

Medical Education in Bengal Presidency: 1835-1916

Dissertation submitted to the Jawaharlal Nehru University

in partial fulfilment of the requirements

for the award of the degree of

MASTERS OF PHILOSOPHY

Aishwaryarupa Majumdar



Zakir Husain Centre for Educational Studies

School of Social Sciences

Jawaharlal Nehru University

New Delhi- 110067

India

2012



Certificate

This is to certify that this dissertation entitled "*Medical Education in Bengal Presidency: 1835-1916*" submitted by Aishwaryarupa Majumdar is in fulfillment of the requirements for the award of the degree of Master of Philosophy of Jawaharlal Nehru University, New Delhi. This work is original and has not been submitted in part or full for any degree or diploma in this university or any other university.

We recommend that this dissertation be placed before the examiners for evolution and consideration for the award of the degree of Master Of Philosophy of this university.

Prof Vinod Khadria

(Chairperson)

CHAIRPERSON
Zakir Husain Centre for
Educational Studies
School of Social Sciences
Jawaharlal Nehru University
New Delhi - 110067

Prof Deepak Kumar

(Supervisor)

Acknowledgements

This dissertation has been possible due to the generosity and cooperation of several people and institution.

My first and foremost debt of gratitude goes to my supervisor, Professor Deepak Kumar, who not only suggested this topic but also guided me intellectually and instilled the essentials of research in my thinking. He has always been a great source of strength throughout the last year.

I am grateful to the other faculties of Zakir Hussain Centre For Education Studies, for guiding me in my course work period.

I am indebted to all the people from whom I got lot of assistance and help during my field work in Kolkata. I would like to mention about the staffs of the Sahitya Parisat, National Library and Centre for School of Social Sciences etc. the librarian of Calcutta University helped me in searching out the University Calendars for my study. I am thankful to him and the other staffs of his library. I appreciate the help extended by all the staffs of ZHCES also.

The Medical College of Kolkata deserves special mention. The faculty of that College gave me support in searching the detail names, years and events related to y study. I would like to give my gratitude to Dr Sankar Nath, and Dr. Shyamal Chakraborty who not only provided relevant materials but also gave me support to proceed in my work. I am grateful to the faculty members of Visva-Bharati University, who constantly supported me whenever I faced problems during my field work.

This dissertation would not have been possible without the support of my parents. They always encouraged me throughout the period of my study. I am thankful to my brother who technically assisted me. Apart from this, my thanks are due to my friends in Santiniketan and JNU campus and especially Juhi, my roommate.

Aishwaryarupa Majumdar

Contents

	Pages
Acknowledgements	
Chapter 1 Introduction	1 - 13
Chapter 2 Establishment of New Medical Institutions	14 – 37
Chapter 3 Calcutta Medical College: A Mile Stone	38 – 76
Chapter 4 Reflections in Society and Media	77 – 100
Chapter 5 Conclusion	100 – 108
Bibliography	

Chapter 1

Introduction

Introduction

This study would try to focus on the emergence of different indigenous endeavour and initiatives for further development of medical education and their impact on Bengali society. Medical Education came to Bengal as a part of the colonial baggage. By the beginning of nineteenth century, British had consolidated their grip over Bengal and made it their main trading centre. Primarily their job was to maintain the political power and use it for profit. British, for their efficient rule and better survival in an unknown country as well as amongst a complete different culture, gradually started touching the major political and social sectors of India and emphasised on altering them according their convenience. These common phenomena of imperialistic rule divulged through the changes brought into medical sector also. Even medicine became an instrument of domination to the alien rule over here. 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 body¹” of Indians by the British.

Though British used medicine as one of the major tools of domination but at the same time, certain useful experiments were also done in this field. They had “result oriented research”² no doubt, but this also led them to introduce modern medical system in India. Their intention could be divided into two parts, initially they thought of a better treatment for the colonizers and soldiers of their own and the second one was to learn more about new diseases, experiment on them and thus enrich their medical knowledge. For the first part they compelled to take help from Indians and thus initiated medical education, obviously Western

¹ Arnold David, *Colonizing the Body, State Medicine and Epidemic Disease in Nineteenth Century India*, Oxford University Press, Calcutta, 1993.

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

in nature, for them. Introduction of medical education in India was not a very simple process for them what it seemed to be. First, they had their own political pressure and second, had to face obstacles from within the Indian society. It was easy to govern politically than to develop faith among the governed society.

Rationale of the Study:

This study aims to know the development of medical education in Bengal and its assimilation by the Bengali people in nineteenth century. It desires to examine and re-search the development and expansion of medical education and knowledge in nineteenth century and its reflection in the contemporary Bengali society through the pages of the Bengali journals specially.

The rationale behind taking nineteenth century as the period of the present study is the importance 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, social and cultural bend and by absorbing it tried to shape a synthesis, which prevailed almost until the end of the British period. Throughout the nineteenth century, Bengal 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. In medical field also Bengal served as a model of this system for the rest of the subcontinent, as Bengal Presidency was the first to have an organized medical service as well as Government medical college for both the Indians and English people.

Bengal is the major concerned area of this work. We know the official activities of the East India Company started in Bengal Presidency and later enabled to possess Bengal as their first ruling territory. The introduction of Western science and medicine in 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. In doing so, along with the archival and other sources, the then Bengali sources are the most authentic and steady fountain of information.

Why and How?

This was an interesting endeavour and a nuanced study would require exploring certain questions. For example, why did the British feel the need to use India as a medical laboratory? Was there a real development purpose? Was there any demand for Western medical education in Bengal? If so, how would the newly emergent Bengali middle class react to it? What was the new medical pedagogy and was it contested?

Apart from the above questions, the general idea about the then scenario of medical education and its development in Bengal as well as in India raises some questions that why within a very short period, in comparison with the other sections of education, medical education was more developed, sophisticated and became popular among the indigenous people. Secondly, it is of no doubt that, British, was also extra conscious about medical conditions and over the time became serious about medical education of the Indians, why? It is preferable to answer the second one first. Generally, medical treatment and medicine, developed in a particular geographical area differs and possesses separate and distinct features than other places and availability of medicine depends on specific problems, necessity and demand of that region. It happens due to the variety and types of diseases and health problems of that particular area. This difference seemed very costly to British when they initially started consolidating their power over here. Therefore, they had no option but to

learn the indigenous one or bring their medicinal system to the new place. British preferred the later one keeping the former only in academic level to show India's glorious past.

The first question is not easy to answer. Solving various problems and answering lot of question the Western medicine gained the popularity amongst the Indians and became a symbol of scientific advancement. When British came to India, they got an identified system of medicine that was already prevalent there, i.e. Ayurvedic and Unani system of medicine. Kaviraj/ Vaidy and Haqim were the medical men respectively. Whether this system of medicine was of high quality and effective for each and every type of diseases and also whether it was scientific or not are some debatable issues which demand a separate study with medical expertise. However, whatever it is, from late eighteenth century in a politically changed situation, when this system faced a completely new and 'advanced' system of western medicine, there occurred two types of problems broadly among the two sections of the society i.e. the Indians and the British. This problem started consolidating from the first half of the nineteenth century when it got more close to the indigenous people. The problem with British has already discussed above. Mention may be made of in this connection that between these two section of the society the former one can again be subdivided into three; general people native civilian, medical men and intelligentsia upper class people. Broadly, the problem was on one hand the question of acceptance or rejection of the alien system and on the other complete habituation with the indigenous one.

Initially the native people of India were totally ignorant about the other medical systems out of 'their world'. Without knowing the large-scale result of Indian medical system, they were entirely dependent and satisfied with the process of treatment, diagnosis and medicine of their own. Naturally, they were not ready to show faith and confidence on the alien medicalmen and their treatment initially, that too with a concept of imposition³. Though in favour of these people one question can be raised that whether the British had shown even a little effort to get largely these people involved into this system so that enhance their confidence on western system? In other word, we can question their 'confidence of superiority', 'responsibility' and 'burden', which they were tried to establish several times throughout their journey in advancing Indians.

³ The word imposition here comes because by late eighteenth and early nineteenth century, Indians got an impression of the British about their mentality of imposition. They had already experienced several examples of British command and power in different spheres of their lives. Started from agrarian reform to medical system British became the supreme authority.

The second category of Indians was the Kaviraj and Haqim. These people and their medical education faced serious challenge from the new system of western medicine. On the one hand, they were not ignorant about the critique of superiority and inferiority by the British and on the other, they were very proud of their country's years old tradition. A question of scientific and rationality about the western system also made them perplexed. They did not have a definite answer no doubt, but there was even no steady reason to accept it without question. In one word, for the first time in India a conflict between tradition and newness got figured regarding medicine in this period.

Advent of Western medicine also affected the intelligentsia or the upper class. The response from their side played a vital role in this regard. As we know, there was a trend to adopt western culture, especially Western language, among the intelligentsia in Bengal from the early nineteenth century; they supported Western medicine without hesitation. This section of the society became the primary source of medical students in nineteenth century. Gradually Western medical education got patronage also from them. So, one can notice a complete acceptance of alien culture among the intelligentsia, which to some extent acted as a bridge between the uneducated lower class people and the ruling authority. Some of them even involved themselves into spreading this medical knowledge through various discussions in the prominent vernacular as well as English journals of that period. From the mid of this century, many small places became prominent for publishing scientific journals having medicine as a major subject. That indicates that not only Calcutta but other places also came in touch with this mode of treatment. However, it should be mentioned here that there was no such reference of British, taking any initiative or serious action in popularising their system among the common people. It was the then situation, which made it possible to make the rural and uneducated people conscious about that, thus not in a large scale.

The introduction of the new medical system had a multi dimensional effect and result. The initial stage seemed to be unsuccessful because of the confusing mentality of a large section of the society. Still, it did not take much time to capture the confidence of the people. Intelligentsia accepted and started practicing the new system because of their consciousness about rationality and benefits of modern scientific techniques. But, the cause behind the acceptance by the uneducated or ordinary people was probably its efficacy. When the first dispensary was opened at Puri (one of the most significant pilgrimage site), the Brahmins and Pandas first choose to ignore. But when they found its medicines and service effective, they thronged to it in no time.

Methodology of the Study:

As evident from above discussions, this work has to depend heavily on primary sources. The Bengali journals in circulation during nineteenth century would be the main primary sources. Some prominent among them are: Swastha (1305 Bangabda), Siksha O Swastha (1320 Bangabda), Pally Sanskar, Chikitsa Sammilani (1884), Chikitsa O Samalochok (1895) Chikitsak (1297 Bangabdo), Bijyan Darpan (1882 Bangabdo), Anubikshan (1875), Nabobarshiki (1877), Banga Mahila (1875), Bamabodhini Patrika (1863), Samachar Darpan (1818), Smbad Koumodi 91821), Sambad Bhaskar (1839), Tattobodhini Patrika (1843), Sambad Prabhakar (1831) etc. A detailed study of these journals would give a better understanding about the society under the study, especially along the objectives of the current study.

Apart from these journals, the private papers of the Bengali intellectuals of the nineteenth century also deserve special attention. These would provide clear picture about the reaction and participation of the Bengali intellectuals towards the medical education.

The archival documents of the Medical Colleges and Institutions of Bengal Presidency are also very important for the present study, as they could provide the history of curriculum and courses introduced by the British. It can also give the chronological order of the teachers and students (especially female students) and the relation prevailed between them as well as between the British personnel and natives.

The private letters and correspondences of Governor-Generals, dispatches from Court of Directors to Governor-Generals, Parliamentary papers of the British as well as minutes of Parliamentary meetings in England would also provide valuable information. Reports of various education commissions would give basic idea of the nature and methods followed by the government to spread medical education in Bengal first and then completely in the country.

As is true for every study, this study also relies on secondary sources. Expert's comments and scholarly views will be studied to get into the current debates on the field.

Medical Education and Knowledge in Colonial Context:

Educational policy of the colonizers always had different purposes and necessity in any social and cultural settings. It was flexible and supple due to the changing nature of need and desire of the ruling section. Introduction of medical education in India by the British, was not accidental, it also had definite objectives. Generally, introduction of medical system and education in a given territory is planned for all-over incensement of health treatment and consciousness and to build a group of efficient people in this field. To survive in a tropical country as rulers and to fight with its different nature of diseases gave an added pressure to the colonizers. It had compelled the British to study deeply the system of treatment of these indigenous diseases.

It is interesting to notice here that there were not a lot of differences between Ayurvedic, Unani and European views of physiology and disease in the sixteenth and seventeenth centuries. They all considered the human organism to be governed by the balance of hormonal fluids and disease occurred when this balance was upset. The only difference started taking place from sixteenth century onwards with European's rapid progress in the field of anatomy and physiology. This actually converted into a big confidence amongst them (Europeans) that they alone had a full understanding of the fabric of a body. This played a vital role in Indian circumstances. Having the high confidence, by that time they had already identified indigenous medicine at least that much that they became concerned about anatomical ignorance of Indian systems. For instance in 1670s a French traveller, 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."⁴ Such critics began to hear and became increasingly prominent over the years. Therefore, Indian medicine was seen as inferior to European medicine. However, they never completely ignored the indigenous system because of their urge as well as necessity to comprehend with Indian reality.

Indian people initially used to help the European medical men in their work and could able to learn from that only. The growing pressure of work and responsibilities of medical officers made the British realise the need of some alternatives. They started looking

⁴ 175 Medical College Bengal 1835-2009, Commemorative Volume.

for low-cost Indian helpers from the society. Gradually they started training them also. These 'native' people (assistant) were popularly known as 'native doctors'.

Medical service was started in Bengal in 1773 and gradually the central Government also started realizing the need for assimilating the so-called 'native' doctors into the lower rungs of medical organization. Secondly, the high utility of the native doctors during the military operations strengthen this realization of the British. Still, up to 1813 British hardly paid any attention to the need of a formal and institutional medical education of their Indian helpers and assistants. It was only after the passage of the Charter Act of 1813, which set aside a sum of Rs. 100000 per annum for the education of the natives that the British began to show concern over the problems of content and medium of medical education to the Indians. Another catalytic factor was the creation of a sub-medical service for the army in June 1812, which precipitated the demand for a uniform and proper institutional medical education to those Indians aspiring to become native doctors.

Government's next step was the establishment of Native Medical Institution in 1822 and in the next decade, the first Western shaped Calcutta Medical College in 1835. In this way, the journey of medical education started for the natives by the colonial power in early nineteenth century in Bengal Presidency, which gradually encompassed the rest of the country within the mid of the century.

Medical College opened its doors for women medical students for the first time in 1876. But, first woman student Mrs. Kadambini Ganguly was admitted only in 1884. In 1889, Miss Bidhumukhi Bose became the first Indian women graduate from Medical College. But it is noticeable here that Miss Ganga Agarwl was appointed first Indian woman house physician of Medical College in 1934, that means it took 68 years for women to break the overt and covert gender bias in society.

Medical education evolved throughout the century with various elements and also enriched itself gathering lot of new experiments and experiences by the different 'native' people in different socio-political conditions. Some Indian doctors started their own initiatives. Mahendrallal Sircar founded 'Indian Association for Cultivation of Science' in 1876, which was the first effort towards institutionalizing Indian interest in western science. In Swadeshi period different endeavour was made for spreading medical knowledge along with vaccination campaign in rural areas, malaria eradication etc. This was the period that Ronald Ross's work has been officially recognised. We can also mention about Acharya

Prafulla Chandra Ray who had laid the foundation of the Bengal Chemical in 1901. A clear picture of societal advancement towards the modern medical science is noticeable here through these examples. They not only learnt it, but also started asserting themselves and their scientific existence in front the ruling power. It took only thirty to forty years to convert English education as the colonial instrument to the major weapon for the Indians to comprehend with the outer world.

The officials of British East India Company no doubt felt for the need of an organised Government medical institution for the native Indians' medical learning by the end of the second decade of nineteenth century. The pre-thoughts and plans behind that is a debatable question and certainly needs a separate discussion. But, before entering into this debate a brief history is important about the then political scenario and British mentality about educational plans and its further developments, on which the primary thinking of an institutionalised medical education might be structured.

Until the second half of eighteenth century, the English East India Company did not face any dilemma about its role in promotion of education in India. Basically, it was a commercial corporation, so its basic objectives were trade and profit. However, from the second half of eighteenth century within the official circle as well as outside of it there was a growing debate about what should be the role of the Company in the promotion of education in India. Immediately after the acquisition of power in India, the Company officials wanted to maintain naturalness or non-intervention in the sphere of religion and culture of the indigenous society. But, constant pressure from various quarters, the Missionaries, the liberals, the Orientalists, the Utilitarians, compelled the Company to give up its policy of non-intervention and 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.

