. The specimen found before were the official letters from native states to the British government and translated works from Sanskrit without having any literary grace. The history of Bengali literature can be traced with the introduction of Fort William College in 1800 and was also indebted to the endless effort of William Carey. In the words of Carey "Bengali is a language which is spoken from the Bay of Bengal in the south to the mountains of Bhootan in the north, and from the borders of Ramgur to Arakan…The Bengali may be considered as more nearly allied to the Sungskrita (Sanskrit) than any other languages in India…On these, and many other accounts, it may be esteemed one of the most expressive and elegant languages of the East"[6]. The languages of northern India had more influence of the foreign languages like Arabic and Persian, whereas Bengali was more or less out of that influence and closer to Sanskrit. Besides nineteenth century saw a high spread of English literature among the

[6] Majumdar R.C, Majumdar. A. K and Ghosh. D.K, (Ed), British Paramountcy and Indian Renaissance, Part II, Bharatiya Vidya Bhavana, Mumbai, 2007, p. 166 – 178.

English educated Bengalis, which to some extent helped the writers in re-modeling and simplifying Bengali language. The new manifestation of this spirit was to be seen in the growth of Bengali periodical and journals.

It is hardly necessary to discuss on the historical value of these contemporary Bengali periodicals and journals. The British preeminence, which had hitherto formed the major part of Indian history, receded in front of the new trend of expressing internal voice in the pages of periodicals and journals from almost every part of Bengal Presidency. As we go through the pages of these journals a complete picture of defects and shortcomings and urge for a new life passes before our eyes, and one can discern in it the symptoms of a sudden awakening after lethargy of centuries[7]. The beginning of new ideas, vision, hope and aspiration, the growth of new belief, debate and conflict between old and new and most importantly a gradual expansion of these ideas and institution became a symbol of modern India. A new culture of representation, courage and boldness to question the authority to establish own wish and demand developed, which directed us to a different side of Indian history. Apart from this great value as source-materials of history, these Bengali periodical and journals were of huge importance as landmarks for the development of Bengali language and literature.

Classification of Contemporary Journals:

While discussing the diversified range of contemporary journals, newspapers and media, it is better to avoid the possible intricacy in the process of understanding. Categorization of the journals could ease the work. A variety of contemporary knowledge practices of that period was comprehended in different ways by the Bengalis. The history of the various 'reaction' towards the medical knowledge, especially to the new one, is the main focus of the present discussion. First of all I will categorize the contemporary journals in some major sections like, English Journals and Bengali Journals. But this is not enough to explain the various approaches of the journals and periodicals towards medicine

[7] Majumdar R.C, Majumdar. A. K and Ghosh. D.K, (Ed), *British Paramountcy and Indian Renaissance*, p. 166 – 178

and medical education. After a thorough investigation, some minor but important subcategories come up.

1. Vernacular journals:-- i. Medical journals;
   ii. Non-medical journals;
   iii. Journals published from urban areas;
   iv. Journals published from non-urban areas
   v. Journals run by individuals;
   vi. Journals of different foundations or organizations
2. English journals:- i. Research oriented;
   ii. Medical journals;
   iii. Non-medical journals;
   iv. Journals run by individuals;
   v. Journals of different foundations or organizations
3. Vernacular journals on homeopathy;
4. Vernacular journals on ayurveda and unani;[8]

Vernacular journals:

Interestingly the first category i.e. English and Bengali journals could be explained in a different way also, i.e. journals run by the British and journals run by the Bengalis respectively (with very few exceptions). Each of them had their own characteristics. For example, the English journals never discussed in detail about the indigenous medical systems, where as vernacular journals were often talked about the new one i.e. allopathy. Sometimes exceptional cases bring light and different angles in our understanding. For instance, *Bengal Gazette* (1780),[9] edited by James Augustus Hicky, was highly critical about the activities of the Englishmen and officials and talked about the indigenous problems and activities. The research-oriented journals like *The Journal of Medical Science* (1838), published articles on case studies of rare diseases.[10] They appreciated the

[8] These subcategories are made after analyzing the journals, both in English and Bengali, published in the nineteenth and twentieth century in Bengal Presidency.

[9] *Bengal Gazette* was the first news paper published in Bengal in English. It could not last long because of some internal problems and stopped publishing in 1781. Bengal Gazette, vol. 1, 1780, Calcutta.

[10] *The journal of Medical Science*,

proficiency of the Bengalis on that particular case, if any, and tried to learn from their skill. But in spite of giving acknowledgement to that system, they enjoyed the gained knowledge and tried to enrich themselves. Not only through the official records and published laws but from the unofficial writings also the nature of handling the indigenous knowledge of the British could be revealed.

On the other hand the vernacular medical journals like *Chikitsak O Samalochak, Sasthya, Chikitsa Sammilani,* etc. took the modern medical systems very seriously. If we study the published articles in these journals, we could locate a systematic approach towards the new medical systems. We should discuss some of the articles here to understand the objective and nature of the vernacular journals. In the very first volume the editor of *Chikitsak O Samalochak*,[11] Satyakrishna Roy, wrote that;

> "…*Chikitsak O Samalochak* is a journal where different types of articles and writings would be published. The first medical issue consists of the history of various medical systems. Though presently there are four types of medical treatments exist in Bengal, but we shall discuss about three predominant systems here (ayurveda, allopathy and homeopathy…).[12]

Along with ayurveda, this journal started publishing articles regularly on allopathy and homeopathy treatment. The discussions were diversified in nature.

The establishment of societies and the publication of periodicals as organs of these societies led to the foundation of many important publications, such as *Bibidhartha-Sangraha*. There are some issues regarding the question of language of the journals, subject to be discussed and whether the language (Bengali) was able to express the complexities of the subject being discussed. Rajendralal Mitra as an editor of Bibidhartha-Sangraha argued,

> "There is a great chance that the experts will be displeased with our way of writing, but I trust that they will keep in mind the purpose of the periodical, and forgive us. So that common people have easy access to knowledge, so that the traders and the shop-keepers can learn about the world in the little time they have from the pursuit of their professions, so that girls and boys can extend their knowledge as they read this periodical as a part of their games or even as a book of

[11] *Chikitsak O Samalochok* was first published in 1895 under the editorship of Satyakrishna Roy
[12] *Chikitsak O Samalochok*, ed by Satyakrishna Roy, B.S. 1301-1302, (1893), Calcutta, p 1-2.

stories, so that the youth can put aside sensually exciting books and take interest in useful things,…[13]"

. *Chikitsa Sammilani*[14] was also a very popular journal of that period. It became conscious about various issues like indigenous medicine and medical science, practice and development of western medical education, public health, sexuality etc. Adoption and also criticism towards allopathy and homeopathy are noticeable here. The motive and intension of the journal was written in this way,

"… all action/ function has its own purpose. Hence the attempt to publish/ propagate a journal called *Chikitsa Sammilani* was also not unjustified. At the same time the presence of a particular cause behind the origin of any purpose or intension is inevitable. Presently, the people of Bengal as well as India are passing through a critical situation regarding the selection process of the right medical professional for treatment. They are confused because there are two types of medical men i.e. indigenous medical practitioners (kaviraj) and western medical practitioners (doctors). The second group is again divided into two i.e. allopathy and homeopathy practitioners…. The intention of this journal is to remove this suspect of the people by making them conscious about the three types of medical systems, their merits and demerits. In doing so, it is really necessary to understand the nature and result of the treatments of these three systems, so that the people would able to take the right decision that where to go for what disease…"[15]

The homeopathy practitioner Fal Gunn wrote in *Chikitsa Sammilani* in reaction to an article previously published about an allegation to homeopathy that,

"Homeopathy is not an 'incomplete' science or mode of treatment. Nobody considers homeopathy as an incomplete system because of the absence of surgery except those ignorant people. According to homeopathy, its surgical process is more advanced than the sophisticated and advanced surgery of allopathy… surgery is not any particular medical science's property, it is knowledge for all kind of medical treatment… but we generally try to improve the patient without giving him the trouble of surgery. Surgery is always critical and risky. This misconception is creating hurdle in the advancement of this system. Homeopathy is not doing

[13] Mitra Rajendralal: *Bibidhartha-Sangraha*, translated by Pradip Kumar Basu (Ed), Health and Society in Bengal, A Selection from Late 19th Century Bengali Periodicals, Sage Publication, New Delhi, 2006.

[14] *Chikitsa Sammilani* was first published in 1884 and published up to 1894. It was edited by Annadacharon Khastogir and Abinashchandra Kabiratno.

[15] *Chikitsa Sammilanir Uddeshyo Ki?*, (article) by Lolit Mohan Chattopadhyay, *Cikitsa Sammilani*, ed by Annadacharon Khastogir and Abinashchandra Kabiratno, vol. ii, B.S. 1292 (1884), Calcutta, p. 404-405.

> well and expected result does not come because of the lack of confidence of the medical practitioners themselves. They used to send the patient, required even a minor surgery, to the doctors[16]. Thus people also are losing their confidence in it. Here we can mention about some of the American homeopathy practitioners like Prof Frankin, Prof Helmut et al. They have engaged themselves in serious surgical science and treatment for a long time, and no need to mention that are doing very well.[17]

However the major objectives of the journals were to make people conscious and gave them relief from any form of confusion in daily life. This was actually needed at that point of time, but didn't justify an absolute imitation of the west; rather get informed and aware of what is happening around them could enrich Bengalis in general. The contemporary English Journals could be divided into three categories, such as, research-oriented journals, medical journals and general journals taking medical issues. But as our focus is on the vernacular or the journals run by indigenous people, the English journals are not discussed in detail.

Although English periodicals appeared in Bengal shortly after the foundation of British rule, there was no Bengali journal before 1818. One of the earliest examples of published journal in vernacular (Bengali) language was '*Samachar Darpan'*. It was published by the Missionaries of Serampore on 23rd May, 1818 (they published Digdarshan two months before its publication, but it did not last long). Though initially J.C Marshman was the Editor, the entire responsibility was rested on the Indian Pundits. Interestingly opening of Bengali journals and the initial stage of the foundation of western medical education in India came almost at the same time. In 1823-24 British thought of establishing Native Medical Institution. It was an absolute newness to the Bengalis. *Samachar Darpan* got very much became attached to this and started publishing regularly the news about the changes and new happenings of the institution and other related issues. First, the news came on 6th July 1822 about the School of Native Doctors.[18] It told about the proposal of the establishment for a new medical institution where both Hindus and Muslims would be permitted to take admission. They would study under the leadership of a European Doctor,

[16] At that time only allopathy practitioners were recognized as 'doctors'.

[17] *Homeopathic Astro Chikitsa* (article), by Fal Gunn, *Cikitsa Sammilani*, Ed by Annadacharon Khastogir and Abinashchandra Kabiratno , vol ii, B.S. 1292 (1884), Calcutta, p. 406-410.

[18] For detail see Bandopadhyay Brajendranath edited and compiled: *Sangbad Patrer Sekaler Katha*, Vol 1, Bongiyo Sahitya Parishat, Kolkata, 1339, B.S 1931.

Jemison. The reason behind the establishment of such an institution was depicted as a severe need to increase capable doctors under the Company's territory. But the Company was facing scarcity of good doctors due to lack of proper education and training. Thus Company was compelled to plan for a western fashioned medical school for the 'native' people.[19] It had explicitly described the criteria of student selection and their future opportunities also. It shows that at the moment Government took a decision which could play a role in the incensement of Indians' livelihood, some sections of the society had involved into it. They realized the need for such initiatives. In 15th March, 1823 there was a report on the establishment of a society for medical science, where several doctors would be associated for different purposes. The news appreciated that the society was going to attach an outlet of necessary books also for the medical students and interestingly the fund would be given by a British[20].

The vernacular journals could be divided into few minor sections like medical journals and non-medical journals (non-medical journals were also vocal about medical issues), journals published from non-urban areas and urban area based publications etc. Medical journals were divided on the basis of their focus on specific themes, like medical treatment (both indigenous and modern medicine), public health issues, critical analysis of different diseases and their treatment, medical education and dissemination of medical knowledge etc. First of all we should take up the medical journals as the first division. *Chikitsa Sammilani* (1883), *Chikitsa Darshan* (1886), *Bhishak Darpan* (1891), *Chikitsa Sangraha* (1870), *Chikitsa Darpan* (1865), *Chikitsak* (1889), *Chikitsak O Samalochak* (1895), *Chikitsatattvabigyan O Sameekaran* (1893). and '*Sasthya.*

The non-medical journals started even before the medical journals in Bengal; like *Samachar Darpan* (1818), *Smbad Koumodi* (1821), *Sambad Bhaskar* (1839), *Tattobodhini Patrika* (1843), *Sambad Prabhakar* (1831), *Pally Sanskar, Somprakash, Dhaka Prokash* (1864) etc. Along with other relevant upcoming subjects and societal changes, these journals started publishing reports on medical education, institutions, opportunities, jobs, medical books and also wrote on various controversial issues. They often talked about the

[19] Samachar Darpan (1818), *Chikitsa*, published on 6th July, 1822, 1229 B.S

[20] Samachar Darpan (1818), published on 15th March 1823, 1229 B.S, p. 13

merits of western medicine and gaps of the indigenous one and also the vice-versa. Over all, the different character and nature of all these contemporary journals could give an insight into the contemporary Bengali society's different psychological dimensions and response towards western medicine.

Social Milieu of Bengal:

It is widely recognized that the impact of western education and intellectual interchange was a critical long-term force in the making of the new, modern Indian culture and attitude as it emerged in the nineteenth century. The new or renaissance 'mentality' was conspicuously different from that of the Mughal twilight. In contrast was the nineteenth century mentality, the components of which were both secular and religious and which ideally aimed at a synthesis of tradition and modernity. The result was a new point of view, a new set of values that underscored religious experiences and reform as well as secular literary expressions. The nineteenth century was a restless formative period as far as the educated middle-class of Bengal was concerned. The headquarters of British power in Bengal, the city of Calcutta, had become a great metropolis, where gradually emerged the richest of Bengal's citizens i.e. landlords, lawyers, doctors, scientists, educationists and other professional classes. Naturally, it was Calcutta that slowly sprang up an educated middle class, having largely been reared in the colonial pattern of Western education.

The new mood was reflected in literature as well. The notion of justice and reason received wider currency as contemporary intellectuals and ideologues advocated a more rational and critical reordering of the contemporary socio-cultural life. The gamut of experiences which are often collectively described as the 'awakening' or 'renaissance' started in Bengal at the beginning of the nineteenth century but later elsewhere. No doubt this awakening had severe limitations and weaknesses, but its importance, nonetheless,

should not be underrated[21]. As a prelude to the societal changes and meticulous refinement in the nineteenth century, it's important to mention the pre-colonial situation. The Bengali society in the eighteenth century was affected severely from all sides, thus decaying the economic and political conditions also. Religion was one of the main factors. Hindu society was suffering from false divisions of caste, class and prejudices of the so-called 'untouchables'. Though there were certain centers of Sanskrit learning and were sought to be protected with the local Hindu Chiefs' patronage, yet the dominance of the Brahmins restricted the spirit of free inquiry and inspired learning. The direct knowledge of *Shastras*, gradually became confined to a small number of scholars and there was the little scope of percolation of their learning to the bulk of their community.

The Hindu belief, however, continued that all their activities from birth until death were to be conducted according to the sanction of the religion. The pursuit of education thus dwindled and superstitious beliefs gradually were gaining a hold on the popular mind. As far as medical education was concerned, the Hindu superstitions and prejudices brought down the *Vaidya* caste (ayurvedic medical men) to a lower status than to the *Kulin*[22]. The cause was their obvious practice of touching the body of the patient (the patient could be from lower or untouchable caste also). Naturally, the bright students from the upper and rich Brahmin families showed less interest in studying ayurvedic medicine, where in ancient period only upper caste and affluent Brahmins were permitted to learn ayurveda. The reason behind this restriction was the intellect and brilliancy required in this kind of profession and the time it demanded to complete the course (there was no fixation of year

[21] There is much debate regarding the Bengal Renaissance. Many historians like Aurobindo Poddar argue that the so-called renaissance was very limited in nature. Unlike European Renaissance, Bengal did not see the effect of the reform movements to reach out to the people residing in the villages and it was largely confined in Calcutta within the educated middle class only. But Subrata Dasgupta in his book Awakening: The Story of the Bengal Renaissance, stated that comparison is less important where as one should pay attention to the fact that it appeared in Bengal in the waning years of the eighteenth century and flowering to fullness through the nineteenth century with great success and awaken the Indian mind in such a manner that he calls it a "revolution".

