

## RAMMOHUN ROY, HIS INTELLECTUAL COMPATRIOTS AND THEIR SCIENTIFIC CONTRIBUTIONS

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Raja Rammohun Roy (1772-1833) has been hailed as the key figure in the so-called 'Bengal Renaissance' and also as the 'Father of Modern India'. He and his compatriots: the early stalwarts of the Asiatic Society, the Serampore Missionaries led by William Carey, as well as David Hare, Derozio and other pioneers of the Hindu School/College engineered the first few sparks of cultural exchange and renaissance movement in India, with special emphasis on modern science. Such a renaissance movement has been defined and characterised with Rammohun as the central figure.

**Key words:** Rammohun Roy, Bengal Renaissance, Syncretism; Srirampur Missionaries, Carey, Asiatic Society, David Hare, Derozio and Derozians, Jones, Prinsep, Science Books and Periodicals, Views of Max Muller, Tagore, Vivekananda, Gandhi etc.

### I

There is little doubt that Raja Rammohun Roy (1772-1833) has been universally acknowledged as the central figure in what is called 'Bengal renaissance', Calcuttan science and the phenomenon of 'awakening' in modern India. We do not subscribe to some of the views of harsh critics such as Mahatma Gandhi, Ramesh Chandra Majumdar attempting to de-rate Rammohun's contribution; the spirited defence of Max Muller in this regard may be quoted later. Nor do we subscribe to the other extreme view that Rammohun was the sole, exclusive or even the chief architect of the early period of Indian renaissance; he was one amongst the many architects of his generation, undeniably the best, but not the only one.

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At the very outset we may mention some of the useful references to the life and works of Rammohun<sup>1-9</sup> and to the theme of Bengal renaissance.<sup>10-17</sup> Many scholars have compared the so-called 'renaissance' in Bengal with the European renaissance; we believe however, that the comparison is unnecessary, leading to futile and endless controversies. 'Awakening' and 'quanta of civilizational progress', which have taken place in the Greek, Chinese, Arab civilizations, Maurya and Gupta eras in India etc, are more useful terms and concepts since these are characterisable in specific spatio-temporal contexts. The Italian renaissance during the life-time of Leonardo da Vinci was not the same thing as the broad spectrum European renaissance between the 13<sup>th</sup> and 18<sup>th</sup> centuries. The former did not have much of a scientific component.

For any debate or comparison, we need to define 'renaissance' as a special kind of human awakening. Saumyendranath Tagore has made a reasonably good attempt in identifying the distinct features of renaissance in Europe:

a rational evaluation of all religious teachings, and a revolt against ecclesiastical authority; affirmation of the importance of material possession as the means for virtuous actions; the belief that conscience of man is the voice of God and the rejection of the unnecessary authority of 'the terrestrial agents of God'; assertion of man's intellectual freedom; a belief in a law-governed universe and a deep interest in reason and scientific knowledge; development of new creative arts and literary forms; and lastly, an emphasis on education.<sup>18</sup>

Saumyendranath further asserted that: "Even though the revival of science was not a specific contribution of the Renaissance, it certainly created an atmosphere in which the seeds of scientific thought could again fructify; the scholars of the Renaissance freed science from the bondage of metaphysics"<sup>18</sup>.

If we use yardsticks articulated above, the eras of spiritual awakening in Firdausi's Iran or in the 15<sup>th</sup> – 16<sup>th</sup> century India of Kabīr, Nānak, Caitanya etc can hardly be called as the period of renaissance. The resurgence during Rammohun's time on the other hand, compares favourably even though 'it could not be an exact copy of the European Renaissance in content and form'. Quite emotively Saumyendranath argued:

"As the Indian Renaissance flowered in the 18<sup>th</sup> century, Rammohun developed two fundamental concepts which could not germinate in the womb of the 15<sup>th</sup> century Europe: first, comparative study and synthesis of three world religions: Hinduism, Islam and Christianity; and, secondly, unqualified support to democratic struggles for freedom of the oppressed people all over the world"<sup>19</sup>.

The present author would have preferred Saumyendranath to dwell on Rammohun's third original concept: the syncretism of the three 'sciences', the newly emergent natural sciences such as physics, chemistry, biology etc., the spiritual sciences and the social sciences. The British Royal Society resolutions of the 1660's had defined modern material / natural 'science' as divorced from religion and politics. Today however, we know that material sciences cannot survive in the modern world, let alone prosper, without the support of mental, moral, spiritual and social 'sciences'. Economists are receiving the prestigious Nobel Prizes, and consciousness researchers are assisting the scientists to discover themselves, to explore their own minds! Raja Rammohun Roy and his intellectual compatriots belonged to a period of awakening, which crossed national boundaries. It was not merely Calcuttan, Bengali or Indian. It had acquired international stature. This Oriental contribution could not compete with the European 'renaissance' (a term which we would like to avoid) in magnitude, and yet provided originality on three counts as we have articulated just now.

## II

### **Life and Works of Rammohun: A Brief Treatise**

One may call it 'Calcuttan Science', 'Bengal Renaissance', 'Indian Awakening' or whatever, the phenomenon was much bigger than any single individual, and Rammohun was himself conscious of this truth. He told Alexander Duff (after 1830): "I began to think that something similar to the European renaissance might have taken place here in India"<sup>20</sup> This statement reveals that Rammohun was not only an actor but also an acute observer in the drama of renaissance during his period, and that there were many other collaborators, participants, intellectual compatriots of Rammohun. Some assisted him wholeheartedly, many did not, yet even the latter, while opposing him on certain counts, supported him in other areas. Thus the phenomenon was not a solo venture but a collective endeavour. Before we deliberate on Srirampur (otherwise spelled as Serampore) Missionaries, William Carey, Hindu College, David Hare, Derozio etc., let us provide a very brief resume on Rammohun's life and works, restricting ourselves to the salient points mentioned in his own writings.

There is some controversy as to whether Rammohun was born in 1772 or 1774; we tend to support the former date. We are grateful to him for his 1832

letter written (one year before his death) from London to one Mr. Gordon, for its 'brevity' and terseness, and describing certain salient points in his career:

"In conformity with the usage of my paternal race, and the wish of my father, I studied the Persian and Arabic languages these being indispensable to those who attached themselves to the courts of the Mahomedan princes; and agreeably to the usage of my maternal relations, I devoted myself to the study of the Sanskrit and the theological works written in it, which contain the body of Hindu literature, law and religion.

"When about the age of sixteen, I composed a manuscript calling in question the validity of the idolatrous system of the Hindoos. This, together with my known sentiments on that subject, having produced a coolness between me and my immediate kindred, I proceeded on my travels, and passed through different countries, chiefly within, but some beyond, the bounds of Hindoostan, with a feeling of great aversion to the establishment of the British power in India. When I had reached the age of twenty, my father recalled me and restored me to his favour; after which I first saw and began to associate with Europeans, and soon after made myself tolerably acquainted with their laws and form of government. Finding them generally more intelligent, more steady and moderate in their conduct, I gave up my prejudice against them, and became inclined in their favour, feeling persuaded that their rule, though a foreign yoke, would lead more speedily and surely to the amelioration of the native inhabitants; and I enjoyed the confidence of several of them even in their public capacity. My continued controversies with the Brahmins on the subject of their idolatry and superstition, and my interference with their custom of burning widows, and other pernicious practices, revived and increased their animosity against me; and through their influence with my family, my father was again obliged to withdraw his countenance openly, though his limited pecuniary support was still continued to me.

"After my father's death I opposed the advocates of idolatry with still greater boldness. Availing myself of the art of printing, now established in India, I published various works and pamphlets against their errors, in the native and foreign languages. This raised such a feeling against me, that I was at last deserted by every person except two or three Scotch friends, to whom, and the nation to which they belong, I always feel grateful.

"The ground which I took in all my controversies was, not that of opposition of Brahmanism, but to a perversion of it; and I endeavoured to show that the idolatry of the Brahmins was contrary to the practice of their ancestors, and the principles of the ancient books and authorities which they profess to revere and obey. Notwithstanding the violence of the opposition and

resistance to my opinions, several highly respectable persons, both among my own relations and others, began to adopt the same sentiments....

“.... In November 1830, I embarked for England, as the discussion of the East India Company’s charter was expected to come on, by which the treatment of the natives of India, and its future government, would be determined for many years to come, and an appeal to the King in Council, against the abolition of the practice of burning widows, was to be heard before the Privy Council; and his Majesty the Emperor of Delhi had likewise commissioned me to bring before the authorities in England certain encroachments on his rights by the East India Company. I accordingly arrived in England in April 1831.

I hope you will excuse the brevity of this sketch”<sup>21</sup>

Rammohun studied Vedantic philosophy at Varanasi, the Tantric philosophy through his spiritual teacher Hariharananda Tirthaswami at Rangpur, the Buddhist precepts at Tibet, the liberal philosophies of Islam at Patna and later the Christianity doctrines while at Calcutta. He was the first person in human history to study the principal religions in the world and critically evaluate them. Thus he may be fittingly called the ‘Father of Comparative Religion’ as well as the first intellectual syncretist of the spiritual traditions.

He ‘endeavoured to show that the idolatry of the Brahmins was contrary to the practice of their ancestors’, and in pursuing this approach, he might have been influenced by the teachings of Islam and found corroboration from Colebrooke’s Vedic studies in the Asiatic Society. Colebrooke also researched, before him, on the Vedic texts which did not permit burning of widows. Rammohun was categorical that ‘the ground which he took in the controversies (with his fellow Hindus) was not that of (wholesale) opposition of Brāhminism, but to a perversion of it’. His poems and songs revealed his mystic love and devotion for the formless Absolute. He was an uncompromising monotheist adopting *Advaita* principle of Śaṅkara but not his *māyāvāda*, not his casteist approach. Resembling the later-day Swāmī Vivekananda, his position was closer to Gautama Buddha who denounced hereditary caste. In 1827 he published a portion of Mrityunjay Ācharyya’s *Vajrasūcī* text adored by the Buddhists, translated it, and quoted a significant *śloka*:

Only he who has realised Brahman may be called a Brāhmin, nobody else!

In 1828 Rammohun linked the casteism amongst the Hindus with their political disunity and disadvantages:

“I agree with you that in point of vices the Hindus are not worse than the generality of Christians in Europe and America; but I regret to say that the present system of religion adhered to by the Hindus is not well calculated to promote their political interest. The distinction of castes, introducing innumerable divisions and sub-divisions among them has entirely deprived them of patriotic feeling, and the multitude of religious rites and ceremonies and the laws of purification have totally disqualified them from undertaking any difficult enterprise .....It is, I think, necessary that some change should take place in their religion, at least for the sake of their political advantage and social comfort”<sup>22</sup>

Rammohun studied Arabic and Persian languages and the important texts of Islam at Patna and elsewhere. He developed deep respect for the logical/liberal and Sufi traditions in Islam, but revolted against the dogmatic and ruthless principles in the Muslim tradition. Gradually, he developed a coherent philosophy of monotheism based upon logic and reason, prevalent in all principal religions sadly contaminated with occasional unreason, dogmatism and gross misrepresentation of the Founder Prophets.

In 1804 he published his celebrated *Tuhfat-ul-Muwahhiddin*, a Gift to the Monotheists [translated into English in 1884 by Maulvi Obedulla and translated into Bengali in 1949 by Jyotirindra Das, incorporated in the 1973 *Rachanāvalī* (Reference No. 5, pp. 714-729)]. This was a Persian text with an Arabic introduction.

The introduction begins with the assertion that there is a universal belief in ‘the existence of one being who is the source of creation and the governor of it’, but there is no agreement between particular religious creeds and rituals. It is logically impossible for the conflicting creeds to be all true. Hence the conclusion must be drawn that ‘some falsehood is common to all religions’.

There is great aesthetic satisfaction and joy in the real spiritual truth, but this is often shrouded by false claims of miracles. Intolerance of rival creeds has often led to torture and murder. Critical thinking and skepticism have often been branded as ‘satanic acts’. Disciples have been asked to believe the *mujtahids*, the so called spiritual teachers without any questioning.

“Each individual, every human being has the inherent right to enjoy sunlight, solar ray, the bliss of the spring and the rainfall, no matter what religious sect he may belong to. Deep introspection, observation and critical reasoning should enable each person, irrespective of his religious faith or the lack of it, to solve the mysteries of astronomy, geology, botany

and zoology. One need not go through useless rituals, need not accept the claims of supernatural miracles, the deceit of false spiritual intermediaries. Can a disease be cured without any remedial step, merely by prayer? Natural Science is a more positive knowledge”<sup>23</sup>

Under the section ‘Brāhminism and Islam’ in his *Tuhfat*, Rammohun wrote:

“Brahmins believe that they received spiritual messages from God which they have recorded in Sanskrit scriptures and which humble Brāhmins like myself have memorized. For believing in such divine injunctions, Muslims have harmed us, insulted us in many ways and threatened for death, but we have not forsaken our religious path. Muslims have cited their holy verses of *Qurān* (such as imprison the infidels, kill the idolators, may release them only against money or submission / conversion etc) as mandatory injunctions of Āllāh, and accordingly have not hesitated to kill the infidels and worshipper of many idols, many gods.

“Now the question is, can the single Almighty Creator give contradictory injunctions (to the Brāhmins and the Muslims), or is it that lot of these ‘injunctions’ on both sides are man-made or concocted. I believe that no person with a healthy and scientific mind would hesitate to accept the latter proposition and proceed to discover the real truths.

“The real spirituality lies in the belief in one God, one humanity. To love all human beings irrespective of nation, caste, creed or religion is the real worship of God”.