In 1823, a General Committee of Public Instruction was set up to look after the development 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 patronised Oriental learning because the most of the members of this Committee belonged to the Orientalist

group⁴. It cannot be denied that some of the Englishmen had the genuine desire to acquire and promote Oriental learning. Mention may be made of in this connection, that the “Calcutta Madrasa” 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 Orientalist⁵ approach by the different groups in England; the Evangelicals, the liberals and the Utilitarian. The new cultural thought that developed in England with the Industrial Revolution was highly critical of the Company’s monopoly trade. Post Industrial Revolution 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 also were 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 Anglisists (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 in India. He recommended establishment of 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. The next major land mark in the development of education in India was Wood’s Despatch of 1854. Charles Wood, the President of the Board of Control, in 1854 laid down the policy, which became the guiding principal of the education programme of the Government of India. A major shift in education system came after the 1858 Mutiny with the political change from Company to Victorian rule. Universities took place for the first time in India (Calcutta,

⁵ Those, who were in favour 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.

Bombay and Madras). Higher education, including medical was transferred by the education department under the authority of Universities, which continued until the end of this century.

Initially, courses and curriculum, syllabus and opportunities were remained the same even after the existence of Universities in India but, pattern of examination, faculty facility and condition of finance were changed according to University pattern, which would be discussed in detail later. Besides the official initiatives, we can notice individual endeavours towards establishing medical institutions by the Indians. It did not always take the side of Western medicine, but largely imagined to re-establish the prestige of indigenous medicine and medically educate Indians through their own system. However, with the passage of time the Western enmeshed Indians somehow forgot to think anything out of the new culture and thus gradually patronage for indigenous medicine stopped from all sides.

The first chapter of the study has tried to give an overview about the methods and rationale of the further study. The process of intellectual overcome of the British in India, especially in the field of medicine is the focus of this chapter. The sources that are used in this work and the cause behind choosing the period and the area of study are discussed here.

The second chapter would focus on the development of the medical institutions prior to the Calcutta Medical College, Native Medical Institution, medical classes in Sanskrit College and Calcutta Madrassa. It would try to depict the condition of late eighteenth and early nineteenth century that made the British to take such initiatives in Bengal. The first reaction of the then Bengali intelligentsia to the introduction of new medical education and their urge for indigenous medicine will be discussed here. Finally, the purpose was of the British and their initiatives for western medical education in India and its immediate result would be explained here.

The third chapter is formulated according to the development of Calcutta Medical College. The changes occurred after its establishment, including the introduction of dissection of human body, and its after effect would be discussed there. It will also focus on female medical education, the emergence of *Bhadrolok* class and their enthusiasm for western medicine. The development of courses and new departments in Calcutta Medical College is another area of discussion. Apart from the Government initiatives, nineteenth century witnessed some private endeavours also (medical school and college), which reached

its zenith in the year 1916. The Belgachia Medical College was established (now it is called R.G. Kar Medical College). This year was remarkable in the history of medicine in India. It would try to give an overview of the evolution of medical education in Bengal throughout the nineteenth century.

The fourth chapter would focus on the contemporary journals, both English and vernacular and the organizations that emerged in the response of the newly introduced western medicine in Bengal. It will examine the changed psychology of Bengali intelligentsia through the pages of journals. Some portions of the relevant journals have been freely translated by me.

The fifth, i.e. the concluding chapter would try to summarise the whole study on medical education in nineteenth century Bengal.

Chapter 2

Establishment of New Medical Institutions

Establishment of New Medical Institutions

Colonization of distant land required not only military strategy but more than that. It required preservation of health of the colonizers. Moreover for proper commercial exploitation also, health considerations come up. So the significance of health was paramount in the colonial expansion right from the trading companies. Throughout the eighteenth century, the European travellers reported the health conditions in the tropics. Every boat had a surgeon on board. The Company itself had established medical board to monitor health requirements. But to get surgeons from abroad was becoming increasingly expensive. So once the wars with Indian Princes were over and Company had established its rule over the large part of India, it decided to introduce modern medicine and trained the local talent then available. Thus was born the Native Medical Institution in 1822-23.

We know, the foundation of such an institution in India did not signify only a simple victory of knowledge over ignorance, but also represents a much darker story of European conquest of Asia. The steps of medical education in Bengal may be classified in this way, hospitals to medical schools and then medical college. Health treatment started with hospitals. Gradually, as in the other sectors, Indians got involved into it and started learning basics of the alien treatment. To strengthen Indian's basic learning and to appoint them as better assistant in hospitals both in military and civil stations, medical schools were thought to develop.

Hospitals: Care for Themselves? Initial Education Centres:

Responsibility of the superior for their inferior subjects can be seen through an early reference of a hospital called General Native Hospital established for the native civilians in 1792 at Calcutta. But the even earlier references of the already established hospitals might convey some other angle of the historical fact. Before searching the answer that why the British thought for a medical care centre for the natives, it is worth here to mention briefly the existing scenario of the health treatment condition in Bengal as well as in India. From the beginning of trading activities in India, 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 of health care centre or hospitals became prominent. Secondly, they were stranger to Ayurvedic and Unani system of medicine. So they were compelled to arrange medical treatment of their own (Western medical treatment) for their soldiers (constituted of European as well as Indian sepoy) and civilians and the journey of Western concept of medicine started.

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 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 used to situate. The third category hospitals (general hospitals) were for native people. The fourth 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.

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.

The emergence of early European physician and surgeons in India can be traced back to the seventeenth century. The earliest example we can get is George Strachan, a Scottish came to India in 1616. Later on a large number of physicians and surgeons had come to India such as John Clarke, Francois Bernier, Nicholas Manucci, Gabriel Boughton, John Fryer, etal (S.N Sen). The first hospital was made by the Portuguese in Goa in. The British East India Company from the very beginning had developed the practice of sanctioning at least one medical officer for each of its permanent factories. In Bengal its factories started appearing from 1620, first in Patna and subsequently in Hoogli (1651), Kasimbazar (1659),

Dacca (1668), Maldah (1676) and other places. Edward Whiting (1662), Ralph Harwar (1672), John Plomer (1695) were some of the early physicians attached to those factories.

List of some early hospitals are given bellow:

- 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.

Medical Institutions: Necessity (or) Benefit

Right from the days of power consolidation of British, along with territorial expansion, as their control got strengthened, the volume of work and responsibilities of the medical officers and the hospitals were also increased. On the other hand after the battle of Plessey, Calcutta started rising as the administrative centre along with the trade hub. So that it became comparatively more crowded. These led the British to look for low-cost helpers in hospitals and Indians were the best option. The practice of providing some kind of medical instructions to Indians attached to hospitals was started and developed by this time. After founding the Presidency General Hospital in 1768 British created a Medical Board to administer medical matters. Indian people initially used to help the European medical men in their work and also used to learn being attached with them. These 'native' people (assistant) were variously addressed as 'native dressers' (Madras), 'country doctors', black doctors (Bengal) and 'black assistants' and 'apothecaries' (Bombay). Later they were popularly known as 'native doctors' and were recognized under this title by the Government in 1767. By 1812 two of them were ordered to be attached to each regiment and one or more to each civil station¹.

¹ 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.

Hospitals were started taking place in the colonial Bengal from 1707 onwards. First was a military hospital at Fort St. George. Apart from the temporary hospitals, the next permanent hospital that was founded was the Presidency General Hospital at Khidirpur in a private farm-house in 1768. The responsibility of the hospital was transferred to the military department. Later in 1789 at the outskirts of the city one Police Hospital was founded, where thirty to forty patients could be accommodated. Interestingly, the responsibility of that hospital was entrusted to two 'Kaviraj' or Vaidyas in a salary of 7.5Rs. Dr. Buirette was appointed as the Police Surgeon of that hospital in 1802 with a salary of Rs 60 per month. Dr. Lyeke, Dr. Firth, Dr. Deuja, Dr. McGown, Dr. Vos were appointed in the place of Dr. Buirette accordingly. These hospitals were entirely planned for the Company's soldiers and sailors but Company officials were also treated there in emergency². In 1821-22, one permanent building was prepared for this hospital near Circular Road and it was again shifted to the Jail of Kulutola where the "road people" were used to give medicine and medical treatment.

Gradually the volume of work and responsibilities of medical officers had more increased and by 1787, when one native medical men (trained by western medicine) on the pay of a 'havildar' was sanctioned for each battalion of sepoys, a good demand of 'native doctors' in army developed. Secondly, British had gradually observed that the inexperienced Indian doctors or the 'Native Doctors' were not at all well capable of managing the serious wounded cases of the factory labours. Most of the time either they were becoming permanently handicapped or even dying sometimes also. In this situation in 1794 one Native Hospital was founded giving the medical responsibility to the European doctors. Though officially there was no option for medical training, but unofficially the Indians got training from the Europeans in this hospital as assistants to them.

General hospital played least role in training this type of hospital assistants. Later on this training programme ceased with the abolition of General Hospitals and in the absence of any other facility of medical training, the standard of recruitment of 'native doctors' in army fell to an alarmingly low level. The high utility of the 'native doctors' during the military operations strengthen the realization of the British to establish a medical institution. But still up to 1813 British hardly paid any attention for the need of a formal and institutional medical

² Fever Hospital Committee, Report, Appendix F, p- 141 (cited in, Roy Binay Bhushan, *Chikitsa Bijyaner Itihas*, Sahityalok, Kolkata, 2005.

education of their Indian helpers and assistants. It was only after the passage of the Charter Act of 1813, which set aside a sum of Rs. 100000 per annum for the education of the natives that the British began to show concern over the problems of content and medium of medical education to the Indians. Another catalytic factor was the creation of a sub-medical service for the army in June 1812, which precipitated the demand for a uniform and proper institutional medical education to those Indians aspiring to become 'native doctors'. This circumstances made the Medical Board to conceive the idea of an full-fledged institution solely for the purpose of training 'native doctors' for army and they submitted in 1822, a proposal in this regard to Governor-General in Council, which was readily approved. From the point of view of institutional teaching in medical sciences, the School for Native Doctors had the distinction of being the first of its type.

The memorandum that was prepared and submitted by the Medical Board was as written bellow;

“The paucity and insufficiency of that very useful body, the Native Doctors, has been long matter of complaint in the Medical Department of the army... In former times, little difficulty was experienced in procuring qualified persons in this class. The General Hospitals, which were then established in different parts of the country, afforded an excellent school of instruction, whence well-taught and experienced individuals could be at all times produced. The army was likewise then not nearly so extensive as it has since become, and the number of persons of this description required for its various establishments was comparatively inconsiderable.”

“After the discontinuation of General Hospitals, there being no longer any regular place of instruction for persons of this description, it became necessary when they were wanted, to seek them wherever they could be found... In this way the Native Doctors entertained within the last few years...”

“Perhaps, the case now under representation cannot be placed in a stronger light, than by stating the fact the only Native Doctors now procurable, are so in experienced and ill qualified, as to make it a just matter of doubt, whether it would not be better to leave the sick to nature alone, than trust their lives to men so little capable of rightly treating them.”

The next question was how to improve the quality of both the trained and the trainer. Initially it was proposed that “at the presidency a class of native pupils whose number shall not fall short of twenty; and whose vacancies are filled up as they occur.” It was also mentioned in the memorandum about qualifications of the pupils to be selected for admission that they should be capable of reading and writing 'Hindustani' in Nagri or the Persian character. They wanted the their age to be not more than twenty years. As the board clearly realised that the success of a venture in professional education of this kind must depend upon

the selection of a right teacher or instructor (superintendent) and only expert physician or surgeon was not the actual need for a standard school, they made the criteria much beyond that. First of all the instructor should know the local languages in all their technicalities and must provide materials in languages the pupil understood. Precisely, the business of the teacher should be to superintend the whole Establishment, and to direct and look after the small and practical pursuits of the pupils, to prepare manuals of the most necessary and intelligible parts of medical knowledge in the native language for their use, to deliver courses of lectures on the same subjects; Secondly, the upcoming doctors would not only treat the Europeans but also the Indian civilians. The patterns and nature of Indian diseases as well as difference of affliction of diseases between Indians and Europeans were separate and to be manage and control by them, they should have had an extensive experience in the most prominent disorders of an Indian climate, and be well informed of their differences as they attacked the differently constituted frames of Europeans and the Indians.

Government's next step was the establishment of Native Medical Institution in 1822. The Lieutenant Colonel Casement, Secretary to Government in Military Department conveyed the approval message for setting up the School to the Medical Board and asked for preparing detailed arrangements in the form of regulations of the institution. As per Government's further suggestion Dr. Jemison, the Secretary of the Board, got appointed in that school. Initially, it was started in Ram Kamal Sen's house (Old Albart College). Medical Board submitted the Regulations of the proposed school on May30, 1822. Within less than a month the Military Department issued the Governor-General's order No. 41, 1822, establishing the School for Native Doctors. For better understanding of the aims and objectives of the School some extractions of from this order is relevant here.

"1. That an institution may be formed at the Presidency for the instruction of Natives in Medicine; and that it be called the School for Native Doctors.

"2. The object of the Institution will be, to educate Native Doctors for the Civil and Military branches of the service.

"3. The institution is to be placed under the Management and direction of a Medical Officer, to be denominated the Superintendent of the School for Native Doctors.

"4. The class composing this school, shall not, in the first instance, consist of less than twenty students; vacancies in it are to be filled up as they occur.

"5. No person to be admitted a Student, who is not, at the time of his application, capable of reading and writing the Hindoostanee language in the Nagree or the

Persian character; and whose Age is under 18 and above 18 and above willing cheerfully to perform all the duties of their calling.”

“6. Hindoos and Moosulmans to best equally eligible, with the sole condition that they persons of respectable cast and character; and willing cheerfully to perform all the duties of their calling.

“8. The students are to be regularly enlisted as Soldiers; from the time of their admission, they are to be supported at the expense of Government; when duly qualified, to obtain Certificate from the Medical Board; and are to succeed as Native Doctors on the occurrence of vacancies in the Army, or Civil Department. Their period of Enlisted Service will be 15 years from the time of leaving the Institution as Native Doctors, unless prevented serving so long, by disability, proved before a Medical Committee and certified accordingly. After a service of 15 years they may demand their discharge in time of peace.

“9. The duties of the Superintendent will embrace the whole Establishment; he is to direct the Studies, practical, and general Conduct of the Students; - to prepare Manuals of the most necessary and intelligible parts of Medical Science, for their use, in the Native Language; to give demonstrations, and deliver Courses of Lectures to them on these subjects; and generally to take every available means of imparting to them, a practical acquaintance with the diseases of most frequent occurrences in India; the remedies best suited their cure; and the proper mode of applying those remedies.”

“12. The Superintendent will be entirely subject to the Orders of the Board in everything relating to the Welfare of the Institution and its Students; and he is to be guided by their Advice and Instructions, in all cases of difficulty, or circumstances of emergency.”

“18. The Students to be severally attached to the Presidency General Hospital, the King’s Hospitals, the Native Hospital, (with the consent of Governors) and the General Dispensary, as may be found most convenient, for the purpose of acquiring practical knowledge of Pharmacy, Surgery and Physic.”

“21. The Students attached to the several European Hospitals will be placed particularly under the Apothecaries respectively belonging to those Hospitals, to attend the Hospital Wards and Dispensary and to assist in dressing the patients, in preparing and administering Medicines, and in the other ordinary duties of the Establishment. Those attached to the Native Hospitals, to be placed under its officers; and those attached to the General Dispensary under the apothecary and his Deputy, and in like manner to assist in the duties of those Establishments.”

“27. During the whole terms of his Education, each Student will be supported at the Public charge, for which purpose, the Sum of Sonat Rupees Eight per Mensem will be allowed to him; this sum being deemed fully sufficient for his clothing and Maintenance. The allowance to commence from the date on which the pupil reports himself to the Secretary to the Medical Board.

“29. With a view to encouraging this important class of Public Servants; he of stimulating and rewarding superior attainments on their part; and of permanently

attaching them to the Public Servant; the Government have resolved that the pay of the Native Doctors educated at the Institution, shall be raised above the rates which have been hitherto ordinarily allowed to the same description of persons, viz. to Sonat Rupees 20 instead of 15 in Garrison or at the Civil Station, and 25 instead of 20 in the Field; and that, with the same view, the allowances of such individuals be still further advanced after seven years of service as Native Doctors, viz. to 25 Rupees in Garrison or at a Civil Station, and 30 Rupees in the Field; provided the Medical Officer under whom those Native Doctors may be serving at that time, grants a certificate, that the general character, and professional conduct of the Individual, deserve this indulgence. The certificate to be countersigned by the Superintending Surgeon of the Division,”

“34. All Native Doctors educated at the Institution, and attached to Civil Stations, are liable to serve with the Army, when so ordered by Government or by the Commander in Chief when his Excellency may happen to be in the Field, when the same advantage in every respect will be extended them to as Native Doctors attached to Corps.”

“36. The Salary of the Superintendent is fixed at Sonat Rupees Eight Hundred per Mensem; with an Establishment of a Moonshee to assist in reading and translating at Sonat Rupees Sixty, a Writer at Thirty, and a Peon at 5 Rupees per Mensem.”