[22] There was a strong prejudice regarding touching dead human body in Hindu society. This prevented the learning of Anatomy from the ancient times. They never showed any interest regarding Anatomical knowledge also. It made a significant difference between the European system and the indigenous one and proved the former one superior. It has already discussed that how the practice of Anatomy started in India with the initiation of Madhusudan Gupta in the second chapter.

but generally it took nine to ten years to became a *Vaidya* or a professional). ayurveda was a part of Atharva Veda, which was accessible only to the Brahmins and such long time, could be provided by an affluent family only to their young generation. Secondly, we know that the herbal medicine had a long tradition in India. But in the eighteenth century Bengal such medicine was often mixed up with the black magic, occultism and witch-craft[23]. It is true that illiterate women were the greatest victims of these practitioners of such practice. But the male population too liberally invited witch-doctors, spirit-rappers (*Ojhas*) and mesmerists.

However keeping all these social hazards in mind one can say that there was a twofold guiding force simultaneously active for the reforms and re-'awakening' programmes in the nineteenth century; one was the colonizer's critique of the Hindu society and religion and the other one was the reformist activities of the Indian intelligentsia. It is interesting to note here that, the women's status became the main focus of the reforming activities of the colonial state. To a large extent, it was the result of a comparative 'civilizational discourse' of colonial the period.[24] When civilizations were ranked, one of the major criteria was the position of women and it was here the Indians were increasingly under attack by the Western observers, from Missionaries to civilians. Gradually Indian intelligentsia also responded to this critique by advocating and supporting reforms to improve the societal condition of Bengal as well as India. It is true that these reforming activities started in Calcutta and remained confined within the educated middle class only, but these re-initiatives definitely had some impact on the ordinary people as well. Vernacular journals, news papers and periodicals, literature and social media became the medium of such reform programme.

The challenge of the Indian reformers of this period was to reconsider reason and science in their own civilization and to re-posit the modernization project within a cultural

[23] Bhattacharjee K.S: The Bengal Renaissance Social and Political Thoughts, Classical Publication, New Delhi, 1986,

[24] For instance, James Mill (1773-1836), Alfred Tennyson (1809-1892) and John Ruskin (1819-1900) were so hostile in their attitude to India that they represented a sharp and strong; sometimes even violent reaction to Indian society and culture. They thought that Indian society and culture were far backward compared with those of the West. They viewed India as a distant land of strange yet magical and mysterious attraction, while some of them had the notion that the West was racially and morally superior, and looked India as an alienating and abhorrent crude middle.

space defined by Indian tradition. These new intellectual strivings created a reform mentality that did not reject Indian tradition but sought to change certain 'unreasonable' aspects of Hindu society, which were unable to meet the new rational challenges. This provided legitimacy to the reform agenda of the Utilitarian reformers like William Bentinck. The movement was started in Bengal by Raja Rammohan Roy, who is often described as the father of modern India. He was the first person to advocate English education pattern with English as the mode of instruction in Bengal, despite a strong protest from the Orientalist group. Rabindranath Tagore in his speech stated that,

> "Rammohan inaugurated the modern age in India. He was born at a time when our country, having lost its link with the inmost truths of its being, struggled under a crushing load of unreason, in object slavery to circumstance. In social usage, in politics, in the realm of religion and art we had entered the zone of uncreative habit, of decadent tradition, and ceased to exercise our humanity."[25]

In remonstration of Rammohan Roy's social activities like the prohibition of *Sati* System and foundation of *Brahmo Sabha*, Rdhakanta Deb and some other Hindus felt insulted due to British interference in their internal sphere and they founded *Drama Sabha* on 24th January 1830 as a counter-organization. Radhakanta Deb was known as the protective Hindu orthodox, but in contrary when the medical students of Calcutta Medical College had started dissecting human body as a necessary part of their knowledge gaining; neither criticism nor protest came from his side. Even he took the voyage of medical students to Europe for their further study in a positive way. It shows a different nature of the then Bengali intelligentsia towards the promotion of education even though it went against their rule of religion.[26] Maharshi Debendranath Tagore, who also belonged to a Brahman family, formed the Tattvabodhini Sabha (Truth-Teaching Association), in 1838. Tattvabodhini Patrioka was started by him on 1843. Akshay Kumar Dutta, Akshay Kumar Datta, who is regarded as one of the frontrunners in spreading the scientific attitude among his countrymen during the 19th century was the editor of that journal. He published articles on science, especially medical science, medical education regularly. Hemendranath Tagore, son of Debendranath, studied medical science at Calcutta Medical College. His

[25] *Bharat Pathik Rammuhan Ray*, (1341 B.S) 1933, West Bengal Government- Rabindra Rachanaboli, 1386 B.S, 1987, P. 436.

[26] Bhattacharjee K.S, *The Bengal Renaissance, Social and Political thoughts*, Classical Publishing Company, New Delhi, 1986, p. 82.

scientific writing, The Essential Meanings of Natural Science, was published in book form by Kshitindranath Tagore in 1897[27].

We can notice that a general trend had occurred in that period which was not restricted within the mare personal interest of these awaken Bengalis, but engaged itself into a much deeper project of making others aware of the new happenings. Print media was found to be the most appropriate mediator. Books, journals, newspapers were started were started coming in a large scale from different parts of Bengal and from all the sections of the society. Generally, the writings of educated middle class, especially from Calcutta became popular, praised and sometimes critiqued by the audience. But not only print media, there existed other types of publishing options too in that period. Projit Mukharji has described the print media and its impact on nineteenth century Bengali society as follows:

> "The major debates in the history of printing in Bengal until recently have revolved around the early typefaces and the contribution of Bengalis in making these. The actual impact of printing on Bengali life and culture, by contrast, was assumed to be fairly straightforward. The impact of printing in this straightforward narrative was assumed to have been formative of the wide-ranging cultural phenomena commonly dubbed as the 'Bengal Renaissance'- a cultural ferment usually framed as one that sought to replace the traditional Bengali cultural milieu based on orality by a textually grounded and rationalized set of cultural practices.[28]"

He gave the example of Anindita Ghosh's study against the existing concept of print media that,

> "Anindita Ghosh argues that the impact of print was much more pluralized and multivalent than has hitherto been acknowledged. Its relationship with pre-colonial worlds of oral culture was not necessarily one of opposition, and the high literary texts of the Bengal Renaissance were not necessarily the only new cultural trend which took advantage of the new printing technology. Ghosh's work has provided a long- awaited critical framework within which to approach the vibrant plurality of Bengali printing... the reformist high literature was only a small component of the entire print output. A more voluminous corpus- often

[27] Bhattacharya Buddhadeb, *Banga Sahitye Vijnan*, Kolkata, 1960

[28] Mukherjee Projit Bihari, *Nationalizing the Body, he Medical Market, Print and Daktari Medicine*, Anthem Press, 2009, p. 75.

described as Bot-tola prints[29]... eschewed any reformism as such and give voice to a variety of tests and genres that did not always sit well with the high reformism of the Renaissance... Ghosh has shown that there existed a far more diverse range of authors and publishers- many of whom drown from relatively marginal sections of the society. Similarly in terms of consumption, too, Ghosh argues that such practices as the use of pages from printed tracts wrap medicines ensured a much larger circulation of fragments of printed works.[30]''

Indigenous Voice through Vernacular Journals:

Discussion on nineteenth-twentieth century Bengali journals or periodicals engages a variety of issues and problems regarding medicine. There were a large number of medical and non-medical journals published throughout these centuries. It is impossible to cover all the volumes (weekly, monthly or quarterly) of each of those journals. Thus a few relevant examples have been chosen here to demonstrate how the colonized Bengali society learned to express their views freely in the pages of those journals. People started writing on medical education, public health, medical research, women and child health and much more. Apart from that, it included data, case studies, translations, contemporary needs and requirements of the society, and all else necessary to acquaint the people with the progress in medical as science.

After the establishment of Calcutta Medical College, *'Gnyananyeshan'* started publishing reports on western medical education regularly. On 14th February 1835 first report was published. It stated that, for the betterment of the condition of medical education and public health, the Governor General took up an initiative to establish a College by abolishing the existing classes in Sanskrit College, Calcutta Madrassa and the Native Medical Institution[31]. The inaugural lecture was attended by a lot of people like Governor General, Dr. Bramley, Charles Metcalf and other British personnel. Apart from that several educated Indians were also present at the inaugural session[32]. Though it has

[29] Bot-tala was named after the locality where the majority of the presses were located.
[30] Mukherjee Projit Bihari, Nationalizing the Body, The Medical Market, Print and Daktari Medicine, Anthem Press, 2009, p. 75-76.
[31] *Samachar - Darpan* 14th February, 1835, 1241 B.S, page not found.
[32] Ibid, 19th March, 1836, 1242 B.S,

mentioned earlier that the establishment of medical institutions in Western fashion was not welcomed by the entire society, the people who were interested in new scientific research and experiments immediately attracted and involved highly with the Government's activities. This journal was conscious about the degradation of traditional medical men and their profession also, thus reported that the condition of *Kavirajs* had become dangerous, and the society was also suffering due to their ill-knowledge. The rate of death in Bengal had become two per hour[33]. So they suggested the Bengalis to adopt the new and more effective treatment for better health treatment and to restrict the unexpected and untimely death. Education, given by the colonial Government was a big opportunity to make themselves as capable as the Europeans, and could remedial for such situation. No doubt, media was being used by the educated middle class as the communicator between rational scientific thoughts and the ignorant, superstitious Bengalis. Interestingly they did not fail in their goal, but were not fully successful too to rule over the ordinary people and their psyche.

On the same day it was published that the young generation should utilize the opportunity and get prepared to learn Anatomy and Surgical knowledge. It is wide recognized that Europeans often criticized Indians for their lack of Anatomical knowledge and religious prohibition of touching the dead human body. The new generation of students could overcome the ignorance of the society by taking western medical education seriously. The journal hoped that the so far success of the students showed a bright future in India[34]. It informed about the prize distribution ceremony of Calcutta Medical College by the educated and upper caste Hindus. It can be explained in this way that the motive behind such news might be for the encouragement of Bengali youths[35].

The Editor of the *Kurior* wrote that among all the recent happenings in Calcutta, medical education and their advancement was most exciting and satisfactory. The Medical College students had acquired unexpected expertise in this field and were awarded by Sir Edwardson. The successful students were, for example, Dwarakanath Gupta, Radhakrishna

[33] *Samachar - Darpan,* 26th March, 1836, 1242 B.S.
[34] Ibid.
[35] Ibid, 23rd April, 1836, 1243, B.S

De, Nabinchandra Maitra, Shyamacharan Dutta et al. Thus Indians were supposed to be grateful to Lord William Bentinck because of his commendable deed[36].

Major thrust had been given to the western medicine and its superiority. Very happily these journals and their editors had shown great interest towards its development and suggested the Bengalis to adopt western medical system only. Until the establishment of CMC, it was colonial Government's interest to take care of the medical education and institutions as well. Gradually situation reversed and a section of the indigenous society looked at good medical education (i.e. western medicine) as in their own interest. In 1852, *Sanbad Probhakar* published that the quality of the Bengali class of CMC was not up to the mark. Due to lack of text books, lecture room, gallery etc. the students were facing troubles. Thus the author appealed to the Education Council to take care of those students, otherwise, the purpose of forming the Bengali class would be meaningless. So we observe that how indigenous intelligentsia became thoughtful about small issues of new medical education and its importance in the society[37]. Moreover, not only Calcutta, the peripheral areas like Dacca also became vocal in favor and need of western medical treatment. In the words of *Dacca Prokash*;

> "…Although the Dacca city is graced with good education (especially English), but is severely lacking good medical institution. The rural areas are highly affected by either 'ill-treatment and without treatment. The traditional medical men, who were almost illiterate and stupid, used to treat on the basis of conjecture (anumaan). Very few of them are good, but unfortunately unable to combat the serious diseases with their back-dated medicine and old mode of treatment. The result is huge mortality. This is also unfortunate that the qualified doctors (su-chikitsak) are not willing to come to the rural areas, rather happy with urban life. Therefore we appeal to the government to think seriously for a medical institution like the Bengali classes of Calcutta Medical College in Dacca…[38]"

In the same year, 1863, *Dacca Prokash* published an article on Mitford Hospital. It expressed that the habitants of Dacca are prospered and pleased with the presence of the civil sergeant Dr. Simpson in Mitford Hospital. His unique way of treatment gave relief from many critical diseases. He never used to differentiate between rich and poor rather

[36] Kurior, 9th February, 1839, 1245 B.S.
[37] Sanbad Probhakar, 28th August, 1852, Bhadro, 1259 BS, p. 335.
[38] *Dacca Prokash*, 1863, 22 *Jaishtha*, 1270 BS, p. 139 – 140.

treated everybody equally and with proper care[39]. In this regard, these articles are very important for few reasons. First *Dacca Prokash* was one of the longest run journals in Bengal Presidency in vernacular language. Second, it was published from Dacca, a periphery of Calcutta, where it was difficult to reach out all the facilities and recent happenings even. These peripheral places not always received proper support of so-called Bengali intellectual's also, but could able to show their consciousness and expressed bold voice against the traditional medical treatment.

Few journals like *Bhishak Darpan, Sasthya,* The Dacca Review, *Chikitsak O Samalochak, Bigyan Darpan* etc. took medicine in serious mood and started publishing articles on diseases, remedial note, public health etc along with other issues. The diseases like cholera, small-pox was in high circulation in Bengal. In 1825, *Sasthya* reported that Calcutta had severely affected by Cholera (olaotha), more than the mofussil areas of Bengal. The mortality rate became so high that every day of a particular week at least four hundred people died. Dacca was also affected, in one week seven hundred people died[40]. Hygiene was the major factor. Muslims of Calcutta were more affected than the Hindus as they were comparatively poor and resided in unhygienic and damp places of the city. The author further criticized the burial system of Muslims. The graveyards were not properly protected and stray-animals used to un-mud the dead body. That was another cause behind the spread of cholera in Calcutta so much[41]. Another serious disease was small-pox. *Chikitsak O Samalochak* published that people became conscious about that disease and frequently consulted the *Daktar,* got admitted to Campbell Medical Hospital and few were vaccinated also. But after vaccination many patient affected by small-pox at that moment. Therefore the author wanted to make the common people conscious about vaccination and also suggested some traditional remedy instead of vaccination[42].

Public health issue was one of the major concerned of the contemporary journals. In 1882, *Bigyan Darpan* wrote'

[39] *Dacca Prokash,* 1863, 18th *Agrahayan,* 1270 BS, p. 405 – 407.
[40] *Sasthya,* 17th September,1825, Ashwin, 1232 BS, p not found.
[41] *Sasthya,* 3rd September,1825, Bhadra, 1232 BS, p. 205.
[42] *Cikitsak O Samalochak*, date and year not found, p. 31- 31.

> "…The indigenous people of all class, caste, religion and professions have adopted the western medicine but are unable to imitate the good habits of the British. England also suffered from serious diseases like malaria, scurvy (among the navy), small-pos etc. But consciousness about hygiene and by refining their habits of daily life, they overcame those fatal diseases, thus was able to sustain good health. By contrast, we, the Bengalis, are gradually going towards more bad habits (improper food is one of the main focus) and unhygienic life style to obtain mare comfort. With the power of advanced medicine and treatment, we should have prolonged our life span. But unfortunately even educated and intellectual class is indulging themselves into a life style where mental work overpowers physical work, which is dreadful for good health of a society. Practically, the life span of the Bengalis has decreased[43].

This article showed respect towards the western medicine and the matured thinking and habits of the British but simultaneously criticized the indigenous people for their unconsciousness about health and hygiene. One of the examples could make the public health condition more clear. In 1918, much later of the article of Bigyan Darpan, Dacca Review published a reported on the sanitation of Dacca. The writer, G. B Williams said that;

> "…I can honestly say that in the whole course of my experience I have never come across a town of any importance in which the generally accepted sanitary principles are more universally disregarded than they are in Dacca. The system of conservancy in the town is appealingly bad. There are many thousands of privies which are totally unserviceable, which cannot be cleaned, and whence the facial matter is discharged on to the ground and makes its way into the tanks or into the khals, which for a great part the year are stagnant ditches. The filthy water in these khals, polluted by the excreta of thousands of people is actually used for washing utensils… The extraordinary thing about this abominable state of affairs is that the intelligent and educated classes in this town, the second capital of Bengal, do not seem to appreciate that there is anything remarkably bad about it…[44]"

This article signifies that the British as well as a small section of the society were serious to make a healthy Bengal. Not only individual efforts were taken through the journals but official works were also done on public health. For example, in 1917 British government published a sanitary report of Dacca (Gaddes Report) and tried to upgrade the sanitary condition of the city by cleaning the khals and also the residential areas of the city. It is

[43] Bigyan Darpan, 1882, Bhadro, 1289, p. 149 – 151.

