Conclusion

Some historians find that up to the twelfth century there was no great difference between the east and the west with respect to scientific ideas. However, "After the twelfth century western science alone progressed and only the vestiges of earlier knowledge, together with a variety of technological and metallurgical skills persisted until the time when British rule was established." (Larwood, 1958: 36) The debate about Indian medicine during the early period of the nineteenth century was at a profound level a debate about the status of European knowledge and the social standing of its vulnerable practitioners. "It was about class-formation in British society, which is one reason for the vitriolic denunciation of the wiles of the Brahmins." (Bayly, 1994: 2) The British search for and categorization of Indian medical knowledge proceeded by compiling detailed inventories of indigenous remedies. This was done by translating the āyurvedic texts, by collecting the specimens they found in the dispensaries of the bazaars (the pansaris), but above all by means of the medical pharmacopoeia. "Pharmacopoeia was a textual window through which transactions in knowledge could take place." (Bayly, 1994: 2)

Throughout the dissertation examples revealing superiority of western knowledge and technology have been given. It may be remembered again, anatomical knowledge is also a technology (not in the sense of instruments) which influenced perception of the body in a completely new way. It was a unique method to delve into the depth of the body. Considering the age of medical knowledge since antiquity (which has been persisting for more than 2500 years) this new knowledge of anatomy is of only 500 years. But it has changed everything regarding disease perception, construction of self and individuality, and, also, mindset of a given population. Here lies the importance of study of anatomical knowledge in its historical background.

When thought of in the context of India anatomical knowledge is often co-terminous with modernity, civilization and improvement of a nation. Possibly, as hindsight, this was the reason why Ram Mohan Roy in his famous letter to Lord Amherst stressed the importance of studying anatomy among other advanced branches of knowledge of modern Europe. Nevertheless, as Partha Chatterjee notes, "There must be something in the very process of our becoming modern...even in our

acceptance of modernity...a certain skepticism about its values and consequences." (Chatterjee, 1998: 275)

In an unusual letter to some J. N. Batten on 1st January 1836 (the year of the first cadaveric dissection in India in the same month, on 10th January) Dwarakanath Tagore wrote about converting "200 good Hindu boys by giving them the holy water that comes from Corbonell & Co". (Tagore, 1836) We should remember that Dwarakanath was the person to provide stipend for the first batch of four medical graduates from Calcutta Medical College to pursue their higher medical study in Britain.

Ram Mohan and Dwrakanath were not the only persons to show their avidity for modern scientific knowledge including anatomy. Keshub Chander Sen, one of the foremost exponents of modern India, exhorted his compatriots to "assiduously and reverently cultivate the sciences", as "Anatomy and Physiology, Geology and Astronomy, Chemistry and Zoology" were "living preachers" that provided "saving wisdom". (Lourdusamy, 2004: 11) However, one of the contentious issues of this dissertation is that acquisition of anatomical knowledge (not to speak of other areas of sciences) was not an original one it was derivative in nature. Another issue is that Indian medical education system was a test laboratory in some senses where new educational policies were first implemented. Final issue in this regard is that in mimicry of professionalized modern medicine "reinforced now by the elements from Western medicine" there occurred "professionalisation of Āyurveda and its consequences, such as the establishment of Āyurvedic colleges." (Meulenbeld, 1995: 10)

Now it may be relevant to tell a few words regarding modern institutions and their activities in colonial India. Asiatic Society of Bengal was set up in 1784. In the first hundred years of its existence, "among nearly a thousand contributors to the journals and proceedings of the society, there were only forty-eight Indians; of these, only the polymath Rajendralal was a regular contributor." (Chatterjee, 1996: 11) Such sorts of examples reveal the nature of the production of colonial knowledge about India. Indian participation was usually very meager due to a number of reasons. Because of which no new research possibilities were in the offing, barring a few examples of J. C. Bose, P. C. Ray, C. V. Raman, Satyendra Nath Bose, and U. N Brahmachari. Not to miss here, Ronald Ross was not Indian. He left India just on

completion of his historical malaria research. This picture becomes darker when it comes to the field of anatomy.