“39. His Lordship in Council is pleased to appoint Surgeon James Jameson to the office of Superintendent of the School for Native Doctors.³

James Jemison became the Superintendent or in charge of the New established Medical School with a salary of Rs. 800 per month⁴. The numbers of other helping men were three consisting of one Munshi, one Clarke and one Guard with the salary of Rs. 60, 30 and 5 consequently. The institution was started with a three years course in vernacular languages. This three-year training was divided into two parts. In the first or junior class, Pharmacy,

Materia-Medica, psychology and Anatomy were taught. Medicine and Surgery were taught in the two senior classes. For the practical knowledge the students needed to visit the other Company Hospitals and specially the Chadni Chalk Hospital regularly⁵. 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. This was performed only in

³ 175 Years of Medical College Bengal, Commemorative Volume, 1835-2009, Kolkata, 2009

⁴ Dey Purnachandra: 'Kolkata Medical College,' Journal Bangashree, 1342 (Bangabdo), 1936, 3rd year, Vol- 1, p- 568.

⁵ Bandopadhyay Brajendranath: 'Sangbad Patrer Sekaler Katha', Vol 1, 1344 (Bangabdo), 1938, Calcutta, P- 36.

General Hospital and the students were permitted to witness⁶. The students of the institution were given a stipend of Rs. 8 per month during their education and after qualifying they were required to serve the army or Civil Department for 15 years. The salary of this newly appointed doctors were Rs. 20 per month with an extra allowance of Rs. 5 when on field service.

The journey of Dr. Jemison with Native Medical Institution ended up with his untimely death in 20th January, 1823 at the age 35. He worked there for seven months only. Dr. Breton was selected to acquire Jemison's position in May, 1823 because of his efficiency in the three languages, i.e. Bengali, Hindi and Urdu. The basis of Western Medical Learning (Allopathy) in India in institutionalised form, whose foundation stone was laid down by Dr. James Jemison, was started getting strength and better shape through Peter Breton's tireless and methodical work, initiation and proper understanding. Full-fledged medical education, what we would find in Medical College in the next decade was the matured form of a small but powerful initiation taken by some people and their effort. Peter Breton was one of them. He had worked in that institution for seven years till his death in 1830. Gradually, with some very essential and progressive changes that were taken by Breton, the institution started developing from 1824 onwards. The most remarkable task done by him apart from compiling the *Materia Medica* in Indian languages, was to prepare a vocabulary of medical terms in English and local languages. This vocabulary was in the form of a table of names of different parts of human body and of diseases in English, Arabic, Persian, Hindi and Sanskrit. This was printed at the Government Lithographic Press and made available to the students and to the Medical Department. A Hindustani translation of the "London Pharmacopoeia" was also made. On the basis of his lectures several small tracts were prepared for regular classes. Apart from that, he produced skeletons, surgical instruments and chemicals as aid to his lecture.

⁶ W.C.B Eatwell: *On the Rise and Progress of Rational Medical Education in Bengal*, Calcutta, 1860,

The other books that were prepared for the students are:

1. Treatise on suspended animation, from the effects of submersion, Hanging, Noxious air or lightning and the means of Resucitation in the Naguree character and in the Hindoostanee language.
2. Substance of a lecture on the Cholera Morbus, delivered to the students of Native Medical Institution: in the Naguree and Persion character and in the Hindoostanee language.
3. Introductory lecture on Anatomy, in the Naguree and Persion character and in the Hindoostanee language.
4. Demonstration of the Brain and its Appendages in the Naguree and Persion character and in the Hindoostanee language.
5. Essay on the Venam of serpents in the Naguree and Persion character and in the Hindoostanee language.
6. Essay on the Intermittent fever in the Naguree and Persion character and in the Hindoostanee language.
7. Essay on the Rheumatism in the Naguree and Persion character and in the Hindoostanee language.
8. Essay on the Cataract in the Naguree and Persion character and in the Hindoostanee language.
9. On the structure of the Eye in the Naguree and Persion character and in the Hindoostanee language.
10. On Osteology in the Naguree and Persion character and in the Hindoostanee language.
11. Demonstration on the Abdominal Viscera in the Naguree and Persion character and in the Hindoostanee language.
12. Demonstration on the Thoracic Viscera in the Naguree and Persion character and in the Hindoostanee language.
13. Essay on the Cholera Morbus in the Bengali language⁷.

A Pandit and Maulavi were sanctioned for the translation work of medical and

⁷ *Liberality of the Indian Government towards the Native Medical Institution of Bengal*, Journal Oriental Herald, Vol 10, P- 18, 1826.

anatomical discourses into Devanagri and Persian characters originally composed in English. Breton prepared it almost like a course or curriculum of medical education by dividing it into different categories such as anatomical, pharmaceutical, medical etc. These were acted as text books to the students. The anatomical works included introductory lecture, osteology and description of several viscera and organs. Pharmaceutical works included a treatise on *Materia Medica*, Hindi translation of London Pharmacopoeia, a treatise on component parts of the air and a posological table. He composed medical tracts on cholera morbus, vegetable poisons and snake and serpents' venom and treatise on rheumatism, intermittent fever and topography of the celestial promixies.

Breton started showing in the pharmacy classes some preparation of different substances such as sulphate of soda, magnesia, muriatic and nitric acids, calomel, hydrogen, etc. The pupils were involved in all these pharmaceutical and chemical preparations. Breton found this method very help full in making understanding of various processes. In the medical class Breton started a very interesting method. He used make the senior boys describe the various organs from memory while two his assistants demonstrated the component parts of the brain, viscera, bowels and eye. This exercise was followed by questions and answers and the reading of medical tracts. In this way their minds were exercised to enable them to recollect what they saw and learnt. Breton also introduced a system of monitors and assistants among the students. The most efficient and capable students of each year would be kept in the School itself to assist the Superintendent and to teach the elementary parts of medical science to the new batches.

With the performance, attendance and efficiency of the pupils, Breton was very satisfied and also happy. He stated that the majority of the students who arrived in Calcutta in 1823 can themselves give a clear demonstration of the thoracic and abdominal viscera, of the brain, of the bones, and of the structures of the eye, and have distinct notion of the other parts of medical science which have been explained to them. For the short period they had been in the institution the progress they have made is really very satisfactory and he had no hesitation in saying that they really knew as much of anatomy and medicine as the generally of the medical students in England (who have not had the advantage of seeing Hospital Practice and of attending public lecture) do after the completion of their apprenticeship. As the period of instruction after which a student could be certified as a Native Doctor or a qualified doctor had not yet been decided, Breton from his experience fixed it from three to four years to be a qualified doctor, who could be allotted to military or civil stations. By 1826 eight of his

students were already appointed to the army and four of the best, as per his instruction, informed as assistant in the permanent establishment of the School.

The above mentioned issue has given us an apparent picture of Peter Breton's as well as Company's mentality towards developing medical knowledge of Indians, thus bringing easiness to their ruling process (strength in military organization enhances strength in totality). Although main motive was to disseminate European medical knowledge, but in reverse Breton's flexibility gives us a different dimension of the entire process. Breton could understand the importance of the native medical system, which contained some useful remedies and he did not hesitate to mention it publicly. He said that in teaching the students Anatomy and Medicine according to the European system, it is not intended that they should be wholly excluded from the advantages derivable from the native Practice. Many native Remedies are probably superior to those of Europe, and possibly beneficial. In this connection he had mentioned the operational skill of one Sautcouree who was expert in the removal cataract without any acquaintance of the structure of the eye. He operated Mr. J.B Britch, Justice of the Peace and restored his eye sight. Breton had the opportunity to observe the operation by himself. Breton stated that "from these cases and from my conviction that Sautcouree has operated on a number of cataract patient (probably several hundred, since he has practiced as an oculist in Calcutta for the last 25 years) I am disposed to believe from the astonishing simplicity of the operation and the little liability to accidents to the eye in the introduction of the couching needle he uses which has neither a point nor the cutting edges, that his mode of couching is easier and safer for the natives of India (whose Hands are generally unsteady) to adopt than the European method which required skill and perfect steadiness of the hand to ensure success"⁸. In fact this method had impressed Breton so much that he got involved into it to teach his pupils this method in his private service. The mentors among the pupils received this training and practiced also upon the eyes of goats and sheep initially. Pursun Singh, among the mentors, performed the operation successfully on the cataract in the left eyes of two old men in Breton's house and restored his eye sight. Breton wrote a small tract entitled "On the Native Mode of Couching".

⁸ Letter dated April 14th, 1824, from Peter Breton to George Proctor, PMB, National Archives, New Delhi. . As cited in Sen S.N, *Scientific and Technical Education in India, 1781-1900*, Indian National Science Academy, New Delhi, 1991.

We can explain Peter Breton's work and initiation as a revolution in the field of medical education to the Indians. He was the first man who tried to reconstruct medical education and prepare a particular curriculum for this. Although all these initiations were the reflection of ruler mentality, but which in reverse ultimately created a favourable condition for the Indians. Indigenous people became conscious and gradually gained the expertise in Western medical system and technology.

Breton was succeeded by John Tytler in 1828, who was trained as physician and mathematician and had a great interest in oriental science and learning. Tytler became a controversial person due to his orientalist approach. At the time of his joining to the School, he was an Assistant Surgeon in the garrison at Monghyr and was therefore a qualified medical man. After becoming the Superintendent he prepared a report of the School for 1830 covering the last years of Breton's superintendence. Mention may be made of in this connection that although in the absence of proper textbooks the compilations and translated works done by Breton were useful and involved hard labour also, but were highly criticised by John Tytler. In his words, "In the anatomical department it will be seen that we are without any description either of the muscles and Ligaments, Blood vessels, absorbents or nerves, the tract on Osteology is merely a catalogue of the names of the bones unaccompanied by any description, the tracts on the thoracic and Abdominal Viscera are too brief to afford much information and if I may express such an opinion the tracts on the minute anatomy of the brain, eye and ear are hardly required in this institution as yet. The *Materia Medica* mentioned in the Pharmaceutical Department is an account of the Bazar Medicines of Hindoostan compiled and translated by Dr Jemison and the translation of the London Pharmacopoeia, at the same time that it contains a great deal with which it is unnecessary to burden the memory of the pupils, is unfortunately destitute of any account of their properties or mode of employment... the Medical and Surgical catalogues...contain only detached parts of the science.⁹"

It could be assumed from his plans for even more reforms than Breton did that, Tytler wrote these comments not only to underestimate the works done by Breton but to make out a case for improved textbooks he proposed to write for his pupils. Tytler found that the pupils selected for admission were generally poor quality and had inadequate preliminary education

⁹ John Tytler's letter dated March 30th, 1831, to James Hutchison, Secretary of the Medical Board, PMB, National Archives, New Delhi. As cited in op.cit note no 8

required for assimilating medical instructions. They only tried to memorize a large quantity of names and information in a foreign language without developing any capacity to reflect upon and understand what they have thus acquired from it and of practical utility. Teaching was also faulty. To remove these defects and improve such condition the first and foremost need was to develop a definite and well thought out syllabus, books and reading materials. Good tracts and text books were also essential for better teaching. We can notice here that how the process of western medical education in India was taking a fine shape and coming as an organised field with the passage of time and arrival of progressive instructors into it.

To improve upon teaching Tytler introduced four classes, the fourth being the lowest class and the first the highest. The lowest began with anatomy, the third with Meteria Medica, the second with practice of physic and the first with surgery. Further he made a certain prospectus of the institution in order to enable the students to derive the maximum benefit from these lectures. The preliminary qualification of students was used to be neglected in earlier days when the students were not readily attracted to the School. But as more students started applying for the admission due to well known advantages, the necessity to judge them as per their preliminary knowledge before admission became important. The desirable qualifications should include age, education and health. According to Tytler, the age should be between sixteen to twenty-two, previous education should be insisted upon and sickly candidate were rejected.

Dissection is one of the major learning parts of medical science and is a controversial history in Indian context. Tytler was very serious about the importance of dissection. We know the Hindu prejudices at that time about touching a dead body and his endeavour towards dissection thus seemed to be impossible. But one very interesting incident altered his as well as our notion. Once Tytler was in search of a fresh head to exhibit the pupil the membranes of the brain, and astonishingly, Durshun Lal, a Hindu student brought him a skull his friend had picked up on the banks of the river. However, the performance was not done due to its bad condition, but the incident shows that for the sake of learning and proper understanding the boys could get over their long standing prejudices about touching dead bodies. This was probably the inauguration which within a few years and under more favourable circumstances turned to a regular practice of both Hindu and Muslim students in the Calcutta Medical College.

It is important to mention here the work of reading materials and textbooks prepared by Tytler:

1. *Introduction to Meteria Medica*- 37 pages, this dealt with Pharmacopea containing as much of principles of chemistry as would enabled the pupils to understand the composition of medicines;
2. *Account of the most useful articles of the Meteria Medica*- 178 pages; contained names, properties and doses of medicines usually employed in hospitals.
3. *A System of Osteology*- 69 pages; comprehending description of all the bones in the skeleton, processes, foramina, attachment of the muscles, ligaments, passage of blood vessels, nerves etc.
4. *Account of Abdominaland Respiratory Muscles*- 9 pages.
5. *Account of the Vascular System*- 41 pages. Revised and enlarged on the suggestions of the Medical Board.
6. *Tract on Gunshot Wounds*- 6 pages; revised and enlarged according to the wishes of the Board.
7. *An Account of the Surgical Operations, on injuries of the Head*- 14 pages; on Hernia- 36 pages.
8. Miscellaneous papers- short answers to questions relating to amputation, dysentery, pneumonia, enteritis etc.
9. A list of the medicines and instruments used in hospitals written in corresponding columns in English, Persian and Nagri to enable the students to read and write labels.

The Maulavi and the Pandit engaged by Breton were discharged from the assistance posts because of their ill qualification on medical science. Their places were taken by Hakim Abdool Majeed, a learned Unani Physician of Calcutta and madhusudan Gupta, the medical Pandit of the Sanskrit College. Tytler also consulted Maulavi Abdool Raheem, Persian translator in the Government.

Reviving the Indigenous Medical System

*Khsudiram bisharad kshyata bhumandale
Ayurved- Mahasindhu sabe jar bale.
Nabakrishna Gupta, Gupta Msdhusudan ei
dui manthan data drira bilakshan korla
aseem shram labhe abasheshe
charakadi-sudharas maner harashe.¹⁰*

This was a widely circulated praising *Shloke* (poem translated from Sanskrit to Bengali) on the foundation medical students of Sanskrit College in Bengal. It says that Khsudiram Bishrad, the teacher of that College had a great expertise on the whole knowledge of Ayurveda. The students like Nabakrishna Gupta and Madhusudan Gupta enabled to acquire the medical knowledge with a huge diligence from that great teacher. Their knowledge would be very useful to the society in future.

Having an impression of the reciprocal attitude of both British and Indians towards western medical system, one section of the Hindu society got disturbed and annoyed ,not only on the alien rulers but also on the Hindus. They were conscious about the richness of the indigenous system and to make people more conscious and 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 the Hindus. 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 most easily obtainable and most generally used in this country, on which account the study of Sanskrit books becomes indispensable to this class.”¹¹

They had an apparent notion that they, 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

¹⁰ Dey Purnachandra: *Kolikata Medical College*, Journal Bangashree, 1342 (Bangabdo), 3rd year, Vol 1, p- 568, 774-775.

¹¹ Brajendranath Bandopadhyay: *Kolikata Sanskrita Collejer Itihas*, Vol 1 (1828-1858), 1948, Kolkata

on the other it certainly would have made Hindus proud. They demanded a separate course of Ayurveda in Sanskrit College for the Hindus specially. The application was submitted in June 1826. Dr. Wilson and Tytler both granted the request of the students and made a report on the importance and need of Ayurvedic system in 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 Treatise on Anatomy'. Tytler also demonstrated to the students the bones of human skeleton and some soft parts of animals. From an 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

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 Teapots @ 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 Furnace and Boilers, Ladles, 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 be so far re-established as to enable him to 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.”¹²

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

¹² 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 Bisharad 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 remedial process and also the new invention of important medicine (*Kolkata Sanskrita College Itihas*, First volume, 1824-1858, Calcutta, 1948)

society¹³. 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.

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 spirit 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, Anodynee 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 bedside of the sick (in the immediate vicinity of the lecture room) habits of observation, of the studying symptoms, of forming conclusions and of presenting readily. It is in fact that indispensable part of their systems of education.”¹⁴

It is evident from the above discussion that though, Ayurvedic medical system impartation and to keep it alive was the initial purpose of the Vaidya classes in Sanskrit College, but somehow the European system became prominent here also 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. The matter would be discussed later with greater emphasis on the Bengali intelligentsia and their intentions.

¹³ Long J.: *Vernacular Education in Bengal*, Calcutta Review, 1854, Vol 22, p.329.

¹⁴ Sen, S. N, *Scientific and Technical Education in India, 1781-1900*, Indian National Science Academy, New Delhi, 1991.

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 by 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 suspended. By the request of D. Ruddell, the Secretary of Madrassa Committee, on June 30th, 1826, Maulavi Zoolfukhur Ali¹⁴ 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 Ali¹⁵. 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 cope with the new

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 Zoolfukhur 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.

medical knowledge as well as their own medical system and it would ease the teaching process¹⁶.

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 them 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 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

¹⁶ General Committe of Public Instruction, July, 1823 to 3rd December, p-568-573.

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 memorising 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 nor 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 become 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.