[44] Williams, G.B, *The Sanitation of Dacca,* The Dacca Review, December, 1918, vol. 8, Nos. 8 & 9, p. 52 – 61.

true that until and unless the majority of the society would take part in public health issues, it was not possible for a government or few individuals to change ruined condition.

On the other hand a different condition of the common people of Bengal had been depicted by Annadashankar Khastagir and Kabiraj Abinash Chandra Kabiratna, the editors of *Chikitsa Sammilani*[45]. In its first volume, they published a long discussion on the emerging western medical science and the social dilemma. This changing situation of altering traditional habits and custom was not unanimously accepted by the Bengalis, especially the less or un-educated people. The journal raised some issues regarding the limitations, complexities, the condition of indigenous medical system and its practitioners as well. It considered the changes in medical science as "revolution" (*maha biplab*). According to the journal;

> "…As in the field of socio-cultural and religion, revolution has arrived in the medical sector also. But it made the situation complex. Ordinary people are confused that whom to approach for treatment; Allopathy? Homeopathy? Or Ayurved? Not only the patient, but the professionals are also in a dilemma. This could bring a severe problem to the society. We should not be partial to any of these systems; however, both should consider the useful sides of the each. The elements of the old Ayurvedic system would ease the diagnosis of the *Daktars*[46] (the Western medical professionals). On the other side Kavirajs also should be aware of the gist of Allopathy[47]".

In the article *Vaidya Chikitsar Eto Agourab Keno* (why the ayurvecic treatment has dishonored) of the former journal, the author raised some question;

> "…Why the age old Ayuvedic *Sastra* (syatem) has been dishonored today? Why we have forgotten that ayurveda had been treating and taking care of human beings when they used to live with the wild animals? Ayurvedic *Shastra* was an offshoot of deep thinking and minute research by ancient scholars. English, French and Germans medicine are actually indebted to ayurveda and today they have gained popularity and pride taking significant elements from ayurveda only. But unfortunately the original one lost its pride in its own place, why?[48]"

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[45] The editors of *Chikitsa Sammilani* were Dr. Annadacharan Khastagir and Kaviraj Anibaschandra Kabiratna. It was first published in 1884. This journal had three separate sections for Allopathy, Homeopathy and Ayurveda respectively.

[46] The Western medical men were identified with the term *Daktar* and the profession was called *Daktari*, distinguishing this from the Ayurvedic profession.

[47] *Chikitsa Sammilani*, 1884, 1st part, Vol, 1, 1291 B.S, page not found.

[48] Ibid p. 17

The author had shown few reasons behind the degraded condition of ayurveda and criticized indigenous people as well.

> "…Maximum people of this country developed a sarcastic attitude towards Ayurvea. They do not even hesitate to compare a Kaviraj with animals. Whereas, *Daktars* are highly praised, as if they have hypnotized the Indians. But nobody analyzes the proper reasons behind it and is not ready to accept the reality behind its degradation. There are mainly three causes; carelessness of the kings (*raja*), dependency on *Daktari* as well as negligence towards Ayurdeva by the indigenous people and to some extent the foolishness of the *Kavirajs*. India had been attacked by many races from ancient times and ayurveda faced repeated challenges by foreign medicine (unani, daktari medicine etc.). Today the maximum ruined condition arrived. The alien rulers had several times destroyed the valuable sources of the Hindu *Sashtra* and tried to influence us, but the indigenous people used to support them out their own interest and unfortunately forgot to protect their own tradition.[49]"

Chikitsa Sammilani regretted that there are lots of examples of praising notes given by the Europeans being surprised by the fineness of the Ayurvedic system, but most of the *kavirajs* today are more interested in earning money than gaining respect. Research has not been done for a long time. We are depending on what our ancestors had done for us. We are not preserving rare medicines and elements required to prepare valuable and important medicines[50]. Secondly, the author argued that few inner issues of ayurveda created a lack of interest towards it. One of the major causes is the length of learning process. A person can be a *daktar* after a few years (four to five years). But, to become a proper *Kaviraj*, it takes minimum eight to ten years. Economic condition of the country, pressure from the Colonial Government sometimes compelled Indian youths to get interested in Western medicine, which is easily accessible and more profitable.

In 1889 Chikitsa Sammilani published that

> About fifty-five years back, when Lord Bentinck set up Calcutta Medical College, we can assume that great hopes might have been stirred in his mind about the new medical education. He must have felt simply elated at the thought that once Western medical practices were introduced in India, educated Indian medical men would definitely apply Western medicine on Hindus. They would definitely bring effective changes by a wise combination of their own knowledge and Western system to the

[49] *Chikitsa Sammilani*, p. 17
[50] Ibid 1884, 1st part, Vol. 1, 1291 BS, p. 21

> medical science. But if today he were alive, he would have seen that the physicians of Bengal have let themselves be guided blindly by what the English or any other European scholar teach them. There is no independent thinking, no commitment to experimentation through research work, no informed opinion, no eagerness to gain experiences and new things and also no attempt to make other learn… there is no famous Indian scholar in medical field, nor did anybody initiate independent research organization. If we did not have Mahendralal Sircar amidst of us, nobody would have known that someone practices medicine in Calcutta. During this long period not a single new book has come out, except the translations of the European tracts[51].

The above-mentioned extracts from different types of contemporary Bengali journals define the vital issues regarding heath and medicine in nineteenth and twentieth century Bengal. There are many said and unsaid importance and influence of these journals on Bengali society. One of them, which I feel most significant, was their direct and indirect impact on those sections of the society who might not be capable of taking western medical education or not interested to be treated in the hospitals. Through the discussion on variant contemporary issues like education, diseases, remedy by different methods, health and hygiene, news on other places and countries, provided an informal education to the majority of the society and probably could increase awareness among them. This happened due to the spread of vernacular language. In other words the transformation of knowledge, which started in early days of British encounter in India, reached its second stage with the help of the vernacular journals and to a large extent could reach out to the grass root level.

Despite the existence of several Bengali Muslim medical Practitioners, writings on Unani system in periodicals were much marginalized. The only example of a journal on Unani system was Hakim Maibar Rahman's short lived journal "Hakim" (1910). This was one of the limitations of Bengali print media.

English Journals:

English journals and periodical came into existence much before the vernacular journals in Bengal. The commencement of new rational thoughts initiated a trend of

[51] Gangopadhyay Jadunath, Chikitsa Sammilani:, Vol-Baishakh-Jaistha (April-June), 1889, 1296 B.S, np

writing on various topics through journals. It is important to discuss the journals which were started by different scientific foundations. These journals tried to bring forth the new medical trend, information of the institutions, difference between the indigenous and foreign medicine, problems regarding adoption of the Western medicine, benefits of both indigenous and Western medicine, societal impact and demand raised in those days and so on. '*Transaction'* was the first such journal which was published by the Medical and Physical Society in 1825. This journal provided serious discussion about diseases and cure, researches and new experiments recently made in the medical field. But all the members of the Society were British. So it was expected that the journal was mainly concerned about the Allopathy and its development in Bengal and would not speak about the indigenous medicines and society's response as well. This was published up to the year 1845. Thacker and Company and the St. Andrews Library was the publisher of this journal.[52] *The transaction of the Calcutta Medical Society* was the main journal of the Calcutta Medical Society. It was started in 1880 as n part of the *Calcutta Medical Gazette*. Later it started coming out individually, but in 1898 with the abolition of Calcutta Medical Society, it was also ended. As the Indian part of the British Medical Association, *'The Journal of the Bengal Branch of the British Medical Association* was started in 1865-66. The above-mentioned journals were published in English throughout the Nineteenth century. These journals and their Editors were more conscious about the development of Western medicine in India and the new researches in medicine done there as well as in England.

Out of the boundary of any foundation, other journals were in circulation in the nineteenth century, which were run by individuals. The first initiation in this regard was '*The Journal of Medical Science'*. John Grant and J.T Pearson started this in 1838. They engaged lot of medical researchers and experts to contribute their writings about medical science. This was an exclusive journal for medicine in India which was published till 1843. *'Calcutta Journal of Natural History and Mislleny of the Arts and Science'* was another of them. It was first published in 1841and was in circulation up to 1847. This journal started talking about different topics regarding science including medicine, but was not a serious medical journal. Medicine and its contemporary scenario were one of the major

[52] Ray Binay Bhushan: *Chikitsa Bijnaner Sekaler Katha, Unish Satake Banglay Pashchatya Sikshar Probhab*, Sahityalok, Kolkata, 2005.

topics of the journal. '*Indian Registrar of Medical Science*' was published in the Editorship of Edward Edlin in 1841. Meanwhile, the Editor was called for the wars in Punjab and with the end of 1849 the journal was closed due to the absence of a proper Editorship. *'Indian Annals of Medical Science'* started a novel endeavor to publish articles about Surgery and Practical Anatomy. Alexander Grant and Norman Siverse had started it in 1845 under their Editorship. This was the first time that Surgery came in front of the people through public media. Here the first exception came with the publication of *The Calcutta Journal of Medicine* by Dr. Mahendralal Sircar in 1868. Till then the English journals were under the initiation of the English men only. Though, the aim of this journal was to promote Homeopathy, but it could be mention here as an example of a step forward towards the development in medicine by Indian initiative. *'The Medical reporter'* was a journal published in 1892 under the Editorship of Dr. Laurence and was in circulation till 1900. One of the main journals of medicine was *'Indian Medical Gazette'*. It was started in 1866. D.B Smith was the first Editor of the journal. Initially it was started with articles regarding Ayurvedic system, Surgery and some rules of medical education. Gradually health problems became the main thrust of the journal. The publishers of Medical Gazette were G. Weman and Company, W. Mewman and Company and Thakarspink in 1866-82, 1883-84 and 1885-97 respectively.[53]

The Calcutta Journal of Medicine was an important exception of the nineteenth century which published in English but initiated by a Bengali, Dr. Mahendralal Sircar. It hardly meaningful to mention here that apart from the mentioned journal, there might be very few (if any) examples of expressing any thought regarding merits and de-merits of western medicine, promotion of indigenous medicine or criticism of the both by any Bengali in these English journals. Therefore these journals were as same as the official records of the colonial authority, manifesting their own system of medicine, its pros and cons and successful progress. As this chapter wants to reveal the inner voice of the colonized society, it is thus not relevant to discuss in depth about these English journals and their role in the society.

[53] Indian Medical Gazette, 19897, October, sighted in Ray Binay Bhushan: *Chikitsa Bijnaner Sekaler Katha, Unish Satake Banglay Pashchatya Sikshar Probhab,* Sahityalok, Kolkata, 2005.

Glimpse of Associations: Constructive Response of the Society

Beginning of the nineteenth century was flowered to fullness with an overall 'awakening'. The entire Bengal "shared in the creation and formation, in one way or another, of a mentality which straddled two cultures, Western and Indian."[54] This cross-cultural mentality was the main feature of nineteenth century Bengal. The newly emergent educated Bengalis started dreaming of a rational and scientific society and most importantly they learnt to convert their dream into reality. As far as medical knowledge and education are concerned, lots of initiatives came from the educated middle class towards forming associations and research organizations; for indigenous as well as for western medical system. Some of them even wished to look on both the systems simultaneously. This interest to re-search and experiment on the existing and imported knowledge and re-awaken their fellowmen was invigorated obviously by the European criticism of Indian society and culture and also through the kind of education they started imparting through various academic institutions. In an essay of by Jadunath Gangopadgyay, written in 1889, the author points out that scientific knowledge cannot be practiced in the country only through translations...association of medical doctors must be established, and this association should supervise the publication of a high-quality periodical[55].

Along with the plan for Western medical education in Bengal through the Native Medical Institution, the Doctors of the Company thought of a research organization to deal with the diseases particularly occurred in India. Although Asiatic Society had started it much before,[56] later in 1823 *Medical and Physical Society* was founded. They decided to publish a journal also as their mouthpiece. James Hare was the first president and the members consisted of doctors of the Company, the members of Medical Service and the members of the Medical Board. It was decided that simultaneous process of general discussion and serious research on particular cases, occurred recently, would be done.

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[54] Dasgupta Subrata: *Awakening: The Story of The Bengal Renaissance*, Random House India, London, 2010

[55] Cited in Bose Pradip Kumar (Ed), Health and Society in Bengal, A Selection from Late 19th Century Bengali Periodicals, Sage Publication, New Delhi, 2006

[56] Ray Binay Bhushan: *Chikitsa Bigynaner Itihas, Unish Satake Banglay Pashchatya Sikshar Prabhab*, Sahitya Lok, Kolkata, 2005,p 281.

Exchange of knowledge could increase their level of standard and they might find some rare solution of diseases[57]. The keen interest of that Society in fulfilling their aims came out form the letter, which was prepared and sent to the contemporary eminent medical scholars and doctors individually. The primary aims, they mentioned, in the letter as follows;

- Region wise description of climate, existing medical professionals and information about health condition of the inhabitants.
- To get opinion of the indigenous medical personnel about special diseases and to learn their system of diagnosis and mode of treatment.
- The impact of indigenous diseases on Europeans as well as on Indians and discussion about the personal experiences of the treatment of such diseases.
- Discussion on the indigenous surgical instruments and their system of surgery.
- Pharmaceutical condition of India, its mechanism and preservation process and also the necessary components of it.
- The present and past condition of indigenous knowledge of medicine.
- Discussion about the unknown medicinal plants to the West and their benefit and difficulties.
- To know the indigenous treatment of veterinary science.
- Anatomical and physiological discussion about human being (practical Anatomy was restricted by the Hindu society for their people)[58].

This Society elected Radhakant Deb, Ramcomul Sen, Madhusudan Gupta and Raja Kali Krishna Bahadur as the corresponding members of the Society in 1827 and they prepared some papers on indigenous medicine and drugs for the Society[59].

The Society received a huge response, shortly after its establishment, from the various sections of the society. For instance, Hardweek, the Major General of Madras and Sir C. Gray came to Calcutta to join the regular meeting of it, which meant not only Calcutta, but this society could appeal other places like Madras also. Gradually the disease like *Gheegha*[60] took an important place of the discussion. The society started preparing

[57] Ibid

[58] Asiatic Journal: Medical and Physical Society, January-June, 1824 p. 50 to 52. Sighted in Ray Binay Bhushan: *Chikitsa Bigynaner Itihas, Unish Satake Banglay Pashchatya Sikshar Prabhab*, Sahitya Lok, Kolkata, 2005, p. 282.

[59] Kumar Deepak, Science and the Raj, A Study of British India, second edition, Oxford University Press, New Delhi, 2011.

[60] Gheegha was a disease which in a severe form was attacking different places in India as devastating epidemic at that time.

Iodine from sea water as a preventive measure of the disease[61]. In 1825 the soldiers of Arakan were affected by a rare type of fever. The Society invited some experts of medicine and doctors to discuss about the solution to rescue the rest of the country. Gradually the non-professionals were also permitted to take the membership of the Society, thus more popularity it gathered and could regulate their findings and experiments to a greater portion of Bengal as well as India. In 1828, Mr. Twining first told about 'Steam-bath' and appealed for an arrangement of 'Steam-Bath' in Calcutta[62]. In April of that year, an article regarding Indian public health by Dr. Barter was raised for discussion. Barter wrote in that article that the direct Sun light was the main cause of different diseases of the tropical countries, whose ultimate result was devastating fever of various kinds. The remedy for such condition suggested by him was;

- More plantations, especially beside the roads and between the habitation areas.
- Usage of more water in the harvesting fields
- He suggested to build houses inside the tunnels (surang).[63]

Though all of his suggestions were not possible physically to fulfill, but important was the exposure of such issues and question of public health amidst the 'public'.

Later on some prominent Doctors, associated with Medical and Physical Society, like Madhusudan Gupta and Dwarakanath Basu started doing research about women health care, pregnancy problem during child birth and also problems. In 1845 the president of the society wrote a petition to Madhusudan Gupta about women health. He mentioned about the Hindu restriction and asked opinion for the age of women marriage. He mentioned that one of the major problems for women was child birth in a premature age and thus life risk for both the mother and baby. As Madhusudan Gupta and Dwarakanath Basu worried of this problem, they started examining the condition of women health individually. This Society published lots of articles also on this matter. These discussions and publication of quality articles through associated journals, on public health, research and experiment curiosity to learn from indigenous medicine etc. were the indications of scientific consciousness of the Bengalis at that period. The initiative which was started by the Asiatic

[61] Samachar Darpan, Op.cit note 14, p. 283.
[62] Asiatic Journal: 1828, Vol. 25, p. 659.
[63] Ibid, Vol. 26, p 216-217

Society in the eighteenth century, Medical and Physical Society tried to give it a proper shape by involving both European Doctors and indigenous experts in a same platform. An ongoing process of spreading medical awareness, not only among the English educated Bengalis, but to the less educated and uneducated also, was started.