An example can be cited here. Dr. N. Pan, Professor of Anatomy, Medical College, Calcutta, wrote an article titled "Some Observation on the Gastro-Intestinal Tract of the Hindus" in the *Journal of Anatomy* in 1919. In that article he wrote, "The nature of the diet in Indians differs considerably from that of Europeans. In an Indian diet we find a bulky carbohydrate food with a very small proportion of the other proximate principles. This led me to expect that the anatomy of the gastro-intestinal tract in Indians would differ from that of Europeans to a considerable degree...The observations were made on 65 subjects, a very small number, and the conclusions drawn from these cases must be accepted with caution." (Pan, 1919: 259) Even a cursory look at the initial sentence will make it clear that the anatomical study undertaken by Dr. Pan was a comparative study, not any exploration into new findings (examples of William Hunter, Bichat, William Harvey or Richard Lower is helpful in this regard). But more interesting issue is the next part of his observation, "The subjects available for dissection in the Calcutta Medical College are the unclaimed bodies from the Campbell Medical School and Hospital where the majority of the patients come from the poor classes. Mahamedans (sic. Mohammedans) take a fair proportion of meat in their diet, but no Mahamedan subjects are available for observation. So most of the subjects observed are adult Hindus including Bengalis, Beharis and Uriyas (sic. Oriya), who subsist on bulky carbohydrate food." (Pan, 1919: 259) Some facts become evident from the statement – (1) bodies for dissection "come from the poor classes". Obviously, these are unclaimed bodies. As the number of bodies was abundant any sort of replica of Anatomy Act of 1832 in England was not called into action here. (2) No 'Mohammedan' subject was available for dissection. This may be due to the fact that this class of people was loathsome to hand over their bodies to persons of different or alien religion. One more evidence in this regard may help to realize it. Charles R. Francis in one of his addresses in 1868 informed the new students of Medical College, Calcutta, about a 'moribund pauper' and 'poor wretched skeleton figure'. He told, "The police have brought him to great haven of refuge, the Medical College Hospital of Bengal." (Francis, 1868: 99) Dr. Francis' statement points to the fact of abundance of pauper and poor people's bodies for dissection.

"Surgery, it was argued, was based upon anatomical 'fact' – the observable materiality of the body – while physic was based upon speculation and imagination." (Doyle, 2008: 17) Surgical knowledge, based upon sound knowledge of anatomy, in its turn performed the most commanding job in consolidation of modern medical authority in Indian subcontinent. The rise of surgery during the 19th century charts changes to the nature of disease and the ontology of the body within science. Moreover, Surgery's promotion of anatomy as the basis of scientific knowledge helped to redefine the anatomical body as the site of medical inquiry. To note, the practice of surgery was specifically related to the consolidation of British imperial power. Thomas Chevalier, an important personality of surgery of the 18^{th}-19^{th} century, wrote in 1797, "It should be remembered that the benefits of those improvements in Surgery which have been made in this country, are by no means confined within our own borders. They have extended to foreign climes..." (Chevallier, 1797: 49) He further added, "And what is of more Importance...is that they have reached the sister kingdom and all the immense colonies of this extensive empire...receiving solace, relief and restoration, through the assistance of men...and the example of the Surgeons of London." (Chevallier, 1797: 49)

Some Indian example may help to clarify it. The decision to establish a Native Hospital in Calcutta was taken in 1792. It was reported in *Calcutta Gazette* on 18 October 1792 – "The institution of the hospital for such of the natives as Providence is pleased to inflict with sickness or casualty, reflects additional credit on the characteristic of humanity..." (Seton-Karr, 1865, Vol. II: 355) The reason behind this effort is worth noticing. During those early years of British colonization in Calcutta new industries were being established. It resulted in huge number of injuries like lacerated wound, fracture of bones, serious damage of the limbs. Following such activities, on 1^{st} September 1794 native Hospital outdoor started on Tuesdays and Fridays to primarily give medicines to the injured from accidents. Consequently, arrangements were done for people ready to undergo surgical treatment. (Lushington, 1824: 313-321) The number of patients suffering from accidental injuries was as follows: **1794-95 – 67, 1795-96 – 108, 1796-97 – 182.** (*Calcutta Gazette*, 1795-1797)

It makes clear of the fact that accidental injuries, which was of great concern among the labouring people, was more or less duly taken care of by the English surgeons. Traditional medical practices utterly failed in this particular area. In his

experience in Madras in the early years of nineteenth century, James Forbes saw that though Brahmins "have risen superior to prejudice" in case of vaccination they were not engaged in any sort of surgical practices. Regarding surgical practices "They do not bleed, nor perform any surgical operation, unless the removal of a part partially divided." (Forbes, 1813, Vol. III: 422-430) Again, "All cases of fractures and dislocations are consigned to the potters, a caste of people abounding in Hindoostan, for making the water jars..." (Forbes, 1813, Vol. III: 430)