Quite understandably, the Muslims in Rangpur were angry at the criticisms, made by Rammohun, against the ugly, conservative face of the tradition which paradoxically had also produced liberal and scientific traits. This was in 1805. In another 15 years Rammohun developed a great taste for the noble ideals of Christianity, wrote his celebrated ‘The Precepts of Jesus’ (1823), fully agreeing that ‘there is nothing so sublime as the precepts taught by Christ’. In the same breath he wrote: “I admire the zeal of the Missionaries sent to this country, but disapprove of the means they have adopted”. This did not please some of his erstwhile friends such as the Srirampur missionaries. Animated debates started in the respective periodicals of both sides, and Rammohun penned his arguments in *Brāhman Sebadhi: Brāhmunicipal Magazine*, The Missionary and the Brāhmun, No. 1, 1821. He observed that for thirty years (1770-1800) the East India Company administration had refrained from interference in the religious matters of India. But thereafter, the Christian missionaries started their vilification campaign against the Indian religions and resorted to conversions by dubious and foul

means, taking advantage of the helpless condition of the subject people. Then Rammohun directed his barb against the erstwhile conquerors as well:

“Why do the Christian missionaries not try their programme of proselytization in countries like Turkey and Persia which are not under the control of the West? ...

..... In this downtrodden country, we have already received such insults (*tiraskār*) (of vilification, proselytization) for the last nine hundred years on account of our accepting extreme courtesy cum docility (*atiśaya śiṣṭatā*) and non-violence (*himsā tyāga*) as hall-marks of religion (*dharmā jānā*) and our caste system which was the root cause of (national) disunity (*anaikyatār mūl*). When the ruthless Muslim invaders (*changeśāhār senāpatirā*) occupied the western part of this country, they were like wild animals and godless, and yet they displayed their arrogance in ridiculing the traditions of religious faith prevalent in this country.”<sup>25</sup>

The Christian missionaries were making similar mistakes; while criticizing Hindu polytheism, they were indulging in another kind of polytheism, namely trinitarianism which was the heart of orthodox Christianity. Rammohun’s unitarianism was accepted by not only some of the Christian missionaries in India like John Adam, but also many intellectuals in England, U.S.A., all over the world. Rammohun was all praise for Luther’s Reformation and struggle against ‘the heathenish doctrines and absurd notions of the Roman Church’.

Ramesh Chandra Majumdar has ridiculed Rammohun’s ‘crusade against belief in a multiplicity of gods and the worship of their images’, and continued that ‘the reply (to his crusade) denoting Rammohun’s failure, is writ large in blazing letters upon the illumined gates of two thousand Durga Puja pandals in Calcutta’<sup>26</sup>. Majumdar forgot to mention that Sri Ramakrishna and Swami Vivekananda had asserted that *Advaita* or monism is the highest principle, and that God is both formless as well as with forms; in the Mayavati Centre (Advaita Ashrama) of the Ramakrishna Maths & Mission, what is worshipped is the formless Absolute and not any idol or image. The numbers in Calcutta do not negate the truth in Mayavati.

Rammohun wanted all people to respect all religions without abandoning their own. The Hindu students in Alexander Duff’s Calcutta school were reluctant to read Bible, and Rammohun told them: “I have read the Bible and the Quran thoroughly, but thereby I have become neither a Christian nor a Muslim. Horace Wilson has not become a Hindu by reading the Hindu scriptures. You should read and ascertain the truth by discrimination. Nobody can force you to be Christians”.<sup>27</sup>

Rammohun was a true syncretist in religion, the Father of Universal Religion based upon discrimination and respect. He opposed the oriental xenophobia against the West prevalent for centuries which Edward Said has tried to re-introduce in his book *Orientalism*.

Raja Rammohun Roy recognised that Martin Luther (1483-1546) and his Protestantism had initiated a new era of spiritual science, Francis Bacon (1561-1626) was the philosopher of modern natural science, and the Baconian approach was extended in the area of social sciences as well by John Locke (1632-1704). Through the espousal of this triumvirate principle by Rammohun, Calcuttan science received its first philosophical nourishment.

The voyages of discovery had impressed Bacon. The inventions of printing, gunpowder and the magnetic compass had, in his view, 'changed the whole face and state of things throughout the world'. Columbus's ship and Galileo Galilei's telescope had ushered in 'a new intellectual world' which he described in his treatises: *Advancement of Learning* (1605), *Novum Organum* or *New Methodology* (1620), *New Atlantis* (1625). The Baconian blue-print of the new or modern science envisaged the ceaseless questioning of the old scholasticism and theology, and endorsed experiments, observations, inferences, new inventions etc. for ceaseless improvements in the lot of mankind. During the 1930's, J.D. Bernal has captured the Baconian spirit and the four centuries of scientific progress in his immortal words: "Science is predominantly a transforming and not a conserving influence..... The acceptance of the ideas of science carries with it an implicit criticism of the present state of man and opens the possibility of its indefinite improvement"<sup>28</sup>

John Locke made the Baconian philosophy sounder by providing a psychological basis to the theory of knowledge or cognition. His masterpiece *Essay Concerning the Human Understanding* was published in 1690 AD. An uncompromising champion for freedom of thought, Locke extended Baconian objectivity in the socio-political sciences.

He denied absolute right to the clergy, to the king or to the government. In his scheme of things absolute power belongs only to the people, who elect the king or the government as their 'trustees' to govern them, who voluntarily surrender a portion of their freedom for common good and prosperity; when their overall interests are hindered, they have every 'right' to change their government.

In his other celebrated work, *Two Treatises of Government*, Locke proposed his 'social contract theory' according to which the government, constituted by the people, is duty-bound to protect the 'holy trinity', the three rights of the people related to their life, property and freedom. There should be three wings of the government with distinct and separate allocations of power: administrative, legislative and judicial. The duly elected Parliament would be the legislative wing, the enacted legislations being binding on the administration and even the monarchy. In his *Letters Concerning Toleration*, Locke defended religious freedom and the principle of toleration of all religious faiths. Just as the Nature in the universe is operated by a set of scientific laws, similarly the human society must be guided by social science, a set of social laws to be discovered by reason and logic.

Lt. Col. Clarence who met Rammohun during 1817-18, reported how the Raja 'used to quote frequently the writings of Locke and Bacon'<sup>29</sup>. Rammohun was a resolute advocate of the principles of reason, logic and freedom in the spiritual, intellectual and socio-political planes. He honestly opined that the Hindus were enjoying much better religious freedom under the British rule than in the previous Muslim rule. For this view he has been severely criticized by some pseudo-secular and pseudo-patriotic scholars who conveniently forgot that Rammohun had also warmly appreciated the logical, liberal and truly spiritual Sufi traditions in Islam. The unkind critics also ignored the fact that Raja had initially 'great aversion to the establishment of the British power in India' but realised that the contact with the Western power for some time would lead to the flow of progressive ideas of Luther, Bacon, Locke etc into the country, modernize it, gel the people in this big sub-continent into one nation for the first time since the Emperor Aśoka, and even motivate the nationalist Indians to wrest their freedom from the British yoke some day. May we quote some of his statements documented in his letters to buttress our contention?

To James Silk Buckingham he wrote on 11 August 1821: "I shall not live to see liberty universally restored to the nations of Europe and Asiatic nations. . . . I consider the cause of the Neapolitans as my own, and their enemies as ours. Enemies to liberty and friends of despotism have never been and never will be, ultimately successful"<sup>30</sup>.

Again, seven years later, he wrote on 18 August 1828, to J. Crawford:

“Supposing that some 100 years hence the Native character becomes elevated from constant intercourse with Europeans and the acquirements of general and political knowledge as well as of modern arts and sciences, is it possible that they will not have the spirit as well as the inclination to resist effectually any unjust and oppressive measures serving to degrade them in the scale of society?”<sup>31</sup>.

One year before his death, Rammohun, while in London, wrote on 31 July 1832 to William Rathbone: “I am now happy on the success of the Reform Bills..... I publicly avowed that in the event of the Reform Bill being defeated, I would renounce my connection with this country (England) ..... The nations can no longer be a prey of the few who used to fill their purses at the expense, nay, to the ruin of the people for a period of upwards of fifty years”<sup>32</sup>

May we ask, what has been the expectation of the unkind critics: the Raja should have waged the First War of Independence, preponing it by a quarter of a century, under the banner of a person who sent a begging bowl through him to London for few more rupees, whose ancestors had sold the empire to the British most cowardly during 1764-65, while the Marhattas, the Sikhs, the Mysoreans went on fighting for few more decades?

Rammohun was the first modern man to conceive the ‘United Nations’ of the World based upon oneness of the entire mankind. He wrote to the Minister of Foreign Affairs of France in December 1831:

“It is now generally admitted that not religion only but unbiased common sense as well as the accurate deductions of scientific research lead to the conclusion that all mankind are one great family of which numerous nations and tribes existing are only various branches. Hence enlightened men in all countries must feel a wish to encourage and facilitate human intercourse in every manner by removing as far as possible all impediments to it in order to promote the reciprocal advantage and enjoyment of the whole human race.....

“..... The ends of constitutional Government might be better attained by submitting every matter of political difference between two countries to a Congress composed of an equal number from the Parliament of each; the decision of the majority to be acquiesced in by both nations and the Chairman to be chosen by each Nation alternately, for one year, and the place of meeting to be one year within the limits of one country and next within those of the other: such as at Dover and Calais for England and France.

“By such a Congress all matter of difference, whether political or commercial, affecting the Natives of any two civilized countries with constitutional Governments, might be settled amicably and justly to the satisfaction of both, and profound peace and friendly feelings might be preserved between them from generation to generation.”<sup>33</sup>

That there is only one race (and no multiplicity) for the entire mankind was first asserted by Gautama Buddha and then by Raja Rammohun Roy and recently corroborated scientifically<sup>34</sup>.

Rammohun has definitely been the first to propose a ‘Congress’ of nations, a century before the practical idea of League of Nations and United Nations came into vogue. Such a notion was not conceived during the European Renaissance which was observed with the idea of colonial domination over the rest of the world. The other major features of the Bengal Renaissance led by Rammohun were the attempted syncretism of the major religions of the world and the welcoming of the scientific ideas of the West in the traditionally spiritual climate of the East.

The Raja was a nationalist, and took great pride in the glorious Indian culture that he inherited. A great expert in Sanskrit, Arabic, Persian, the Hindu and Islamic scriptures, he had full sympathy for the oriental studies in the Asiatic Society; Horace Wilson was one of his personal friends. Nevertheless, he felt that the government should utilize its financial resources not for ‘the establishments of a new Sangsrit School in Calcutta’ but for establishing a college for modern scientific education in accordance with the best European tradition. His appeal to Lord Amherst dated 11 December 1823 was of great historic importance and deserves to be quoted partially:

“The establishment of a new Sangsrit School in Calcutta evinces the laudable desire of Government to improve the Natives of India by Education, a blessing for which they must ever be grateful; and every well wisher of the human race must be desirous that the efforts made to promote it should be guided by the most enlightened principles, so that the stream of intelligence may flow into the most useful channels.

“When this Seminary of learning was proposed, we understood that the Government in England had ordered a considerable sum of money to be annually devoted to the instruction of its Indian Subjects. We were filled with sanguine hopes that this sum would be laid out in employing European Gentlemen of talents and education to instruct the natives of India in Mathematics, Natural Philosophy, Chemistry, Anatomy and other useful Sciences, which the Nations of Europe have carried to a degree of perfection that has raised them above the inhabitants of other parts of the world.....

“ ..... We now find that the Government is establishing a Sangsrit school under Hindoo Pundits to impart such knowledge as is already current in India. This seminary (similar in character to those which existed in Europe before the time of Lord Bacon) can only be expected to load the minds of youth with grammatical niceties and metaphysical distinctions of little or no practicable use to the possessors or to society. The pupils will there acquire what was known two thousand years ago, with the addition of vain and empty subtleties since produced by speculative men, such as in already commonly taught in all arts of India.

“The Sangsrit language, so difficult that almost a life time is necessary for its perfect acquisition, is well known to have been for ages a lamentable check on the diffusion of knowledge; and the learning concealed under this almost impervious veil is far from sufficient to reward the labor of acquiring it. But if it were thought necessary to perpetuate this language for the sake of portion of the valuable information it contains, this might be much more easily accomplished by other means than the establishment of a new Sangsrit College; for there have been always and are now numerous professors of Sangskrit in the different parts of the country engaged in teaching this language as well as the other branches of literature, which are to be the object of new Seminary. Therefore their more diligent cultivation, if desirable, would be effectually promoted by holding out premiums and granting certain allowances to those most eminent Professors, who have already undertaken on their own account to teach them and would by such rewards be stimulated to still greater exertions.

“From these considerations, as the sum set apart for the instruction of the Natives of India was intended by the Government in England, for the improvement of its Indian subjects, I beg leave to state, with due deference to your Lordship’s exalted situation, that if the plan now adopted be followed, it will completely defeat the object proposed; since no improvement can be expected from inducing young men to consume a dozen of years of the most valuable period of their lives in acquiring the niceties of the *Vyākaraṇ* or Sangsrit Grammar.....

“ ..... Neither can such improvement arise from such speculations as the following, which are the themes suggested by the *Vedānt*: In what manner is the soul absorbed into the deity? What relation does it bear to the divine essence? Nor will youths fitted to be better members of society by the Vedāntic doctrines which teach them to believe that all visible things have no real existence, that as father, brother, etc have no actual entirety, they consequently deserve no real affection and therefore the sooner we escape from them and leave the world the better – Again no essential benefit can be derived by the student of the *Mīmāṅsā* from knowing what it is that makes the killer of a goat sinless on pronouncing certain

passage of the Vedas, and what is the real nature and operative influence of passages of Veda etc.