Firstly, this chapter has intended to examine the complexity of colonial domination for establishing Western medical education in Bengal. It concentrates on the fact that why British wanted Indian people be educated and trained by modern medical system. Secondly, the areas covered by the British established medical colleges and institutions in Bengal Presidency would be another area of focus. As the necessity was military, the British established hospitals first the military bases and the disturbed areas. Gradually they opened hospitals and primary training centres in the civil places also. Native Medical Institution also came as the result of this necessity. This chapter has tried to examine the pre-history of Calcutta Medical College, the first medical college in Bengal as well as India. Medical College was an institution which first started giving the degree and also permission to the Indian doctors to practice privately. But the western medical education started much earlier with its own features. And it is necessary to discuss the ground that had already prepared by the British for the Bengalis to learn and adopt western system. As a response of the newly established institution and medical system, a section of the Bengalis showed interest towards Government initiatives for indigenous systems. They wanted official effort. Thus the British

introduced the medical classes in Sanskrit College and Calcutta Medical College. This was the first instance for advancement and development of indigenous systems by the Bengalis. Later in the mid of this century, though not in a united way and with strength, some organizations had came into existence for revival of the original medical systems.

Chapter 3

Calcutta Medical College: A Mile Stone

Calcutta Medical College: A Mile Stone

Initial Initiatives:

1835, establishment on Calcutta Medical College (CMC), through which the history of medical science in India got a novel dimension towards 'modern medicine' or advanced medicine as well as achieved a world acquaintance in this field. Finally, British could able to enter into the official process of "Colonizing human Body"¹ along with their other motives in India by providing and also involving them in their mode of health treatment. 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 but multidimensional causes and after effects and 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 as per their strength and ability in their own way to fulfill the immediate needs. 1830s brought enormous political as well as cultural change in India. Modification and revision in almost every sector started with Lord William Bentinck's² arrival to India as Governor- General in 1828. Meanwhile, since about 1800, intellectual turmoil in England had been encouraged by the forces of Liberalism, Evangelicalism and Utilitarianism. Advocates of these tenets could be found in India and also Orientalists as their opponents. After years of debate in Parliament and Company circle as well as in the public sector, the situation was

reaching in a climax in the 1830s, and finally led to the famous Orientalist- Anglicist controversy. Anglicists' view was to enhance intellectual, moral and material condition of India, introduction of English or European education could be the only way. Where the Orientalists were in favor of the indigenous culture, saying that Government should support it

¹ Arnold David: *Colonizing the Body, Colonizing the Body, State Medicine and Epidemic Disease in Nineteenth Century India*, Oxford University Press, Calcutta, 1993.

² 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.

and keep it intact and assimilation process with European culture by the Indians would be natural. Indian classical languages i.e. Persian and Sanskrit were to be the means of communication. But to the Anglicists, heritage of India was not worthy of consideration. The man destined to make a decision in this controversy was Lord Bentinck (1828-1833). Though his chief mandate from the Court of Directors was economic factors; health and education were not his top priorities. But observation in Calcutta and the other parts of Company's territories convinced him that something should be done to alleviate the poor condition of both health and medical education available to the populace. 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 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, discarding Sanskrit medical books together.

The members of the Committee visited various institutions i.e. the schools and colleges of Bengal to get a fair picture about the present condition of medical education and existing demands and requirements for formal medical education. They talked with people from different ideological background, 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 in a positive way to the question of handling a dead body for anatomical purposes, even while acknowledging that such action would be contrary to the traditional beliefs. After having an affirmative response from the student section and observing the ruined condition of existing medical education in the major three institutions due to their no availability of proper language training, thus lack of books, the Committee in its report submitted on 20th October, 1834, said that, "A 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". The Committee recommended for establishment of a new medical institution on an extensive scale where the various branches of medical service cultivated in Europe should be taught and as near as possible on the approved European system.

Victory rested with the Anglists. 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. Government G.O. No. 28 of 28th January, 1835:

“The Right Honourable the Governor-General of India in Council is pleased to pass the following resolutions:

1. “That the Sanskrit College medical class, the medical class of the Madrassa, and the Native Medical Institution, be abolished from the 1st proximo.
2. “That such of the students of the Native Medical Institution as are now capable of passing their final examination shall be appointed native doctors, and all the other students of that institution be transferred to the native corps of the army, upon their army, upon their present salaries, to become native doctors when represented to be duly qualified by a committee of medical officers, or, if not found qualified in two years, to be discharged.
3. “That a new college shall be formed for the instruction of a certain number of native youths in the various branches of medical science.
4. “That this college shall be under the control of the education committee.
5. “That the education committee shall have the assistance of the following medical officers, ex-officio. The surgeon of the General Hospital, the surgeon of the Native Hospital, the Garrison Surgeon of Fort William, the superintendent of the eye Infirmary and the Apothecary to the Hon’ble Company.
6. “That the instruction be given through the medium of the English language.
7. “That a certain number of native youths, whose ages shall not exceed twenty years, or be less than fourteen years, shall be entered upon the foundation pupils of the institution.
8. “That all candidates for admission as pupils shall be required to present respectability of connexions and conduct, shall be able to write and read English and Bengalee or English and Hindostanee and with these qualifications all natives between the age of fourteen and twenty shall be equally eligible without exception to creed or caste.
9. “That the candidates shall be examined by the education committee and the superintendent of the institution, and that the selection of the pupils shall be determined by the extent of their acquirements.
10. “That the number of the foundation pupils shall be limited to fifty.
11. “That the foundation pupils shall each receive a monthly stipend from Government of Rs 7, which may be increased according to the following scale.
12. “That all foundation pupils be divided into three classes, each class having a different salary:

The First Class Rs. 7 per month

The Second Class Rs. 9 per month

The Third Class Rs 12 per month

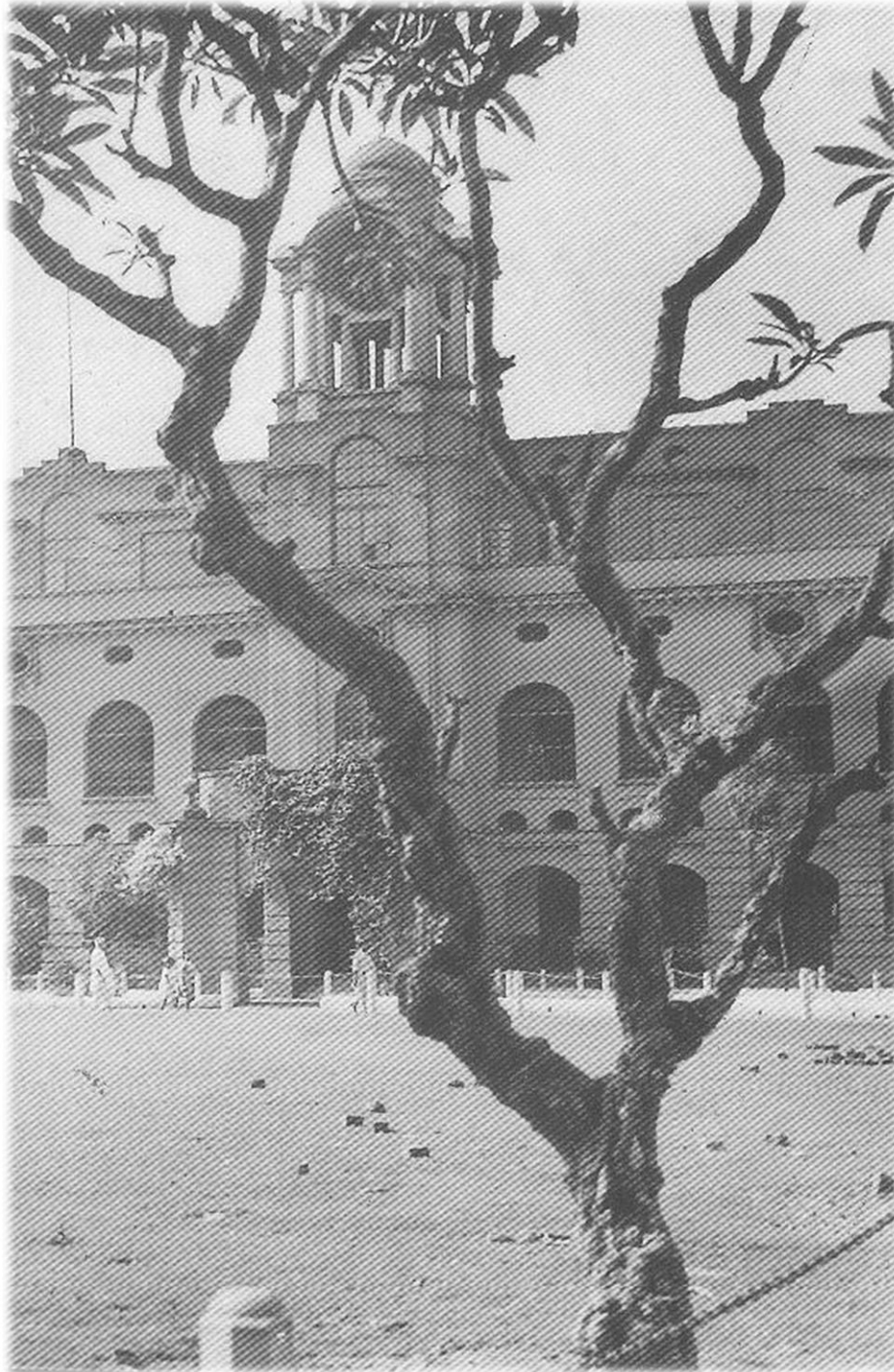
13. "That the formation of these classes shall be entrusted to the management of the education committee and the superintendent of Institution, it being distinctly understood that the classification will depend upon the acquirements of the pupils, and not upon the period of their studies; excepting, that no pupil shall, during the first two years being on the foundation, receive a higher salary than Rs. 7 per month, but that afterwards the increase will depend upon the classification.
14. "That the foundation pupils shall be expected to remain at the institution for a period of not less than four years, and not exceeding six years.
15. "That all foundations pupils be required to learn the principles and practice of the medical science in strict accordance with mode adopted in Europe.
16. "That all the pupils who shall have completed their studies according to the form prescribed, shall be entitled to have certificates signed by the Superintendent to enable them to present themselves for final examination.
17. "That the final examination for granting certificates of qualification to practise surgery and medicine, or for admission into the service, shall be publicly made by the medical officers above mentioned.
18. "That such pupils as shall be deemed qualified to practise surgery and medicine shall receive by the president of the committee of education and countersigned by the secretary of that committee and the superintendent of the institution.
19. "That the public service shall be supplied with a view to this object, whatever appointments may happen to fall vacant during the period which intervene between the two examinations shall be offered for the acceptance of the students who passed at the examination next ensuing. The selection shall be regulated by the extent of professional acquirements.
20. "That as an inducement for pupils of a respectable class to enter the institution, the pay of the native doctors who shall have been educated at the college and have received the certificates of qualification, shall be Rs. 30/- per month; after seven years their service shall be Rs. 40/- per mensem, and after fourteen years , Rs, 50/-per mensem. After twenty years' service they shall be entitled to retire upon a pension, regulated according to the proportions granted to native commissioned officers of the army, if no longer capable of performing duty from age, disease or wounds.
21. "That the education committee shall be charged with a suitable building for the college, a library, anatomical preparations, and all other objects of indispensable

necessity to the expense being previously submitted for the sanction of the Council of India.

22. "That the college shall be under the management of a European superintendent, who shall devote the whole of his time to the interests of the institution, and who shall not be permitted to enter into private practice, or to hold any way withdraw his attention from his duties at the institution.
23. "That the superintendent shall be permitted to draw a staff allowance of sonat Rs. 1,200 per month in addition to regimental pay and allowances.
24. "That the superintendent shall be aided in his duties by a European assistant, who shall draw a staff salary of Rs. 600 per month in addition to his regimental pay and allowances.
25. "That the European assistant shall devote the whole of his time to his duties at the institution and that he shall not be permitted to enter into private practice or to hold any situation that can withdraw his attention from the interests of the institution.
26. "That the European assistant shall exercise no control over the management of the institution, excepting by permission of the superintendent, but that he shall confine himself to the duty of assisting the superintendent, in the work of educating the pupils.
27. "That the whole management of the institution, the charge of the pupils, the mode of teaching, and all the arrangements, shall be entrusted to the judgement and guidance of the superintendent, under the control of the education committee.
28. "That the superintendent shall make half-yearly reports upon the state of the institution, to the education committee, by whom these reports shall be forwarded with their sentiments to the Government of India.
29. "That the division of duties of the superintendent and of the assistant shall be made at the discretion of the former, subject to the control of the education committee
30. "That the superintendent with the aid of his assistant shall be expected to instruct his pupils in anatomy, surgery, medicine and pharmacy, and to qualify them for medical charges, either civil or military.
31. "That the pupils shall visit, to witness the practice, the General Hospital, the Native Hospital, the Hon'ble Company's dispensary, the Dispensaries for the poor, and the Eye infirmary.
32. "That the superintendent shall be supplied, under the direction and management of the education committee, with a certain monthly allowance of stationery for the use of the institution.
33. "That the formation of a plan of medical education and the rules and discipline of the institution shall be entrusted to the education committee.

34. "That an addition to the pupils in the foundation, the benefits of this college shall be open to all classes of the native youths between the age of fourteen and twenty, without exception to creed or caste, provided they possess respectable connexions and conduct and can read and write English and Bengalee, or English and Hindoostanee, and that all thus qualified shall, at the discretion of the committee of education, be permitted to attend the instruction at the college, subject to its discipline and regulations.
35. "That the superintendent shall draw a pay bill for the establishment of the institution, which shall be countersigned by the secretary of the education committee, and shall annex to it a normal roll of the youths on the foundation of, and establishments attached to, the native medical institution, and voucher for the payment of the house rent, both signed by the secretary of the education committee.
36. His Lordship in Council is pleaded to nominate Mr. Assistant Surgeon M.J. Bramley to the situation of superintendent of the new medical college; Mr. Bramleys appointment to the have effect from the 1st proximo."³

³ 175 Years of Medical College Bengal, Commemorative Volume, 1835-2009, Kolkata, 2009



Old view of Calcutta Medical College

Age of Knowledge:

The door of the pioneer institution for Western Medical Education was opened in the East with Bentinck's approval of the recommendation of the Committee. Medical College of

Calcutta (later known as Calcutta Medical College) started with its fresh motives and features. 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 foundation pupils the benefits of the new college were opened to all classes of the native youths between the age of fourteen and twenty without exception to creed or castes. No distinction was made as to caste or creed. One Christian joined, but no Muslims were in the first class. Subsequently, some Muslims became students but they always remained a small minority. 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. Forty nine were selected in 1835 as foundation pupils. Most of them and their education were in the Hindu College, Here'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 (later designated as Principal) with Dr. Goodeve and Dr. B.O'shaughnessy⁴ as his colleagues. 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 themselves for private practice⁵. Madhusudan Gupta, a vaidys, Profesor 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. On 5th August of that year, the official designation of Superintendent was changed to that of Principal. Initially the College had no library, museum, apparatus or hospital to start with. Two skeletons were purchased through Bathgate & Company of Calcutta for Rs. 1500 and other anatomical preparations were imported from England. One Mr. Evans was appointed Curator of the newly established Museum.

⁴ Later Goodeve was appointed as the Professor of Anatomy and William Brooke O'Shaughnessey joined the Professor of Chemistry.

⁵ *Report of the Medical College of Bengal, 1839*, Calcutta as cited in the Book *Chikitsa Bijnaner Itihas: Unish Satake Banglay Pashchatya Sikshar Prabhab* by Binaybhushan Ray, Sahityalok, Kolkata, 2005.

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 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 wood and tin models of ship's brain and goats' livers for teaching Anatomy. 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 still prevented the touching of dead human beings, much less dissecting them. Bramley, for this reason initially instituted a course in elementary Anatomy primarily concerned with Osteology because it was obviously less messy 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, Umacharan Set, Rajkrishna De, Dwarakanath Gupta and Nabin Chandra Mitra⁶. He enabled to make Hindu, especially Brahmin pupils as well as a large section

of the society rational and also helped them to rise superior to all prejudices and superstitions. This became another landmark in the history of medicine in India by opening the gates of the tradition of modern scientific medicine in this country. On this victory of Madhusudan Gupta we can get several praising notes by 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 were erected four years earlier appeared too small for his dear students amounting to upwards of 250 youths of all nations, colours, religions and caste, comingling together in that good work as freely and amicably as the more homogeneous frequenters of an European School.

⁶ 175 Medical College Bengal, 1835-2009, Commemorative Volume.



Madhusudan Gupta (1800-1856)

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)⁷. This unanimous notion of Madhusudan Gupta's victory over Indians' year long superstitions has questioned by a recent scholar Jayanta Bhattacharya, in his article "The First Dissection Controversy: Introduction to

⁷ Bandopadhyay, B. N (ed), *Sambad Patrer Sekaler Katha*, Bangiya Sahitya Parisat, 1996 Kolkata, Vol 2, p-698.