In 1836, after the foundation of Medical College, Dr. F. H. Brett, in his report "Prospectus of the Central Hospital and Hospital of Surgery, Calcutta", writes, "In the space of two months and without a complete establishment, with the resources of the Bazzar and Native Hakeems...the number of Surgical operations performed" which were for "extirpation of tumours from various parts of the body, removing of cancers and other malignant morbid parts, tying arteries, cutting for stone...amounting to eighty-four extirpation of the parotid gland..." (*General Committee of the Fever Hospital and Municipal Improvements*, 205) He seems confident of conferring "great benefit...on those destitute creatures." (Ibid, 205) To perform surgery in a better way he prioritizes Hospital over Dispensary. In his opinion, in a Hospital a patient "is never lost sight of by his Medical attendant", whereas in Dispensary "disease cannot be watched." (Ibid, 205)

A Military Medical Student in his memoirs reflects on his studentship in 1880s, "In the medical wards the days of bleeding and drastic purging had passed" and, he reminisced, "The scope of the operative work was of course much more limited then. The only abdominal operation I saw was the removal of an ovarian cyst by Dr. Harvey." (*Centenary Volume*, 1935: 154-161) Rather, he adds that minor surgeries like 'evacuation' of hydrocele caused much relief to the patient. "The patient went on his way rejoicing...and spread abroad the *fame* of the hospital where a radical (?) cure had been effected so speedily." (*Centenary Volume*, 1935: 159; Kopf, 1969) This experience of Medical College, Calcutta, in 1880s may be compared with early medical education in England. "Operations on the cavities of the body, except 'cutting for stone', were rare and seldom undertaken except in hospitals or hospital surgeons...and the most notorious 'cutting for stone' with a crude death-rate at least 20 per cent." (Singer and Holloway, 1960: 3) Besides this surgical aspect of colonial medicine, a few more issues should be considered now. Early nineteenth-century

medical training in England was extremely diverse. While some practitioners held university degrees from the most respected medical colleges of the world, some were apprenticed to apothecaries where they "spent most of their time capping bottles and rolling pills". (Youngson, 1979: 12) Still others were quacks and drug peddlers who practiced freely with no legal sanctions against them. Private training in anatomy and other clinical subjects further complicated the whole issue there. (Lawrence, 1988)

Part of the problem with educating and licensing doctors in England was in the conflicting struggle for rights and power between licensing bodies; there were nineteen of them in the United Kingdom alone. (Petersson, 1978) Moreover, there were divisions among physicians, surgeons and apothecaries. Physicians would be gentlemen of high origin and socially accepted. Surgeons were given a lower status. In Indian context, this scenario was altered. Contrarily, in India, the highest status one medical practitioner could get was Civil Surgeon. Here the divide between physicians and surgeons was not apparent, nor was it articulated in medical curricula. So, the Indian experience might have helped to sort out the problem in England too. Also, to note that from the very beginning of Medical College it was state-owned. The licensing authority in India was always the colonial state. This experience too might have come up to review the question of private education in England. "Important, too, in changing European attitudes was the growing professionalism of doctors trained and qualified by European medical schools...and dispatched in significant numbers to the expanding outposts of empire." (Arnold, 1988: 12) This observation, if coupled with that Chevalier with respect to surgeons and their practices in the colonies, leads to the fact that India (and Calcutta) was a kind of 'laboratory' to test various medical theories and administrative practices.

Additionally, as cited above, Dr. Goodeve in his lecture exhorted his students, "clinical lectures will from time to time be delivered to you upon such cases of interest as you may meet with in the hospital. Again, "It is only at the bedside of the sick, by observing closely the symptoms and progress of disease, watching the effects of remedies...and the *death of your patient afford you an opportunity to inspect the body*. Moreover, "it is only by these means that you can hope to render yourselves worthy and useful members of the profession you have chosen." (*Calcutta Monthly Journal* 1836, 25) Here stress is laid on clinical cases at hospital and hospital, in turn, providing the opportunity to learn pathological anatomy.