It is of no doubt that the indigenous medicine was facing big challenges due to the expansion of western medicine even among the qualified and upper-class Hindus. There was almost no impetus, from the government, in any form, for up gradation or modification of indigenous systems. As a result, few initiatives came from within the indigenous society, which was rather expected. 'Vaidyak Samaj' was found in 1831 exclusively for indigenous systems. Kshudiram Bisharad, an ex-medical teacher in Sanskrit College, was the initiator for establishing such institution. Initially it was started in the house of Bhairab Chandra Basu in Jorasanko. *India Gazette* wrote that it might be going to be a persistent attempt by the Indians for the betterment of medical knowledge. Bengali 'Vaidya' (medical professionals) class was suffering from lack of knowledge of herbal medicine. So a gathering of good scholars was considered good for the entire society[64]. Thought the members of the society were of the 'Vaidya' class mainly, Ramcoomul Sen as an educated 'daktar' (western educated doctor) was invited to deliver his speech in the meetings of the society. But problem occurred when he restricted the activities of the Society by providing religious rules. *Samachar Darpan* was highly critical of the rules and concept promoted by this society, as those were full of religious superstitions and restrictions[65]. However, it is a known fact that Hindu society was, till then, not free from prejudices and thus unwillingly affected their medical science too. The importance of such organization did not lie on the high scientific growth of indigenous medical systems, but to think for a platform engaging Bengali society (not as a whole, but the particular section). The Association appealed to the Government for financial help to

[64] India Gazette, *Native Medical Society*, 10th August, 1831.

[65] Social mobility was restricted at that time. If a patient took medicine from a non-*Vaidya*, the actual *Vaidya* class used to refuse him to treat further. Here an instance is important. Maharaja Krishnachandra had a famous *Kaviraj* in his court, who was a *Kayasth*. But Krishnachandra never used the medicine prepared by him as he was of a non-*Vaidya* caste. For these reasons the value of the knowledgeable medical men reduced in the society and whose place was entirely taken by the ill-knowing persons. Unfortunately the rich and affluent members of the Bengali society were not prepared to get rid of the religious superstitions, and thus proper knowledge did not have patronage.

develop Ayurvedic researches to make it more effective to the society. But the Government rejected the proposal because the then Medical Board considered Ayurved an un-scientific system.

Though the colonial Government was not always available to support indigenous system, the Bengalis kept struggle to protect their own system, though less in number. In the 70s the Kavirajs of Bengal planned to form an association and it was started in the house, no 6, in Madan Mitra Lane, Sukia in Kolkata[66]. They decided to publish books on Ayurved and as a result the *Ayurved Sar Sangraha* was published in two volumes[67].

Jas Hutchinson wrote a letter to the Director of *Indian Journal of Medical Science* for a new medical society called Native Medical Society in January, 1838. Both Europeans and Indians were permitted to take the membership. It was opened for the students of Medical College, Hindu College, indigenous medical professionals and private practitioners also[68]. This was for the first time students enjoyed a platform to raise questions, deliver speeches and to give their opinions. Generally, once in a week they gathered in a particular place and as per the rule, one student used to speak on any medical problem of his choice, then the next one had to discuss about Surgery, Anatomy and preparation of medicine and also the practical side of these topics. The third student would discuss about the symptoms a particular disease and its treatment process. The Society used to divide subjects to the students for the next day lecture to elevate confidence among them and also to make the student active in searching proper materials about the given topic[69]. The language of discussion was Bengali and the reason behind that was to make it popular and accessible to all. Hutchinson suggested to establish its branch in the major cities of India and also mentioned that it was the responsibility of the Association to reach out the medical knowledge to those who did not have the opportunity of good communication to the centre[70].

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[66] *Ayurved Sar Sangraha*, Vol 1, Calcutta, 1872, 1278 B.S, p. 1
[67] Ibid p. 2.
[68] *Samachar Darpan*, p. 319.
[69] *Samachar Darpan* p. 319
[70] Indian Journal of Medical Science: Native Medical Institution, Vol 1, 1834, p 4-6, cited in Ray Binay Bhushan: *Chikitsa Bigynaner Itihas, Unish Satake Banglay Pashchatya Sikshar Prabhab*, Sahitya Lok, Kolkata, 2005,p 281.

The response of Native Medical Society was surprising and rapid. Within six months of the proposal, it started igniting people for such more initiatives. Including Barakpore, two Societies were established by the indigenous initiators and planned for another Dumdum also. Having a warm response from the people, the editor of the *Indian Journal of Medical Science* suggested establishing region wise branches to enrich the knowledge generation and circulation. Secondly the people outside Calcutta would be able to participate in the regular meetings held in Calcutta of the Society. In perseverance of these activities the other parts of the country would also themselves in establishing similar Associations in their own places. It was more necessary for the places like Agra, Meerut, Canpoor etc. where military bases existed. This could bring the European doctors and Indian medical men closer to exchange their views[71].

British Medical Association (Bengali Branch) opened its branch in Calcutta in 1867 with Dr. Francis became as the President of the Society. Surja Coomar Goodeve Chakraborty became the Secretary[72]. The annual fee of membership was twelve Rupees[73]. The first session was chaired by the Goodeve Chakraborty (he was the acting President that day due to the absence of Dr. Francis for ill health) and other members like Dr. Robinson, Gopalchandra Roy, and Lalmadhab Mukherjee etal attended the session. The main thrust of the meeting was on recently occurred diseases, especially in Calcutta. For example, the theme of the meeting, on 11th February, was Tuberculosis. According to Goodeve, Portuguese and the Indian Christians suffered most from tuberculosis than the Hindus and Eurasians. Muslims and Jews were the least sufferers. Dr. Jagabondhu stated that the rate of this disease in the Portuguese inhabitants of Goa. But, Dr. Betson had the opinion that the rate of tuberculosis in India was not notably high. It was decided to cease this discussion till the observation had been completed. Interesting news of that meeting was Dr. Severs's mentioning about that the *Indigenous Drugs of India* written by Kanailal De, which was praised by Dr Warring in the meeting on the Pharmacopeia in England[74].

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[71] Ibid, Editorial, Indian Journal of Medical Science 1st August, p. 316-317.

[72] Indian Medical Gazette, *The Bengal Branch of the British Medical Association*, 1886, 1st July, p 192-193.

[73] *Correspondence*, Indian Medical Gazette, p 200.

[74] Bengal Branch of British Medical Association, Indian Medical Gazette, 11th Feb, 1868, p. 91- 92, cited in Ray Binay Bhushan: *Chikitsa Bigynaner Itihas, Unish Satake Banglay Pashchatya Sikshar Prabhab*, Sahitya Lok, Kolkata, 2005,p. 325.

Later cholera became one of the prime matters of discussion in the Society. According to Dr Mare the poison of cholera worked almost like Chloroform, which benumbed the some portions of the body. If the affected area could be recognized then the patient would be rescued. It was suspected by Dr. Macnamara that India was responsible for the spread of Cholera in the other countries because the germ of the disease could be carried by human body. But doctors were not unanimous about this. Dr. Smith considered the experiment and observations of Dr. Macnamara faulty. These instances told about the interest on serious discussion about different diseases were popularized by that time. There was no division between Europeans and Indians regarding research and experimental activities. And *British Medical Association* with its lot of courage continued these activities till the end of this century[75].

On 21st January, 1880 Calcutta Medical Society was founded by the medical professionals of Calcutta. Dr. B.B Smith was elected the President of the Society. The main motives of the Society were;

- To arrange public exhibitions of the examples of fatal diseases.
- Critically analyze the clinical practices[76].

Decision was taken by the executive body about the Society, which would be opened for the courageous people from outside Calcutta and from the student section also. Not only these people, for the first time the people from different profession, if he wished could join the summit and openly discuss their opinion. Homeopathy was excluded from their work list due to the possibilities of undue debates. Heart problems of women and child were raised there as personal experiences of the doctors. Personal view, exchanges and experience sharing by the doctors of different hospitals (Bengali as well as English) enriched the different sides of medical knowledge and learning.

One of the main objectives of any public association is to give importance to create a platform and give freedom of thought and speech. The medical associations in nineteenth century Bengal were set up with such ideas and partially able to fulfill it too. These associations were not engaged with direct or practical treatment, nor these were degree

[75] The Annual Meeting of the Bengal Branch of the British Medical Association, Indian Medical Gazette, 1st June, 1869, p. 125,

[76] *The Medical Reporter*, 1894, 1st March, p. 135.

provider institutions, but definitely were able to note the prime need of that period and to make people medically alert than to give them treatment. Few journals and periodicals were in circulation as the mouthpiece of the associations, but because of lack of English knowledge, a very few were only accessible to the general people. Nevertheless, the novel and fresh thought of forming associations and publication of journals showed Bengalis a new direction, where individual knowledge could be disseminate to others without any condition and accumulation of new thought and knowledge was also possible. Through these Associations we can see how the Bengali society built up their own 'medical thought', which did not reject the alien system, nor remained glued to the indigenous one, but enabled the society to take advantage of both the systems in the maximum possible way. It is true that the associations started their activities to make the new knowledge accessible to the people of periphery also, but Government was silent maximum time. The presence and activities of independent organizations and journals made to be appreciated. They remained in Bengal throughout the century, and did affect the society as much as they could.

Conclusion:

Beginning of print culture in the nineteenth century brought an enormous change in Bengal. The special emphasis should be given to the use of vernacular language. Bengali was the mother tongue of the majority of the population in Bengal. Thus the indigenous people, without any conscious effort, could gather knowledge because of the use of Bengali as the medium of expression of those journals. It became the most potent agent for mutual communication and exchange of ideas. *Bibidhartha-Sangraha* raised some issues regarding the question of language of the journals, subject to be discussed and whether the Bengali would be able to express the complexities of the subject or not. Rajendralal Mitra as an editor of Bibidhartha-Sangraha argued;

> "There is a great chance that the experts will be displeased with our way of writing, but I trust that they will keep in mind the purpose of the periodical, and forgive us. So that common people have easy access to knowledge, so that the traders and the shop-keepers can learn about the world in the little time they have from the pursuit of their professions, so that girls and boys can extend their

knowledge as they read this periodical as a part of their games or even as a book of stories, so that the youth can put aside sensually exciting books and take interest in useful things,…[77]"

The English journals and their Editors were more conscious about the development of Western medicine in India and the new researches in India as well as in England. If we look back to the condition of the Nineteenth century Bengali society and the effect of these journals to their psychology towards rational science, it would be clear that, except *'The Calcutta Journal of Medicine'* by Mahendralal Sircar, none of those had an idea to promote modern medical system among the ordinary people. Nor they tried to revive the old system. Here English language played a vital role and the greater Bengal remained out of it. The journals which came out in vernacular language became the bridge between the Calcutta oriented rational changes and the ordinary people of peripheral areas.

By the end of nineteenth century, different types of medical institutions (government, non-government) for professional medical education came into existence in Bengal. But it is also true that apart from a small section of the society (upper class/caste, beneficiaries of western education, affordable class etc.) almost the major population of Bengal remained out of such educational opportunities. One of the major reasons was the urban nature of the educational institutions. Only the cities, like Calcutta, Dacca, Patna, and Cuttack had enjoyed the warmth of such opportunities of proper medical education. Was it possible for a man from the frontier areas or remote villages to come forward and avail such education? Certainly not. Even if they wished to involve into western medical education, were stay aloof because of unawareness and lack of good opportunities in their areas. Basically, the modern concept of medicine was revolving around some particular group of people and within a small territory. Neither the Government nor the intellectuals or educated people of Bengal took any interest to reach out western education to the remote areas. It was only the published journals and periodicals, which to some extent, reach out the major happenings in the cities to the mofussil areas and vice versa.

Literature connects individuals with the larger truths and ideas of the society. Late nineteenth and twentieth century provided us many literary and visual representations,

[77] Mitra Rajendralal: *Bibidhartha-Sangraha*, translated by Pradip Kumar Basu (Ed), Health and Society in Bengal, A Selection from Late 19th Century Bengali Periodicals, Sage Publication, New Delhi, 2006.

possibly depicting the complexities that had emerged from the imposition of western medical knowledge upon traditional world, which had its own perception of knowledge and had different yardsticks measuring education. Tarashankar Bandopadhyay portrays in his novel *Arogyo Niketan* that how the contemporary social re-construction influenced the new generation[78]. It talks about a family where the father was a renowned *kabiraj* (ayurvedic doctor) in a village but never enjoyed economic affluence because of social contempt. People had the concept that the manufacturing cost of bio-medicine, prepared and given by the *kabiraj*, was very low but sold in high price. Thus that *kabiraj* could not earn money as he deserved. On the other hand his son, whom he taught ayurveda, desired to learn western medicine in search of material comfort in life. The father was naturally not in favour of western medicine. Despite resistance, the son admitted to a modern medical institution, but unfortunately couldn't complete the course. He came back and learnt ayurveda again to his father in spite of having a great influence of western medicine. The author very nicely depicted the changing social milieu in Bengal. The traditional philosophy regarding death i.e. death is not the end, rather eternal emancipation and the ultimate salvation of the soul, had altered with newer concept of combating diseases by advanced mode of treatment.

The encounter between western medical system and the indigenous medical systems happened under the framework of colonialism, led to a mixed form of responses from colonized society. The initial resistance from the native elites soon gave way to an idea that the two systems could exist side by side. However there were others who believed that it was not simply a matter of co-existence, but it could also be a matter of synthesis. These ongoing tensions within the Bengali privileged groups were presented differential forms by diverse sections of the media and performing arts. Tarashankar's *Arogyo Niketan* began with resistance and ended with acceptance, something which was natural by force of the situation of the times. On the other hand Balaichand Mukhopadhyay in his novel *Agnishwar* created a character who was a western educated doctor by profession in a rural

[78] Bandopadhyay. Tarashankar, *Arogyo Niketan*, 1953.

hamlet[79]. The author posited an idea that an allopathic doctor was armed with the best of results and knowledge to overcome serious health maladies that affected the health of the poor people. The main character i.e. the doctor had been portrayed through the activities of his entire carrier as an idealistic and far-sighted person. This was not about a special character, but a general idea about the strength and power of western medicine and practitioners actually created a confidence for a hope of better health and long life.

Another side of the social condition was a general perplexity among the common people regarding the choice of medical treatment. It was probably expected and usual. In between love, attachment and faith towards traditional medicine and new hope for better treatment by western medicine, people many times suffered from dilemma and uncertainty. A short story (satire), *Chikitsa Sankat*, written by Rajshekhar Basu described in a light mood that how the person (main character) compelled to visit to the different doctors after a plenty of suggestions from his friends[80]. That was not the end. Complexities arrived when all of the doctors (doctor of western medicine, doctor of homeopathy, kabiraj, hakim and a lady doctor) gave different remedies for a particular disease. The short story ended in a humorous mood, but definitely left two important messages for us. Firstly, dissension between the medical men and secondly, the existence of the lady doctor.

Shart Chandra Chattopadhyay in his short story *Datta* showed a responsible doctors' accountability towards his community[81]. Nabin, the main character of the story received medical education from England. After coming back from abroad, he started serving in the rural bases of Bengal. This was probably a mild protest against the common trend of western educated doctors in cities, who used to prefer an urban life for comfort and economic affluence. Rural community was always ignored. This other side of the story was a growing consciousness among the educated youth for the poor and so far neglected populace of villages of Bengal.

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[79] Mukhopadhyay. Balaichand (Bonoful), *Agnishwar*, 1959. In 1975 a popular Bengali movie was also made (directed by Arobindo Mukhopadhyay) on this novel called *Agniswar*, where Uttam Kumar played the role of the Doctor.

[80] Basu, Rajshekhar (Parasuram), *Chikitsa Sankat*, 1923

[81] Chattopadhyay. Sarat Chandra, *Datta*

Chapter VII

Conclusion

The existence of western medicine in Bengal can be seen through an early reference to a hospital called General Native Hospital established for the native civilians in 1792 at Calcutta. But even earlier references of the already established hospitals might convey some other angle of the historical fact[1]. The foundation of western medical care centres for the civilians and the military was a well thought out process by the British. Gradually they opened hospitals and dispensaries for the natives too. From the beginning of trading activities, the colonizers were very conscious about their health and medical treatment. As they had to face conflicts and wars right from the initial stage, the need for health care centres or hospitals became prominent. Secondly, they were stranger to ayurvedic and unani system of medicine, thus were compelled to arrange medical treatment on their own for their soldiers (constituted of European as well as Indian sepoy) and civilians. And the journey of the Western concept of medicine started.