Anatomical Education in Bengal and British India”⁸. 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”⁹. From this statement the event seemed to be so important not less than a military victory. According to

Jayanta 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 industry which was little anticipated by those who know their strong religious prejudices upon this point twenty years since.”¹⁰

Secondly, it has 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. 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.”¹¹

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

⁸ Bhattacharya Jayanta: *The First Dissection Controversy: Introduction to Anatomical Education in Bengal and British India*, Current Science, Vol. 101, No. 9, 10 November 2011.

⁹ 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.

¹⁰ Goodeve, H. H., *Lancet*, 1847, I, 190. As sighted in the Article *The First Dissection Controversy: Introduction to Anatomical Education in Bengal and British India*. Edited and published by P. Balaram, Current Science Association, Bangalore, 2011.

¹¹ GCPI, 1859–1860, p. 147. The source is same as note 10.

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 110 respectively.¹² 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.

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 plunge the scalpel into the dead human body."¹³ 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 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."¹⁴

¹² Ibid.

¹³ Hundred Years of the University of Calcutta, Calcutta, 1958

¹⁴ Ibid

Rules of Academia:

As we have mentioned earlier that initial students were fifty in number and were constituted of Europeans, Eurasians, Anglo-Indians and Indians and later on a fixed the number of Ceylonese and Burmese students were allowed to the sub-medical Department. The course was of three years, at the end of which the students had pass an examination conducted by the examination committee of the College. The students were given the diploma degree in Medicine and Surgery after passing the course successfully. Till the Calcutta University was founded in 1857 this was the scenario. After the existence of the University Doctor of Medicine (MD) and Licentiate of Medicine (LMS) were granted for them. The degree of Bachelor of Medicine (MB) was added later on in 1860. The duration of study was raised to four in 1840 and again to five in 1845. The minimum qualification for admission was fixed to Matriculation in 1857 and later to the First Arts (FA) in 1860. In the examination of 1838¹⁵, eleven students of the Medical College came forward one year in advance as conditions for letters-testimonial for declaring them competent to begin the practice of medicine and surgery. Thw Examination Committee of the

Medical College unanimously recommended that Umacharan Set, Dwarakanath Gupta, Rajkrishna De and Nobinchandra Mitra were competent enough to be given letters-testimonial for practicing medicine and surgery. They were the first batch student of Diploma degree in Medicine and Surgery and were the first full-fledged medical men in Bengal trained in Western system. They were soon appointed as SASs too the hospitals of Dacca, Murshidabad, Patna and Chittagong respectively at the salary of Rs 100 per month. Lord Aucland presented a gold watch to Umacharan Sett, who was adjudged the best among them.

Mean while a secondary or military class was formed for the instructions of the Native Doctors. The Medical College was planned to improve the poor condition of medical education in the earlier educational institutions but the types of physicians coming from high standard medical education could not meet up the need for the Native Doctors as dressers, assistants for the military serves. This involved 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. The plan for this kind of secondary class was formed by Dr. B. O'Shaughnessy. In August 1839, the General Department sanctioned the

¹⁵ David Hare was the then Secretary of Medical Council (1837-1841) and he helped the students and the Professors in many aspects like getting jobs and required aids for the College etc.

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 Superintendent and thus given the charge of the military class. The period of was prescribed for four years.

As the instruction was in Hindustani language, it was known as Hindustani class. The subjects taught included Anatomy, Surgery, Medicine, Materia Medica and Physiology. Chemistry and Botany were supporting subjects and taught indifferently. Madhusudan Gupta used to take the Anatomy and Surgery class. Allan Webb was allotted to take class on military surgery and the teaching of Medicine and Materia Medica devolved on Surgeon Shibchundar Karmokar. The student growth in the military class is shown in table...

Growth of Military class during the first 5 years: GRPI, Bengal, 1844-45¹⁶

Year	Remaining	Admitted	Dismissed	Passed
1839	0	46	0	0
1840	46	16	2	0
1841	60	9	5	0
1842	64	47	12	32
1843	66	36	10	13
1844	76	25	14	10
Total	312	179	43	55

This two tire medical education became three-tire in the year 1853, when the Bengali vernacular class was opened to fill the subordinate echelons of district and mofussil hospitals.

¹⁶ ¹⁶ Sen S. N: Scientific and Technical Education in India, 1781-1900, Indian National Science Academy, New Delhi, 1991, p- 245

Evolution of Courses and Curriculum:

Gradually there was the emergence of new and more sophisticated branches of medicine as courses in Calcutta Medical College. 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 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 Materia 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 days¹⁷. 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,

¹⁷ *175 Years of Medical College of Bengal, Commemorative Volume, Kolkata, 2009, p- 45*

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 were 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 etc¹⁸.

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 become in charge of two non-clinical departments. So the Professors of Anatomy, 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 year 1835-1845 Prof. H.H Doodeve used to teach Physiology, in addition to his various other commitments. Prof. (Dr.) J.T Pearson took over charges from Doodeve in 1845 as “Prof. of Physiology, Comparative Anatomy and Zoology”. In 1872 the subject Physiology became an independent discipline. Prof. (Lt. Col.) J.E Ewart was the first wholetime Professor of Physiology, though he had been serving the department since 1862. The last European Professor of the department was Prof. (Lt 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.

¹⁸ Sen S. N: Scientific and Technical Education in India, 1781-1900, Indian National Science Academy, New Delhi, 1991, p- 289.

Among the Indian teachers who could not become Professor but demand honourable mention were, Dr. Charubrata Raymahashya, Dr. L.M Ghosal, Dr.Chandi Charan Chatterjee. Dr. Chandi Charan Chatterjee, who could not achieve 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 years¹⁹.

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 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 midwifery²⁰.

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 hospital²¹.

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 Professro 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.

¹⁹ 175 Years of Calcutta University, ibid p 48

²⁰ 175 Years of Calcutta Medical College, ibid, p. 55-56.

²¹ Sen S. N, ibid, p- 250

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.

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. Diagrammes, drawings and living specimens were used for the lecture and for practical and firsthand knowledge the senior students required to visit Botanical Garden in Shibpur²².

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. This course the subjects as follows:

²² Sen S. N, *ibid*.

- 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
- Mechanical treatment of poisons and the use of stomach pump with the means of restoring suspended animation from drowning etc²³.

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 Department²⁴.

Materia Medica:

Materia 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 Materia Medica. The lectures were delivered thrice in a week on Mondays, Wednesdays and Fridays at 3 p.m.

²³ Sen S. N, *ibid*, p- 250-251

²⁴ *Ibid*.

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 remodelled and Dr. F.J Mouat was entrusted to teach Medical Jurisprudence. In 1850, an independent chair was created and 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, who 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 recognised 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 Ward²⁵.

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

²⁵ 175 Years of Calcutta Medical College, *ibid*, p. 53

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 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 Great 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 anaesthesia smoother and which can be reduced the dose of chloroform needed for a particular operation.

In 1920 a post of anaesthetist was created in this College and Dr. Nihar Nag was appointed to the post²⁶.

Dentistry:

In May 1861 Dentistry as a special subject was introduced in Medical College and a separate department was set up. Dr. J.P Smith was appointed to the post of Lecturer. The Professorship 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 Visiting and two Honorary Clinical Tutors and an Anaesthetist to administer short gas anaesthesia for extraction²⁷.

²⁶ 175 Years of Calcutta Medical College, *ibid*, p. 76

²⁷ *Ibid*, p- 63

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 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 Century²⁸.

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.

1. Sir James Ranald Martin, FRS, FRCS, 1817-1839.
2. Dr John Jackson, FRCS, FRCP, 1845-1855.
3. Dr. N.C Macnamara, FRCS (IMS), 1870-1874.
4. Dr. H. Cayler, FRCS (IMS), 1874-1886.
5. Dr. R.G Sanders, FRCS (IMS), 1886-1901²⁹

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 realised it very soon and inaugurated the Department before he left India³⁰.

²⁸ 175 Years of Calcutta Medical College, ibid, p- 50

²⁹ Ibid, p- 81.

³⁰ 175 Years of Calcutta Medical College, ibid, p. 78.

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 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. In 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.³¹

Emergence of Craving Bhadrolok: Their role in promoting Western Medical Education

Nineteenth century Bengal is marked with the emergence of a new section popularly known as 'English educated middle class' (*Bhadrolok Shreni*). It is true that this class were confined mainly within Calcutta, thus made the greater Bengal out of their association. Sometimes ordinary people could not find any connection with those intellectuals and their deeds. But in pursuance of English education, they also enabled to realize the rationale behind the acceptance of 'modernity' brought in by the British in India. They did not step out to give it patronage in different ways and also to promote westernize modernity among Bengalis according to their expedience.

A few enlightened families of Calcutta during the 19th century took an active part in the promotion and expansion of science-consciousness through different ways. The Tagores of Jorasanko were one such family whose members had realized the cultivation of science as one of

³¹ Ibid, p- 65.

the prime needs of the hour and involved themselves in the wave of growing consciousness about it. Prince Dwarkanath Tagore was one of them.³² An important instance is worth to mention here. In 1839, the Secretary to the General Committee of Public Commission, Dr. Wise, drew the attention of the Government to the suggestions of the Committee appoint in 1833, which proposed to send “eight of the elite of the pupils”³³ to Europe to complete their education there. Dr. Wise told the Government that

“the experiment would show to the people on the subject... the evidence of rich harvest which Indian education must return”

But Indian students were not habituated with going abroad, partly because of their financial condition and partly for the religious superstitions.³⁴ In 1844, Dwarkanath Tagore, proceeding to Europe for the second time, made the ‘munificent’ offer to take two pupils of the Medical College to England for their further study. It was calculated that each student would cost Rs.

7000. It was a big blow on the Hindu orthodox society, but the then emerging young generation, of course with the permission of their family, came forward. Three students were volunteered to go, Bholanath Bose, Surjakanta Chakraborty and Dwarkanath Bose. Professor Doodeve offered to pay the expanse of the additional student. Apart from these three students, Gopalchandra Seal, was also agreed to go. An additional sum was raised for Gopalchandra among which 4000 Rs. Was contributed by the Nawab Nazim of Bengal. They proceeded to England in March, 1844. They got the diploma of the College of Surgeons in 1846. Three of them also were awarded with the M.D degree of London University, the highest degree which could then be procured in Europe.

In 1847, a proposal was made by some of the courageous people for the establishment of a class of Bengali Doctors in connection with the Medical College. Ramkamal Sen³⁵ along with Dr. Mouat, the Secretary of the Council of Education, were the main initiator of this programme. Ramkamal Sen drew up a scheme. He proposed that instruction should be given in vernacular. It was argued that “Indians studying through English medium had neither time,

³² For further reading about the Tagores of Jorasanko and their scientific mentality see Blair B. Kling, *Partner in Empire: Dwarkanath Tagore and the Age of Enterprise in Eastern India*, Calcutta, 1981.

³³ Op.sit note 13.

³⁴ Along with the other religious superstitions, Nineteenth century Bengal had a prejudice which did not permit Hindus to cross the ocean. This was a symbols of degradation of caste (*kalapani par*)

³⁵ Ramkamol Sen was intimately associated with the movement for medical education in Bengal.

nor disposition, nor means to communicate to their countrymen the knowledge they possessed.”³⁶ The new Bengali class was opened on 15th June, 1852. Twenty foundation pupils were appeared in the examination in 1853. Pundit Madhusudan Gupta was appointed Superintendent of the class and teacher of Anatomy. It reveals the fact that the then Bengali middle class were gradually started seriously thinking about the needs and necessities of the society which might be compounded with impartation of proper education to the ordinary people (poor people too).

Apart from such individual instances, we can mention about the general interest that had grown about Western medicine among the middle classes. Many prominent citizens of Calcutta began to attend the Medical College lectures as amateurs and contributed subsequently in popularizing it among the public. It included luminaries like Baboo Durgacharan Bonerjee, Headmaster of Hare School, Gunendramohan Tagore, a scholar of Hindu College and many

others along with the apothecary³⁷ of the General Hospital.³⁸ Many rich people donated liberally to the Medical College and for the construction of hospitals. To promote medical education and made it popular among the people several prizes and scholarships were instituted by them for students. Dwakanath Tagore was the first to institute yearly prizes for various classes in 1836. From the fund of Babu Ramkamol Sen a gold medal was to be awarded at the end of three successive sessions to the best student of Botany (Wallich Medal), another prize from Rustomjee Cowasjee’s fund (Esquire of Calcutta) was to be awarded annually to the best student in practical Anatomy. Such prizes and scholarships were also instituted for Midwifery and other branches of medicine. After the establishment of Calcutta Medical College, there was a trend to attend lectures of eminent medical scholars and Doctors among the middle class. They were called by the College also to attend the ceremonies like award distribution, opening of new buildings etc³⁹.

³⁶ Op.cit note 13.

³⁷ Apothecaries were a class of European medical workers attached with the subordinate department of medical service who had not availed the benefits of a professional education in Europe.

³⁸ Kumar Anil, *Medicine and the Raj, British Medical Policy in India, 1835-1911*, Sage Publication, New Delhi, 1898.

³⁹ Sambad Prabhakar(1831): 1847, Vol 3377, p. 2

Situation after the emergence of Universities:

The establishment of Universities in India as in the other streams of education brought some 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 Honours. 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, 1857⁴⁰. The Senate divided itself into four Faculties, Arts, Law, Medicine and Civil Engineering. The following were the members of the Medicine faculty; Lt. Governor of Bengal, Kenneth Mackinnon, Henry Walkar, Thomas Thomson, Fredrick John Mouat, Alexander Grant⁴¹. The executive government of the University was vested in a Syndicate.

⁴⁰ Op.sit note 13.

⁴¹ Ibid.

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."⁴² 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). The list is given bellow;

- | | |
|-----------------------------|--------------------|
| 1. Chandracoomar De | 1862 |
| 2. Mahendralal Sirkar | 1863 |
| 3. Jagabandhu Basu | 1863 |
| 4. R.W Carter | 1865 |
| 5. Bhagabatchandra Rudra | 1880 |
| 6. Ramprasad Bagchi | 1887 |
| 7. Nilratan Sarkar | 1890 |
| 8. Suresprasad Sarbadhikari | 1891 |
| 9. Hemenchandra Sen | 1895 ⁴³ |

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 selected by himself;

⁴² Ibid.

⁴³ Ibid.

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. 100⁴⁴

The most distinguished graduate of the Calcutta Medical College in the nineteenth century was Mahendra Lal 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.

⁴⁴ Ibid.



Dr. Mahendralal Sircar (1833-1904)

The role of Universities in advocating female education is important to mention. As far as medical education was concerned, it had a great instance for the commencement of higher education for women. Under the Act of incorporation, none of the three Universities got the power to admit any woman to a University entrance examination. The question of admitting woman in Universities was first raised by the Registrar of Bombay University. On 30th April 1875, he enquired of the University of Calcutta about the expediency of admitting females to the Indian Universities. Though the Syndicate received the letter of the Registrar, but did not express an opinion. After this incident within a few months Calcutta University had to face a situation in which a woman candidate, Chandramukhi Basu, a pupil of Native Christian Girls' School of Dehra, applied for the admission to the Entrance Examination of the University. After a much debate it was resolved by the Syndicate that it was the time for taking steps for the admission of women to the University Examinations. On 12th May, 1877 it was decided that the Entrance Examination should be the same as for the men,⁴⁵ but women should be examined in a separate place under the supervision of women. In the 1879 for the first time women were permitted to take admission in Indian Universities. Kadambini Ganguly, along with

⁴⁵ The decision was taken because there was a strong opinion from the Bengali society that there should be a separate arrangement for women as they were prohibited to come in front the outer male persons (*Purda Syatem*).



Kadambini Ganguly (1861-1923)

Chandramukhi Basu in Arts stream was allowed to take their degrees at the convocation in 1883

Mention may be made of in this connection that the Medical College of Calcutta opened its doors for women medical students for the first time in 1880s. But first woman student Mrs. Kadambini Ganguly was admitted only in 1884. In 1889 Miss Bidhumukhi Bose became the first Indian women graduate from Medical College. But it is noticeable here that Miss Ganga Agarwl was appointed first Indian woman house physician of Medical College in 1934, that means it took 68 years for women to break the overt and covert gender bias in society. Later in 1882, Viceroy Hamilton set the “National Association for Supporting Women in India” to improve the medical condition of Indian women. This Association recruited and trained women doctors, midwives and nurses for the betterment of the situation of women in illness and child bearing.

Proliferation of Institutions: Non-Government Efforts

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, when on the other side demand was really high. Thus, popularity towards Bengali classes (started in 1852) was noticeable in this period. With this growing popularity attention also came to be focused on the shortcomings of the training and the scope for improvement. As large number of students joined the vernacular classes, the need become pressing to transfer these classes to some other places. For instance, in 1872, the total students of Medical College were 1226, and among them 635 were belonging to the Bengali class alone⁴⁶. For these reasons the latter half of the nineteenth century witnessed a considerable growth of medical schools in the major provinces.