To sum up, a number of new features emerged which gave colonial medicine its distinct shape to distance it from traditional healing practices. These may be enumerated thus – (1) *centrality of medical knowledge* – anatomical knowledge constituted its distinctive feature. (2) *Valorization of the hospital* – for anatomical dissection and surgical operation its existence was almost mandatory. Besides anatomo-surgical issues it was also necessary for clinical knowledge to study an individual patient at his bedside. (3) *ubiquity of lesions* – this new knowledge of medicine based on anatomical pathology did result in permanent departure from the long legacy of humoral pathology. To give one example, John Peet ,writes in 1864, "By disease is to be understood an altered condition of the fluid and solid constituents of the body." (Peet, 1864: 1) We must note the tone of humoral lingering in "fluid or solid constituents". In Mark Harrison's observation, "Although Western medicine was already distinctive in terms of its anatomical knowledge by the mid-seventeenth century, it maintained essential similarities with the humoral outlook of Indian medical systems until the early nineteenth century..." (Harrison, 1999: 223) (4) *Emergence of professionalism and medical researches* – Charles Morehead's work is pioneering in this regard. He wrote, "The graduates of the Indian Medical Colleges, for whose benefit I have chiefly written, may often, for many years yet to come, be placed in positions remote from their professional brethren, and in circumstances ill adapted for the prosecution of pathological research." (Morehead, 1860: xi) (5) *The medicalization of life* – this particular concept was to be felt only after the arrival, extension and consolidation of Western medical practice. It started from demographic study to prison house to dispensaries to school level. In the context of medical specialization, George Weisz notes, "during the past centuries the evolution of modern Western societies has moved so vigorously in the direction of increasing specialization of labor, knowledge, and expertise that it would be quite astonishing if medicine had failed to follow this path." (Wiesz, 2003: 538)

As noted above, Indian medical practitioners began to publish medical journals like *Indian Medical Gazette* and *Calcutta Medical Gazette*. Publication of these journals did have material ground. From 1792 to 1823 the number of patients being treated at the hospital at Dharmatala, Calcutta was of astounding value. The figure is – 1794—247 persons, 1795—420, 1796—495, 1797—616, 1800—2024,

1823—41166. The total number is 358865 (*Samachar Darpan*, 11 June 1825). Such huge number of patients when remain under physicians' gaze in the hospital is sufficient for any research work. It was unthinkable in pre-colonial India.

It heralded a new horizon for medical professionalization. In Indian context, unlike western societies, the whole of society did never participate in this process. This process was confined to the upper echelon of society. One of the outcomes of this particular phenomenon is that to the most of the people of India western medicine was not the first choice for treatment. Traditional healing practices like Āyurveda, was there to fill in the void. But persistent effort on behalf of the educated class was put to make English medicine popular. It was oftentimes reported in *Samachar Darpan*, "Those people who have witnessed wisdom of the English physician have come to realize that so many people do not recover when they fall victim to the treatment of indigenous physicians. But they survive when they come under judicious and laborious treatment of the English physicians." (*Samachar Darpan* 13 June 1818)

During cholera epidemics in Calcutta Native doctors trained in Native Medical and, later, in Medical College reached out to the afflicted people at different locations. They did their best to alleviate sufferings of the ailing people. Moreover, especially during cholera, new European remedies like that one made to use by Dr. Breton yielded positive results. "The Native students are beginning to make themselves useful; eight having been already posted to corps, and four are about to be attached to two dispensaries, now forming for the relief of the suffering Natives...they will prove a highly useful class of public servants of the British Government in India." (*Oriental Herald*, 1826, Vol. X: 24) It was recorded in the realm of surgery too. A Mussalman (Mohmmedan) practitioner successfully did ophthalmologic surgeries (couching) on eleven patients. (Kirwan, 1937: 638-644) Furthermore, "*Case of Lithotomy, performed by a Native; communicated by A. K. Lindsay, Esq.*" was also described with due importance. (*Transactions of the Medical and Physical Society of Calcutta*, 1829, IV: 440-442)

Going against the stream, two points should be noted here. (1) As late as 1841, when Hospital of medicine of Indian variety was in full swing and acquisition of anatomical knowledge in medical education was set into motion, 'miasmic' theory of disease causation was also present along with pathological anatomy. "Of the various soils and situations productive of miasmata, the most deserving of notice, are low and

marshy place." (Annesley, 1841: 9) (2) There was distinct, sometimes nuanced too, chasm in the reception of Western medicine between the educated section and general population. In 1872 Buckland wrote to the Secretary, the Government of Bengal, "If any one has observed how difficult it is to get his private servants, or the people who come under his immediate influence of a sudden station to take English medicine properly and regularly, and to submit themselves to reasonable treatment, he will easily conceive how much of the effect is lost when medicine given to a set of ignorant and doubting people in the villages, who probably do their best to destroy the valuable of the English drugs by combining with them (as they fancy) the prescriptions of the kabirajes or the wise and aged women of the village." (*Proceedings of the Lieutenant-Governor of Bengal*, August 1872) Is it an act of subversion? Is it an enunciatory act of splitting that the colonial signifier creates? (Bhabha, 1998: 128)