We have discussed the gradual growth of western medical institutions and its greater acceptance and comparatively less refusal by the indigenous people during the nineteenth and the twentieth century. But we didn't talk properly about the early health care centres, dispensaries or hospitals, which is as relevant as the educational institutions. According to Anil Kumar, by the middle of nineteenth century various types of hospitals came into existence, which can be placed into four broad categories. First and foremost of these were the 'military hospitals' for the soldiers' and sailors' remedy and rehabilitation. Military hospitals again can be divided into two types; temporary and regular. Temporary military hospitals were movable depending on the area of a particular war or rebel place. Generally, these temporary or camp hospitals were arranged in some old or ruined buildings for immediate and urgent need of treatment and then they were shifted to the newer battle zones. The regular military hospitals were permanent in nature in the

[1] These are some early references of hospitals in Bengal: Calcutta Hospital (1707), Temporary Hospital inside Old Fort (1757), Presidency General Hospital (1768), Dumdum Hospital (1787), General Native Hospital (1792) in Chitpur, which was the precursor of Calcutta Medical College and Hospital.

cantonments and military bases of the Company. These hospitals were well equipped with medicine, doctors and attendants and well organised than all other categories. The second category comprised of all such hospitals which were planned and used for the British civilians exclusively. Metropolitan area and District Headquarters were the places where these kinds of hospitals were situated. The third category hospitals (general hospitals) were for native people. The forth and the last category was the charitable hospitals. We can notice some changes after the Sepoy Mutiny in the category of the hospitals and their locations due to the political shift between the British themselves[2]. Apart from the above-mentioned types of hospitals there existed another kind of hospital, called Lock Hospitals. The distinct feature of this kind of hospital was the exclusiveness of it for the British men, who were got health problem due to the sexual mixing with the Indian women[3].

These hospitals were the places through which Indians first came in touch with the western system of medicine and health care. Initially, Indian assistants/helpers started working there only. The encounter of the British along with new medical knowledge gave birth of different medical institutions (in cities and later on in the peripheral areas), which ultimately altered the role of Indians as 'assistants' to proper doctors and involved them to western medicine in depth. Medical institutions like CMC played the pioneering role in making excellent Bengali doctors, who went to England also for further studies[4]. CMC also became a bridge between the core (Calcutta) and the peripheral areas (Dacca, Patna, Cuttack etc) also. Until and unless the periphery themselves received any proper institution, many zealous pupils came to CMC for medical education. In the first half of the twentieth century medical college by individual initiative came into existence (e.g. Carmichael medical College). This proved indigenous society's perseverance towards western medicine.

I have raised a question regarding the fulfilment of aspiration of the Bengalis and the British also in terms of getting medically educated and being the benefactor respectively. After dealing with all major issues of western medicine one can say that the

[2] Kumar Anil, Medicine and the Raj: British Medical Policy in India, 1835 – 1911, Sage Publication, New Delhi, 1998, p. 88 – 120.
[3] Kumar Anil, Medicine and the Raj: British Medical Policy in India, 1835 – 1911, Sage Publication, New Delhi, 1998, p. 88 – 120.
[4] Dwarakanath Tagore sent four Bengali students of CMC to England. *IOR/F/4/2095/97803*. P not found.

aspiration of the British was not more than their political need and they achieved it because of their power and strength. But the case with the recipients was different. The aspiration of the indigenous people towards learning new knowledge, making a fruitful profession and changing few social boundaries grew only after the encounter with the western medicine and that too mainly among the English educated intellectual group. It is true that this new mode of treatment didn't restrict itself within the short territory of educated people of cities, but to bring the larger section of the society, it took a substantial time, which was certainly expected. The aspirations of the educated Bengalis were somehow mixed with the official policies of the British, which was ultimately guided by the existing socio-political and military need and demands of the rulers.

Two very discrete but inseparable divisions of western medical science have been discussed in this thesis. Western medical intervention into cultural sphere of Bengal is a well-discussed issue in the academic circles. Few chapters of this thesis like *Modern Medical Institution: Policy and Administration*, *Medicine and Women* and *Contemporary Journals and Media* have tried to show how medical science and education became a major field of advancement in nineteenth and twentieth century Bengal influencing a large section of the society. In a period, when the western educational system was gaining prominence in all spheres, drastic social and cultural changes were in the offing. This was, of course, one of the most important outcomes of the introduction of the western medicine in India. But without a little discussion on the advancement and development in medical science itself, which sometimes solely germinated within the premises of the Indian laboratories, the history of medical science and technology would be incomplete. Thus one separate chapter i.e. *New Knowledge of Anatomy: Experiments through Surgical Operations,* focuses on how the new technology and advancement in medical science influenced the Bengali society. Western medicine was totally unknown and new to the indigenous people. As a result, every step in advancement generated large-scale interest and ardour among the zealous people. Few were, no doubt, did not take part, rather they remained sceptical and detached. Anatomical knowledge had been one of the main areas of discussion of this chapter. It was anatomy, which distinguished the western and indigenous medical systems, thereby instigating a sharp division between the earlier 'two-dimensional' and new 'three-dimensional' theories about the human body.

It is noteworthy that with the advancement in medical sciences, new curriculum and pedagogical changes also took place in the medical institutions. But, there is doubt over the extent to which the new syllabi and technological changes influenced the lives of the ordinary masses. It is necessary to state here that the class room culture of medical science also in course of time became a part of the larger aspect of medical science in Bengali society. The intervention of new knowledge influenced the newly emerging Bengali medical professionals and through them, it entered into the socio-cultural sphere. This is not a complete answer of the question that has been raised. After seventy years of independence, we are still seeking for more health opportunities with new technology in the primary (rural areas mainly) bases of this country. Therefore one can assume that it was almost impossible for the British Government to think of giving equal medical facilities in the mofussil areas too. There were preliminary health centres (small hospital or dispensary) in almost every small town, but these were certainly not sufficient as the rural localities of this country were heavily crowded. It is even unwise to think that the entire society was very enthusiastic in adopting the western medicine. Many times, a big section of the society was unwilling to accept the new/alien system, even if it was more effective in the eradication of diseases and their treatment. But the cities were more influenced by western medicine and they also received more facilities.

There are plenty of examples and references which inform us about the growing popularity and demand of western medicine in Bengal throughout the nineteenth and twentieth century. On the other hand, the indigenous medical systems and homeopathy became comparatively less popular. It is partially true that the British introduced western medicine for their own convenience, which within a short period overpowered the other traditional medical systems in India. But, blaming the British solely for the ruinous condition of the other systems would be an oversimplification of historical facts. Undoubtedly, the British never considered these systems as scientific and kept them aside from their imposed arena of medical knowledge. One cause for not dovetailing indigenous systems with the curriculum of the Medical College was explicated in terms of its totally different characteristics and different ways of teaching. The methods of controlling and using the body would be different in Western and indigenous medical traditions. But unfortunately, they did not even try to encourage these systems of medicine and never

thought of establishing separate institutions for indigenous medical systems. They were denied of the official patronage, since the British bureaucracy did not consider them as scientific[5]. Pradip Basu gives an example quoting a contemporary Kaviraj.

> "Had the postulators not failed to provide adequate physiological and pathological references and had they not thus aggravated matters, today the ayurvadas would not have been looked down upon by the West. But we still owe a lot to the collectors and compilers ayurvedic textual material. Without such collectors, the very word ayurveda would have been obliterated. [6]"

It was a complaint that before considering ayurveda as unscientific they should have read the texts with dexterity and discussed with experts well versed with these systems. Possibly, such an exercise could give them a clear conception of what Ayurveda actually said about the body and disease.

This was the attitude of the 'superior' towards their 'inferior' subjects', who had their own traditional systems of medicine. But one can ask a question that why was it necessary for the practitioners of ayurveda or unani to prove that their own knowledge systems were no less scientific? The common tendency of considering the colonial rule the supreme authority to judge every aspect of culture and practice in India brought disrepute for indigenous systems among the ordinary as well as educated people. As the British displayed contempt and disregard for these systems, the indigenous people also started neglecting their own traditions. Was it a relationship of knowledge and power? However the irony of this period was despite having a long tradition, the *vaidyas*, *hakims* and the other educated people very rarely came forward together to protect their own medical systems. Organizations were established for allopathic medicine by Indian initiatives but they forgot the importance of their own indigenous medical systems. There was a lack of enthusiasm for the institutional promotion within the society. Though the nineteenth century was described in the epithet of the renaissance and there were issues to vindicate such descriptions, but very few initiatives were taken to modify the traditional medical

[5] The idea of body in ayurveda is different from that of Western idea. According ayurveda the body is composed of five elements, among them wind, bile and mucus are the main. Misbalance in one these are the cause of disease. In contrast in Western medicine the explanation of body is physiology and about disease and pathology.

[6] Basu Pradip (ed): Health and Society in Bengal, A Selection from Late 19th Century Bengali Periodicals, Sage Publications, New Delhi, 2006, p. 24-25.

systems. The 'awakened' men as the prodigies of the new awakening re-searched and experimented on western medicine, became efficient and affluent doctors, ignoring their native traditions and scholarship in medical sciences. There were some individual initiatives for synthesizing both the systems, but they were half-hearted and failed to generate much popular interest.

The discussions on western medicine have largely been confined within a gendered discourse, privileging the achievements and activities of the males over the females. In fact, for a fairly long period of time, medical facilities (education, treatment) had been made available only to the males[7]. Women were socially and religiously secluded. Such a social environment lend much strength to the criticisms of the White ruling elites that the poor health conditions of the women exposed the fallacies of the Indian civilization and raised doubts over its humanistic foundations. It is true that the Purdah system restricted women from availing the western medical facilities or treatment from a male doctor. The educated Bengalis started thinking seriously about this condition and gradually women also became conscious for their education. But before getting the comfort and satisfaction from the western medical treatment, there was no choice and people never used to complain against the indigenous mode of treatment. However, it was easy to adopt the readily available advanced medicine than to re-work on the existing one. The earlier treatment remained untouched almost. The late nineteenth century witnessed an impressive growth in the sphere of women's medical education. Trained midwives were able to reduce women and child mortality and most importantly medicine became a strong profession for women too, which to some extent altered the position of women in the society.

While talking about the changes brought in with the introduction of western medical education in Bengal, we generally depend on the official documents, contemporary books written by the colonial officials, medical men and missionaries etc. These sources provide 'their' views and observations on colonial activities as well as the overall response of the indigenous society. But objective history dose not only demand mare truth, it is necessary to verify the story from another side also. The ruler and the ruled both take equal part in the history of a colonized society. The only way to know the actual

[7] Forbes, Geraldine. *Women in Modern India*, Cambridge University Press, U K, 1998, p. 161.

response of the indigenous society is to analyze the contemporary vernacular journals and literature, which was to some extent out of direct colonial influence. Knowledge in India was somehow restricted within the territory of manuscripts, which was impossible to spread and difficult to remember orally. However the initial decades of the nineteenth century witnessed almost a revolution in Bengal with the coming of print culture. The indigenous society received an opportunity to express their views, criticism and demands through printed journals, books and also through media. Print media paved the way to transfer information, awareness and knowledge from educated section to uneducated or less-educated section, from conscious to unconscious and from city to peripheral people of the society.

British encounter with the new scientific mood in many ways altered the existing socio-cultural, political and economic condition of Bengal. Changes started with the privileged groups (English educated) of course, and contestation in the indigenous society between the traditional thought and upcoming 'modernity' remained even after British left India. Adoption and rejection of western medicine simultaneously progressed with respective causes and reasons given by the heterogeneous society. Not only social groups participated in this contestation, but within Bengali families different generations were engaged in this process according to their separate understandings. However few positive changes became prominent right after the introduction of western medical education publicly.

The older concept of losing one's caste (*jati*) or status due to touching of dead human body disappeared with the growing social status of medical men and the terms *daktar* and *daktari* (medical professional) adequately explains the change in the mindset of the Bengali population. New knowledge generated new thoughts and impressions in the Bengali mind, which led to the rationale thinking that the doctor was above the restrictive domains of caste, class or religion. Madhusudan Gupta played the pioneering role being the first Bengali dissector. But, such efforts to break the taboos, based on ritual purity and pollution, remained more of a concern for comparatively the small section (English educated) of the society mainly in cities. The majority was still in the dark of the possible implications of these changes and took time to overcome such situations. Gradually the

demand for Western medical education increased among the common people. It reached its zenith when the vernacular class was attached to the Calcutta Medical College. Within a very short period medical education reached out to the mofussil areas by attracting ordinary people. These people were neither financially nor academically suitable for the main English class (fees were high and lack of proficiency in English accounted for the obstacles faced by them). Vernacular class to some extent altered the medical education, which had till then retained an elite character, into a field of interest to the ordinary people of Bengal. It is noteworthy here that the teachers of Calcutta Medical College were not always the English scholars, Bengali doctors were also considered as good teachers.

The demand for Western medicine within the Bengali society had a diversified character. Within seven to eight years of the establishment of the Calcutta Medical College, the increased popularity came under Government notice. Accordingly they were compelled to open a provision for 'free students' (without allowance) admission[8]. But the question arises here why simultaneously the number of stipendiary students decreased, while the free students' number was rising? Later vernacular classes were started to meet the demands of the Bengali speaking people as well as those of the officials. But the students of this class were 'free students' and it was seen as low standard in comparison to the main course (English class in Medical College). As the popularity and demand rate were high for the vernacular classes, it led to a growing consciousness within the indigenous society and eroded much of the elite character of western medicine within a short period. Probably Bengali language never received importance from the colonial Government nor did they ever try to solve the limitations of Bengali language by reordering the Bengali medical textbooks. It was only out of demand that they compelled to start Bengali class in CMC.

The class composition in the primary and secondary classes is necessary to mention here. It could reveal the social conditions prevalent in Bengal and to some extent in the peripheral localities. Surprisingly, the primary (English) class was composed almost exclusively of the Hindus and the military class had a Muslim majority. Among the Hindus, *Kayasthas* were the majority initially, but this changed in the 1860s with Brahmins

[8] Kumar Anil, Medicine and the Raj, British Medical Policy in India, 1835-1911, Sage Publication, New Delhi, 1998, p. 29-36.

joining in larger numbers. Military class comprised of Muslims mainly, among whom the majority used to come from the North Western Province and this character never changed in future also. This had more to do with the political and social conditions of the Muslims in the nineteenth century. Firstly, the Muslims were still to recover from the shock of losing their political authority to the British and this led them to reject the virtues of western civilization and modernity. Secondly, their failure to accept the realities of the situation, was responsible for their backwardness in matters of education and this accounted for their economic sub ordination to the English educated upper caste Hindus. While the Hindus realized the advantages of the English administration and education, the Muslims remained stagnant in their older ideas. Expensive medical education was not affordable to all the Muslims. Thirdly, their socio-religious rigidities was also responsible for their lack of interest in western medical education from English and this kept them more in a disadvantage, compared to the Hindus. However, gradually with the educational reforms initiated by Syed Amir Ali and Sir Syed Ahmed Khan, there was some interest among the Muslims to know about the new system. It took time, but involved them into the main stream medical education.

The military nature of the British since their first day of conquest was evident throughout their rule. For instance any event of importance was celebrated with gun salute. Madhusudan Gupta's act of dissection was celebrated with gun salute, even every day the Calcutta Medical College used to close with a gun-fire[9].

The early decades of the twentieth century witnessed a great deal of interest in western medical sciences. The achievements of Ronald Ross became a matter of household discussion and the nobleness of *daktari* as a profession was propagated through popular counter-publics. The recurrence of famines and epidemics in rural Bengal sometimes brought out the need for more allopathic practitioners and more government involvement in public health schemes. In fact, while the city limits of Calcutta had a fairly large number of government medical institutions, the interior districts lacked such facilities. In such a situation, the claims of the superiority of the western medical system fell flat, with allopathic doctors having to face indigenous medical practitioners, the

[9] Rules and Regulations of the Medical College of Bengal, (Printed by order of the Council of Education), Military Orphan Press, Calcutta, December, 1848, (BL)

majority of whom were quacks, synthesising the elements of indigenous medical systems with magic, rituals, divine powers (daivya). The contestations between allopathic medicine and bazaar medicine were by no means irrelevant to be written off.