“Again the student of *Nyāya Śāstra* cannot be said to have improved his mind after he has learned it into how many ideal classes the objects in the Universe are divided, and what speculative relation the soul bears to the body, the body to the soul, the eye to the ear etc.

“In order to enable your Lordship to appreciate the utility of encouraging such imaginary learning as above characterised, I beg your Lordship will be pleased to compare the state of Science and literature in Europe before the time of Lord Bacon with the progress of knowledge made since he wrote.

“If it had been intended to keep the British nation in ignorance of real knowledge, the Baconian philosophy would not have been allowed to displace the system of the schoolmen, which was the best calculated to perpetuate ignorance. In the same manner the Sanscrit system of education would be best calculated to keep this country in darkness if such had been the policy of the British Legislature. But as the improvement of the native population is the object of the Government, it will consequently promote a more liberal and enlightened system of instruction, embracing mathematics, natural philosophy, chemistry and anatomy with other useful sciences which may be accomplished with the sum proposed by employing a few gentlemen of talents and learning educated in Europe, and providing a college furnished with the necessary books, instruments and other apparatus”<sup>35</sup>.

Akshaya Kumar Datta, a great science enthusiast and an architect of Bengal Renaissance, penned a stirring eulogy on Rammohun, the pioneer harbinger of scientific education in India. We provide a free and partial translation of the eulogy written in Bengali:

“Oh Raja Rammohun Roy, you are blessed! The rays of your intellect pierced and dispelled the darkness of clouds, the prevailing superstitions of all kinds. Your inspiring knowledge and spirituality served as a fiery volcano surrounded by muddy low-lands and jungles emitting the holy fires of enlightenment. The deep sonorous martial music in favour of modern science (*vijnāner anukūl pakṣe sugabhīr raṇavādya vādan*) that you have trumpeted still resonates and lingers in our ears! Your title is ‘Rājā’, the king. Your kingdom is not in the inert mass of land, it occupies a very vast tract of human intellect (*subistār manorājya*)...”<sup>36</sup>

Most of the scholars who have written on Rammohun’s contributions to the Renaissance have concentrated on his reformist movements, debates with the

conservative Hindus and Christian missionaries, and not so much regarding his efforts for the scientific education in India; Akshaya Kumar Datta's writings are of course the glorious exceptions.

We recognize that Rammohun cannot be given the exclusive credit for the grand movement in Calcutta in favour of modern science and Western education. In this particular area (science and education), in this thrilling drama, he was not the sole actor, he was as well an observer, a witness of other actors. As he told Alexander Duff, he was also a spectator witnessing 'something similar to the European Renaissance'<sup>20</sup>; he witnessed the activities of his intellectual compatriots such as the Srirampur missionaries led by William Carey, the Asiatic Society stalwarts, David Hare, Derozio and several others.

### III

There were a few persons senior to Rammohun who contributed to Bengal Renaissance. The Raja might not have met the great mystic Ramprasad Sen and the orientalist William Jones in Calcutta before their deaths. He might have met Colebrooke and been influenced by his writings. Ramram Basu (born 1757) had proficiency in Persian and Sanskrit and was the first writer in Bengali prose (*Pratāpāditya Caritra* 1801) which came out in print; Mrityunjay Vidyalkar (born 1762) was a Sanskritist who translated *Batris' Simhāsan* (Thirty two Thrones) into Bengali. Both Ramram and Mrityunjay were associates of William Carey (1761-1834) in the Fort William College and even his teachers in Bengali and Sanskrit knew Rammohun intimately. Almost of the same age as Rammohun were Tarinicanan Mitra (born 1772) having great proficiency in Persian, Urdu and Sanskrit, 'the first Western trained linguist of India' working in Fort William College, Jayagopal Tarkalankar (born 1775) who provided Sanskrit lessons to Carey, Marshman and other missionaries of Srirampur, and lastly David Hare (1775-1842) a great philanthropist-educator and friend of Rammohun. Not much younger than Rammohun were Rasamay Datta (born 1780), Ram Camul Sen (born 1783), Radhakanta Deb (born 1783) who were all proficient in Persian, Urdu, Sanskrit and English, often agreeing and disagreeing with Rammohun on specific issues. Mrityunjay debated against Rammohun on the anti-idolatry stand but supported him on the issue of widow-burning. On the latter issue, Radhakanta disagreed with Rammohun and yet collaborated with him in the School Book Society. Thus the Raja thrived in an atmosphere of intellectual ferment which

constituted the first few sparks of Calcuttan Science, Bengal Renaissance and Indian Awakening.

Let us start with the intellectual activities of William Carey and his wonderful associates in the Srirampur Mission, School and College on which several valuable references exist.<sup>37-45</sup> William Carey was lucky and proud to have been associated with his colleagues who shared the ideals of his mission:

Eustace Carey, his brother, Felix his son (1786-1822) a prodigy & a genius who learnt Bengali since his childhood in Bengal, William Ward (1769-1823) the gifted printer and technologist, Hanna Marshman (1767-1847), the first champion of women's education in India, her husband Joshua Marshman (1768-1837), son John Clark Marshman (1794-1877), John Mack (1797-1845), the famous chemist etc. all were missionaries and able followers of William Carey.

During the four decades of his devoted stay and work in India, William Carey displayed (at least) four different personalities : (a) as a missionary spreading the message of Baptist Christianity, (b) as a lover of Bengali and other Indian languages since he could not preach without learning and handling the local languages and literatures, (c) as a lover of school and collegiate education to enlighten the Indian masses and, (d) as a self-trained natural scientist, a botanist, zoologist and agriculturist promoting scientific education in and around Calcutta. We would elaborate the last named trait first<sup>45</sup>.

### **Enthusiasm for Science and Technology**

Even in his childhood in England, Carey displayed a passionate interest in plants and animals, specimens of which even filled his bedroom and the surrounding garden. An erudite botanist, his efforts were mainly directed to agriculture, horticulture, zoology. In Mudnabatty and Srirampur he built up in addition to a garden, a farmhouse, a museum and an aviary, and started exchanging seeds, plants and birds with other countries. His Botanical Garden at Srirampur was 'better than the Company's Garden at Shibpur'. Carey's collection of as many as 427 species was arranged in Linnaean System. Professor Bruhl remarked: "Many plants to be found in Bengal to-day, came of seeds first bird-borne or wind-sown from Carey's garden"<sup>39</sup>.

Roxburgh, Wallich and other Superintendents of the Shibpur Garden were Carey's personal friends and admirers. In 1814, Carey edited Roxburgh's *Hortus*

*Bengalensis*, a catalogue of 3500 species of plants growing in Shibpur Botanical Garden, and then Roxburgh's *Flora Indica* (1820-24 and 1832 editions). Dr. Voigt compiled *Calcutta Subarbanensis*, a catalogue of plants in Carey's garden, which mentioned the Bengali names of the plants also. One unknown variety of *Saul* tree was named in his honour as *Careya\_Saulea*. Carey as a prominent member of the Asiatic Society read a paper in 1811 entitled "(The Sad) State of Agriculture in the District of Dinajpore". The same year Lord Minto spoke about the moribund state of education in India.

With the patronage of Lord and Lady Hastings, William Carey founded the *Agri-Horticultural Society for India* in September 1820, went on teaching botany, biology and agriculture as subjects at Srirampur and bequeathed the whole of his Museum consisting of minerals, shells, corals, insects, other natural curiosities and a *Hortus Siccus* to the College. Branches of the Agri-Horticultural Society were established in Western India, Dacca, Dinajpur, Madras, Burdwan, Meerut, and as far as Singapore. The various research and developmental programmes of the Society were articulated. Some of the aims of the newly founded Society were: (a) collecting information with regard to the agriculture of India; (b) to enhance the modes of agriculture; (c) to introduce new and useful plants; (d) to improve live stock and the implements of husbandry etc.

The main contribution of the missionaries led by Carey was in the field of scientific education and introduction of a scientific temper in India. One of the very first acts of Carey as he came to India in 1793, was to raise the slogan: "Do not burn thy widows, kill thy (infant) daughters, oppress thy lepers: *bewā mat jwālāo, beṭī mat māro, koḍi mat dābāo*". Based upon his agitation during 1794-1802 and his 'Report and Recommendations', Lord Wellesley legislated the stoppage of infanticide in the Ganges and in the sea.

In 1800 Carey, a workhorse, simultaneously founded the Baptist Missionary at Srirampur under Danish patronage and joined the newly founded Fort William College as Professor of Sanskrit and Indian languages. By then he had developed proficiency in Bengali and Sanskrit. Fort William College in Calcutta was meant to teach East India Company executives the subjects related to the Indian affairs particularly languages. Colebrooke had invited Carey to assist him and encouraged Carey to prepare educational texts and print them.

At that time there was no organised text, no grammatical book, not even a written and printed Bengali prose, and worst still, no infra-structure for printing!

Through Herculean efforts Ramram Basu's *Pratāpāditya Caritra* (the first ever printed Bengali prose), *Lipimālā*, Carey's *Kathopakathan*, *Christ Vivaranā mṛtam*, Mrityunjay Vidyalankar's *Batris' Simhāsan* etc. were published in a few years. Eventually Carey published editions of Bible translated in Bengali, Assamese, Hindi, Marathi, Oriya, Punjabi, Baluchi, Dogra, Gujarati, Canarese, 40 Asian languages and even books on grammar in these languages!! How was this miracle performed? Of course many volunteers were inducted to compile the texts, but what about printing?

Fortunately, Carey had an expert printer in his fellow-missionary William Ward and an expert typographer/ technician Panchanan Karmakar, then working with Colebrooke at the Asiatic Society. Panchanan had helped Charles Wilkins in cutting Bengali types in 1778. A low-caste blacksmith, he familiarized himself with European techniques of printing, also acquired skills in metallurgy and engraving from Wilkins. At Srirampur, Panchanan took the sole charge of foundry and printing, training his assistants including Manohar, his son-in-law. Manohar by 1850 had cut types for 15 oriental languages and also a Chinese font (fount) with 43000 characters! The Srirampur infrastructure became the origin of printing industry in modern India and the 'Asia's largest type foundry in oriental languages'.

There was a devastating fire in the Srirampur Press in 1812, but fortunately five presses and 4000 steel punches of 14 Indian languages were saved. 14 types of founts could cater to 50 languages: for example, Devanagari fount for 21 languages, Naskhi font for Arabic, Persian etc. Bengali font for Bengali, Assamese, Khasi and Manipuri languages and so on. The Bible was published in 43 languages, grammar and dictionaries were collated for eleven languages, literatures and periodicals in seven major languages. A fabulous record indeed for the first quarter of the 18<sup>th</sup> century in India!

Early success in printing encouraged Carey to make investment in ink and paper manufacture. In 1819 there was an accident in the manual trade mill, the engine of which was driven by relays of forty men; one Indian worker collapsed in summer on account of exhaustion. A steam engine was bought and installed on 17 March 1820. This was the first time that steam engine was used for an Indian industry. The Calcutta Gazette wrote on 27 May 1824:

"Four years have elapsed since the installation of steam engine, but still it is drawing large crowd of the natives of every walk. Even those who are travelling on boats anchor there on the shore, and spend long hours to witness its working".

George Smith has provided a similar description.<sup>38</sup> Steamboats were introduced in India during the same year namely 1824. Bernstein has written:

“Iron boats full of steam and fury may well have left an impression with unsophisticated villagers, adding to those which led some to look on the English as wonder-working people...It would be impossible to measure precisely how much the British position in India rested on this point in the psychology of the people”<sup>46</sup>

It may be noted that ‘*Guru*’ William Jones (not Sir William Jones) was the first private engineer to introduce steam power in India. He recommended that a 12 hp steam engine be imported and commissioned for the paper mill at Srirampur. But East India Company imposed a 10 p.c. duty for the Raniganj coal used, since Srirampur was a Danish settlement! The government rejected Jones’s request to waive the duty clause.<sup>47</sup> In 1828 Carey allowed Goluk Chunder, a Bengali blacksmith of Titagar, to build a steam-engine of a smaller size, modelled on the Srirampur machine, ‘without the aid of any European artist, the smaller machine being useful for irrigating lands’. Goluk Chunder’s steam engine was displayed in the Annual (1828) Exhibition of the Agri-Horticultural Society held at the Town Hall of Calcutta.<sup>48</sup> Carey was as proud of the indigenously modelled engine as ‘the large-sized fruits, vegetables and a dairy cow of enormous yield’ displayed in the exhibition. In the 1820’s, Carey described how the indigenous paper was being made, starting with the pulp. Arrangements were made for research and improvement in the technology, such as the use of arsenious material for providing an antifungal coat on the surface of the paper. Srirampur paper was better and cheaper than the British paper and therefore East India Company decided to throttle this industry! In a few decades the Danish control was terminated and the Srirampur Project suffered an irreversible decline.

### **Carey’s Enthusiasm for Vernacular Languages and Indigenous Science**

How did a missionary like Carey develop so much interest in the indigenous science and technology? Initially, he was interested like William Jones in Man and Nature in the different parts of the world, not only in the intellectual sense but also in the emotional and spiritual planes. For the sake of Christ he wanted to help the Indian masses, but then he wrote to a friend on 04 December 1793: “I am not able to preach because I do not know the language of the masses”.