Against this background, Āyurvedic practitioners began to be engaged in the process of modernizing Āyurveda. Major problems they faced were with (a) place of anatomical knowledge in Āyurveda, and (b) how to express old Āyurvedic terms in modern connotations. The second one was again related with the question of translation of one's language into other's one. Gyan Prakash asks, "At stake was the integrity of the Indian languages, which did not participate in the *creation* of modern scientific discourses but were *obliged* to incorporate them." (Praksh, 2000: 50) Further, "What were they to borrow and assimilate successfully without losing their fundamental character?" (Praksh, 2000: 50) Regarding this problem the Bengali magazine *Rahasya-Sandarbha* (An Anthology of Riddles) wrote, "When Bengali language is in incomplete form at present we are to collect abundant number of words from Sanskrit or other languages. It may quite help Bengali language in a considerable way." (Basu, 1998: 20) Leaving the question of translation apart for the time being let us come back to the question of Āyurveda as practiced in the 19th and early 20th century, at least, by the leading Āyurvedic practitioners.

To modernize Āyurveda various programmes were adopted. These may be listed thus – (1) formation of various societies for scientific and intellectual discourses, (2) publication of journals, (3) finding new terms in Sanskrit and Bengali equivalent to English medical terms, and (4) reinterpretation and standardization of classical texts of Āyurveda. The formation of societies and publication of journals

were in the shadow of the rising modern medical profession. In European context, formation of various societies and publication of journals were the two basic features of any professional group. In emulating this process Āyurvedics had to abandon the basic mode of traditional learning Āyurveda, i.e. *gurukul* system. Charles Trevelyan observed, "In the Sanskrit college of Calcutta, European anatomy and medicine have nearly supplanted the native systems." (Trevelyan, 1838: 8) The All India Ayurveda Mahasammelan was set up in 1907. "The movement which this organization represented sought to systematize the knowledge of Āyurvedic *clinical methods*, mainly by producing standard editions of classical and recent texts..." (Chatterjee, 1998: 278) In the pattern of European physicians, some of the Āyurvedic practitioners like Gangaprasad Sen introduced fixed consultation fees that equaled or surpassed the fees of British physicians. (Gupta, 1998: 373)

During the period 1918-1943, four Āyurvedic colleges and big hospitals were established. At the same period Dr. Popat Prabhuram and Vaidyaratna Gapalacharyulu established Āyurvedic colleges in Bombay and Madras respectively. Gananath Sen epitomized all these efforts, "...in 1835 the erudite scholar Madhusudan Gupta proceeded to dissect by his own hands. He first chanted the hymn of renaissance of Āyurveda. Since then, Āyurvedics have begun to firmly believe in the necessity of acquiring knowledge of anatomy." (Sen, 1944: 31) To attain 'clinical methods' the greatest emphasis was put on anatomical dissection. Suffice it to say, without the knowledge of anatomy no one can excel in surgery. Especially, to perform surgery in the treatment of ascites any surgeon at his will cannot do (jalodar roga). It demands knowledge and farsightedness." (Basu, 1998: 112) It was also suggested that what has been called *Viṣṇupadāmrita* in Āyurveda is nothing but oxygen. (Basu, 1998: 350)

In *Śārṅgadhara saṃhitā – nabhistha praṇapvanaḥ spriṣṭvā hṛtkamalāntaram / kaṇṭhād vahirviniryāti pātuṃ viṣṇupadāmṛtam //* (Pū. 5.43-44)

During nationalist revival, at least since 1885, *viṣṇupadāmṛtam* was translated to be *oxygen*. Nevertheless, in a different translation, "The breath of life located in the navel, touches the inside of the lotus of the heart, and then exits from the throat to the outside to drink the nectar of the sky (to my translation it would be 'the nectar of Viṣṇu')." (Wujastyk, 1998: 325) To a modern commentator, "Modern anatomists have never tried to count the exact number of Veins in human body, whereas Susruta

has given the precise number." (Thatte, 2005: 143) Always trying to search for modern connotations in ancient texts became more entrenched through 'modern' Āyurvedic pictures following colonial encounter in anatomy.