At the end of British rule the government-appointed Bhore Committee provided an elaborate and comprehensive plan for future health development in this country and it was with great interest expected that it would decrease the health problems to a large extent. But political settlement, which ended with the division of the country into two Dominions, brought unexpected hurdles in the way to fulfil the recommended plans to its fullest. The political leaders were busy in settling hostile situation and the social reconstruction did not receive adequate attention. While the independence marked a stage of high hopes among the common people as well as the political leaders, the unprecedented population transfer and frequent communal insurrection brought another obstacle in front the developmental schemes. The refugee problem and communal trouble naturally took precedence over other matters and all the available resources of the central Government and provincial governments had to be mobilized to meet the difficult situation[10].

Following independence there was a sharp rise in the number of medical colleges and 13 new colleges were established during the 3 years 1946-49., and 21 more in the period 1950-58. So by 1959 the total number of medical colleges came up to 50[11].

The nineteenth and twentieth century signify an all round transformation and re-construction in Bengali society. Colonial set-up and political importance of Bengal gave an excellent opportunity to perceive a massive cultural interchange throughout those centuries. Western medical discourse occupies an extremely important place in the process of colonization. Interaction and resistance were simultaneously seen. In spite of having many debates regarding the coercive nature of colonization process, it is mentionable that the economic and social interest many times encouraged indigenous people to adopt western medicine and medical profession. However, along with playing as a tool for colonial rule, the western medical education and practice, in the contemporary period,

[10] Raja. K.C.K.E, *Recent Development in the Field of Health in India*, The British Medical Journal, vol. 1, no. 4650, Feb, 18, 1950, p. 387 – 392.

[11] Khanolkar V.R. *Fifty Years of Science in India: Progress of Medical Science*, Indian Science Congress Association, Calcutta 1963.

directly or indirectly touched almost every sector of the society. None other than medical science could affect the entire society so much and with such intensity.

Bibliography:

Primary Sources:

❖ Archival Documents:

West Bengal State Archive:

Proceedings:

- Proceedings of the Government of Bengal, Department of Education, 1840 – 1858.
- Proceedings of General Department, Education Branch, 1865 – 1907.
- Bengal Public Works Proceedings, 1854 – 1947.
- Judicial Department, Medical Branch.
- Proceedings of General Department: Education Branch, Medical Branch, Miscellaneous Branch 1865 – 1907.
- Proceedings of the Home Department: Education Branch, Medical Branch and Public Branch (1861 – 1907).
- Proceedings of Finance Department (National Library)
- Political Department (Medical Branch)
- Municipal Department: Municipal Branch
- Medical Branch, DPI Report- 1835 1900.

Reports:

- Medical Education on Vernacular Medical School,
- Report of the Council of Education,
- General Report: Public Instruction in Bengal,
- Annual Report on of Inspector General of Civil Hospitals (1925-1944)
- Report on Medical Laws and Legislation of Bihar (1916 onwards)

National Archives:

- Proceedings of Home Department, especially the branches of Education, Public Works etc. 1854 – 1901.
- Reports on Native News Papers published in Bengal Presidency, 1862 – 1866.
- Annual Report on of Inspector General of Civil Hospitals, 1925-1944.

Dhaka Archive:

- Government of Bengal Proceedings, (letters, orders, reports etc. of the Government of East India Company and Government of Bengal), 1859 – 1864.
- Collectorate Records, 1889 -1960).
- Government Publication 1800 – 1900.
- Sylhet Proceedings/ Files, 174 – 1947, (there are records of the Sylhet District when it was a part of Assam Province).
- Calcutta Gazettes and Pakistan Gazettes, 1833 – 1990.
- 'A' Proceedings of the Lieutenant-Governor and Governor of Bengal, Department of Education, Finance, General, Judicial, Medical and Public Works, 1854 – 1947.

Dacca District Records:

- Letters received and sent by Magistrate-Collector of Dhaka, 1840 – 1885,
- Miscellaneous Letters received and sent by Collector of Dhaka, 1840 – 1885.

Dacca city Corporation Records:

- Collections of Administration Reports, Health, Education and the Mitford Hospital Files

Patna State Archive and Library:

- Annual Report of Prince of Wales Medical College, 1925 – 1928.

- Report on the Progress of Education in Bihar and Orissa, 1922 – 1952.
- Administrative Reports of Bihar and Orissa, 1875 – 1876, 1911 – 1912, 1930 – 1931.
- The Quinquennil Review of the Progress of Education in Bihar and Orissa1912 – 1917, 1927 – 1931.

British Library:

Reports:

- Report of Medical College of Bengal-- 1840-1845, 1852-1853, 1923-1946.
- Report of the Carmichael Medical College—1923-1932.
- Report of the Prince of Wales Medical College—1926-1935
- Reports on the Working Hospitals d Dispensaries under the Government of Bengal—1935-1939.
- Report of the Medical Schools of Bengal—1926-1937.
- Report of the Calcutta School of Tropical Medicine and Hygiene—1923-1932.
- Report of the Committee on the Organization of Medical research Under the Government of India—1929.
- Report on the Surgical Operations—1846.
- Report o the Sanitary Commission of Bengal—1912-1913.
- Report of the Suburban Hospitals, 1868, Baptist Mission Press.

Government Publications:

- Bengal Medical Regulations, W. Palmer Military Orphan Press, Calcutta, 1851.
- Martin James Ranald, Notes on the Medical Topography of Calcutta, Military Orphan Press, 1836

Primary Books (British Library and Wellcome Library):

1. Balfour, Margaret I and Young Ruth: *The Work of Medical Women in India*, Oxford University Press, London, 1929

2. Beatson, William Burns: *Indian Medical Service Past and Present*, Simpkon, Marshal, Hemilton, Kent & Co. lit., Oriental Institute,London,1931
3. Bellew, W. (Henry Walter): *The History of Cholera in India from 182to1881,* Trubner & Co., London,1885.
4. Birch, Edward, A. (Edward Alfred): *The Management and Medical Treatment of Children in India*, Thacker, Spink, Calcutta, 1895
5. Birdwood, George C. M. (George Christopher: *The industrial arts of India*, Chapman and Hall, London, 1880
6. Brett, F E: *A Practical Essay on Some of the Surgical Diseases of India*; S L Hyder Medical Journal Press, Calcutta, 1840.
7. Brown, J. Campbell: *Report on the Vaccination in the Province of Bengal for the Year Ending 31stMarch 1874*, Bengal Secretariat Press, Calcutta, 1874.
8. Browne, John Cave: *Indian Infanticide: Iits Origin, Progress, and Suppression.* W.H. Allen and Co., London, 1855.
9. Bryden, James L. (James Lumsdaine): *Annual Returns of the European Army of the Bengal Presidency from 1858 to 1869,* Superintendent of Government Printing, Calcutta, 1871.
10. Bryden, James L. (James Lumsdaine): *Report on the General Aspects of Epidemic Cholera in 1872*, Superintendent of Government Printing, Calcutta, 1874.
11. Bryden, James L. (James Lumsdaine): *Reports Bringing up the Statistical History of the European Army in India and of the Native Army and Jail Population of Bengal to1876*, Superintendent of Government Printing, Calcutta, 1876.
12. Charles, T Edmodston: *Dengue and its Treatment*, Calcutta Central Press Company, Calcutta, 1872.
13. Charles, Thomas Edmondston: *Report on the Stamping out of Small-pox in Calcutta,* Office of Superintendent of Govt. Print, Calcutta, 1868.
14. Chevers, Norman: *A Brief Review of the Means of Preserving the Health of European Soldiers in India*, R. C. Lepage, Calcutta, 1860.
15. Cole, J J: *Military Surgery; Being the Experience of the Field Practice in India*, Wm.H and Co., London, 1856

16. Crawford, Dirom Grey: *A history of the Indian Medical Service, 1600-1913*, Thacker & Co., London, 1937.
17. Davidson, Andrew: *Hygiene and Diseases of Warm Climates,* Young J.Pentland, Edinburg And London, 1893.
18. Derenzy, C C: *On the Causation of Typhoid ad Sanitary Improvement of India*, Albionn Press Lahore, 1873
19. Duncan, Andrew: *The Prevention of Disease in Tropical and Sub-tropical Campaigns,* J. & A. Churchill, London, 1888.
20. Emery, Alan E. H: *Principles and Practice of Medical Genetic*, Churchill Livingstone, London, 1983.
21. Fayrer, Joseph: *Clinical Surgery in India*, John Churchill and Sons, London, 1865.
22. Fayrer, Sir Joseph: *Recollections of My Life*, William Blackwood and Sons, London, 1944.
23. Fayrer, Sir Joseph: *Surgery in Bengal,* (Publisher Not Found), Calcutta, 1865.
24. Fenwick, C. A: *Essay on the Colonization of the Hindoosthan*, Baptist Mission Press, Calcutta, 1828.
25. Flemig, John: *A Catalogue of Indian Medical Plants and Drugs*, Hindoosthani Press Calcutta 1810.
26. Ghosh, Birendra Nath: *A Treatise on Hygiene and Public Health, with Special Reference to the Tropics,* Hilton & Co. Calcutta, 1912.
27. Gribble, J. D. B. (James Dunning Baker): *Outlines of Medical Jurisprudence for India*, Higginbotham, Madras, 1998.
28. Hardinge of Penshurst, Charles Hardinge: *Indian Sanitary Policy, 1914*, Government Printing Office, Calcutta, 1914.
29. Hare, E. (Edward): *Malarious fever*, Military Orphan Press, Calcutta, 1864.
30. Hare, Edward Christian: *Memoirs of Edward Hare C.S.I. Late Inspector General of Hospitals Bengal,* Grant Richards, 1839.
31. Harvey, Robert: *Report on the Medico-legal Returns Received from the Civil Surgeons in the Bengal Presidency, 1870-2.,* Calcutta Central Press Co, Calcutta, 1876

32. Hoggan, Frances Elizabeth: *Medical Women for India*, J.W. Arrow Smith, printer, Bristol, 1882.
33. James, S.P. (Sydney Price): *Smallpox and Vaccination in British India*, Thacker, Spink, Calcutta, 1909.
34. Jee, Bhagvat Sinh (Sir): *A Short History of Aryan Medical Science*, Macmillan & Co., London, 1897.
35. Lewis, C. B. (Charles Bennett): *The Life of John Thomas*, Macmillan & Co., London, 1873.
36. M. Duncoum, Barbra: *The Development of Inhalation Anaesthasia*, the welcome historical medical museum, Oxford University press, London, 1947.
37. Mackenzie, Stephen Coull: *Medico-legal Experience in Calcutta*, E. & S. Livingstone, Calcutta, 1891.
38. MacKinnon, K.: *A few Remarks upon Dr. Stewart's Late Pamphlet on the Subject of Vaccination in Bengal*, F. Carbery, Bengal Military Orphan Press, Calcutta, 1854.
39. Macnamara, Nottidge Charles: *Report on Cholera Mortality in Calcutta, 1866-70*, Wellcome Trust, (place and date not found).
40. Martin, James Ranald: *Influence of Tropical Climates in Producing the Acute Endemic Disease of the Europeans*, John Churchill, London, 1861.
41. Martin, James Ranald: *Notes on the Medical Topography of Calcutta*, Printed by the order of the Government, 1836.
42. McLeod, Kenneth: *Operative Surgery in the Calcutta Medical College Hospital: Statistics, Cases and Comments*, J. & A. Churchill, London, 1885.
43. McLeod, Kenneth: *The Principles of Rational Medicine*, Thacker, Spink and co., 1892
44. McNally, C. J: *Elements of Sanitary Science*, London, 1894. (Publisher not found).
45. Moore, William James: *Review of the Progress of Sanitation in India*, (Publisher not found).
46. Mouat, Frederic John: *An Atlas of Anatomical Plates of the Human Body*, Bishop's College Press, Clcutta, 1849.
47. Neuburger, Max: *History of Medicine*, Oxford University Press, London, 1910.
48. Orme, E: *The trial of Shama Charan Pal*, Lawrence and Bullen, London, 1897.

49. O'Shaughnessy, William Brooke: *Report on the Investigation of Cases of Real and Supposed Poisoning*, Bishop's College Press, 1841.
50. Pereira, Jonathan: *The Elements of Materia Medica and Therapeutics (Volume 1),* Lea and Blanchard, London, 1843.
51. Pereira, Jonathan: *The elements of Materia Medica and Therapeutics (Volume 2),* Lea and Blanchard, London, 1854.
52. Peterkin, Alfred: *Commissioned Officers in the Medical Services of the British Army, 1660-1960,* London, 1968.
53. Rogers, Leonard: *Report of an Investigation of the Epidemic of Malarial Fever in Assam, or kala-azar,* Assam Secretariat Printing Office, Shillong, 1897.
54. Russell, William: *Report on the State and Progress of Vaccination in Bengal During the Years 1805and 1806, (submitted to the medical board at Fort William),* Honourable Company's Pres, Calcutta, 1807.
55. S.N.: *Hindu Medicine,* (Publisher, place and year not found)
56. Sam, Nicolas: *Around the world via India a Medical Tour,* American medical association press, Chicago, 1905.
57. Silk, A. E.: *Municipal Engineering Applicable to Conditions Existing in Bengal,* Bengal Secretariat Press, London, 1899.
58. Simpson, Benjamin (Sir): *Scientific Memoirs by Medical Officers of the Army of India,* Superintendent of Government Printing, Calcutta, 1884.
59. Simpson, W. J. (William John): *Cholera in Calcutta in 1894 and Anti-choleraic Inoculation* (Publisher, place and year not found).
60. Simpson, W.J. (William John): *A note on the Sanitation of Calcutta,* 1897.
61. Stein, Aurel: *In Memoriam: Theodore Duka, 1825-1908,* Privately Printed, Oxford, 1914.
62. Stewart, Duncan: *Report on Small-pox in Calcutta, 1833-34--1837-38--1843-44, and Vaccination in Bengal, from 1827to1844,* G.H. Huttmann, Military Orphan Press, Calcutta, 1844.
63. Turner, John Andrew: *Sanitation in India,* Times of India, 1914
64. Wallace, John: *Sanitary Engineering in India,* Education Society's team Press, Bombay, 1893.

65. Webb, Allan: *Elephantiasis Orientalis, and Specially Elephantiasis Genitalis, in Bengal*, F. Carbery, Bengal Military Orphan Press, Calcutta, 1855.
66. Webb, Allan: *Pathologia Indica, or, The Anatomy of Indian Diseases, Medical and Surgical: Based Upon Morbid Specimens from all Parts of the Indian Empire in the Museum of the Calcutta Medical College*, Calcutta Thaker & Co., Calcutta, 1848.
67. Webb, Allan: *The Historical Relations of Ancient Hindu with Greek Medicine in Connection with the Study of Modern Medical Science in India*, J.C. Sherriff, Military Orphan Press, Calcutta, 1850.
68. Wise, T.A.: *Commentary on the Hindu system of Medicine*, printed at the Baptist Mission Press, Calcutta, 1852.

❖ Journals:

English Journals:

1. *Bengal Chronicle*
2. *Bengal Spectator*
3. *British Medical Journal* (London),
4. *Calcutta Gazette*
5. *Calcutta Journal of Medicine* (1874)
6. *Homoeopathic Mirror*(1924, Calcutta)
7. *Indian Medical Gazette*
8. *Medical and Physical Society* (1835, Calcutta)
9. *Medical Register and Directory of Indian Empire* (1842, Calcutta)
10. *Reformer*
11. *The Medical Reporter* (1892, Calcutta)
12. *Indian Lancet*
13. *Indian Nation*
14. *The Medical Research Memories (1924)*
15. *Calcutta Magazine and Monthly Register (1830)*
16. *Calcutta Monthly Journal (1797)*

Vernacular Journals:

1. *Balak* (1885)
2. *Bamabodhini Patrika* (1863)
3. *Bangadarshan* (1872)
4. *Basumati*
5. *Bharati* (1877)
6. *Bijnan Darpan*
7. *Bhisak Darpan*
8. *Bibidhartha Sangraha*
9. *Chikitsak* (1297 *B.S*)
10. *Chikitsa O Samalochak* (1895)
11. *Chikitsa Sammilani* (1884)
12. *Digdarshana* (1818)
13. *Dacca Prokash*
14. *Homeopathy (1922)*
15. *Homeopathy Chikitsa (1929)*
16. *Homeopathy Poricharok (1928)*
17. *Homeopathy Samachar (1925)*
18. *Pally Sanskar*
19. *Prabassi*
20. *Sadhana* (1891)
21. *Samachar Darpan* (1818)
22. *Sambad Bhaskar* (1839)
23. *Sambad Koumudi* (1821)
24. *Sambad Prabhakar* (1831)
25. *Sandhya*
26. *Shihsha O Swastha* (1320 *B.S*)
27. *Somprakash* (1858)
28. *Suchikitsa* (1332 *Bangabdo*)

29. *Swastha* (1305 *Bangabdo*)
30. *Tattobodhini Patrika* (1843)

❖ Articles:

i. British Medicine in India: *The British Medical Journal*, Vol. 1, no 2421, May 1907, Published by BMJ Publishing Group

ii. Buess H: The Beginning of Industrial Medicine in England, *British Journal of Industrial Medicine*, Vol. 19, no. 4, Oct, 1962.