Within seven years thereafter, he became an expert and pioneer in that language namely Bengali. Towards the end of his career he claimed himself to be

a 'Bengali'. Ramkamal Sen wrote after Carey's death in 1834: "Whatever has been done towards the revival of the Bengali language must be attributed to that excellent man Dr. Carey and his colleagues". The famous poet Rabindranath Tagore concurred: "Carey was the pioneer of the revived interest in the vernaculars".

Gradually it dawned on Carey's mind that the revival of a vernacular language such as Bengali should be directed not only to improve its literature and to spread the message of Christ but also to improve the educational content and scientific awareness for the masses. We discern a distinct shift in his thought pattern during the period 1800-1813.

Colebrooke had inducted Carey not only in the Fort William College but also in the Asiatic Society in 1806. Dr. James Hare (Junior), David Hare's brother, proposed in 1808 that a 'Physical Committee' (separate from the Literary Committee) be constituted in the Asiatic Society 'to promote the knowledge of natural history, philosophy, medicine, improvement of the arts, and whatever is comprehended in the general term of Physics'. Alongwith several other members, William Carey voluntarily agreed to serve the Physical Committee.

Carey's preferences for science and the vernacular languages (as contrasted with literary and orientalist research in Sanskrit, Arabic and Persian) became clearly manifest in 1813. In the Srirampur schools, science in vernacular languages was introduced as a compulsory subject.

The Charter Act of 1813 marked a turning point in the history of education in India. Under it, the Company for the first time assumed State responsibility for education and it provided that "a sum of not less than one lac of rupees in each year shall be set apart and applied to the revival and improvement of literature and the encouragement of learned natives of India, and for the instruction and promotion of a knowledge of the Sciences among the inhabitants of the British territories in India....." (East India Act of 1813, Sec 43). The Act was there, but nothing significant was done towards the implementation of its provisions during the next ten years. The 1813 Charter Act also allowed, for the first time, the Christian Missionaries to operate in India. This encouraged Carey.

On 20<sup>th</sup> September 1813 Lord Minto spoke in the College of Fort William defending the orientalists, such as Colebrooke, who had been one of his advisors, and classical orientalism to unlock the treasures of classical science and

literatures in Sanskrit, Arabic, Persian etc. At that time William Carey was the only European faculty member of the College arguing in favour of a vernacularist position on cultural revitalization and for spreading the European sciences. In his June 1814 motto, “A plan for Instructing Native Inhabitants of India in the European Sciences”, Carey emphasized science (nine years before Rammohun’s letter to Lord Amherst; in 1814 Rammohun had barely arrived and settled in Calcutta) more than he did for any other subject, including religion.<sup>49</sup>

Carey submitted two alternative plans : (a) all Indians may be educated in their languages according to the new Srirampur Scheme, although the total cost would be prohibitive, or (b) the College of Fort William may be expanded to instruct a chosen team of Indians (Calcutta School Society and the teachers’ training programme were yet to be instituted), who would go back ‘to impart to the people the new scientific knowledge which would include mathematics, biology, mechanical philosophy (physics) and other natural sciences’.

The new Serampore Scheme of 1816 was collated collectively by Carey, Ward and Marshman. William Ward had published in 1811 *Account of the Writings, Religion and Manners of the Hindus* in 4 volumes and was then writing *A View of the History, Literature & Mythology of the Hindus* in 2 volumes to be published in 1818. These were very perceptive and sympathetic books on the 18<sup>th</sup> / 19<sup>th</sup> century India. Ward observed that the indigenous schools in India (*pāthśālās*) were very large in number but low in curriculum content: “Though the Hindu boys are of quick capacity, their powers are observed soon to wither in the premature stage. If the appetite for knowledge were supplied with food in due proportions, I doubt not that the Hindus would become in mental status almost equal to Britons” (*A View* ..... 1818, p. 119 quoted by Chattopadhyaya<sup>41</sup>). Ward’s ideas were incorporated in the aforesaid 1816 document.

The memorandum *Hints Relative to Native Schools* released from Srirampur in 1816 emphasized in Section II (pp. 10-19) that ‘instructions must be imparted in vernacular languages’. ‘The idea of using a language such as English, not their own, is completely fallacious’. ‘Such futile attempts had been made in modern (1816) Ireland for two centuries’. The ideal curricula in Indian schools should include, stated the memorandum, not only orthography, grammar, arithmetic as taught previously, but also subjects such as:

1. Solar System, Laws of Motion, Attraction, Gravity (Newton)
2. Comprehensive Views of Geography
3. Natural Philosophy: subjects such as light, heat, air, water, meteorology, mineralogy, chemistry, natural history.
4. History and Chronology, Nations, Printing, Gunpowder, Mariner's Compass, Rise of Christianity, Islam, India and China (William Carey used to teach history of science and civilization).
5. Body & Mind, Ethics and Morality, Holy Scriptures 'are better than Hindu Ethics, but should we (Christian missionaries) introduce them too quickly?'

Between 1800 and 1818, the Christian missionaries were definitely the pioneers in spreading organized education amongst the Hindus, not so much amongst the Muslims. London Missionary Society started in 1814, had by 1818, about 36 schools in and around Chinsurah, Hoogly. The Church Mission Society had 27 schools and in 1818 the most successful Srirampur Mission had 111 schools all over the country: in Srirampur, Hoogly, Howrah, 24 Paraganas, Dhaka, Bardhaman, Jessore, Birbhum, Dinajpur, Murshidabad, Ajmir. In 1828, it had schools in Varanasi, Allahabad and Akyab.

In 1818, Carey, Marshman and Ward had founded Serampore College 'to teach Eastern Literature and Western Science, through library, museum, laboratory, observatory, medical department etc., to all persons irrespective of caste, colour and creed'. Arrangements were made for regularly publishing Bengali periodicals: *Digdarśan* (monthly) 1818-1820, *Samācār Darpan* (weekly) 1818-1841, and later the English weekly *Friends of India* 1835-1851. The first one, *Digdarśan*, was the pioneer periodical to have published scientific articles in Bengali.

The reputation of the missionaries brought many intellectuals and scholars, Lady and Marquess of Hastings, and even Rammohun Roy to Srirampur. Rammohun joined the prayer service of Eustace Carey and discussed with the missionaries mathematics, psychology, eternity of atoms, the nature of proof and many other philosophical issues.<sup>50</sup> The King of Denmark was so pleased, that he conferred upon the College in the Danish colony in 1826, the status of an European University. This might have not pleased the British authorities with a guilty conscience: the Danes taking some credit for Bengal Renaissance!

### Scientific Books and Periodicals: The First Few in a Vernacular Language in India

The events in Calcutta during 1814-18 proceeded with a great unexpected tempo: arrival of Rammohun in 1814, his establishment of *Ātmīya Sabhā* and violent controversies with the fellow-Hindus starting in 1815, his contact with the Srirampur missionaries during 1815-16; the establishments of the Hindu College in 1816, of the *Calcutta School Book Society* in 1817 and the *Calcutta School Society* in 1818. Let us now dwell on the *School Book Society* alone and the brilliant contributions of the missionaries in promoting scientific consciousness through the Bengali language. We are indebted to Buddhadeb Bhattacharyya for his studies<sup>51</sup> in this regard.

The *Calcutta School Book Society* was founded on 08 July 1817 mainly through the enthusiasm of William Carey and the patronage of Countess of Loudoun and Moira and Marquis of Hastings who wanted a collaborative effort for publishing appropriate books in English and Bengali for the schools proliferating in large numbers. Carey inducted for this stupendous project, his missionary colleagues such as William Yates (1792-1845), William Hopkins Pears (1794-1840), and his Indian colleagues such as Mrityunjay Vidyalankar, Ramkamal Sen, Radhakanta Deva, Tarinicharan Mitra and even Dwarkanath Tagore and Rammohun Roy. It may be noted that Radhakanta and Rammohun were on the opposite camps (orthodox and reformist) with regard to the Hindu theological debates; but this did not pose any problem since the books were meant to cover scientific, moral and secular tracts and not any religious/sectarian issue. The Society functioned well till 1843.

Robert May (1789-1818) is credited to have been the founder of a chain of English schools under the London Missionary Society in 1814 centering around Chinsurah and the author of the first scientific book in Bengali; *May-Gaṇita* or *Aṅka Pustakam* published by the School Book Society in 1817. J.J.D Anslme of the neighbouring Chandannagar French colony, later Principal of the Hindu College had assisted May in collecting the *Śubhañkari* lores of the indigenous system of arithmetic. John Hurley, also of the London Missionary Society, published a better arithmetical treatise *Gaṇitāñka* in 1819.

John Clark Marshman (1794-1877) son of Hanna and Joshua Marshman made prolific contributions to the Srirampur Mission. He was proficient in the Bengali language since his childhood, edited the periodicals *Digdarśan*,

*Samācār Darpaṇ* and *Friends of India* for different periods between 1818 to 1851. He was the author of *Jyotiṣ O Golādhyāya* in Bengali in 1819, the same year when *Bhūgol Vṛttānta* of William Hopkins Pears was also published by the School Book Society. Pears wrote not only on geography but also on animals: *Paśvābalī*, and prepared model 'scientific copy books' for the school students. He served the Srirampur Press as well as the School Book Society with devoted attention. John Pearson (1790-1831) published in 1824 and 1827 his treatise on conversations related to geography and astronomy: *Bhūgol evam Jyotiṣ biṣyak Kathopokathan*. He was a member of the London Missionary and died early. All these books on geography were focussed more on political geography of the different continents. John Clark Marshman lived long to write several accounts in English: *History of Serampore Mission* (1852), on *Carey, Marshman and Ward: Life and Times*, 2 volumes (1859) and *The Story* (1864). He left Srirampur in 1855 and the valuable *Memoirs* which he had written are regrettably not available.<sup>41</sup>

William Yates was another active worker of the Calcutta School Book Society (Secretary 1819) and Hindu College (Visitor 1823). A graduate of Bristol College, he arrived in Calcutta in 1815 and immediately got in touch with Rammohun; Yates published his *Padārtha Vidyāsāra: Elements of Natural Philosophy and Natural History in conversation form* in 1824, second edition in 1834. The title is misleading; it is related not so much to physics but to a bit of geography, astronomy, geology and life sciences. The author's spiritual bent of mind has clouded his scientific judgments.

The other book by Yates has a long history; it was titled *Jyotirvidyā*, a Bengali translation of James Ferguson's *An Easy Introduction to Astronomy for Young Persons*. The translation work was started by three Bengalees: Virjyamohan Datta, Maheshchandra Palit and Haruchandra Palit. They sent specimens of their translation to Tarinicharan Mitra, the then Indian Secretary of the School Book Society, and sought the endorsement of the Society for the total work which was granted on or before 1819. The printing of the manuscript (1819-20) was interrupted because several corrections and further editing were considered to be necessary. The editing work was continued over the years successively by Rammohun Roy, Mr. Gordon, Dr. David Bruster, Radhakanta Deva (Rammohun's adversary in other matters) and finally William Yates.

The Bengali in Yates's *Jyotirvidyā* (1833) is clear and attractive. Described through 'conversations' between the teacher and the disciple, the book dealt with

natural geography in part, and then terrestrial and stellar attractions, the stars, sun, planets and comets and the various findings of Kepler. The distances between the planets and the sun, their brightness, the pole star, the Mediterranean, variations in the duration of day, night, seasons, ebbs and tides, the eclipses, the observational techniques etc. were discussed lucidly, with occasional submissions to the divinity of the Creator.

William Carey's son Felix Carey (1786-1822) was a genius, a prodigy, came to Bengal when he was only seven years old and picked up Bengali language (from Ramram Basu) better even than his father. Not much interested in religious preaching, Felix went to Burma (Myanmar) in 1807 and specialised in the language and culture of that country, just as the Marshmans (father and son) became specialists in the Chinese. Felix came back to India and compiled his prolific, encyclopedic *Vidyāhārāvalī* (1819-20) on behalf of the School Book Society. The sixteen volumes were gradually published, and later compiled into one. The first volume (October, 1819) dealt with *Vyābcheda Vidyā* or Anatomy which was compiled from *Encyclopedia Britannica*, fifth edition. In his translation work, Felix was assisted by his father and two Bengalee Pundits, Srikanta Vidyalkar and Kavichandra Tarkashiromani.

The *Vyābcheda Vidyā* volume was divided into two parts; the first part dealt with human anatomy of bones, skin, nail, hair, muscles, stomach, spleen, lungs and breathing, heart, brain and sensory organs. The second part introduced the importance of comparative anatomy, introducing the subject of anatomy of different animals. Just as William Carey and Ramram Basu are considered as pioneers in Bengali Prose, Felix Carey may be honoured as one of the pioneers in introducing *paribhāṣā* or scientific terminologies in the Sanskritized Indian languages: *vyābcheda* or anatomy, *udara* or stomach defined by Felix as *bakṣāsthi agrābadhi gātrāmsa adhaḥ*, the portion below the chest.

A separate treatise on animals Animal Biography or *Paśvābalī* was compiled by John Lowson (1787-1825) who was an expert in natural history, geology, botany (original research and teaching at Srirampur), zoology, art and music! His work was translated by William Hopkins Pears.

Radhakanta Deva's *Bānglā Śikṣāgrantha* (1821) contained some discussions on mathematics and geography, though of little scientific value. However he was a dedicated worker of the School Book Society co-operating with Rammohun. One report of the School Book Society dated September 1820

stated that Rammohun's books on geography in English and Bengali (*Jyāgrāhi*) were ready for publication by the Society. Rammohun also wrote texts on astronomy (*Khagol*) and geometry (*Jyāmiti*). The aforesaid three technical terms were coined by him.