The colonial Government decided to shift the vernacular classes of the Medical College to the new locations and to open new schools as well. It was also planned that geographical importance would be under consideration⁴⁷. Thus the Bengal class was shifted to Campbell Medical School at Sealdah⁴⁸ (1873) and was given the name 'The Vernacular Licentiate Class'. Medical College generated another medical school at Patna (1874) named Temple Medical School. Two more schools were established at Dacca (1874) and at Cuttack (1876). The Military class of Medical College was transferred to the Patna Medical School⁴⁹.

A Committee was appointed to investigate and prepare a comprehensive curriculum for the vernacular classes all over the country. In 1878 the proposal submitted by the Committee was approved by the Government of Bengal. Greater emphasis was given to acquisition of

⁴⁶ Kumar Anil, *Medicine and the Raj*, op.cit...

⁴⁷ *ibid*

⁴⁸ Sealdah is a suburb of Kolkata.

⁴⁹ *DPI Report*, Bengal, 1873-1874, Calcutta, p. 57.

practical knowledge, clinical surgery, medicine and midwifery⁵⁰. 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 from 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 school⁵¹.

By 1895 almost 75 per cent students of vernacular schools were belonged to the group, whom the Government had given admission after an examination of minimum English knowledge. The first decade of 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. They discovered that there were no worthy vernacular textbooks. “Medical education thus had to contend and compromise with the twin phenomena of Anglicization and provincialization.⁵²” gradually colonial Government establish such medical schools in the other provinces and non-provincial regions also.

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 English class. This class of Calcutta Medical College was divided in two sections, i.e. Bengali class and Hindustani class. With the passage of time as the interest and rush on vernacular medical education had been increasing, 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

⁵⁰ National Archive of India: Department-*Home*, Branch-*Medical*, July, 1880, No. 29.

⁵¹ *DPI Report*, Bengal, 1894-95, Calcutta, 1895, p. 87.

⁵² Kumar Anil, *Medicine and the Raj*, op.cit note no

Campbell Medical School after 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 signed by any Principal or Superintendent of a Government or Government affiliated school⁵³. 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 neighbourhood invariably results from the quick and certain benefits of a bold but discriminate surgery.⁵⁴”

Anatomy, Materia 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 dey⁵⁵, was in favor of strengthening the course of Chemistry by including practical work in the laboratory, such as test 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 countries but rare in India. So the knowledge was not useful to the doctors who were coming out of that school. In

⁵³ West Bengal State Archive, Department *General*, Branch *Medical*, 1877, July, No. 6, File No, 55. Np. Kolkata.

⁵⁴ 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.

⁵⁵ Kaney Lall Dey was the faculty of Calcutta Medical College. Later he joined as the Chemistry teacher in Campbell Medical School.

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.

Temple Medical School, Patna (1874):

Temple Medical School of Patna was opened on 23rd June, 1874. Surgeon-Major Boys Smith was the first Superintendent. The Hindustani class of Calcutta Medical College was transferred to this school and thus the lectures were delivered in Hindustani language. According the changes of Campbell school, in 1882-83, 23 out of 34 students received the Licentiate Diploma. Temple School was later shifted to Darbhanga as Darbhanga Medical School, when Patna Medical College was established.

Dacca Medical school (1875):

Dacca Medical School was founded in 1875 with Dr. B. Smith as its Superintendent. It had 160 foundation students. The mode of instruction was Bengali and this school too followed the courses and curriculum of Campbell Medical School.

Cuttack Medical School:

Cuttack Medical School was established in 1875. The first Principal was Lieut.-Colonel W. D. Stewart, civil Surgeon of Cuttack. In this School the four years course did not started up to 1899-1900. It followed the rules and coursed as set for the Campbell Medical School.

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 were the major instances.

Calcutta Medical School:

With the initiation of Dr. Radhadovind 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. Radhagoving 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 stipends⁵⁶. 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 Shcratchandra Mukherjee, saradaprasad Das etal.

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 1895⁵⁷. 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

⁵⁶ General Department, Education Branch, April, 1885, no 1-2

⁵⁷ *John Coats*: Indian Lancet, 1st August, 1895, p 79

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 college⁵⁸?

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 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 examination⁵⁹. 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

⁵⁸ *Occasional Notes*, The Indian Nation, 10th February, 1896, vol- xix, no 6, np

⁵⁹ Roy BinayBhushan: *Chikitsa Bigyner Itihas*, Sahityalok, Kolkata, 2005, p. 138.

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 Hospitals⁶⁰. 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.

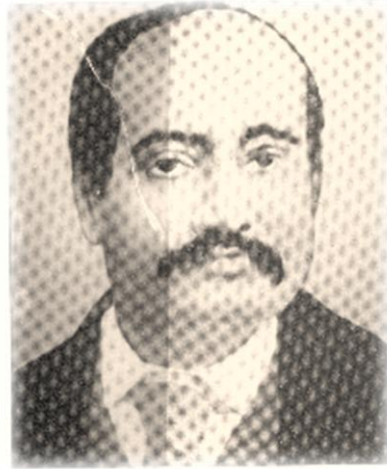
But Aswinikumar Dutta did not leave his hope for the advancement of the school. He again wrote a letter to the Inspector-General of Civil Hospitals re reconsider the proposal. In response to the letter the Inspector-General ordered to the Secretary of Municipal department that the first year pass out 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 schools⁶¹.

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. Radhagovind 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 Physicians and Surgeons of Bengal' then onwards. The new institution was a combination of four years school course in vernacular

⁶⁰ Education Branch, Education Department, March, 1893, no- 22-23

⁶¹ Education Branch, ibid June, 1894, no- 10-11

language and five years college course in English⁶². The Medical Bill Came in 1911. Before that the Government



Radhagovind Kar (1852-1918)

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. radhagovind Kar became the Secretary of that college and remained in the same post till the end of his life (19th December, 1918)⁶³.

⁶² Dr. Subir Kumar Chattopadhyay: *Nirab Biplabi, Chikitsak o sikshabid Dr. Radhagovind Kar*, journal *Janamat*, nd, np

⁶³ The name of the books written by Radhagovind 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.

Chapter 4

Reflections in Society and Media

Reflections in Society and Media

The dramatis personae were not all Bengalis or even all Indians but they were all of Bengal. Some were concerned with the discovery of Indian past. Some invented prose as a literary style in the Bengali language, and some new forms of poetry and story telling. Some were religious reformers, and some social reformers. Some created new modes of education. Some fought on behalf of women's rights and against injustice to women. Some argued for a more humanistic, secular, and rational society. Some created scientific ethos for the country. And some stirred within their fellow countrymen a new nationalistic consciousness.

Dasgupta¹

Subrata

Bengali journals were the mouthpiece of the 'native' people of the nineteenth century Bengal. This chapter would focus on the contemporary Bengali journals and their response to medicine and medical education in the nineteenth century. The journals, periodicals and newspapers (mainly in Bengali) as a source of history could give an insight into the minds of the then Bengali intelligentsia as well as reveal the response of the ordinary people. Early medical journals in India were a natural offshoot of both the general as well as specialized western scientific tradition².

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. Nineteenth century was

¹ Dasgupta Subrata: awakening. The Story of The Bengal Renaissance, Random House India, London, 2010, p- 2

² Das Sinha Savitri: Medical Thought and Practice in Colonial India, A Study of the Indian Medical Gazette (1866-1947) PhD Thesis, Jawaharlal Nehru University, 2011, p-12

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 is 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 underrated³. As a prelude to the societal changes and meticulous refinement in 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 the main factor. The influence of the Hindu society suffered false divisions of caste in society and also prejudices against the so-called lower castes. 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 enquiry and inspired learning. The direct knowledge of *Shastras*, gradually became confined within a small number of scholars and there was little scope of percolation of their learning to the bulk of their community.

The Hindu belief, however, continued that all their activities from birth till 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

³ There is much debate regarding the Bengal Renaissance. Many historians like Aurobindo Poddar argues 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 middleclass 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 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".

the *Vaidya* caste (Ayurvedic medical men) to a lower status than to the *Kulin*⁴. The cause was their obvious practice of touching body of people (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 upper caste and affluent Brahmins were only used to be permitted to learn Ayurvedic medicine. The cause 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 but generally it took nine to ten years to become 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- craft⁵. 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.

The two fold guiding force behind the reforms and re-‘awakening’ programmes in Nineteenth century were active simultaneously, 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.⁶ 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. So, Indian intelligentsia also

⁴ 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.

⁵ For detail Bhattecharjee K.S: The Bengal Renaissance Social and Political Thoughts, Classical Publication, New Delhi, 1986,

⁶ 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.

responded to this civilizational 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 on various topics, news papers and periodicals 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 reposition the modernization project within a cultural 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.”⁷

In remonstrance of Rammohan Roy’s social activities like the prohibition of *Sati* System and foundation of *Bramho Sabha*, Radhakanta 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

⁷ *Bharat Pathik Rammohan Ray*, (1341 B.S) 1933, West Bengal Government- Rabindra Rachanaboli, 1386 B.S, 1987, P. 436.

rule of religion.⁸ 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 scientific writing, *The Essential Meanings of Natural Science*, was published in book form by Kshitindranath Tagore in 1897⁹.

We can notice that a general trend had occurred in that period which was not restricted within the more 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 all the sections of the society. Generally the writings of educated middle class, especially those were from Calcutta were popular and praised or critiqued by the audience. But the situation guided us to a different angle to get a historical picture.

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 be 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

⁸ Bhattacharjee K.S, *The Bengal Renaissance, Social and Political thoughts*, Classical Publishing Company, New Delhi, 1986, p. 82.

⁹ For detail see Bhattacharya Buddhadeb, *Banga Sahitye Vijnan*, Kolkata, 1960.

Bengali cultural milieu based on orality by a textually grounded and rationalized set of cultural practices.¹⁰”

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 pluralised 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 described as Bot-tola prints¹¹... eschewed any reformism as such and give voice to a variety of texts 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 drawn 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.¹²”

Here another question arises. Whether the Bengal Renaissance got impetus from the emergent ‘media trend’ or this trend to publish one’s thoughts in a printed form was influenced by Renaissance? If one goes even back to Mukherji’s starting, Renaissance, we can notice the existence of both printing provision and indigenous medical systems in India. Secondly, the wealthy section was not the result of English education that started in the nineteenth century. It was a common phenomenon of the society. Landlords, Zamindars, businessman, traders, regional rajas, were the rich people since the pre-colonial period. So the circumstances as were found in nineteenth century, could be locate earlier also. But they were lacking mental preparations, understanding and a strong cause to use the print media as

¹⁰ Mukherjee Projit Bihari, *Nationalizing the Body, the Medical Market, Print and Daktari Medicine*, Anthem Press, 2009, p. 75.

¹¹ Bot-tala was named after the locality where the majority of the presses were located.

¹² Mukherjee Projit Bihari, *Nationalizing the Body, the Medical Market, Print and Daktari Medicine*, Anthem Press, 2009, p. 75-76.

a mouthpiece. Ayurveda was never tried to be publicised to the peripheral or rural areas by the Bengalis (especially the people of centre, and the centre might be the *darbar* of a nawab or raja). The question of improvement, preservation and research on those medical systems never became the focus of the upper classes. The consciousness did not exist to make others aware. The cause might be that the indigenous systems were never challenged till then. On the one hand it was true that the print media helped to spread awareness among ordinary people, and on the other, the critique made by the British in the nineteenth century, awakened the people in Bengali society.

New journals:

The commencement of new rational thoughts initiated a trend of writing on various topics through both English and vernacular journals. In the field of medical education also journals played an important part. They discussed different sides of medicine and its impact on the society. There are mainly two types of journals, those which were published as the main journals of scientific (medical) foundations and those which were published autonomously by individuals. 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 medical problem, researches and new experiments recently made. But all the members of the Society were British. So it was expected that the journal was mainly concerned about the Allopathy medicine and its development in India and would not speak anything about the Indian response. This was published up to the year 1845. Thacker and Company and the St. Andrews Library was the publisher of this journal.¹³ *The transaction of the Calcutta Medical Society* was the main journal of the Calcutta Medical Society. It was started in 1880 as a part of the *Calcutta*

¹³ Ray Binay Bhushan: *Chikitsa Bijnaner Sekaler Katha, Unish Satake Banglay Pashchatya Sikshar Probbhab*, Sahityalok, Kolkata, 2005.

Medical Gazette. Later it started coming out individually, but in 1998 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.

Out of the boundary of any foundation, various important journals by individual initiative were in circulation in Nineteenth century. 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 Mislenny of the Arts and Science*' was another of them. It was first published in

1841 and was in circulation up to 1847. This journal started talking about the various topics of science including medical science, but was not a serious medical journal. Medicine and it's the then scenario was one of the other topics. '*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 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.¹⁴

Vernacular Journals:

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 here as well as in England. If we look back to the condition of 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 were came out in vernacular language became the bridge between the Calcutta oriented rational changes and the ordinary people. There were two types of Bengali journals, those which were purely medical oriented and the general journals interested in medical development also. *'Chikitsatattvabigyan O Sameekaran'* (1893), *'Chikitsa Sammilani'* (1883), *'Chikitsa Darshan'* (1886), *'Bhishak Darpan'* (1891), *'Chikitsa Sangraha'*(1870), *'Chikitsa Darpan'*(1865), *'Chikitsak'* (1889), *'Chikitsak O Samalochak'* (1895) and *'Sasthya'* were some of the examples of the former category. But even before the medical journals some important journals by the initiation of Bengalis came into existence in Bengal. These journals were conscious about the upcoming subjects and societal changes. They started talking about the new scientific institutions and education also. Some of those were; Samachar Darpan (1818), Smbad Koumodi (1821), Sambad Bhaskar (1839), Tattobodhini Patrika (1843), Sambad Prabhakar (1831), Pally Sanskar, Somprakash etc.

¹⁴ Indian Medical Gazette, 19897, October, sighted in Ray Binay Bhushan: *Chikitsa Bijnaner Sekaler Katha, Unish Satake Banglay Pashchatya Sikshar Probbhab*, Sahityalok, Kolkata, 2005.

Pradip Kumar Basu has explained the comparison between the present condition of scientific researches and the nineteenth century thinking. He says that;

“Today, anyone will reply to the question by pointing to the need for high quality laboratories, state of the art-research institutions, an atmosphere conducive to research, expert teaching by specialists, etc. in sum, ideal places for the practice of science are, according to this view, research laboratories and institutions. But in the Nineteenth century, educated people believed that learned associations were capable of fulfilling this role; because only such associations was an adequate concerning knowledge and practice possible. Knowledge-practice had not yet been transferred to research laboratories. A doctor’s association established for the progress of knowledge was seen as a requisite in this regard.” (for detail see Pradip Kumar Base, Health and Society in Bengal.)

The establishment of societies and the publication of periodicals as organs of these societies led to the founding of lot of important publications, such as *Bibidharths-Sangraha* etc. 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 stories, so that the youth can put aside sensually exciting books and take interest in useful things,...

The numbers of medical journals published throughout the nineteenth century was not a small one. These journals 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.

One of the earliest example of this kind was ‘*Samachar Darpan*’. It was published by the Missionaries of Serampore on 23rd May, 1818. This was the first Bengali journal in nineteenth century (they published *Digdarshan* two months before its publication, but it did not last long). Though initially J.C Marshm’an was the Editor, the entire responsibility was

¹⁵ 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.

rested on the Indian Pundits. It was the time of the foundation of medical education in India for the first time in a new fashion with Western features. *Samachar Darpan* got very much attached into this and started publishing regularly the news about the changes and new happenings. First the news came on 6th July, 1822 about the School of Native Doctors.¹⁶ It told about the proposal of the establishment of 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, 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 proper medical school for the 'native' people.¹⁷ 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 got conscious. They realized the need of such initiatives. In 1823, 15th March 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 British¹⁸.

After the establishment of Calcutta Medical College, '*Gnyananyeshan*' started publishing reports on that frequently. On 14th February 1835 first such 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 Institution¹⁹. 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 session²⁰. Though it has mentioned earlier that the establishment

¹⁶ For detail see Bandopadhyay Brajendranath edited and compiled: *Sangbad Patrer Sekaler Katha*, Vol 1, Bongiyo Sahitya Parishat, Kolkata, 1339 B.S 1931.

¹⁷ *Samachar Darpan* (1818), *Chikitsa*, published on 6th July, 1822, 1229 B.S, np

¹⁸ *Samachar Darpan* (1818), published on 15th March 1823, 1229 B.S, p. 13.

¹⁹ *Gnyananyeshan*: 14th February, 1835, 1241 B.S, cited in Ray Binay Bhushan: *Chikitsa Bigyaner Itihas*, *Unish Satake Banglay Pashchatya Sikshar Prabhab*, Sahitya Lok, Kolkata, 2005, p 281.

²⁰ *Ibid*, 19th March, 1836, 1242 B.S,

of medical institutions in Western fashion was not welcomed by the entire society, but the people who were interested about new scientific researches and experiments got immediately attracted and involved highly with the Government's activities. It had 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 hour²¹. 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 act as a remedy of 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 also to rule over the ordinary people and their psyche (this would be discussed later in this chapter with references).