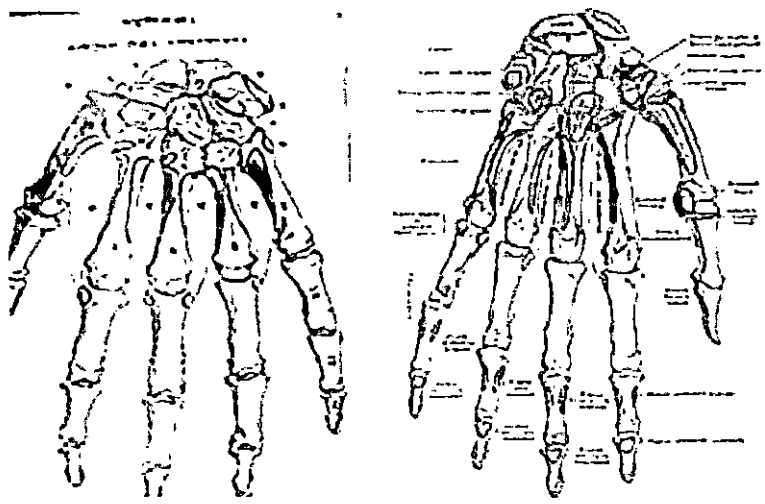

Fig. 16 [Picture on left is taken from *Āyurveda Saṃgraha (pariśiṣṭa)*, revised by Kaviraj Devendranath Sengupta and Kaviraj Upendranath Sengupta (Calcutta: C. K. Sen, 1902), 18. The next picture is from *Gray's Anatomy*, 1887. T. Pickering Pick was the editor of this edition and colour printing was introduced for the first time.]

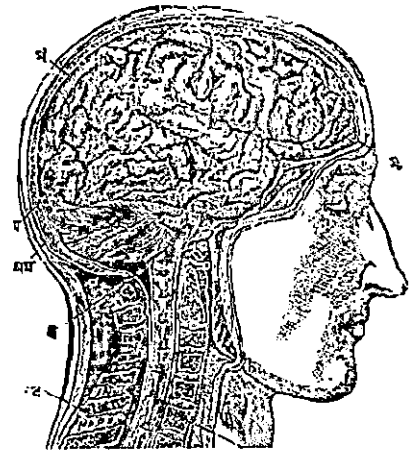

Fig. 17a

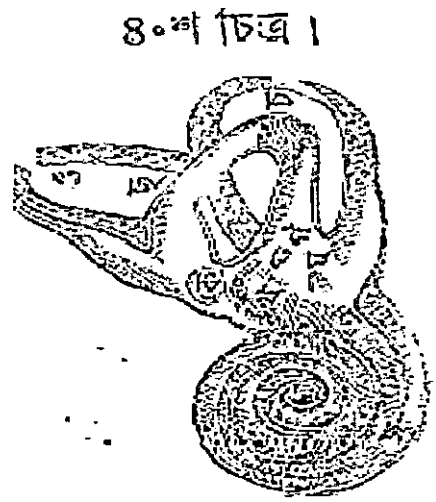

Fig. 17b [Picture above is again from *Āyurveda Saṃgraha (pariśiṣṭa)*, p.64. The picture below is also from the same book, p.88. In the first picture internal details of the brain, which was a completely unexplored area in classical Āyurveda, are illustrated. In the second one, authors dare to give accurate details of the internal ear that is solely inconceivable in the classical texts. In Āyurveda, position and function of *hṛdaya* (not the post-Harverian heart as discussed before) is undefined, more so of the brain, and better not to speak of the internal ear, inconceivable to the wildest guess of the ancient healers.]

Such was the trope of epistemological reconstitution of terms and, consequently, knowledge to make it consistent with positivist colonial scientific logic and reasoning. Printing technology rendered manuscript culture of pre-colonial India marginal. There were both 'mimicry' and 'hybridization' within 'modern' Āyurveda. As a result of such contestations between Western and indigenous medicines there emerged a space split open – the all-powerful Western therapeutics and indigenous ontology of health. Contesting, yet vanquished, indigenous population and practitioners tried to inscribe their presence inside this space – oftentimes as 'mimicry', more often through rejection of Western medicine – and resorting to indigenous healing practices, particularly in case of chronic diseases (which is till date a dark area of modern medicine). Eminent physician and Āyurvedic Girindranath Mukhopadhyaya advocated for anatomical dissection, hospital setting and institutionalization of entire Āyurvedic system. (Mukhopadhyaya, 1974, Vol. II)

As discussed earlier about the effect of Brahminization on Āyurveda, Manu mentions physicians in the same category as meat-sellers or liquor-vendors, and Yājñavalkya classes them with thieves, prostitutes and others, whose food cannot be taken. (Basu, 1894: 20) Western medical practice provided the way to rise over the social stigma of physicians inscribed on them by the Brahminic society. But they had to pay for it. Subjectivity of the rising and modern Indian physicians was reconstituted. They began to perceive both the body and health in the light of post-enlightenment Europe. 'Indianity' was to be fought with modernity. Within the interstices of modern health perception and treatment of diseases a space was split open through insinuation of Indian ontology of health and 'Indianness' of the body.