Secondary Sources:

❖ Vernacular Books:

1. Bandopadhyay Brajendranath, *Sangbad Patrer Sekaler Katha*, Vol. 1 and 2, Bongiyo Sahitya Parishat, Kolkata, 1931, 1339 B.S.
2. Basu Pradip: *Samayiki, Purono Samayiki Patrer Probondho Sankalon. Bijyan O Samaj* Vol. i. 1850 – 1901, Ananda Publishers, 1998.
3. Bhattacharya Arupratan: *Bangalir Bijnan- Bhabna O Sadhna*, Dev's Publishing, Kolkata, 2006.
4. Bhattacharya Jayanta (Ed): Bharater *Patabhumite Chikitsa Bijnyaner Itihas, Sankshipta Parjalochona*, Ababhas, Kolkata, 2009.
5. Chakraborty Dr. Shyamal: *Rabi Thakurer Daktari*: A, Shishu Sahitya Sangsad Pvt. Ltd., Kolkata, 2011.
6. Chakrakorty Arun Kumar: *Chikitsa Bigyane Bangali*, Sahitya Bihar, Kolkata, 1975
7. Deb Chitra: *Mahila Daktar Bhin Groher Basinda*, Ananda Publisher, Kolkata, 1994.

8. Devi Shanta: *Bharat-Muktisadhak Ramananda Chattopadhyaya O Ordhosatabdir Bangla*, Dev's Publishing, Kolkata, 2005.
9. Ghosal Dhananjay (Ed): *Balaka, Bangalir Bijyancharcha, Prak Swadhinata Parbo*, Kolkata, 2009.
10. Ray Binay Bhushan: Chikitsa Bijnyaner Itihas, Unish Shatake Baglay Pashchatya Sikshar Prabhab, Sahityalok, Kolkata, 2005.
11. Ray Binay Bhushan: *Unish Sataker Banglay Bigyan Sadhana*, Ananda Publishers, Kolkata, 1987.
12. Roy, Benoybhusan: *Unish Satake Banla Bhasay Bigyan Ch*archa, Naya Udyog, Kolkata, 2002.
13. Shastri, Shibnath: *Ramtanu Lahiri O Tatkalin Banga Samaj*, edited by Baribaran Ghosh, New Age Publishers Pvt. Ltd., Kolkata, 2009.
14. Sinha Dr.Dinesh Chandra: *Prasanga Kolkata Bishwavidyalaya*: A Collection of Essays on the University of Calcutta, University of Calcutta, Kolkata, 2007.

❖ Articles:

1. Alavi Seema, Medical Culture in Transition: Mughal Gentleman Physician and the Native Doctor in Early Colonial India, *Modern Asian Studies*, Cambridge University Press, Vol. 42, No. 5, pp. 853-897, Sep. 2008.
2. Arnold David, Cholera and Colonialism in British India, Past & Present, The Oxford *Journals*, No. 113, pp. 118-151, Nov., 1986.
3. Bannerji, Himani, Fashioning a Self: Educational Proposals for and by Women in Popular Magazines in Colonial Bengal, *Economic and Political Weekly*, Vol. 26, No 43 (Oct 26, 1991), pp WS50 – WS62.
4. Bhattaycharya Jayanta, The first Dissection Controversy: Introduction to Anatomical Education in Bengal and British India, *Current Science*, Vol. 101, no. 9, 10th November 2011.
5. _____, The Genesis of Hospital medicine in India: The Calcutta Medical college (CMC) and the Emergence of a New Medical Epistemology, *The Indian Economic and Social History Review*, 51, 2 (2014): 231 – 264.

6. Alter Joseph S. Rethinking the History of Medicine in Asia: Hakim Mohammed Said and the Society for the Promotion of Eastern Medicine, *The Journal of Asian Studies*, Vol. 67, No. 4, pp. 1165-1186, Nov. 2008.
7. Bajpai Vikas and Saraya Anoop, For a Realistic Assessment: A social, political and Public Health Analysis of Bhore Committee, *Sage Publications*, pp. 215-231,2011.
8. Barrett Bruce, Identity, Ideology and Inequality: Methodologies in Medical Anthropology, Guatemala 1950-1995, *Eau Claire Family Medicine*, 807 South Farwell, Madison, WI 54701, Vol. 44, No. 5, p. 579-587, 1997.
9. Beattie James, Imperial Landscapes Of Health: Place, Plants, And People Between India And Australia, 1800s–1900s, *Health And History*, Vol. 14, no. 1, p. 100-120, 2012.
10. Bhadra Mita, Indian Women in Medicine: An Enquiry Since 1880, *Indian Anthropologist*, Vol. 41, No. 1 pp. 17-43, January - June 2011.
11. Bose Debasis, Madhusudan Gupta, *Indian Journal of History of Science*, 29 (1), 1994, p. 31 – 40.
12. Chakrabarti Pratik, "Signs of the Times": Medicine and Nationhood in British India, Osiris, Vol. 24, No. 1, *Science and National Identity*, p. 188-211, 2009.
13. Dugan Kathy, History of Science in Non-Western Classrooms: A Bridge between Cultures, *Social Studies of Science*, Vol. 17, No. 1, p. 145-161, Feb., 1987
14. Ernst. Waltraud, Beyond East and West. From the History of Colonial Medicine to a Social History of Medicine(s) in South Asia, *Social History of Medicine*, Vol. 20, No. 3 pp. 505–524, 13 November, 2007.
15. Gaurlay Jharna, Medical Women and Female Medical Education in 19th Century India, Education and Empowerment, Women in South Asia, *Bethune School Praktani Samiti*, Kolkata, 2001.
16. Ghose Saroj, William O'Shaughnessy-An Innovator And Entreprene, *Indian Journal Of History of Science*, 29 (1), 1994.
17. Ghosh Ajay Kumar, *A Short history of the Development of Homeopathy in India*, *The Faculty of Homeopathy*, 2010, p. 130-136.
18. Ghosh S.C., Calcutta University And Science, *Indian Journal Of History of Science*, 29 (1), 1994.

19. Gorman Mel, Introduction of Western Science into Colonial India: Role of the Calcutta Medical College, *Proceedings of the American Philosophical Society*, Vol. 132, No. 3, pp. 276-298, Sep., 1988.

20. Gautham Meenakshi and Shyamprasad K.M, The 'Basic' Doctor for Rural India: A Failed Promise*? Economic and Political Weekly,* Vol xlv no 38, pp. 25-29, Sep, 2010.

21. Gupta, Madhusudan and Bose Debasis, Post Graduate Trainee, R.G. Kar Medical College, Calcutta, *Indian Journal of history of Science*, 29(1),1994.

22. Harrison Mark, Science and the British Empire, *Isis, The University of Chicago Press,* Vol. 96, No. 1pp. 56-63, March 2005.

23. Home Amal: The Calcutta Municipal Gazette : Tagore Memorial Special Supplement, *The Calcutta Municipal Corporation, Calcutta*, 13th September, 1941(Reprinted on 9th May, 1986

24. Jeffery Roger, Allopathic Medicine in India: A Case of Deprofessionalization?, *Economic and Political Weekly*, Vol. 13, no 3, Jan 21, 1978.

25. Karlekar Malavika: Kadambini and Bhadrolok: Early Debates Over Women's Education in Bengal, *Economic and Political Weekly*, Vol. 21, no 17, April 26, 1996.

26. Khan Shamshad, Systems of medicine and nationalist discourse in India: Towards ''new horizons'' in medical anthropology and history, *Social Science & Medicine* 62, 2786–2797, 2006.

27. Khare R. S, Dava, Daktar and Uda: Anthropology of Practiced Medicine in India, *Social Scientist, Medicine*. Vol. 43, No 5, pp. 837 – 848, 1996.

28. Kumar Deepak, Emergence of 'Scientocracy': Snippets from Colonial India, *Economic and Political Weekly*, Vol. 39, No. 35 (Aug 28-Sep 3, 2004), pp. 3893-3898.

29. _____ Medical Encounters in British India, 1820 – 1920, *Economic and Political Weekly*, Vol. 32, no 4, Jan 25 -31, 1997.

30. _____ Unequal Contenders, Uneven Ground: Medical Encounters in British India, 1820-1920, Andrew Cunningham and Bridie Andrews (Ed) *Western*

Medicine as Contested Knowledge, Manchester University Press, New York, 1997.

31. _____ Calcutta: The Emergence of a Science City (1784 – 1856), *Indian Journal o History of Science,* 29 (1), 1994.
32. _____ Developing History of Science and Technology in South Asia, *Economic and Political Weekly*, Vol. 38, No. 23 (Jun 7-13, 2003), pp. 2248-2251.
33. _____ Reconstructing India: Disunity in the Science and Technology for Development Discourse, 1900-1947, *Osiris*, Vol. 15, Nature and Empire: Science ad Colonial Enterprise (2000), pp. 241 – 251.
34. _____ Science and Society in Colonial India: Exploring an Agenda, *Social Scientist*, Vol28, No. 5/6 (May-June, 2000), pp. 24 – 46.
35. _____ The 'Culture' of Science and Colonia Culture, India 1820 – 1920, *The British Journal for the History of Science*, Vo 29, No 2 (June, 1996), pp. 195 – 209.
36. Lambert Helen, Medical pluralism and medical marginality: Bone doctors and the selective legitimation of therapeutic expertise in India, *Social Science & Medicine*, 74 (2012) 1029e1036, 25 January 2012.
37. Lourdusamy John Bosco, The Indian Association for the Cultivation of Science: A Tortuous Tryst with Modern Science, Journal *of Science Education and Technology*, Vol. 12, No. 4, pp. 381-396,Dec., 2003.
38. Majumdar D. N., Rao C. Radhakrishna, and Mahalanobis P. C., Bengal Anthropometric Survey, 1945: A Statistical Study, Sankhyā: *The Indian Journal of Statistics* (1933-1960), Vol. 19, No. 3/4, Bengal Anthropometric Survey, 1945: A Statistical Study, pp. 201-408, Jun., 1958.
39. Mathias Mildred E., Magic, Myth and Medicine, *Economic Botany*, Vol. 48, No. 1, pp. 3-7, Jan. - Mar., 1994.
40. Marks Shula, What is Colonial about Colonial Medicine? And What has Happened to Imperialism and Health? *The Society for the Social History of Medicine,* p. 205-219, 1997.

41. Mukherjee Sujata, Environmental Thoughts and Malaria in Colonial Bengal: A Study in Social Response, *Economic and Political Weekly*, Vol. 43, No. 12/13, pp. 54-61, Mar. 22 - Apr. 4, 2008.

42. _____ Medical Education and Emergence of Women Medics in Colonial Bengal, *Institute of Developmental Studies Kolkata*, August, 2012.

43. Mukherjee Projit Bihari, Structuring Plurality: Locality, Caste, Class and Ethnicity in Nineteenth-Century Bengali Dispensaries, *Australian and New Zealand Society of the History of Medicine*, Vol. 9, No. 1, p. 80-105, 2007.

44. Mukherjee, Pulak Kumar and Atul Wahile, Integrated Approaches Towards Drug Development from Ayurveda and Other Indian Systems of Medicine, *Journal of Ethnopharmacology* 103 (2006), pp. 25–35.

45. Mushtaq Muhammad Umair, Public Health in British India: A Brief Account of the History of Medical Services and Disease Prevention in Colonial India, *Indian Journal of Community Medicine*, Vol. 34, Issue 1, January 2009.

46. Pai Madhukar, *Unnecessary* Medical Interventions: Caesarean Sections as a Case Study, *Economic and Political Weekly*, Vol. 35, No. 31, pp. 2755-2761, Jul. 29 - Aug. 4, 2000.

47. Pai, Madhukar, Unnecessary Medical Encounters: Caesarean Sections as a case Study, *Economic and Political Weekly*, Vol. 35, No 31 (Jul 29 – Aug 4, 2000), pp. 2755 – 27761.

48. Palit Chitabrata, Mahendralal Sircar and Popular Science in Indian Archive, *National Archives*, New Delhi, 1997.

49. Qadeer Imrana and Nayar K. R., Politics of Pedagogy in Public Health, *Social Scientist*, Vol. 33, No. 1/2 pp. 47-75,Jan. - Feb., 2005.

50. Raj, Kapil, Colonial Encounters and the Forging of New Knowledge and National Identities: Great Britainand India, 1760-1850, Osiris, 2nd Series, Vol. 15, *Nature and Empire: Science and the Colonial Enterprise*, pp. 119-134, 2000.

51. Reddy Sita, Making Heritage Legible: Who Owns Traditional Medical Knpwledge?, *International Cultural Property Society*, USA, 2006.

52. Roy Bharati, Women of Bengal: Transformation in Ideas and Ideals, 1900-1947, *Social Scientist*, Vol. 19, no 5/6, May – June, 1991.

53. Sajeda Amin and Alaka Malwade Basu, Popular Perceptions of Emerging Influences on Mortality and Longevity in Bangladesh and West Bengal, *Population Studies*, Vol. 58, No. 3, pp. 357-363, Nov., 2004.

54. Samata, Arabinda, Crop, Climate and Malaria: Ecological Construction of an Epidemic in Colonial Bengal, *Economic and Political Weekly*, Vol. 36, No 52 (Dec 29, 2001- Jan 4, 2002), pp. 4887- 4890.

55. Sarbadhikari K.C, *Western Medical Education in India During the Early Days of British Occupation, Journal of Medicine*, 1961.

56. Sen S.N., The Pioneering role of the Calcutta in scientific And Technical Education in India, *Indian Journal Of History of Science*, 29 (1), 1994.

57. Sen, Krishna, Lessons in Self-Fashioning: "Bamabodhini Patrika" and the Education of Women in Colonial Bengal, *Victorian Periodicals Review*, Vol. 37, No. 2, The Nineteenth-Century Press in India(Summer, 2004), pp. 176-191.

58. Sheehan, Helen E and Hussain S J: Unani Tibb: Hitory Theory and Contemporary Practice in South Asia, *Annals of American Academy of Political and Social Science*, Vol. 583, Global Perspectives of Contemporary and Alternative Medicine, Sep 2002, pp. 122-135.

59. Sherawat Samiksha, Feminising Empire: The Association of Medical Women in India and the Campaign to Found a Women's Medical Service, *Social Scientist*, Vol. 41, No. 5/6 p. 65-81,May-June 2013.

60. Soman Krishna, Rural Health Care in West Bengal, *Economic and Political Weekly*, Vol. 37, No. 26, pp. 2562-2564,Jun. 29 - Jul. 5, 2002.

61. Sujatha and Abraham Leena, Medicine, State and Society, *Economic and Political Weekly*, Vol. 44, No. 16, pp. 35-43, Apr. 18 - 24, 2009.

62. Swangwan Satpal, Science Education in India Under Colonial Constraints, 1792 - 1857, *Oxford Review of Education*, Vol. 16, no 1, 1990.

63. Sykes W. H., *Statistics of the Educational Institutions of the East India Company in India, Journal of the Statistical Society of London*, Vol. 8, No. 3, pp. 236-273, Sep., 1845.

64. Umair Mushtaq Muhammad, Public Health in British India: A Brief Account of the History of Medical Service and disease Prevention in Colonial India, *Indian Journal of Community Medicine*, Vol. 34, issue 1, January 2009.

65. Varma Daya R., From Witchcraft to Allopathy: Uninterrupted Journey of Medical Science, *Economic and Political Weekly*, Vol. 41, No. 33, , Aug. 19-25, 2006, pp. 3605-3611.

66. Wiley Marshall Margaret, Calcutta and the Meeting of East and West: the Dilemma of Cultural Allegiance, *The Journal of Higher Education*, Vol. 32, no. 4, April 1961, p. 185 – 191.