John Mack (1797-1845) was a very competent scientist, a worthy graduate of the University of Edinburgh, who joined the Srirampur Mission in September 1821 on the invitation of William Ward. Many of the fresh recruits like Mack started their careers assisting William Ward at his printing press, and ended up contributing to the Bengal Renaissance.

William Carey wrote of John Mack: "An able mathematician, there are few branches of natural science in which he was not at home, specially attached to the sciences of chemistry which he had cultivated with success under the most eminent professors in London". John Mack arrived in India with a £ 500 pounds donation from one James Douglas towards a scientific laboratory related to chemistry, physics, electricity, battery, meteorology, Watts Steam Engine, specific equipment like one measuring expansion of metal by heat (James Prinsep built one such indigenous equipment for himself) etc. Mack made a sensation in Calcutta, and his demonstrated lectures on chemistry delivered at the Asiatic Society were attended by many scholars and Marquis of Hastings. Many Indians and Europeans rushed to Srirampur College to hear his lectures.

John Mack published a bilingual book *Principles of Chemistry*, Volume I: *Kimiyā Vidyār Sār* (1834), the English text printed on the left side, and the Bengali text on the right hand side pages of the book. The word 'chemistry' was translated not as '*rasāyana*' (later use) but as *Kimiyā* the old world term denoting alchemy. Otherwise the European terms were 'merely expressed in Bengalee characters' such as oxygen –*oxijān*, nitrogen-*naitrajān*, sulphuric acid – *gandhakāmla* etc. Mack wrote in his introduction: "It is a mistake to suppose that any good will be served by accurate translations of scientific names . . . . In composing this volume, my primary object has been to introduce chemistry into the range of Bengali literature and domesticate its terms and ideas in this language". Both in the Asiatic Society and the Serampore College, Indian experts in Sanskrit and Bengali helped the European scholars ever since 1784 for more than half a century.

John Mack explained in his book, 'chemical forces' or *Kimiyā Prabhā b*, 'chemical substances' or *Kimiyā Vastu*, 'electro-negative substances', 'unmetallic

electro-positive substances', non-metals, atomic weight of elements, steam engine (he had written an article on this in *Samācār Darpaṇ* dated 25 April 1832), preparation of elements such as oxygen etc. John Mack had utilised for his work several British texts penned by Murray, Henry, Brande, Ure, Turner etc. He contemplated to write the second volume of *Kimiyā Vidyā* on metals, organic chemistry, astronomy and mechanics etc, but this never came out. Like so many missionaries (we have lost count of them, another one David Hare), John Mack died prematurely of cholera!

The establishment of the Calcutta School Book Society (Carey himself was a pioneer in this Society) triggered the missionary activities related to scientific writings in Bengali: the publication of not only books but also periodicals. *Digdarśan* was the first ever (started April 1818) periodical, a monthly, devoted to this area, particularly to the Bengali writings in physics, chemistry, geography, geology, astronomy and life sciences.

The title itself was defended in the October 1818 issue: the phenomena in the sky, on the earth and ocean were contemplated to be covered, since that alone would justify the title of *Dik-Darśan*, different directions and observation. Magnet and navigational compass were discussed in the April and December 1818 issues. Under physics, the gravitational forces including Newton's contributions (July 1818), and different kinds of matter (September 1818) were discussed lucidly through contemplated conversations. In the article entitled *Pratidhvani* (October 1818), it was explained how echoes originate and propagate themselves.

In April 1818 and February 1820 issues were printed articles on ascent by balloons and their manoeuvrability in the sky. An article on steam-boat (yet to arrive in India) *Vāspēr dvārā naukā cālānar viṣaye* came out in the second issue May 1818. Noteworthy were the discussions on electricity and lightening (September 1818) and on cloud (February 1820).

Several articles on geography and geology were published: Geographical Divisions of the Earth and on the Vesuvius (April 1818); India's Plant Resources (May 1818); Coal Mines in England, Pearl Fishery in Ceylon, Subterranean Salt Mine near Cracow in Poland (December, 1818).

A few interesting articles on animals were published: The Natural History of the Elephants (June 1818), On the Whales *Makar Matsyer Vivaraṇ* (January

1819). Not many articles on astronomy, chemistry and technology were printed. An article on Stars (Tārā) (September 1818) was very brief. The November 1818 article on Metals (*Dhātu*) was however very detailed. The special properties of metals were explained with illustrations on Platinum, Gold, Silver, Mercury, Copper, Iron, Lead, Tin etc. The Origin of Printing which eventually led to the European Renaissance was discussed in the October 1818 issue.

The monthly *Digdarśan* was discontinued after 1820, but the weekly Bengali periodical *Samācār Darpaṇ* started on 23 May 1818 by the Srirampur Missionaries went on till 1841, publishing scientific news and very short articles.

On geography and human habitat we find notes on: Limits of Hindustan (06 June 1818), Different Indian Races and Tribes (13 June 1818), An Account of the City of London (30 January 1819), A Preliminary Account of Burma, Myanmar (22 January 1820, presumably penned by Felix Carey), The Extent of this Earth, *Prithivī r Parimān* (30 July 1831) etc.

*Samācār Darpaṇ* printed technical discussions on Torpedo (15 August 1818), Kaleidoscope (22 January 1820), Periscope (10 September 1831), the last one extremely useful for ‘*jalamadhya matsya apachita vastu jalamagna byakti ityādi* sub-marine investigations, devised by an inventor from Sydney, New South Wales’. The 13 November 1819 issue had a short article *Āścarya Ālok* (Mysterious Light).

During the 1830’s *Samācār Darpaṇ* issues included technical treatises under the sectional title *Vidyāviśaya*. Presumably John Mack preferred the term *Vidyā* rather than *Vijnān* to denote Science. John Mack’s tradition seems to be to print the English text on the left and the Bengali translation on the right, in order to cater to two different categories of readers. His 08 February 1832 article ‘Attraction’ *Ākarṣan*, discussed physical (*sanlāga*) as well as chemical (*kimiya*) attraction, the latter denoting interaction of atoms of different kinds to produce molecules of a new compound with altered properties:

‘*Bhinna vastur paramāṇu paraspar līn hoy, nūtan vastu utpanna hoy*’

How the heat (*tāp*) energy interacts with solid, liquid and gaseous phases as well as the properties of sun-ray and dew were discussed in the issues of 29 February 1832 (a leap year! ) and 07 March. On 25 April 1832 came out John Mack’s celebrated article *Vāspēr Kal* or ‘The Steam Engine’ which was later

included in his 1834 book *Kimiyā Vidyār Sār* as an appendix. The article with sketches discussed the general properties of a steam engine and then specifically the technical details of Watt's Double Acting Steam Engine. Mack tried his expertise in translating 'boiler' as *hunāri*, 'cylinder' as *chungī* etc. In the 13 June 1832 issue one finds a very popular article on *Tūt Pokā* (Silk Worm).

*Digdarśan* and *Samācār Darpaṇ* were the first ever Bengali periodicals publishing scientific articles, and these efforts of the Christian missionaries led by William Carey, not sufficiently recognized and honoured in later times, must have inspired the contemporary Bengalees including Raja Rammohun Roy.

Rammohun's Bengali periodical *Samvād Kaumudī* was published first in July 1819. The first essay on the Satī, *Sahamaran Samvād*, protesting against the practice of widow-burning was also reprinted as a booklet and praised in the July 1819 issue of *India Gazattee*. In 1821 *Samvād Kaumudī* published articles on the importance of newspapers; improvement of water services in Calcutta; criticism of the misers; need to prohibit export of rice from India; need for low-cost medical help for the poor; on medical training from the European doctors; proficiency of the Hindu youth in Bengali and English and the need for grammatical knowledge; Hindu Architecture and so on. In the issues of the said periodical published in 1824 we find articles: *Pratidhvani* (echo), *Ayaskānta vā Cumbakamanī* (magnets), *Makar Matsyer Vivaraṇ* (on the whales), *Balloon-er Vivaraṇ*, on History etc.<sup>53</sup>

The tradition in favour of scientific periodicals in Bengali was sustained through the institution of new periodicals such as *Jñānānveṣaṇ* (1831), *Jñānodaya* (1831), *Vijñānasevadhi* (1832), *Vijñānasārasamgraha* (1833) etc. *Vijñāna Sevadhi* was probably the first periodical to use the Bengali Sanskrit word *vijñāna* (instead of *vidyā*) to denote the modern, natural 'science'; the periodical was published by the newly founded Society for Translating European Sciences patronised by the eminent orientalist cum scientist Horace Hayman Wilson of the Asiatic Society of Calcutta. The society and the periodical immediately drew acclaim in the May 1832 issues of the *India Gazette* and *Samācār Darpaṇ* of Srirampur. Inspired by Wilson, Amalchandra Ganguly and Kashiprasad Ghosh translated chapters of a scientific book by Brohem, the first on mathematics, conics and co-ordinate geometry, and the second on experimental physics related to wind, electricity, optics. The quality of translation into Bengali was adjudged to be excellent.

The scientific journals and the books in Bengali promoted by the Calcutta School Book Society created great interest among the Indians, not only the Bengalis, but also the populations in Bombay and Madras where School Book Societies were founded. Mountstuart Elphinstone, Governor of Bombay since 1819 and before him, Thomas Munroe, Governor of Madras till 1807, had been the champions for education in the vernacular languages. Quite naturally science consciousness spread in these three regions of India, Bengal providing the common inspiration.

G.J. Gordon and E.S. Montague of the Calcutta School Book Society took up collaborative projects on geographical books in Bengali compiled through the collective efforts of Indians and Europeans from different parts of Bengal. The first few Indian maps of the world were published in Bengali.

The School Book Society published the books written by Pearse and Pearson, and reported on 11 September 1820 that Rammohun had also submitted his bilingual manuscript *Jayāgrāhi* or Geography for publication. Rammohun had also recommended 'that a translation of some of Lord Bacon's works such as *Novum Organum* etc., which has been the groundwork of much of the Science cultivated in England, would offer much interesting matter for publication'.

During the 1930's, the Anglicists won their decisive victory in the sphere of education against the Orientalists and the Vernacularists, and yet the role of the vernacular languages in spreading the message of modern science could not be denied. On 21 March 1834 Holt Mackenzie commented in The Asiatic Society meeting: "It was by works in the local dialects, conveying the elements of European knowledge, that the road was paved for the introduction of our language, literature and science"<sup>54</sup>

#### IV

There were three streams of thought, not necessarily working in unison, to contribute to the phenomenon loosely titled as the 'Bengal Renaissance': those championed by (a) the Orientalists led by the Asiatic Society stalwarts such as Jones, Colebrooke, Wilson and Prinsep, (b) the Christian Missionaries led by William Carey, and thirdly, (c) the Hindu College enthusiasts led by David Hare, Derozio and the Derozians. The third group became in due course the most effective, accepting European knowledge, modern science and English education

as its motto and Raja Rammohun Roy as the central figure in this movement, even though Rammohun was not formally connected with the Hindu College and its so-called 'founders'.

For nearly two decades since 1814 there was the fierce intellectual debate as to which language/languages should be used for educating the youth of India, and which subjects to be taught. The first group favoured the classical languages such as Sanskrit, Arabic, Persian, the Oriental Sciences followed by modern knowledge; the second group led by Carey insisted on the use of the Vernacular languages and teaching of modern science. The third group led by Rammohun, David Hare and Derozio emphasized on the use of English and modern scientific learning; they favoured a syncretistic approach and could not be categorised as the crude and rude Anglicists like Mill and Macaulay.

In 1818 James Mill in England published his magnum opus, *The History of India* in which he severely criticized the Orientalist approach of Colebrooke and practically every achievement of the Asiatic Society. Mill rudely suggested that the Indian culture was absolutely useless and the only thing that needed to be taught in India was the Western knowledge system in English. One year before Mill's hostile pronouncements, the Hindu College had been established (1817), mainly through the indigenous efforts proclaiming a comprehensive view: "The primary object of this institution is the tuition of the sons of the respectable Hindoos, in the English and Indian languages and in the literature and science of Europe and Asia". The italicized words clearly signified a syncretistic approach and no hostility against any culture or any language.

When Lord William Bentinck, the Governor-General of India, advised by Mill and Macaulay, endorsed the Government resolution of 7 March 1835 favouring 'promotion of European literature and science, and funds on English education alone', it appeared as if the Anglicists had won. But the truth is that the Indians had settled for English education two decades earlier! In course of his evidence before the Parliamentary Committee of 1853 (Parliament Papers, Vol. XXXII), Alexander Duff, a missionary and personal friend of Rammohun, testified that the idea behind the first English seminary in India originated in 1815 in the minds of David Hare and Rammohun, and that during the next two decades, 'English education was in a manner forced upon the British Government, which did not itself spontaneously originate it'.

### David Hare, Derozio and the Derozians

The famous historian Ramesh Chandra Mazumdar has refused to accept the testimonies of Duff and Derozio regarding the aforesaid 1815 involvement of David Hare in the planning of Hindu College<sup>7</sup>. Entering this phase of our discussion, we refer to what we have cited before<sup>4,7,8,10-17</sup> and now mention additionally some more literatures on the subject of Hare, Derozio and the Derozians,<sup>55-63</sup>.

David Hare, was born 17 February 1775, as one of the sons of a watchmaker in London, and came to Calcutta to pursue this profession in 1800. During the middle of his career, which ended of cholera on 01 June (still observed at present as the Hare Day) 1842, Hare switched over from business to education and philanthropy out of sheer love for this country and its people. During his 56<sup>th</sup> birthday, 17 February 1831, which was celebrated by 565 young admirers, fittingly called 'Young Bengal' heralding the renaissance movement, Hare declared: "A few years after my arrival in this country, I was enabled to discover during my intercourse with several native gentlemen, that nothing but education was requisite to render the Hindoos happy, and I exerted my humble abilities to further the interests of India"<sup>64</sup>.