Perhaps on the skeleton of Indian medical knowledge the robust body of modern medicine was constructed.

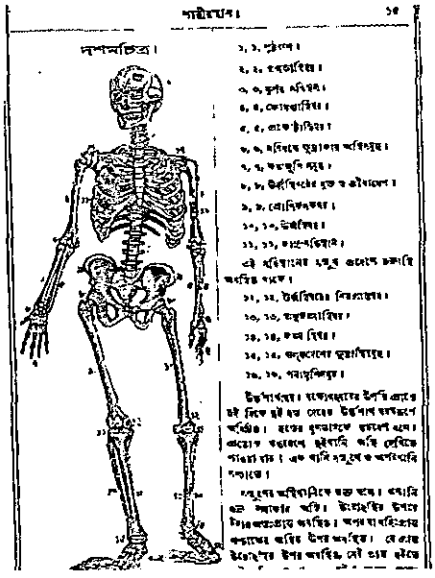

Fig. 18

In another more learned writing, "Vāgbhaṭa (2nd Century B. C – Kunte), for instance, displays his knowledge of bacteria..." (Sharma, 1929: 195) The author also finds example of modern medical conceptions like endocrinology in Āyurveda, "Hindu physicians classify disease from the view-point of the 'soil' which is the same as sympathetic Endocrinology..."(Sharma, 1929: 189) One more learned author analyzes, "The classification of dravyas under fivefold *bhūta* group is based upon certain *physico-chemical* properties or qualities ascribed to each *bhūta* class." (Dash,

1971: 72-73) Examples of similar nature will go on accruing. It is better to recollect Partha Chatterjee here, "given the close proximity between modern knowledge and modern regimes of power, we would for ever remain consumers of universal modernity; never would be taken seriously as its producers." (Chatterjee, 1998: 275)

It was the fundamental crisis which was faced by Āyurvedic practitioners. They were always in fear of losing their selves. To reconstitute their selves in the dislocating milieu of colonialism they took recourse to various tropes discussed above. But in doing so they were perhaps perpetually entrapped in a number of problems – (a) epistemological dislocation of Āyurvedic concepts, (b) unwittingly hailing the superiority of modern anatomical and surgical knowledge, (c) extermination of basic knowledge system of Āyurveda and indigenous world, and, finally, (d) reconstitution of their own selves in the language of Modernity. They became 'modern' medical practitioner in the garb of Āyurveda and doing different sort of practice, so called 'alternative medicine'. This modernizing spree went even to the extent of judging the question of childhood-marriage from modern anatomical knowledge of ossification of bones. (Basu, 1998: 166-187) In one self-critical note, it became evident "Despite the fact that Hindu Ayurveda has attained the final limit of excellence Western physicians has improved their medicine to an incredible level. They have endeavor, industriousness, and research. We do not have anything except pride and self-conceit." (Basu, 1998: 115) David Arnold comments, "From the 1890s there was a revival of the indigenous systems, with the establishment of Ayurvedic and Unani colleges and dispensaries and the manufacture of drugs along western lines, which aimed to put the 'traditional' systems on a par professionally and commercially with the allopathic interloper." (Arnold, 1996)

A few years back, Anirban Das insightfully showed how modern medical has insidiously reconstituted the concept of the body in Ayurveda. With professionalization and the concomitant institutionalization and state patronage, Ayurveda translates its knowledge of the body into categories of modern medicine. Even in the "shuddha" institutions, separating the two systems in pedagogy, the conceptualization of the anatomy of the "body" brings in the three-dimensional space of anatomo-clinical knowledge where diseases are expressed." (Das, 2001: 126) This basic tension and 'war of attrition' was conceived by the Āyurvedics, especially, of

the twentieth century. Gananath Sen used to tell in a lighter vein to his students about the present state of Āyurvedic knowledge –