❖ 2. Books:

English:

1. Alavi Seema, *Islam and Healing: Loss and Recovery of an Indo Islamic Medical Tradition 1600-1900*, Permanent Black, New Delhi, 2007.
2. Archanboult, Reginald D.: *John Dewey On Education: Selected Writing Edited And With The Introduced,* The Modern Library, New York, 1964.
3. Arnold, David: *Colonizing the Body, State Medicine and Epidemic Disease in Nineteenth Century India*, Oxford University Press, Calcutta, 1993.
4. _____ *Imperial Medicine and Indigenous Societies*, Oxford, Delhi, 1989.
5. _____*Science, Technology And Medicine In Colonial India*, Cambridge University Press, 2000.
6. Attewell Guy, *Refiguring Unani Tibb: Plural Healing in Late Colonial India*, Orient Longman, Hydrabad, 2007.
7. Baber Zahir: *The Science Of Empire Scientific Knowledge, Civilization And The Colonial Rule*, State University Of New York, Albany, New York, 1996.
8. Bagchi, Amiya Kumar And Soman Krishna: *Maladies, Preventives And Curatives: Debate In Public Health In India,* Tulika Books, New Delhi, 2003.

9. Bala Poonam, *Imperialism and Medicine in Bengal: A Socio-Historical Perspective*, Sage Publication, New Delhi, 1992.
10. Bala, Poonam: *Contesting Colonial Authority: Medicine and Indigenous Response In Niteenth And Tweteenth Century India*, Lexinton Books, London, 2012.
11. Bala, Poonam: *The State And Indigenous Medicine:Some Explorations On The Interaction Between Aayurvedic And The Indian State*, Jnu, New Delhi, 1982.
12. Balfour M.I and Young R, *Medical Women in India*, Oxford University Press, London, 1929.
13. Bandhopadhyay, Arun: *Science And Society In India 1750-2000*, Manohar, New Delhi, 2010.
14. Basu, Aparna: *Essay In The History Of Indian Education*, Concept Publishing Company, New Delhi, 1982.
15. Basu, Aparna: *The growth of education and political development in India, 1898-1920*, Oxford University Press, Delhi, 1974.
16. Battacharya, Sabyasachi. *Documents On The Discourse Of National Education In India; Cotherouthers-Joseph Bara, China Rao Yogali*, Kaiskhka Publishers, New Delhi, 2003.
17. Battacharya, Sabyasachi. *The Contested Terrain Perspective On Educational In India*, Orient Longman, New Delhi, 1998.
18. Battacharya, Sabyasachi. *Education and Disprivileged: Nineteenth And Twentieth Century In India*, Orient Longman, New Delhi, 2002.
19. Bhattacharya, K.S: The Bengal Renaissance Social and Political Thoughts, Classical Publishing Company, New Delhi, 1986.
20. Bhattacharya, Tithi: *The Sentinels Of Culture: Class, Education And The Colonial Intellectual In Bengal*, Oxford, New Delhi, 2005.
21. Bordiew, Pierce And cloudi, Pseron Jean: *Reproduction In Education, Society And Culture*, Sage Publication, London, 1977.
22. Bose, Pradip Kumar: *Health and Society in Bengal, A Selection from Late Ninwteenth Century Bengali Periodicals* (edited), Sage Publication, New Delhi, 2006.

23. Burn, Sturat Black And Dalmia, Vasudha: *Indian Literary History: Essay On The Nineteenth Century*, Permanent Black, New Delhi, 2006.
24. Burnett, Charls; Wajastyk, Dominik and Unschuld, U.: *Sir Henry Welcome Asian Studies,* Vol-4, Brill Academic, 2004.
25. Chakravarty, Pratik: *Medicine and Empire 1600-1960,* Palgrave Macmillan, Banigstoke, 2014.
26. Chakravarty, Pratik: *Western Science And Modern India: Institutions, Individuals And Discource*, Jnu, New Delhi, 1999.
27. Chakravarty, Pratik: *Western Science In Modern India: Metropolitan Methods Colonial Practices*, Permanent Black, Delhi, 2004.
28. Chakrobarty, Pratik: *Bacteriology In British India*, University Of Rochester Press. Rochester, 2012.
29. Chanana, Karuna: *Interrogating Women's Education: Bounded Visions, Expanding Horizons,* Rawat Publication, New Delhi.
30. Chaterjee, Anne Vaugier: *Education And Democracy In India*, Manohar, New Delhi, 2004.
31. Chattopadhyay, Swali: *Representing Calcutta: Modernity, Nationalism And The Colonial Uncanny*, Rutledge, New York, 2005.
32. Chopra, Preeti: *A Joint Enterprise, Indian Elites And The Making Of The British Bombay*, University Of Minnesota Press, London, 2011.
33. Cohn, Bernald S.: *Colonialism And Its Form Of Knowledge-The British India*, Oxford, Calcutta, 1974.
34. Crawford, D.G. *A History Of The Indian Medical Science*, Vol. I, II, London, 1914.
35. Crook, Nigel. *The Transmission Of Knowledge In South Asia: Essay On Education, Religion, History And Politics*, OUP, Delhi, 1996.
36. Das, Kedarnath. *Obstetrics Forceps: Its History and Evolution*, The Art Press, Calcutta, 1929.
37. Dasgupta, Subrata. *Awakening, The Story of The Bengal Renaissance*, Random House India, London, 2010.

38. Desai, A. R. *Social background of Indian Nationalism*, Bombay Popular Prakashani, 1976
39. Eatwell W.C.B, *On the Rise and Progress of Rational Medical Education in Bengal*, Military Orphan Press, Calcutta, 1860.
40. Ebrahimnejad, Harmoz: *The Development Of Modern Medicine In Non-Western Countries:Historical Perpective*, Routledge, London, 2009.
41. _____Edited, Empirical Medicine and Indigenous Societies, Manchester University Press, Manchester, 1988.
42. Engels D and Shula Marks (ed), *Contesting Colonial Hegemony: State and Society in Africa and India*, British academic Press, 1994.
43. Forbes, Geraldine (introduced) and Raychoudhury Tapan (translated): Haimabati *Sen "Because I am a woman", A Child Widow's Memories from Colonial India*, Cronicle Books, New Delhi, 2011.
44. Gayatri, Ch. Radha: *Female Medical Education in Colonial India*, Ajanta, New Delhi, 2008.
45. Ghosh, Sures Chandra: *The History of Education in Modern India*, 1757-1998, Oriental Longman, New Delhi, 2000.
46. Gittelsohn, John, Bentley Margaret E., Peltro Peritti J., Nag Moni, Pachauri Saroj, Harrison Abigail D., Landman Laura T. (edited): *Listening to Women about Their Health: Issues and Evidences from India*, Har- Anand Publications, New Delhi,1994.
47. Gregdemitriadis, Kamberelis George: *Theory for Education*, Rutledge, New York 2006.
48. Gupta, Summon & Rustau, Hiltrud: *Philosophy, Science And Social Progress*, People's Publishing House, New Delhi, 1992.
49. Gupta Gupta, Uma, *Science and Modern India: An Institutional History 1784-1947,* Chattopadhyay, D.P.(Ed): *History of Science, philosophy and culture in Indian civilization*, Pearson, Longman, Delhi,2011.
50. Habib S. Irfan and Raina Dhruv, *Social History of Science in Colonial India*, Themes in Indian History, Oxford University Press, New Delhi, 2007.

51. Habib, Irfan: *Technology In Medieval India 650-1750,* Tulika Books, New Delhi, 2008.
52. Hardick, D.R.: The Tools Of Empire*: Technology And European Imperialism In Nineteenth Century*, Oxford, 1988.
53. Hardiman, David & Mukharjee, Projit Bihar: *Medical Marginality In South Asia: Situating Subaltern Theorapelics,* Routledge, London, 2012.
54. Harrison Mark: *Public Health British Indian Anglo-Indian Preventive Medicine 1859-1914*, Cambridge University Press, New Delhi, 1994.
55. Harrison, Mark, Jones, Margerate and Sweet, Helan (Ed): *From Western Medicine to Global Medicine: The hospitals beyond the west,* New Perspective In South Asian History, Hyderabad, 2009.
56. Hassan, Narin: *Diagnosing Empire, Women, Medieval Knowledge and Colonial Mobility,* Asghate, Farnham, 1988.
57. Hoges, Sarah: *Reproductive Health In India: History, Politics, Controversies*, Orients Longman, New Delhi, 2006.
58. Jayapalan, N., *Economic History of India: Ancient to Present Day,* Atlantic, New Delhi, 2008.
59. Keshwari, N.H.: *Medical Education In India Since Ancient Times,* Mallay, C.D.O. (Ed): *The History Of Medieval Education*, California, 1968.
60. Kuhn, Barnard S.*: Colonialism And Its Form Of Knowledge-The British In India*, Oxford, Delhi, 1997.
61. Kuhn, S. Thomas: *The Structure Of Scientific Evolution,* University Of Chicago Press, 1962.
62. Kumar Deepak: *Science and the Raj, A Study of British India*, second edition, Oxford University Press, New Delhi, 1995.
63. Kumar Deepak and Basu Rajshekhar (ed), *Probing History of Medicine and Public Health in India: A Study of Encounters at Multiple Sites*, in Medical Encounter:
64. Kumar, Anil: *Medicine and the Raj: British Medical Policy in India, 1835-1911*, Sage Publications, New Delhi, 1998.

65. Kumar, Deepak (edited): *Disease and Medicine in India*, Indian History Congress (Published by Tulika Print Communication Services), New Delhi, 2001.
66. Kumar, Deepak; Bara, Joseph; Khadaria Nadita & Gayathri, Ch. Radha: *Education In Colonial India: Historical Insight,* Manohar, Delhi, 2013.
67. Kumar, Krishna: *Political Agenda of Education: A Study of Colonialist and Nationalist Ideas*, Sage Publications, New Delhi,2005.
68. Kumar, Neelam: *Women in Colonial India, A Reader*, Oxford University Press, New Delhi.
69. Kutumbiah, P.: *Ancient Indian medicine,* Orients Longman, New Delhi, 1962.
70. Lane, John: *A Sociological History Of Medicine: Health, Healing And Disease In England 1750-1950,* Rutledge, London.
71. Lele R.G, *Ayurveda and Modern Medicine*, Bhavan's Book University, Mumbai, 1986.
72. Mocklead, R. And Milton L. (ed): *Medicine And Empire: Perspective Of Western Medicine And The Experience Of European Expansion,* London, 1988.
73. Mukharjee, Haridas And Mukhargee, Uma,: *The Origin Of The National Education Movment,* National Council Of Education Bengal Jadhawpur University, Calcutta, 1957.
74. Mukharji, Projit Bihari: *Nationalizing The Body: The Medical Market, Print and Daktari Medicine*, Anthem Press, New York, 2009.
75. Mukherjee G.N, *History of Indian Medicine*, (3Vols), Calcutta University Press, Calcutta, 1926
76. Mukhopadhyay, Gurindarnath: *The History Of Indian Medicine, From The Earliest Ages Of Present Time,* Vol. II, Orient Books Reprint Corporation, New Delhi.
77. Nayar, Sushila and Mankekar Kamla (edited), *Women Pioneers in India's Renaissance: As I Remember Her, Contributions from: Eminent Women of Present-Day India*, National Book Trust, New Delhi, 2007.
78. Neelmegham, A.: *Development Of Medical Societies And Medical Periodicals In India 1780-1920*(Publication And Year Not Found).

79. Nutton, Vivian and Potter Roy (edited): *The History of Medical education in Britain, Rodopi*, Amsterdam- Atlanta, 1995
80. Palit Chittabrata and Das Chirantani: *Acharya Prafulla Chandra Ray and Indian Chemistry*, Readerss Service, Kolkata, 2007.
81. Palit, Chittabrata and Dutta Achintya (edited): *History of Medicine in India, the Medical Encounter*, Kalpaz Publication, New Delhi, 2005.
82. Palit, Chittabrata and Pahari Subrata: Satish Chandra Mukherjee *The Dawn Society And National Science*, Reader Service, Kolkata, 2002.
83. Palit, Chittobrata: *Hospital and Medical Education in Calcutta: The Beginning, India Pharmacol Society*, Calcutta, 1989
84. Pati, Biswamoy & Harrison, Mark: *Health Medicine And Empire Perspective On Colonial India*, Orient Longman, New Delhi, 2001.
85. Pati, Biswamoy and Harrison, Mark: *The Social History Of Health And Medicine In The Colonial India,* Routledge Studies In South Asian History, London, 2009.
86. Poddar, Arabinda, Renaissance *in Bengal, Quests and Confrontations, 10800-1860*, Indian Institute of Advanced Study, Simla, 1970.
87. Prakash, Gyan: *Another Reason: Science And The Imagination Of Modern India*, Princeton University Press, Princeton, 1999.
88. Raina, Dhruv and S. Irfan Habib: *Domesticating Modern Science, A Social History of Science and Culture in Colonial India*, Tulika Books, New Delhi, 2004.
89. Raina, Dhruv: *Images And Context: The Historiography Of Science And Modernity In India,* Oxford, New Delhi, 2003.
90. Raj Kapil, *Relocation Modern Science: Curriculum and the Constitution of Scientific Knowledge in South Asia and Europe, 1650-1900*, Palgrave Macmillan, Basingstoke, 2007
91. Raj, Kapil: *Relocating Modern Science: Circulation And The Construction Of Knowledge In South Asia And Europe 1650-1900,* Palgrave Macmillan New York, New York, 2007.
92. Ramanna, Mridula: *Western Medicine and Public Health in Colonial Bombay, 1845 – 1895*, Orient Longman, New Delhi, 2001

93. Ramjimwale, D A: *Indian Pharmaceutical Industry,* People's Publishing House, New Delhi, 1996.
94. Rao, Parmala, V.: *New Perspective In The History Of Indian Education*, Orient Blck Swan, New Delhi, 2014.
95. Richard, glyn: *Gandhi's Philosophy And Education*, Oxford, New Delhi, 2001.
96. Sangwan, Satpal: *Science, Technology And Colonization; An Indian Perspective 1757-1857*, Anamika Prakashan, Delhi, 1991.
97. Sarkar, Smiriti Kumar: *Technology And The Rural Change In Eastern India 1830-1980*, Oxford, New Delhi, 2014.
98. Sen, S.N: *Scientific and Technical Education in India 1781 – 100*, Indian National Science Academy, New Delhi, 1991.
99. Sengupta, Indra & Ali Daud: *Knowledge, Production, Pedagogy And Institutions In Colonial India*, Palgrave Macmillan, New York, 2011.
100. Seth, Sanjay: Subject Lesson: *The Western Education Of Colonial India*, Oxford, New Delhi, 2007.
101. Sharma Madhuri, *Indigenous and Western Medicine in Colonial India*, Foundation Books, New Delhi, 2012.
102. Sharma, Priya Vart: *History Of Medicine In India (From Antiquity To 1000)*, Indian National Science Academy, New Delhi, 1992.
103. Sharma, S.R.; Ratho, T. N. And Sharma, K.K.: *The Beginning Of English Education In Indian History And Development Of Education In Modern India,* Sorup Book Publishers Pvt. Ltd., New Delhi, 2010.
104. Sharma, S.R.; Ratho, T.N. And Sharma: *History And Development Of Education In Modern India-(Vol. 5) Vernacular Vs Anglicist Controversy In India Education*, Sorup Book Publishers, New Delhi, 2010.
105. Shukla, Suresh Chnadra & Kaul, Rekha: *Education, Development And Underdevelopment*, Sage Publication, New Delhi, 1998.
106. Sinha, D P. *The Educational Policy of East India Company in Bengal up to 1857* Sinha, Jagdish N. *Science, War And Imperialism: India In The Second World War*, Brill, Boston, 2008.

107. Thomas, T.M. *Indian Educational Reforms In Cultural Perspective,* Chand S. And Co., New Delhi, 1970.
108. Thompson, C.J.S. *The History and Evolution of Surgical Instruments,* Schuman's, New York.
109. Turner, R. Harward: *Science In Medieval Islam:* An Illustrated Introduction, OUP, New Delhi, 1999.
110. Varier Vaidyaratnam P. S., *History of Ayurveda*, Kottakkal Ayurveda Series, Kottakkal, Malappuram, 2005.
111. Vishwanatha, Gauri: *Masks of Conquest: Literary study and British rule in India*, Faber and Faber, london1990.
112. Zysk Kenneth G., *Medicine in the Veda, Religious Healing in Veda*, Monilal Banarsidass Publication, Delhi, 1985.
113. Ernst, Waltraud: *Plural Medicine, Tradition And Modernity 1800-2000,* Rutledge, London, 2002.

Unpublished Thesis:

- Das, Sinha Savitri: *Medical Thought and Practice in Colonial India: A Study of the Indian Medical Gazette*, PhD Thesis to Jawaharlal Nehru University, Zakir Hussain Centre for Educational Studies, New Delhi, 2011,