There is no documentary evidence regarding the precise date when 'Hare's humble abilities were exerted' for the first time: in 1815 or before/after this date. The famous historian Susobhan Sarkar wrote in 1970: "The controversy about the founder of the Hindu College ought to be settled by the *Calcutta Christian Observer*, 1832, which states, on the authority of Derozio, that Hare mooted, at Rammohun's house in 1815, a scheme for a metropolitan education centre, as an 'amendment' to the Raja's projected religious society... It was Hare's plan which was carried 'by a native' to Hyde East who convened the foundation meeting on 14 May 1816. Near contemporaries regarded Hare as one of the real founders of the great College"<sup>65</sup>.

Such a widely accepted tradition has been rejected, on the plea of lack of documentary evidence, by David Hare's contemporary, Radhakanta Deva<sup>66</sup>, an orthodox Hindu, and Sarkar's contemporary, another well-respected historian, R.C. Majumdar. Radhakanta Deva, however kindly certified<sup>66</sup> from the old records that 'Mr Hare was nominated a Visitor of the College on the 12<sup>th</sup> June 1819, and as he gradually devoted his time and attention to promote the object of the Institution, he rose in the public estimation and was elected a Manager of the College, perhaps in the year 1825'. Peary Chand Mitra, a direct student of David

Hare and Derozio wrote wryly on Radhakanta's reply: "Raja Radhakanta was perhaps not aware of the good David Hare used to do by stealth. He took care not to appear as the ostensible founder of the Hindu College, but there is no doubt that in reality he was"<sup>66</sup>. In the Felicitational address that the (565) student-admirers of David Hare presented to him on 17 February 1831, they wrote: "however your eminent services to this country may be overlooked by others, they are appreciated by those who have experienced their advantages". The favour of his sitting for a portrait was solicited from 'the man who has breathed a new life into Hindu Society, who has made a foreign land the land of his adoption, who has voluntarily become the friend of a friendless people'<sup>67</sup>

The documented account related to David Hare starts in 1817, not with the Hindu College (inaugurated on 20 January) but with the inception of the Calcutta School Book Society on 08 July. Hare used to contribute Rs. 100 annually towards the 'cheap supply of useful school books other than religious, in English and oriental languages'. The twin organization, Calcutta School Society founded on 01 September 1818, was literally David Hare's heart; he was its European Secretary for two long decades (1823 – 42) till his death.

The School Society appointed three sub-committees: (a) for the establishment of a limited number of model 'nominal' schools, (b) for aiding and improving the indigenous schools and (c) for the education of a selected number of pupils in English and to groom them as the future teachers. David Hare seems to have accepted the model of Dr. Bell, tried in his Military Orphan Asylum of Madras in 1791, and the model of the dissident missionary, Robert May who established a chain of graded schools around Chinsurah, West Bengal. Classes were graded and senior students of merit were required to coach the junior students in this 'monitorial' method. Similarly, schools were classified.

In David Hare's Arpooly *Pathśālā* there were classes of successive standards, the students using *khari* (chalk), in the lowest class, then *tāl* (palm leaf), then plantain leaf and then the students in the highest class writing on paper! This is how the poor students of Bengal received the first spark of modern education. The famous Reverend Krishna Mohan Banerjee squatted down to write on plantain leaf in the Arpooly *Pathśālā*, then moved on to David Hare's English school at Pataldanga, and finally in 1824 to the Hindu College<sup>68</sup>. Kishory Chand Mitra wrote:

“David Hare’s schools always served as an intermediate link between the independent schools fostered by the Calcutta School Society, and the Hindoo College. The most promising pupils from it were sent to the Hindoo College to be educated at the Society’s expense. The number always amounted to thirty. These pupils invariably proved the most distinguished and took the shine out of their fellow collegians. They carried almost all the honors and shed greater lustre on the College than what was reflected by its “pay” students. This fact is easily accounted for by their comparative poverty, their habits of industry acquired in the preparatory school and the stimulus held out to them in the shape of prizes and scholarships.

They were the picked boys of a well conducted High School. They had already risen above their compeers in that school and acquired a love for study, whereas the majority of the foundation and “pay” scholars of the College, were the sons of wealthy men who had been cradled in the lap of luxury. No wonder therefore, that these Sybarites were unable to rub shoulders with the sturdy “Boreahs”, (as Hare’s boys were derisively called) who had been taught to look to collegiate proficiency as the only passport to wealth and distinction.

Thus fostered and recruited, the Hindoo College became a mighty instrument for improving and elevating the Hindoos.”<sup>68</sup>

David Hare served not only the poor, but even the poorest of the poor, if the boy or the girl had the thirst for education and true merit. When Hare admitted in his school the only son of a sobbing poor widow, she exclaimed, “David Hare is not a man but an angel come in disguise upon earth to relieve distressed humanity”. Hare’s palanquin was chased after by innumerable boys like Ramtanu Lahiri pleading to the saint “me poor boy, have pity on me, me take in your school”<sup>69</sup> Ramtanu used to say later: “What Hare did for me, he did for thousands”. David Hare’s palanquin was a mobile dispensary full of medicines, which visited not only the schools and colleges, but also the sick boys in the huts of the poor where the ladies would wait for the saintly *sāheb* and talk to him intimately, as if he was their own brother. Hare bore all the expenses for the poor students, the cost of their books, food, medicine, till he himself became broke. He donated his own land for the Sanskrit and Hindu Colleges. If he was not the spiritual founder of the Hindu College, who was? Peary Chand Mitra captured the spiritual side of the apparently ‘God-less secular David Hare’:

“History affords instances of remarkable changes at certain periods.

Circumstances create agents. Cousin says God sends special agents when circumstances are ripe for their advent. (To us the appearance of Hare in Calcutta as the pioneer and father of native education was providential as there was no natural bond of sympathy between him and the Bengalees.)

The Āryas saw God in everything and Paul says “in Him we live, move and have our being.” Those who exalt themselves spiritually become his instruments and Hare was one. Without him, who could have secured the cordial co-operation of the native community, gone from door to door for subscriptions to the Hindu College and kept up the interest created in the native mind in the education of the Hindu youth?

“If then Hare was devoid of motive and was what the Āryas say “*niskāma*” i.e. free from desire to receive return in any shape, if he deprived himself of the comforts of life and if his existence and fortune were devoted to the good of his fellowmen although belonging to a different race, was he not “laying up treasures in heaven and not looking at the things which are seen and temporal but at the things which are unseen and eternal”?

For the good done by Mr. Hare to the Hindus, “not in word, nor in tongue but in deed and truth,” the portrait, the tomb, the tablet and the statue are no doubt monuments of our gratitude, but they are after all perishable and “shall dissolve.” The real imperishable monument is the pure grateful recollection of our benefactor in the national heart, and this, we pray, may be transmitted from generation to generation”<sup>68</sup>

Though established in 1817, the Hindu College had not come into full functioning before 1818-19. The premises of the College were shifted from one place to another, and the institution ran into severe financial difficulties. The government agreed to help the College financially, stipulating the condition that the ‘General Committee of Public Instruction’ headed by the famous Orientalist Horace Hayman Wilson, would supervise the functioning of the College. The government had decided, against the advice of Rammohun, to establish the Sanskrit College, also under the leadership of H.H. Wilson. David Hare donated his land property on the northern side of College square for the buildings of the two Colleges: ‘Hindu’ and ‘Sanskrit’. Thus started the Hare – Wilson era of the Hindu College since 1823. Formally, and as per the documents, Hare was a Visitor (1819), an Inspector, a Committee Member (1825) of the Hindu College, and we have no reason to disbelieve in the numerous testimonies that he was the heart and soul of this institution ever since its contemplation in 1815 and right upto the date of his death on 01 June 1842.

### Other Developments in Education and Science

There were several developments during the period 1818-1823. The School Society movement spread from Calcutta, and many other cities adopted this model: Dacca School Society (founded 11 November 1818), Murshidabad School Society (16 June, 1819) etc. All these societies preferred to spread non-religious, secular and modern education. Similarly the model of the School Book Society was transmitted from Calcutta to the metropolitan cities of Bombay and Madras. Mr Montague wrote from Calcutta to the Secretary, Madras School Book Society: "Our most useful works are in Bengalee; and it would be desirable to get translations of them for the Madras Committee to be put into the garb of the local dialects".<sup>70</sup>

A School of Native Doctors was established in Calcutta in 1822 for the training of Indian doctors employed in the army. European medicine was the subject of instruction through the medium of Hindustani. Four years later, medical classes were opened in the Sanskrit College to turn out Ayurvedic practitioners, and in the Calcutta Madrassa to train young men in the practice of Unani medicine. The two early superintendents, Peter Breton and John Tytler struggled hard to teach Western medicine through English as well as a vocabulary of local languages. John Tytler taught Anatomy, Pharmacy, Medicine, Surgery and even Chemistry under Pharmacy. Under Anatomy and Surgery, Tytler introduced anatomical dissection in his class of 1828. The students 'learnt zootomy, dissecting softer parts of animals and barely handled the bones of human skeleton'.

The Calcutta Medical and Physical Society were founded in March, 1823 and published, without any government aid, its *Monthly Circular and Selections* regularly. Indians were admitted in these associations founded by the Europeans. Radhakanta Deva, Ramkamal Sen, Raja Kalikrishna Bahadur and Madhusudan Gupta (the first Indian to dissect a human body in 1836) were all elected as corresponding members of the Medical Society in 1827, they even contributed a few papers on indigenous drugs. Radhakanta also contributed in March 1828 to the Agricultural and Horticultural Society of India a few papers on the use of manures and the chemical elements in Indian soils.<sup>71</sup> Having quoted Deepak Kumar from one of his very useful papers<sup>71</sup>, we may also refer to the readers in the same breath, some of the excellent papers of the great science historian, Samarendranath Sen on the similar subject <sup>72-74</sup>.

In a letter dated 06 October 1823, the General Committee of Public Instruction recommended to the Government, on behalf of the Hindu College, a Professorship of Experimental Philosophy for teaching of mechanics, hydrostatics, pneumatics, optics, electricity, astronomy and chemistry. The Committee wrote:

“The lectures on general physics might be held in the Sanskrit college (premises), and the apparatus presented by the London Society might be disposed of in that building.... The instruction in chemical science may be given in a separate building to be constructed in the immediate vicinity accommodating the philosophical apparatus and a laboratory, in which chemistry can be usefully and practically studied.....

“To these lectures all the Governors, teachers, and scholars of the (Hindu) College and School should be admissible. It might perhaps be desirable, also to throw them open to the public at a moderate charge for admission, the amount of which might constitute an additional remuneration to the Professor”<sup>75</sup>.

It may be noted that Rammohun wrote his famous historic letter to Lord Amherst in December 1823, pleading for the education of modern European sciences in English. At that time the importance of modern science was hardly a subject of controversy; all scholars including the Orientalists and the Vernacularists and all Indians supported the cause of Science. The point of controversy was related to the language issue, to the priority of English over the classical and vernacular languages. The Orientalists wanted the Indian youth to study ancient Indian science and European science through Sanskrit, Arabic and Persian. In the Calcutta Madrassa, Maulavee Abdoor Ruheem translated a number of English books on mathematics such as Bridge’s *Algebra*, Hutton’s *Mathematics*, Geometry from *Encyclopedia Britannica* etc. into Arabic and Persian. Similar attempts were made in the Sanskrit College to teach modern mathematics in Sanskrit. The students ‘expressed their determination to quit the College rather than attend such classes’. J. Thomason and Rev. W.H.Mill (the great scholar in Sanskrit) observed during 1824-26, the futility of such educational experiments and felt that ‘much would be gained, if instead of translating (so many, already available) English books into the eastern languages, scientific instruction were conveyed in English’<sup>75</sup>. Even Wilson concurred. Rammohun might have smiled at this development before he left for England in 1830.

Rammohun might have also been delighted to know how John Tytler introduced the subjects of anatomy and dissection to Madhusudan Gupta in the

Sanskrit College class of 1828, and how Robert Tytler taught in 1830 the finer points of Spherical Trigonometry to the Hindu College student Radhanath Sikdar (which enabled the student later in 1852, to compute the altitude of the highest mountain peak in the world). We do not have any documentary proof that Rammohun had met or heard of Derozio, the most reputed and revolutionary teacher at Hindu College since 1826-27, but we tend to accept this likelihood, since David Hare was an ardent admirer of both the personalities. Derozio was an admirer of Rammohun, who had come out in fiery denunciation of the murderous practice of *Sati* or widow-burning, and who supported Lord Bentinck's proclamation suppressing the rite on 04 December 1829. Derozio admired the beautiful English and spirit of Rammohun, displayed in the Felicitation Address and delivered to Lord Bentinck in the teeth of orthodox protests from Radhakanta Deva's *Dharma Sabhā*.