Mālākāścakarmakārah nāpito rajakastatha /

Bṛddhāḍandā biśeṣaṃa balāu panca cikitsakā // [In the age of Kali or *kali yuga* there are five physicians – garland maker, blacksmith, barber, washer man and old widow (in slang).] (Tahkur, 1994: 1)

No other expression can possibly express so succinctly both epistemological and ontological characteristics of 'modern' Āyurveda that finally became an Indianized replica of modern Western medicine. Excepting the states of Kerala, Tamilnadu and part of Maharashtra all other states are following this dictum of 'modern' Āyurveda set into motion by Āyurvedic practitioners like Gananath Sen, Upendranath Sen, Gangadhara Kaviraj, Shiv Sharma, P. S. Varier (Varrier, 2005) and others. For example, Varrier's book is declared as a "concise and complete text book of human anatomy and physiology in Sanskrit with commentary and illustrations compiled for the use of āyurveda colleges." It was first published in 1925. All the diagrams and illustrations are taken from standard textbooks of modern anatomy. The same type of illustrations we have seen in the works of Gananath Sen and Upendranath Sen too.

This dictum of Āyurveda is carried forward in modern day health practices too. The pictures shown above are some exemplars of this trend, where both 'mimicry' and 'hybridization' of 'modern' Āyurveda are figuratively represented.

This dissertation is a humble attempt to address all these complicated, multi-layered and interrelated issues along with the study of encounter between two medical knowledge systems where the question of bodily dissection played the central and epoch-making role.

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List of Publications and Awards

Papers:

(1) *The Body: Epistemological Encounter in Colonial India* – presented at the 1st International Conference on **Making Sense of Health, Illness and Disease** at St. Catherine's College, Oxford University, 2002.

(2) *Epistemology of the Body vs. Indian Colonial Medicine – An Indian Experience* – presented at the **38th International Congress on the History of Medicine**, Istanbul, 2002.

(3) *Human Cadaver and the Rise of 'Modern' Medical Knowledge in Colonial India: Some Preliminary Inquiries* – presented at the **22nd International Congress of History Science**, 24-30 July 2005, Beijing.

(4) "**Encounter in Anatomical Knowledge: East and West**" in *Indian Journal of History of Science* 43, 2 (2008): 163–209.

(5) "**The Knowledge of Anatomy and Health in Āyurveda and Modern Medicine: Colonial Confrontation and Its Outcome**" in *Eä - Revista de humanidades médicas & estudios sociales de la ciencia y la tecnología* (*Journal of Medical Humanities & Social Studies of Science and Technology*) 1, 1 (2009):1-51.

(6) *Construction of Medical Hegemony: An Exploration into Colonial Encounters in Anatomical Knowledge in India* – presented at the **XXIII International Congress of History of Science and Technology**, 28 July-2 August 2009, Budapest.

Books and Book Chapters:

(1) *The Body: Epistemological Encounters in Colonial India*, in **Making Sense of Health, Illness and Disease**, ed. Peter L. Towhig and Vera Kalitzkas (Amsterdam, New York: Rodopi, 2004).

(2) *Modernity and Indigenization: A Study on Biomedical Discourses of Health in India* in ***Anthropology on the Move***, eds., Zahirul Islam and Hasan Shafie (Dhaka, Dept. of Anthropology: University of Dhaka, 2006).

(3) *Death, Embodied Approach and Medicine* in **Science and Spirituality in Modern India,** ed. Makarand Paranjape (New Delhi: JNU, Sambad India Foundation, 2006).

(4) Book in Bengali BIOMEDICINE THEKE NAJARDARI MEDICINE [*From Biomedicine to Surveillance Medicine: Foucault and Beyond*] (Kolkata: Ababhas, 2008).

Edited Volume

Edited the first international collection in Bengali on History of Medicine in India. Title: **Bharatiya Patabhumite Chikitsa Bijnaner Itihas: Samkshipta Paryalochana** (History of Medicine in Indian Context: A Critical Appraisal) [Kolkata: Ababhas, 2009]. Contributors include David Arnold, Francis Zimmermann, Kenneth G. Zysk, Dominik Wujastyk, Waltraud Ernst, Geraldine Forbes, Christiane Hartnack, Rahul Peter Das etc.

Awards

(1) Awarded **Research Associateship** of Indian National Science Academy 2005-2009.

(2) Awarded **Special Certificate of Honor** for "an outstanding essay" by the *Asian Society for the History of Medicine* in 2006.