On the same day it was published that the young generation should utilize the opportunity and prepare themselves 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 dead human body. However, this could be overcome if the medical students took their education seriously for the advancement of the society. The journal hoped that the so far success of the students showed a bright future in India²². 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 youths²³.

The Editor of the *Kurior* wrote that between the then 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 De, Nabinchandra Maitra, Shyamacharan Dutta et al. Thus Indians were supposed to be grateful to Lord William Bentinck because of his commendable deed²⁴.

²¹ Ibid, 26th March, 1836, 1242 B.S.

²² Ibid.

²³ Ibid, 23rd April, 1836, 1243, B.S

²⁴ Kurior, 9th February, 1839, 1245 B.S.

These journals and their editors had shown a great interest towards the development and adoption of Western medical system by the Indians. They almost rejected Ayurvedic treatment

saying it as unscientific than the former one. Moreover, one had to deal with the inefficiency of the indigenous medical men too. The colonial influence and hegemony over a substantial portion of the society is reflected through this. But in contrary certain efforts made by the local people to preserve their self respect through the development of their scientific elements can also be seen through a detail study of some other journals of that period.

*Chikitsa Sammilani*²⁵ in its first publication published a long discussion on the emerging Western medical science and its pre-condition. They raised some issues regarding the limitations of that and the condition of indigenous medical system as well as its practitioners. It considered the changes in medical science as “revolution” (*maha biplab*). According to it,

As in the social morals and religion, revolution has arrived in the medical sector also. It made the situation complex. Ordinary people are confused that whom to approach for treatment; Allopathy? Homeopathy? Or Ayurved? Not only the patient, professionals are also in a dilemma. This could bring severe problem to the society. We should not be partial to any of these systems; however, both should take the useful sides of the each. The elements of the old Ayurvedic system would ease the diagnosis of the *Daktars*²⁶ (the Western medical professionals). On the other side Kavirajs also should be aware of the gist of Allopathy²⁷.

In the article *Vaidya Chikitsar Eto Agourab Keno*, the author raised some question;

Why the years old Ayurvedic *Sastra* (syatem) has been dishonored today?
Why nobody thinks what was the situation and modes of treatment when human beings used to live with the wild animals together? Ayurvedic *Shastra*

²⁵ 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.

²⁶ The Western medical men were identified with the term *Daktar* and the propession was called *Daktari*, distinguishing this from the Ayurvedic profession.

²⁷ *Chikitsa Sammilani*: 1884, 1st part, 1st Vol, 1291 B.S. (free translation by...)

was an offshoot of deep thinking and minute research by ancient scholars, and taking

elements from that medicine, English, French and Germans have gained popularity and pride. But unfortunately the original one lost its pride, why?

Maximum people of this country have a sarcastic attitude towards Ayurveda. They do not even hesitate to compare a *Kavirajes* with animal. Whereas, *Daktars* have hypnotized the Indians. But nobody knows the proper reason behind that. People are not ready to accept the actual cause of its degradation. There are mainly three causes; carelessness of the kings (*raja*), dependency on *Daktari* as well as negligence towards Ayurveda by the indigenous people and to some extent the foolishness of the *Kavirajs*. From the time of Jabana (foreign) attack on India till now including the period of Muslim rule, such ruined condition of Ayurveda has not been seen. The alien rulers had several times destroyed the valuable sources of the *Sashtra* and tried to influence us, but the indigenous practice remained intact. But unfortunately people have forgotten to protect their wealth today.

Indigenous medical man should be more conscious to protect their honor and pride. Researches have 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. There are lot of examples that Europeans were surprised by the fineness of the Ayurvedic system. But most of the *kavirajs* today are more interested in earning money, not gaining respect.

Secondly, the time of learning process matters here a lot. A person can be a *daktar* after a few years association with a professional, not even having proper education. But, to become a proper *Kaviraj*, it takes eight to ten years. Economic condition of the country, pressure from the Colonial Government sometimes compelled Indian youths to get interested into Western medicine, which is easily accessible and more profitable.

Another thing which is playing an essential role in this matter is the profound respect and faith on the British and their rule. When British entered into the country they were completely ignorant about our culture and systems. So we can expect disrespect and unfaithfulness for the Ayurvedic system. They started learning about the philosophy and history of India but ignored their scientific knowledge. According John Stuart Mill Hindus do not have any

kind of medical system. For instance, if the British consider Indians developed, then only we get satisfaction. In the same way until and unless the British would identify Ayurvedic system as rich and effective, we would not be satisfied. Indians are fond of imitation. This is the prime reason behind the degradation and dishonored condition of Ayurveda and *Kavirajs*²⁸.

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 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 are 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 tracts²⁹.

With the arrival of the lithographic print machine in India, a contestation appeared between the native elite and the Company to style themselves as medical patrons and further for the Company to legitimize their political authority. As a result by 1820s a wave came in vernacular medical printing. Among the other regions of India, Bengal had an unique feature of print sphere, from where it started diverging. Seema Alavi shows that none of these authors of

²⁸ Chikitsa Sammilani:1884, 1st part, Vol 1, p. 17-22.

²⁹ Gangopadhyay Jadunath, Chikitsa Sammilani., Vol-Baishakh-Jaistha (April-June), 1889, 1296 B.S, np

early printed journals or books were associated with Company's medical establishment and the elites as well. The first reference of medicine oriented print writing appeared in 1818. Gradually with more activities on the Company's side in the medical field, a variety of people were involved in talking through print version.

As was the case in Europe, the boom of Bengali periodical publishing came in 1870s. The rate of growth slowed down, but the longevity of published journals increased³⁰. Most of the times, the journals which was not associated with a particular specialised organization or association did not have a restriction on publishing different themes. Gradually the trend become active towards mixing up the three-four existing medical systems in a singular issue or case study. According to Projit Mukherji, the trend of journal publication was not guided by the hope of profit making.

Despite the existence of several Bengali Muslim medical Practitioners, writings on Unani system in periodicals were much marginalised. The only example of a journal on Unani system was Hakim Maibar Rahman's short lived journal "Hakim" (1910). This was a limitation of Bengali print media sphere.

³⁰ Mukherji Projit, *ibid*, p-77-78.

Glimpse of Associations: Constructive Response of the Society

Beginning in the waning years of the Eighteenth century, an overall ‘awakening’ in Bengal flowered to fullness in the nineteenth century. The entire Bengal “shared in the creation and formation, in one way or another, of a mentality which straddled two cultures, Western and Indian.”³¹ This cross cultural mentality was the main feature of nineteenth century Bengal. The newly emergent educated Bengalis started dreaming of a rational and scientific India and most importantly they learnt to convert their dream into reality. As far as medical knowledge and education is concerned, lots of initiatives came from the above mentioned class towards forming associations and research organizations; for indigenous medicine as well as for European 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 written in 1889 by Jadunath Gangopadhyay, 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 periodical³².

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. Asiatic Society had started it much before.³³ 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 were consisted of doctors of the Company, the members of Medical Service and the members of the Medical Board. It was

decided that not only the general discussion, they would engage themselves into researching also about the particular cases which was occurred recently. Exchange of knowledge could

³¹ Dasgupta Subrata: *Awakening, The Story of The Bengal Renaissance*, Random House India, London, 2010

³² Cited in Bose Pradip Kumar (ed), *Health and Society in Bengal, A Selection from Late 19th Century Bengali Periodicals*, Sage Publication, New Delhi, 2006

³³ Ray Binay Bhushan: *Chikitsa Bigyaner Itihas, Unish Satake Banglay Pashchatya Sikshar Prabhab*, Sahitya Lok, Kolkata, 2005, p 281.

increase their level of standard and they might find some rare solution of diseases³⁴. Keen interest of that Society in fulfilling their aims comes out from the letter they prepared for the then eminent medical scholars and doctors and sent it individually to them. As their primary aim they mentioned these points in the letter;

- 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 some special diseases and 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)³⁵.

The 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 Society³⁶.

The Society got a huge response within a very short period of 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. That means this appealed not only to the Calcuttans or its surrounding places but also the places like Madras which is a

³⁴ Ibid.

³⁵ Asiatic Journal: Medical and Physical Society, January-June, 1824 p. 50 to 52. Sighted in Ray Binay Bhushan: *Chikitsa Bigyaner Itihas, Unish Satake Banglay Pashchatya Sikshar Prabhab*, Sahitya Lok, Kolkata, 2005, p.282.

³⁶ Kumar Deepak, *Science and the Raj, A Study of british India*, second edition, Oxford University Press, New Delhi, 2011.

distant place from Calcutta. Gradually the disease like *Gheegha*³⁷ took an important place of the discussion. The society started preparing Iodine from sea water as a preventive measure of the disease³⁸. In 1825 the soldiers of Arakan got diseased by a rare type of fever. The Society invited various experts of medicine and doctors to discuss about the solution of that fever to rescue the rest of the country. Gradually the non-professionals were also permitted to take the membership of the Society, thus got more popularity 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 arrangement of 'Steam-Bath' in Calcutta³⁹. 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. As the remedy of such condition he suggested to;

- 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).⁴⁰

Later some prominent Doctors were also got associated with Medical and Physical Society. Madhusudan Gupta and Dwarakanath Basu were among them. They started research about women health care, pregnancy time and period and problems. In 1845 the president of the society wrote a petition to Madhusudan Gupta about women health. He mentioned about the Hindu restriction and opinion of the age of marriage of women, their problem regarding child birth in a premature age and child death as well as life risk of the mother also. Madhusudan

Gupta and Dwarakanath Basu both were interested in this problem and they individually examined the condition of women health in Bengal. The Society published certain articles also on this matter.

These discussions on various important topics of health, new diseases, experiment and solutions were the indications of scientific consciousness of the Bengalis at that period. The

³⁷ Gheegha was a disease which in a severe form was attacking different places in India as devastating epidemic at that time.

³⁸ Samachar Darpan, Op.cit note 14, p. 283.

³⁹ Asiatic Journal: 1828, Vol 25, p. 659.

⁴⁰ Ibid, Vol 26, p 216-217

initiative which was started by the Asiatic 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.

As the Medical and Physical Society was initiated by British, in the same way for exclusive medical discussion on indigenous system, there was formed a Society called 'Vaidyak Samaj' in 1831. Ex-medical teacher in Sanskrit College Kshudiram Bisharad was the initiator to establish such an 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' class was suffering from lack of knowledge of herbal medicine. So a gathering of good scholars was considered good for the society⁴¹. Though the members were of the 'Vaidya' caste mainly but Ramcoomul Sen as an educated 'daktar' was invited to deliver his speech there. But problem occurred when he restricted the activities of the Society by providing religious rules. He suggested not using the medicine prepared by the other caste Hindu, who is by profession a medical man. And it meant that the medicine prepared by the Association for the improvement of the entire society could not be sold to the other caste medical men also⁴². In this was he marked certain limitations. *Samachar Darpan* was highly critical of this concept⁴³. The Association appealed to the Government for financial help to develop Ayurvedic researches and to make it 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, but the Bengalis never diverted from their path. 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,

⁴¹ *India Gazette, Native Medical Society*, 1831, 10th August.

⁴² *Op.cit* note 13, p 318.

⁴³ 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.

Sukia in Kolkata⁴⁴. They decided to publish books on Ayurved and as a result the *Ayurved Sar Sangraha* was published in two volumes⁴⁵.

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, students of Hindu College, indigenous medical professionals and private practitioners also⁴⁶. It for the first time gave the students a platform to ask question, to deliver speeches and to give opinions. Generally, once in a week they gathered in a particular place and as a rule one student used to speak on any medical problem as per 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 topic⁴⁷. 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. He 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 centre⁴⁸.

Within six months of the proposal, *Native Medical Institution* started their action to ignite people for such initiatives. In Barakpore and in the other areas of Calcutta native medical men had already established two Societies and planned one for Dumdum also. Having a warm response from the people, the editor of the *Indian Journal of Medical Science* suggested to establish region wise Associations, which could enabled to enrich the knowledge generation. Another cause was the inability of the people outside Calcutta in participating in the regular meetings held in Calcutta. In perseverance of these activities the other parts of the country would also themselves in establishing similar Associations in their

⁴⁴ Ayurved Sar Sangraha, Vol 1, Calcutta, 1872, 1278 B.S, p. 1

⁴⁵ Ayurved Sar Sangraha, ibid, p. 2.

⁴⁶ Samachar Darpan, Op.cit note 14, p. 319.

⁴⁷ ibid

⁴⁸ Indian Journal of Medical Science: Native Medical Institution, Vol 1, 1834, p 4-6, cited in Ray Binay Bhushan: *Chikitsa Bigyaner Itihas, Unish Satake Banglay Pashchatya Sikshar Prabhab*, Sahitya Lok, Kolkata, 2005,p 281.

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 views⁴⁹.

British Medical Association opened its branch in Calcutta in 1867. Dr. Francis became the President of the Society. Surja Coomar Goodeve Chakraborty became the Secretary (rupakar)⁵⁰. The annual fee of membership was twelve Rupees⁵¹. The first session was attended 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, Lalmadhab Mukherjee et al. The main thrust of their lecture was the recent occurred diseases especially in Calcutta. On 11th February the speaker of that meeting delivered their speech on 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. Breton 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. In that meeting Dr. Severs mentioned that the *Indigenous Drugs of India* written by Kanailal De was praised by Dr Warring in the meeting on the Pharmacopeia in England.

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 in this notion. 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.

⁴⁹ Op.cit note 27, Editorial, 1st August, p. 316-317

⁵⁰ Indian Medica Gazatte, *The Bengal Branch of the British Medical Association*, 1886, 1st July, p 192-193.

⁵¹ Ibid, *Correspondence*, p 200.

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 practices⁵².

Decision was taken by the executive body that the Society 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.

These medical Associations played a vital role in making Indians concerned about their own treatment process as well as conscious about the demerits of it. This also connected the alien knowledge and indigenous system. Though these Associations were not engaged with direct practical treatment, nor these were degree provider institutions, but definitely were able to note the prime need of that period and to make people more alert than to give them treatment. 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, but Government was silent in this matter. Though the initial orientalist thoughts give us a different picture of exploring oriental knowledge, ultimately they used only the necessary resources of India for limited purposes. The presence and activities of independent organizations and journals made to be appreciated. They remained in Bengal throughout the century, and did affect certain changes but failed to alter the situation.

⁵² *The Medical Reporter*., 1894, 1st March, p. 135.

Chapter 5

Conclusion

Conclusion

“Education is deeply implicated in the politics of culture. The curriculum is never simply a neutral assemblage of knowledge, somehow appearing in the text and classrooms of a nation. It is always part of a selective tradition, someone’s selection, some group’s vision of legitimate knowledge. It is produced out of the culture, political, and economic conflicts, tensions, and compromises that organise and disorganise a people.”¹

Earlier in seventeenth century it was fashionable for the royal families, princes and nawabs or the wealthy people of India to maintain European physicians. Nawab Muhammad Ali for example, had eight European medical men. Three of them later on joined the Company’s medical service at Madras. But after the acquisition of political power over Bengal, the British acquired not only political supremacy, but also they gained a position to control the psyche of Bengalis. The situation reversed. The British gained the authority to keep Indian helpers and assistants in their hospitals, whom they later ‘honoured’ with the title Native Doctors.

The colonial state originally consisted of mercantilist class. According to Deepak Kumar, “the notion of ‘science for profit’ makes an early appearance”². The colonial scientists got an opportunity to discover and sight new things, utilise local unexplored resources and experiment on them, thus enriched themselves as well as provide better survival and long term rule over here. They gathered experiences, examples, raw materials and knowledge from India, which were till then untouched by the indigenous people. They used their colony as a scientific laboratory that enriched themselves and their mother country as well. Not only economically, they were benefitted scientifically also. Medicine was a lucrative field for experiment and research due to the availability of cases of rare diseases of tropical country. But the gradual development of medical institutions in India was not the result of their academic interest only. It was the time of wars with the Indian rulers for power expansion. So there was a huge requirement for military hospitals and efficient doctors in the

¹ Apple Michael W. The Politics of Official Knowledge: Does a National Curriculum Make Sense? The University of Wisconsin Madison, Teachers College Record, Vol 95, No 2, Winter 1993, , Columbia University, p 1

² Kumar Deepak: Science And The Raj, A Study of British In India, 2nd edition, Oxford University Press, New Delhi, 2006, p 363.

disturbed areas. The civil places were also not out of this need. As the British could not depend upon the Indian systems of medical treatment, they started thinking to educate Indians by their system and use them as helpers.

Therefore the Native Medical Institution was founded (1822-23) with the notion that Indians, aspiring for jobs and with some interest in medicine would come forward and learn the new medical knowledge. And those people would be used by the British in the hospitals as assistants. This institution existed till 1835, the year of the foundation of Calcutta Medical College. The three very enthusiastic persons, i.e. Dr James Jemison, Dr. Breton and Tytler respectively tried to give a proper shape of that institution with required additions and alterations. Many translation works from English to Sanskrit and English to Bengali were done in this period, obviously with the help of Pundits and Maulavis. For a long period those were the only text books for medical students. The consequence of this institution was the emergence of small section called 'native doctors' in this decade in Bengal. They sometimes even used to treat individually also. But these people should not consider as full-fledged doctors because of their partial training and education. However, the formal education in western medicine started with in institution only in India.