#### **Henry Louis Vivian Derozio (18 April 1809 – 26 December 1831)**

In a beautiful 'Foreword' to the latest edition of Thomas Edwards's work<sup>61</sup>, R.K.Dasgupta provided the 'correct' dates of birth and death of H.L.V. Derozio (as given above) and also suggested the date of his joining the Hindu College (as the teacher) as 1826 (the date provided by Edwards is March 1828). Dasgupta has claimed that 'it was not earlier than the 1870's that Derozio (his name) appeared (in the literature)'. This is not quite true; Dasgupta overlooked the paper, a direct testimonial from Kishory Chand Mittra<sup>58</sup> dated June 1861, which has been cited in the 1877 book on David Hare<sup>60</sup>. Kishory Chand put the date of Derozio's joining the Hindu College as 1827. He and his brother Peary Chand were direct witnesses, and we would rather quote him at length than let the evidence be forgotten:

"In 1827, Mr. Henry Vivian Derozio was appointed Assistant Master in the Senior Department. I thus prominently notice his appointment, because it opened up, so to speak, a new era in the annals of the College. His career as an educator was marked by singular success. His appreciation of the duties of a teacher was higher and truer than that of the herd of professors and schoolmasters. He felt it his duty as such to teach not only words but things, to touch not only the head but the heart. He sought not to cram the mind but to inoculate it with large and liberal ideas. Acting on his principle, he opened the eyes of his pupils' understanding. He taught them to think, and to throw off the fetters of that antiquated bigotry which still clung to their countrymen.

“He possessed a profound knowledge of mental and moral philosophy and imparted to them. Gifted with great penetration, he led them through the pages of Locke and Reid, Stewart and Brown. He brought to bear on his lectures great and original powers of reasoning and observation which would not have disgraced the late lamented Sir William Hamilton. But it was not only in the class room that he laboured for the interests of his pupils. He delighted to meet them in his own house, in debating clubs, and other places and to pour out to them the treasures of his cultivated mind.

“He was not a fluent but an impressive speaker, what he said was suggestive and contained bone and sinew. The native managers of the College, cradled in superstition, were alarmed at the progress which Derozio’s pupils were making by actually “cutting their way”, as one of the newspapers of the day no inaptly expressed it, “through ham and beef and wading to liberalism through tumblers of beer”. Like many other enlightened men of other enlightened times, they could not rise above the prejudices of the nursery and see, in the innovating spirit of the Collegians, aught but an element of danger to their country. They were therefore, naturally scandalized at their heterodoxy and attempted to put it down by dismissing Mr. Derozio.

“But the seed which had been sown, had germinated and developed into a stately tree and was to bear goodly fruit.

“The Jesuits,” says Pascal in one of his unparalleled letters, “have obtained a papal decree condemning Galileo’s doctrine about the motion of the earth. It is all in vain. If the world is really turning round, all mankind together will not be able to keep it from turning or to keep themselves from turning with it.” The order of the College Committee for the dismissal of Mr. Derozio, was as effectual to stay the great moral revolution as the decree of the Vatican to stay the motion of our globe. Onward shall it roll through the country like the advancing flood of the Ganges bearing truth and religion in its resistless course.

“Progress is the law of God and cannot be arrested by the puny efforts of man. As knowledge is acquired, facts accumulate and generalization is practised, skepticism arises and engenders a spirit of enquiry. Faint glimpses of the truth begin to appear and illuminate into midday. The youthful band of reformers who had been educated at the Hindoo College, like the tops of the Kanchanjangha, were the first to catch and reflect the dawn. But the light which had first illuminated the tops of mountains, has since descended on the plains and will, I devoutly trust, soon penetrate to the deepest valley and the lowest rice field.

“The earliest Hindoo Collegians of whom you, Baboo Ram Gopaul, were one and not the least distinguished one either, were our pioneers and the first to rebel against their spiritual guides and summon Hindooism to the bar of their reason. They were the first to go into the breach and carry the ramparts. They felt and they asserted in their lives that, what is morally wrong, cannot be theologically right. The foundations of the fabric thus opened and examined, and its outworks, thus sapped, seemed to be tottering to their fall. India, which had been buried so long under the ashes of prejudice, seemed to be overtaken by a new resurrection and to be casting about to rise on her feet”<sup>58</sup>

The elder brother, Peary Chand, a direct student of Derozio, also wrote about his teacher<sup>60</sup>, how the guidance from the teacher ‘led to free exchange of thought and reading of books which otherwise would not have been read’. The debating club Academic Association founded by Derozio in 1828/1829 attracted not only his students but a large number of intellectuals. Some specific names of the Derozians may now be listed:

Rasikkrishna Mallik (1810-58), Dakshinaranjan Mukherji (1812-87), Krishnamohan Banerji (1813-85) and Ramgopal Ghose (1815-68), the four ‘firebrands’ as they were called in their college days; Harachandra Ghose (1808-69), Sibchandra Deb (1811-90), Ramtanu Lahiri (1813-98), Radhanath Sikdar (1813-70) and Pearychand Mitra (1814-83). Also listed as Derozians were Madhabchandra Mallik, Maheshchandra Ghose, Gobindachandra Basak and Amritalal Mitra. An elder associate, Tarachand Chakrabarti (1804-55), had belonged to Rammohun’s group. He and Kishorichand Mitra, younger brother of Pearychand were not direct students of Derozio.

Derozio brought into the new educational system ‘the finest ideals of the European Enlightenment, the spirit of enquiry, a rationalist and sceptical approach to the vital concerns of social and individual life’. Referring to Derozio’s famous critique on the philosophy of Kant, the famous Sanskrit scholar in Calcutta, Dr. W.H. Mill declared that Derozio’s published objections were ‘perfectly original, and displayed powers of reasoning and observation which would not disgrace even gifted philosophers’.

Derozio’s method of teaching was to present and carefully weigh both sides of a crucially important question / issue. He quoted Lord Bacon’s dictum: “If a man will begin with certainties, he shall end in doubt”. When the orthodox members of the College Administration suspected that Derozio was spreading

atheistic immorality amongst his students, he sent back his written rebuttal dated 26 April 1831:

“I have never denied the existence of a god in hearing of any human being .... Is it forbidden anywhere to argue upon such a question? ... I thought it my duty to acquaint several of the College students with the substance of Hume’s celebrated dialogue between Clenthes and Philo, in which the most subtle and refined arguments against Theism are adduced. But I have also furnished them with Dr. Reid’s and Dugald Stewart’s more acute replies to Hume, replies which to this day continue unrefuted. If the religious opinions of the students have become unhinged in consequence of the course I have pursued, the fault is not mine. To produce conviction was not within my power, and if I am to be condemned for the Atheism of some, let me receive credit for the Theism of others... That I should be called a sceptic and infidel is not surprising, as these names are always given to persons who think for themselves in religion....”

The Native Managers handed out a majority decision to dismiss Derozio who shot back: “I believe there was a determination on their part to get rid of me (without charges, without any trial) to satisfy not (merely) popular clamour but their own bigotry”.

In the sudden outburst of a sense of desperation and anger (against the notion surrounding Rammohun’s role, discussed earlier), Majumdar has written: “Hindoo College was conceived by the orthodox Hindus and established by the orthodox Hindus, for the orthodox Hindus”<sup>76</sup> Not by the liberal Europeans also, such as Hare or Wilson? Not for the liberal minded poor Hindus to be emancipated? Were the not-too-orthodox Derozians led by their teacher trying to hijack or heighten the ideals of their dear College during 1827-31?

The sad year 1831 ended with the death of the teacher, exactly eight months after his resignation from the orthodox institution. David Hare (and also Wilson and Srikrishna Singh) had stoutly defended Derozio before his dismissal; Hare was abused by the College’s Head Master James Isaac, D’Anselme who called him ‘a vile sycophant, when Hare asked politely, whose sycophant was he.

What a ‘vile sycophant’! Hare was admiring his much younger friend’s patriotic verse:

My country! In thy days of glory past  
A beauteous halo circle round thy brow,  
And worshipped as a deity thou wast,  
Where is that glory, where that reverence now?

The young poet Derozio was not despondent, he had abundant faith in his students, the 'Young Bengal':

Expanding like the petals of young flowers  
I watch the gentle opening of your minds  
And the sweet loosening of the spell that binds  
Your intellectual energies and powers.  
What joyance rains upon me when I see  
Fame in the mirror of futurity  
Weaving the chaplets you have yet to gain,  
And than I feel I have not lived in vain.

David Hare must have concurred, he had also 'not lived in vain.' Rammohun in England rejoiced in the renaissance, in the emerging Young Bengal. After Derozio's death (December 1831), Hare became the sole friend, philosopher and guide of Young Bengal. 565 young men had been the first to publicly honour him on his 56<sup>th</sup> birthday. Hare became the protector of the Academic Association and patron of the Society for the Acquisition of General Knowledge (1838).

#### **After Derozio**

Hare steadfastly worked through *Pāthśālās*, School Society Schools, his own schools, founded and maintained by him alone, also Hindu College, Sanskrit College and finally the epoch-making Calcutta Medical College founded in 1835, his palanquin physically, and he affectionately moving through all these institutions every day and encouraging students all his own!

When the Medical College was founded, there was the hurdle of Hindu orthodoxy and reluctance on behalf of the Hindu students to touch and dissect dead corpses. The Principal, Dr. M.J. Bramley wrote that the situation 'appeared to threaten the very existence of the institution; without the zealous coadjutor David Hare's influence, any attempt to form a Hindu Medical class would have been futile'<sup>77</sup>. To break down Hindu orthodoxy and superstition, Rammohun used his pen, Derozio his voice and David Hare his heart, gentle persuasion and inspiring words. Sriram Chatterjee has described how David Hare received one day Babu Madhusudan Gupta, the then Professor of the Sanskrit Medical Science of the Sanskrit College, and anxiously asked him: "Well, Madhu, have you found the text in your *Śāstra* (scripture) authorizing the dissection of dead bodies". Madhu, formerly one of the students in Hare's School, replied in the affirmative<sup>77</sup>. It is now a historical fact (J.E.D Bethune's Address on 15 June 1849) that

Madhusudan Gupta dissected a body on the 10<sup>th</sup> of January 1836, the first amongst the Indians in the modern world. Inspired by his example, four students Rajkrishna Dey, Umacharan Seth, Dwarakanath Gupta and Nabin Chandra Mitra undertook the experimental dissection work on 28 October 1835. The discrepancy in the two reported dates may be noted;<sup>78</sup> the first one was probably January 1835 (and not 1836 as printed in Bethune's Address) when Madhusudan switched over from Sanskrit College. Alternatively, the second date could be 28 October 1836. In any case, there was some nine months time gap between the pioneering act of Madhusudan and that of the four students. During this time-gap, Madhusudan was ostracized by the orthodox Hindus, and had to quote the Sanskrit texts related to human dissection in ancient India. A debate was arranged by the Lieutenant Governor of Bengal at the initiative of J.E.D. Bethune; the Maharaja of Navadwip presided over the conference.<sup>79</sup>

Between 1837 to 1841, David Hare was the Secretary, Treasurer and even virtually Principal of the Medical College. Presided over by him, the Society for the Acquisition of General Knowledge arranged monthly meetings on various topics, since its inception on 12 March 1838, and published three volumes of its discourses between 1840 to 1843; there was one paper on the Physiology of Dissection by Prasanna Kumar Mitra.

Hare appeared with the Derozians in public meetings: against press regulations (15 January 1835); for extension of the jury (8 July 1835); against indentured labour (10 July 1835) etc. He rescued 'coolies', intended for forced emigration to Mauritius, from a Pataldanga house. He participated in the agitation for legal reforms (1836).

David Hare died suddenly of cholera on 01 June 1842. On a rainy inclement day, 5000 sobbing Indians (not many Europeans) followed his body from the Hare Street residence to the grave in College Square, in his own land appropriately. His admirers erected the 1847 memorial statue (a portrait had been secured in 1831 with his permission) and instituted the tradition of anniversary meetings after death (01 June) every year without a break. The wonderful annual lectures delivered in his honour remain as our sacred national legacies.

Peary Chand's book<sup>60</sup> is a treasure book recording wonderful eulogies on David Hare and his era, and we would quote two kinds of statements published therein. In an obituary, *The Friends of India* from Srirampur, edited by Carey, Marshman and other Christian missionaries, paid warm tributes to the just departed

David Hare, but at the end added a note of jarring dissonance: “At the same time, it must be confessed with deep regret, that his (Hare’s) inveterate hostility to the Gospel, produced an unhappy effect on the minds of the Native youths, who were so largely under his influence, by indisposing their minds to all enquiry after religious truth and inducing a general skepticism”.<sup>80</sup>

This rank untruth, falsehood in the above statement had to be countered, and it was countered eventually by Kishory Chand Mitra<sup>58</sup> who defended the spiritual philosophy of the Hindu College, secular but not irreligious or Godless, nobly enunciated by Rammohun, David Hare and Derozio. The triumvirate was not ‘hostile’ to any religion; they were respectful, and equally respectful to all denominational faith as well as to the principles of scientific reason and freedom in religious belief. This principle of spiritual secularizing was understood neither by the Orthodox Hindus of the *Dharma Sabhā*, nor by the diehard Christians of Srirampur. Kishory Chand’s spirited rebuttal in 1861 may now be quoted:

“Has the education imparted at the Hindoo College realized its object? There are those who condemn it as irreligious, and suggest the introduction of the Bible as a class-book....

“ ... I cannot admit the charge preferred against the system pursued in the Hindoo College by certain parties that it takes no account of the spiritual element in man. I emphatically deny that it is calculated to make only secularists. It has brought to those who have come within the range of its influence, inestimable moral and religious benefits. It has taught them great truths not only respecting men, their histories, their politics, their inventions, and their discoveries, but respecting God, His attributes and His moral Government. It has revealed to them the laws which the Almighty Mechanician has impressed on the world of mind as well as on the world of matter. Let me not be told therefore, that the expansion of the mind and thought which is going on around us, is not accompanied by an expansion of the heart: the development of the moral and religious feelings. Nothing can be more unfair than to characterize this system of education, as it is characterized by certain parties, as an irreligious or a non-religious system. No system can be such which leads us through Nature up to Nature’s God. The elements of morality and religion may be conveyed independently of any system of dogmatic theology.....