A major turn came in this period with the introduction of Ayurvedic classes in Sanskrit College and Unani classes in Calcutta Madrasa. For the first time, the British recognised Indian medical knowledge as a part of formal courses in the institutions, which were established by the colonial rule itself. But these initiatives towards institutionalization of Indian medical systems were not spontaneous. The Hindu teachers and students of Sanskrit College and some other people found it better to educate themselves through their own system rather than to acquire the alien one. This societal pressure played a vital role in formulating the plan to establish Ayurvedic and Unani classes officially. The classes lasted for few years only to satisfy the 'natives'.

Native Medical Institution ended with the establishment of Calcutta Medical College in 1835. It was planned to train Indians in a proper way that they were providing earlier. Rejecting vernacular language as the mode of instruction, the British imposed English as the medium of language in the new college. For the first time British Government took up the medical education programme officially for the Indians and to give them degree for private practices. It is notable that, on one hand western medicine was officially started but on the other the training of indigenous medical systems was abolished from Sanskrit College and Calcutta Madrasa on the same year. The success of the Calcutta Medical College can be

gleaned from a variety of contemporary sources. W.W. Bird stated that the Medical College students had considerable skill and ability, becoming excellent anatomists, and those native families were actually hiring students while they were still studying³. A commentator declared that the College inculcated "those habits of analysis which must be most important in its effects on the national character and social life of the Hindus. . . . The Medical College . . . now equals many of the best and ancient schools of Europe. It affords the finest medical education⁴." The heritage of the rigorous standards in the basic sciences of the medical curriculum in this century established through this College. The heights of achievement of early modern scientists were the fruits of the scientific tradition so successfully established in the formative years of the Calcutta Medical College.

The advancement in the field of medicine could be seen through the development of different courses and departments in Medical College. 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) were the new courses that developed throughout the nineteenth century. Though since 1823 Native Doctors had been dealing with some aspects of western medicine, but they were not introduced with these streams till then. Especially Anatomical knowledge was totally unknown and ignored by them due to the religious superstitions. Interestingly, within a very short period Bengalis (Hindus) got rid of those prejudices and superstitions and practical Anatomical was started attracting young students. Madusudan Gupta was the pioneer of this 'revolution' in Bengali as well as Indian society. The modernization of medical education and

treatment in India was really started.

The establishment of Calcutta University had a great impact on Indian education. Medical department was also transferred under it. One of the remarkable developments in Indian medical education and in the society was the permission of admitting women in the Medical College. Despite its multisided advancement, medical education was confined within

³ *British Parliamentary Papers. Reports from the Select Committee, House of Lords, 1852-53, vol.*

15, Colonies, East India (Shannon: Irish University Press, 1970) 132, cited in Gorman Mel, *Introduction of Western Science into Colonial India: Role of the Calcutta Medical College*.

⁴ "Hindu Medicine and Medical Education," *Calcutta Review*, (1866), p 120-22.

males only till the 1880s. Kadambini Gangully became the first medical student of Calcutta Medical College. Women in the medical profession as lady '*dakitars*' was a landmark in the history of medical education in Bengal as well as India.

The older concept of caste degradation due to touching dead human body and lower caste people disappeared with the arrangements of new status of the doctors as '*daktars*' in the society. Gradually the demand for Western medical education increased among the ordinary people. It reached its zenith when the vernacular class was attached with Calcutta Medical College. Within a very short period medical education reached out to the mofussil areas also by attracting ordinary people. These people were neither financially nor academically suitable for the main English class (fees were high and English made obstacles sometimes for them). So the medical education, which had till then an elite characteristic, became 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 teacher.

The question of demand for Western medicine in Bengal within the society had a diversified character. Within seven to eight years of the establishment of the Calcutta Medical College, the Government noticed that popularity had unexpectedly increased a great deal among the Indians. They were compelled to open a provision for free students (without allowance) admission⁵. But the question arrives why the British gradually started decreasing the number of stipendiary students, while the free students' number was rising? Later vernacular classes were started due to the same cause to meet the demand of the Bengali people. But the students of this class were free students and it was seen as low standard to the main course (English class in Medical College). Though the popularity rate was high for the vernacular classes, it showed that demand for the Western medicine and its popularity went beyond its elite characteristic within a short period. But unfortunately 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 textbooks.

Social composition in the primary and secondary class is important to mention here. It could reveal the societal condition of Bengal and to some extent outside it. Surprisingly, the

⁵ Kumar Anil, *Medicine and the Raj, British Medical Policy in India, 1835-1911*, Sage Publication, New Delhi, 1998, p. 29-36.

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 more joining of Brahmins into it. Military class was comprised of Muslims mainly, among whom the majority used to come from the North Western Province and this character never changed in future. This might show the political and social condition together of the Muslims in the nineteenth century. Firstly, the Muslims were shocked politically over their loss of ruling authority by the British and thus started hating them in every aspect. Secondly, this common sulking nature of Muslims brought them down economically to the Hindus. When Hindus started taking advantages of the English administration and education, Muslims remained stagnant in their position. Expensive medical education was not affordable to all the Muslims. Thirdly, their socio-religious rigidities also made obstacles in accepting medical education from English and with Hindus sometimes.

As a response to the new renaissance, print media came into existence in Bengal in the second decade of the nineteenth century. Sometimes journals and periodicals expressed their gratitude for the strategies adopted by the Government to set a new medical tradition, and sometimes tried to point out the degraded condition of the indigenous medical treatment. British influence and hegemony was clearly felt in the nineteenth century. But on the other hand the unique form of its 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.

It is always easy to place the responsibilities of failure upon others. So did the Bengalis in the nineteenth century and often done by us in the present day to blame the British for the ruined condition of the Ayurvedic and Unani system. To hold the British as the only responsible factor for this condition would be an oversimplification of historical facts. No doubt that the British never considered these systems as scientific and kept aside those out of their imposed arena of medical knowledge. One cause for not attaching indigenous systems with Medical College was its totally different characteristics and different way of teaching, which did not conform to the Allopathy system. The methods of controlling and using the body would be different in Western and local medicine. But unfortunately they did not even try to establish separate institutions for indigenous medical systems and remained

indifferent to give official patronage, because, this according to them was not scientific⁶. Pradip Basu give 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.”⁷

It was a complaint that before considering Ayurveda as unscientific they should read the texts properly and discuss it with experts of this system, which could give them a clear conception of what Ayurveda actually said about the body and disease. Why was it necessary to prove Ayurveda to be scientific? The common tendency of considering the colonial rule the supreme authority to judge everything in India brought disrespect for indigenous systems among the ordinary as well as educated people. One can call it the relationship of power with science.

The irony of this period was that despite having these issues and problems the *vaidyas* and the educated people as well never came forward together to protest against the activities of the British. Organizations were established for Allopathic medicine by Indian initiatives but they forgot the importance of the indigenous one. There was lack of enthusiasm for the institutional promotion from the society. Though we call the period as renaissance and no doubt it was in many aspects, but in spite of re-discovering the original techniques and knowledge of medicine, the ‘awakened’ men re-searched about the alien system. Though there were some individual initiatives for synthesizing both the systems, but several questions on scientific or unscientific debate remained unanswered.

Generally from the initial stage of colonial rule the Indians were identified with ideas and practices unscientific, non-rational and superstitious. The elasticity required for advancement, was found absent here. Rationality and progress as tools were used to show the West as superior to the East (including medical science, especially due to Anatomical progress) and they critiqued India in many aspects. But this condemnation was not total.

⁶ 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 is pathology.

⁷ Basu Pradip (ed): Health and Society in Bengal, A Selection from Late 19th Century Bengali Periodicals, Sage Publications, New Delhi, 2006, p. 24-25.

Many early European scholars found richness in the tradition and showed respect towards the indigenous science and technologies. Though the developments in medicine in the nineteenth century were sometimes taken for academic interest and sometimes for administrative need, it was a multisided benefit for India. We can mention the introduction of new techniques and technologies, different streams of medicine and overall a general consciousness for the same kind of medical education (western medicine) irrespective of class, caste and religion as some of the major shifts that occurred in nineteenth century. This gradually enriched the medical condition here.

Bibliography:

Primary Sources:

❖ Archival Documents:

West Bengal State Archive:

Proc. of General Department, Education Branch, 1865 – 1907.

Medical Branch, 1861 – 1907.

DPI Report- 1835 1900.

❖ Journals (English):

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. *The Hindu Patriot*
13. *Indian Lancet*
14. *Indian Nation*

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 *Bangabdo*)
10. *Chikitsa O Samalochak* (1895)
11. *Chikitsa Sammilani* (1884)
12. *Digdarshana* (1818)
13. *Pally Sanskar*
14. *Prabassi*
15. *Sadhana* (1891)
16. *Samachar Darpan* (1818)
17. *Sambad Bhaskar* (1839)
18. *Sambad Koumudi* (1821)
19. *Sambad Prabhakar* (1831)
20. *Sandhya*
21. *Shihsha O Swastha* (1320 *Bangabdo*)
22. *Somprakash* (1858)
23. *Suchikitsa* (1332 *Bangabdo*)
24. *Swastha* (1305 *Bangabdo*)
25. *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, Published by BMJ Publishing House.

Secondary Sources:

❖ **Books (Bengali):**

1. Bandopadhyay Brajendranath edited and compiled: *Sangbad Patrer Sekaler Katha*, Vol 1and 2, Bongiyi Sahitya Parishat, Kolkata, 1931, 1339 B.S.
2. Basu Pradip: *Samayiki, Purno 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 (edited): *Bharater Patabhumite Chikitsa Bijnyaner Itihas, Sankshipta Parjalochona*, Ababhas, Kolkata, 2009.
5. Chakrakorty Arun Kumar: *Chikitsa Bigyane Bangali*, Sahitya Bihar, Kolkata, 1975
6. Chakraborty Dr. Shyamal: *Rabi Thakurer Daktari: A*, Shishu Sahitya Sangsad Pvt. Ltd., Kolkata, 2011.
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 (edited): *Balaka, Bangalir Bijyancharcha, Prak Swadhinata Parbo*, Kolkata, 2009.

10. Ray Binay Bhushan: *Unish Sataker Banglay Bigyan Sadhana*, Ananda Publishers, Kolkata, 1987.
11. Ray Binay Bhushan: *Chikitsa Bijnyaner Itihas, Unish Shatake Baglay Pashchatya Sikshar Prabhab*, Sahityalok, Kolkata, 2005.
12. Roy, Benoybhusan: *Unish Satake Banla Bhasay Bigyan Charcha*, 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. Bhattaycharya Jayanta: *The first Dissection Controversy: Introduction to Anatomical Education in Bengal and British India*, Current Science, Vol. 101, no. 9, 10th November 2011
2. Home Amal: *The Calcutta Municipal Gazette : Tagore Memorial Special Supplement*, The Calcutta Municipal Corporation, Calcutta, 13th September, 1941(Reprinted on 9th May, 1986
3. Jeffery Roger: *Allopathic Medicine in India: A Case of Deprofessionalisation?*, Economic and Political Weekly, Vol. 13, no 3, Jan 21, 1978.
4. Gaurly Jharna: *Medical Women and Female Medical Education in 19th Century India*, Education and Empowerment, Women in South Asia, Bethune School Praktani Samiti, Kolkata, 2001.
5. Karlekar Malavika: *Kadambini and Bhadrolok:Early Debates Over Women's Education in Bengal*, Economic and Political Weekly, Vol. 21, no 17, April 26, 1996.
6. Kumar Deepak: *Medical Encounters in British India, 1820 – 1920*, Economic and Political Weekly, Vol. 32, no 4, Jan 25 -31, 1997.
7. Kumar Deepak: *Unequal Contenders, Uneven Ground: Medical Encounters in British India, 1820-1920*, Western Medicine as Contested Knowledge, edited by

- Andrew Cunningham and Bridie Andrews, Manchester University Press, New York, 1997.
8. Reddy Sita: *Making Heritage Legible: Who Wons Traditional Medical Knowledge?*, International Cultural Property Society, USA, 2006.
 9. Swangwan Satpal: *Science Education in India Under Colonial Constraints, 1792 - 1857*, Oxford Review of Education, Vol. 16, no 1, 1990.
 10. Roy Bharati: *Women of Bengal: Transformation in Ideas and Ideals, 1900-1947*, Social Scientist, Vol 19, no 5/6, May – June, 1991.
 11. Palit Chitabrata: *Mahendralal Sircar and Popular Science in Indian Archive*, National Archives, New Delhi, 1997.
 12. 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.
 13. Wiley Marshall Margaret: *Calcutta and the meeting of East and West: the Dilemma of Cultural Allegiance*, , Vol 32, no. 4, April 1961.

❖ **2. Books (English):**

1. Arnold, David: *Colonizing the Body, State Medicine and Epidemic Disease in Nineteenth Century India*, Oxford University Press, Caicutta, 1993.
2. -----Edited, *Imperial Medicine and Indigenous Societies*, Manchester University Press, Manchester, 1988.
3. Babar, Zaheer: *The Science of Empire: Scientific Knowledge, Civilization and Colonial in India*, State University of New York Press, 2000.
4. Bhattacharya, K.S: *The Bengal Renaissance Social and Political Thoughts*, Classical Publishing Company, New Delhi, 1986.
5. Bose, Pradip Kumar: *Health and Society in Bengal, A Selection from Late Ninwteenth Century Bengali Periodicals* (edited), Sage Publication, New Delhi, 2006.
6. Desai, A. R.: *Social background of Indian Nationalism*, Bombay Popular Prakashani, 1976

7. Dasgupta, Subrata, *Awakening, The Story of The Bengal Renaissance*, Random House India, London, 2010.
8. 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.
9. Gayatri, Ch. Radha: *Female Medical Education in Colonial India*, Ajanta, New Delhi, 2008.
10. 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.
11. Gregdemetriadis, Kamberelis George: *Theory for Education*, Routledge, New York 2006.
12. Ghosh, Sures Chandra: *The History of Education in Modern India, 1757-1998*, Oriental Longman, New Delhi, 2000.
13. Harrison Mark: *Public Health British IndianAnglo-Indian Preventive Medicine 1859-1914*, Cambridge University Press, New Delhi, 1994.
14. Hassan, Narin: *Diagnosing Empire Women, Medical College and Colonial Mobility*, Ashgate, London, 1969.
15. Jayapalan, N., *Economic History of India: Ancient to Present Day*, Atlantic, New Delhi, 2008.
16. Kumar, Anil: *Medicine and the Raj: British Medical Policy in India, 1835-1911*, Sage Publications, New Delhi, 1998.
17. Kumar, Deepak (edited): *Disease and Medicine in India*, Indian History Congress (Published by Tulika Print Communication Services), New Delhi, 2001.
18. -----,: *Science and the Raj: A Study of British India*, Oxford University Press, New Delhi, 1995
19. Kumar, Krishna : *Political Agenda of Education: A Study of Colonialist and Natinalist Ideas*, Sage Publications, New Delhi, 2005.
20. Kumar, Neelam: *Women in Colonial India, A Reader*, Oxford University Press, New Delhi.
21. Mukharji, Projit Bihari: *Nationalizing The Body: The Medical Market, Print and Daktari Medicine*, Anthem Press, UK and New York, 2009

22. 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.
23. Nutton, Vivian and Potter Roy (edited): *The History of Medical education in Britain, Rodopi*, Amsterdam- Atlanta, 1995
24. Palit Chittabrata and Das Chirantani: *Acharya Prafulla Chandra Ray and Indian Chemistry*, Readerss Service, Kolkata, 2007.
25. Palit, Chittabrata and Dutta Achintya (edited): *History of Medicine in India, the Medical Encounter*, Kalpaz Publication, New Delhi, 2005.
26. Palit, Chittobrata: *Hospital and Medical Education in Calcutta: The Beginning, India Pharmacol Society*, Calcutta, 1989
27. Palit, Chittabrata and Pahari Subrata: Satish Chandra Mukherjee *The Dawn Society And National Science*, Reader Service, Kolkata, 2002.
28. Pati, Biswamoy and Harrison Mark (edited): *Health, Medicine and Empire, Perspectives on Colonial India*, Orient Longman, New Delhi, 2006.
29. Poddar, Arabinda, *Renaissance in Bengal, Quests and Confrontations, 10800-1860*, Indian Institute of Advanced Study, Simla, 1970.
30. Ramanna, Mridula: *Western Medicine and Public Health in Colonial Bombay, 1845 – 1895*, Orient Longman, New Delhi, 2001
31. Ramjimwale, D A: *Indian Pharmaceutical Industry*, People's Publishing House, New Delhi, 1996.
32. Raina, Dhruv and S. Irfan Habib: *Domesticating Modern Science, A Social History of Science and Culture in Colonial India*, Tulika Books, New Delhi, 2004.
33. Sen, S.N: *Scientific and Technical Education in India 1781 – 100*, Indian National Science Academy, New Delhi, 1991.

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,