“ ... I am opposed to the introduction of the Bible as a class book. It will introduce a state-church element into the relations of the Government with the people, which would be highly prejudicial to the healthy development of true religion in the land. I hold that the State should have no connection (with sectarian religion), since the inevitable and invariable result of such connection is to de-spiritualize the spiritual instinct...”<sup>81</sup>

### **The Legacy of the Derozians**

Who were the 'Derozians'? Derozio might have taught hundreds of students in his short stint (1827-31), but hardly a dozen amongst them shone in the later parts of their career as the worthy students of their teacher. R.K. Dasgupta has pertinently questioned in his beautiful Bengali essay on Derozio<sup>82</sup>, did the select band of 'Young Bengal' publicly protest when Derozio was dismissed, did they even write much on Derozio in their long careers. The answer is in the negative.

We may venture to attend to Dasgupta's emotionally honest charge that Derozio's students 'did not fulfil their moral obligations'. More important than any individual is the ideal that he or she pursues. There was one Derozio, but was there a Derozianism, an ideal coherently and exclusively his own? Did not Derozio himself subscribe to the renaissance ideals of freedom, free critical thinking, English education and European science, articulated by Rammohun and David Hare?

We suggest therefore, that the so-called Derozians were Rammohunians and Davidians as well. Rajnarayan Bose wrote categorically<sup>59</sup>, that for the English education (in Hindu College) the Nation is indebted first to David Hare and after him to Derozio. Attending to Dasgupta's charge, we may point out that the Derozians, 565 of them, led by the fire-brand rebels, gave a public ovation to David Hare in February 1831 on the eve of Derozio's dismissal from the Hindu College, when the Head Master D'Anselme branded David Hare as Derozio's 'evil sycophant'. For another 11 years and even later, the 'Derozians', known as the 'philosophical radicals' and 'stormy petrels of our renaissance', have paid homages to David Hare and other heroes of the movement. The ideal was one, the renaissance spirit one, the individual names and labels did not matter.

Some of the early Derozians were abusive against the rituals of the orthodox Hindus, themselves indulging in the counter-rituals of drinking wine, eating beef, ridiculing the sacredness of the Hindu gods and goddesses. Derozio did not support their excesses; as a matter of fact, like Hare, he counselled moderation and respect for the elders and national traditions to his students. Some of the Derozians embraced Christianity, some did not, remained in the Hindu society as Brahmos or mere rebels, non-conformists (Ramtanu Lahiri, Mahendralal Sircar were the examples). Tarachand Chakravorty left the circle of Brahmos and functioned as the senior most Derozian intellectual. Sibchandra Deb, a Derozian, on the other hand, went back to Rammohun's Brāhmo ideals and enriched that society in Konnagar and elsewhere. Krishnamohan became a Christian and yet

contributed to the world of scholarship in Sanskrit and Western science, technology and education.

Rasik Krishna Mallik was noted for great erudition and thoughtful speech. His periodical *Jñānānveṣaṇ* was popular for the critical essays, so was Krishnamohan's *Enquirer*. There was a definite shift away from the cultural issues towards the socio-political. Ramgopal Ghose became the most famous of the Derozians, when he excelled as the associate of George Thompson in the world-wide anti-slavery agitation and the Bengal British India Society, founded in April 1843; as an orator, he was hailed as 'the Indian Demosthenes'. Ramgopal became even more famous by his spirited defence of the Black Acts (1849-50) which aimed at subjecting the European residents to the jurisdiction of the local courts.

Radical politics of a Western type at that time, a decade before the first War of Independence (1857), was hardly possible and 'the rich promise we see in the Derozians never matured into anything solid'. Further wrote Susobhan Sarkar: "The Derozians failed to develop any movement outside their own charmed circle, and the circle itself could hardly keep any significant form".

Peary Chand Mitra and Radhanath Sikdar conducted a campaign for a simple colloquial style in Bengali prose. The latter was a mathematician, computer and surveyor in the government department, whose scientific career has been carefully chronicled by Jogesh Chandra Bagal, Arup Ratan Bhattacharyya and others.<sup>83</sup>

Born in October 1813, Radhanath Sikdar had a long and successful studentship in the Hindu School and College over the period 1824-32. In 1824 John Mack, the wonderful chemist from Srirampur College, could not join the Hindu College, and D. Ross was a poor substitute 'talking more about soda' than anything else. A class on Drawing was started in 1827. John Tytler was quite successful in his teaching of animal dissection in the Sanskrit College, and Madhusudan Gupta of 1835 fame must have been inspired by him.

Robert Tytler (1787-1838) the mathematician joined the Hindu College in 1828. Radhanath Sikdar took lessons from him learning eagerly Euclid, Algebra, Spherical Trigonometry, Maxima, Minima, Calculus, Kepler's Problems, Windhouse's Astronomy etc among other subjects such as Newton's *Principia*. Sikdar started translating a few scientific books from English to Sanskrit (the orientalist tradition was still on!), but his work was interrupted when he joined the Great Trigonometrical Survey of India (GTI) in 1832.

Sikdar acquired more skills in mathematics and geodesy under George Everest the Surveyor General, and using theodolite and other equipment, conducted trigonometric measurements of Himalayan mountain peaks for two decades. Everest wrote of Sikdar: "In his mathematical attainments there are few in India, whether European or native, that can at all compete with Radhanath Sikdar". The 1851 Report of the GTI also commented that 'Radhanath Sikdar's attainments are of the highest order'.

During 1848-1850 observational data were acquired for 79 Himalayan mountain peaks including the unnamed Peak XV, the highest in the world, 29,002 feet above the sea, named after Everest. The author of the paper in the 10 November 1904 issue of *Nature* as well as Sir Francis Younghusband (1921) admitted that the observations had been recorded earlier, computations were completed in 1852 in the Calcutta Office of GTI, and then "one day, the Bengali Chief Computer (Radhanath Sikdar) rushed into the room of the Surveyor General, Colonel Andrew Waugh, breathlessly exclaiming: Sir, I have discovered the highest mountain in the world". The Peak XV was named by Waugh after his predecessor as 'Mount Everest'.

Radhanath Sikdar died on 17 May 1870 and for another six years, his name did not get any recognition, till one of his friends, Colonel Macdonald, a Deputy Surveyor General, wrote a letter published in the *Friends of India*, issue dated 24 June 1876, setting the record straight, 'in order to rescue from neglect the name of one of the greatest Mathematicians, who measured and computed the great Indian arc'. For this friendly act, Macdonald was reprimanded by the Governor General Lord Lytton and suspended from his job for three months!<sup>83</sup> Sikdar's honour was vindicated, as we have mentioned, in 1904 and 1921 by two other Britons.

Bagal and Bhattacharyya have also 'rescued the name'<sup>83</sup>, but R.K.Kochhar is still not convinced<sup>84</sup>. He quotes the colonial 1945 Survey of India Report dittoing Lord Lytton's version and comments that 'the height was calculated at Dehra Dun, after Sikdar had been posted at Calcutta'. Kochhar believes that the Sikdar legend is 'no doubt an attempt to push the most deserving peripheral native into a nuclear role'.

## V

**Back to Rammohun**

We have mentioned that three streams of thought contributed to the phenomenon of Bengal Renaissance during the first half of the 19<sup>th</sup> century. There were the Orientalists, the Srirampur Missionaries and the Hindu College stalwarts. Rammohun the most shining star of that period of Indian Awakening, did not belong to any group, but as an institution by himself, came to be recognised as the Father of Modern India.

Rammohun's ideals had many resemblances with those of the three groups of intellectuals, and yet he was different and supremely above in his majestic height. Himself proficient in Sanskrit, Vedic studies, Arabic, Persian and Islamic literatures, he had sympathy for the oriental research; however, his priority was not to look back but to surge forward towards the modern scientific education. Rammohun had great respect for the vernacularist and philanthropic approach of the Christian missionaries but disliked their proselytization and Trinitarian theology. The Hindu College curriculum was close to his heart and yet he cautioned that the College should not turn out some 'atheist beasts'.

Basically, Rammohun was a syncretist and a spiritualist. He wanted to integrate all denominational religions, minus their rituals and superstitious theologies, into one Universal Humanism, wanted to combine the golden messages of the East and the West. His was a gigantic world-view which was not even comprehended during the European Renaissance. At least on this count the Bengal Renaissance could find an esteemed place beside the European. Referring to the proposed analogy with the Italian Renaissance, Susobhan Sarkar aptly remarked: "An analogy is only an analogy, not a replica"<sup>85</sup>. We also earnestly believe that no serious comparison is warranted.

While initiating our discussion on Rammohun's contribution to 'Calcuttan Science and Indian Awakening' (consider Tagore's characterization of him as *Bhārat Pathik*, one in search of a Greater India), we wrote that Rammohun himself noticed that something like an European Renaissance was taking place in India, of which he was a participant.

What did the Bengal Renaissance achieve? Susobhan Sarkar has identified<sup>85</sup> three major limitations in that Movement: (a) inadequate appreciation of the nature

of the British imperialist exploitation, (b) the elites were gulf apart from the common masses of our people, and (c) the Hindu bias in the movement alienating the Muslim consciousness. Considerately enough, Sarkar admitted that the defect was collective and could not be attributed to any single individual. Fair enough. But other less magnanimous scholars and critics have extended the discussion specifically to Raja Rammohun Roy's role, in Renaissance, and that evokes some rebuttal.

Rammohun in his youth intensely disliked the British stranglehold over India, and gradually realized that the previous administration had been no better. He welcomed the inflow of modern emancipatory ideas through English education, which he hoped would gradually unite the Indian masses in their struggle for independence against the British. This is precisely what happened later (1857-1947). The writings of Rammohun on this subject have been preserved for posterity. What do the critics say about the continuity of English education in India six decades after independence? How do they feel today about Gandhiji's famous diatribe: "The system of English education is an unmitigated evil.... Tilak and Rammohun, pigmies compared with Chaitanya etc. would have been far greater men, if they had not had the contagion of English learning" (*Collected Works*, Volume 19, pp. 476-78).

The second point: the elites have been apart from the common masses. Yes, but not William Carey, David Hare or Raja Rammohun Roy! Rammohun met many ordinary poor people in Patna, Varanasi, Tibet, Rangpur, Bhagalpur, Calcutta, Srirampur, England etc and felt deeply for them. He was found weeping for the destitute in India while he was sitting in a Church in England. His whole life was dedicated for the upliftment of common men in India. The Marxists are not the only people concerned with the proletariat. To Robert Owen, Rammohun expressed his warm sympathy for Socialism and hoped that it would remain linked with spirituality. Much later, Swami Vivekananda developed his theme of Vedantic Socialism.

The third point regarding the alleged 'Hindu bias' in the Renaissance Movement 'alienating the Muslim consciousness' is serio-comic. It amuses us. It clearly exposes the naivety of the critics, their make-believe world about Indian history. They keep telling us that the British imperialists came to India, and indulged in the policy of Divide and Rule. The real truth is that they ruled over the Indian masses already divided, hopelessly. That deep-seated schism in the two communities was repeatedly noted over centuries by Al-Bīrūnī, Kabīr, a number of mystic

saints, Sufis, Akbar, Dara Shuko etc. Now the historians like Muhammad Habib, Mushirul Hasan, Tapan Ray Choudhuri<sup>86</sup> admit that ‘communalism has a history going back to pre-British times’!

Rammohun did not have any ‘Hindu bias’. He studied Quran, many Sufi Islamic literatures, wrote in Arabic, Persian, the famous *Tuhfat* and so on. He tried to impart liberal Islamic ideology to the die-hard conservative Muslims at Rangpur. When he criticized certain parts of *Quran*, he was branded a *Jabardast* (staunch) Maulvī. Rammohun realized that intellectual reforms had to come from within; even Kabīr had failed earlier. So he proceeded to struggle against Hindu orthodoxy at Calcutta, just as Martin Luther had launched his reformist movement centuries ago in Christian Europe.

We would discuss the topic of the so-called ‘Muslim alienation’ in a separate paper. For the present, may we terminate our deliberations by putting forth a question amusingly? What did the learned critics (Sarkar excluded) expect of Rammohun? He should have imbibed several other personalities in one (his) body: those of Kabīr, Akbar, Jhānsi ki Ranī, Karl Marx and Mahatma Gandhi and then launch the First War of Independence on behalf a united Indian nation? We would now end by quoting Friedrich Max Müller who counselled for a realistic and just appraisal of Rammohun’s personality and achievement:

“I like to call Rammohun Roy, a great man with three essential elements – unselfishness, honesty and boldness – who will be remembered for ever, with some of his fellow-labourers and followers, as one of the great benefactors of mankind...

“The German name for prince is *Furst*, in English First, he who is always to the fore, he who courts the place of danger, the first place in fight, the last in flight. Such a *furst* was Rammohun Roy, a true prince, a real Rājā, if Rājā also, like Rex, meant originally the steersman, the man at the helm.

“If however I was wrong in calling Rammohun Roy a really great man, I wish that those who seem so jealous of greatness would at least explain on what grounds they would bestow that ancient title.

“Why should we grudge ‘greatness’ and ‘fame’ to those whom the world likes to honour? Go into a great library if you wish to know the meaning of the immortality of a name . . . True immortality is the immortality of the work done by man, which nothing can make undone, which lives, works on, grows on for ever”<sup>87</sup>.

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64. Reference No. 60, pp. xvi-xvii, citing *Government Gazette* of 21 March, 1831.
65. Susobhan Sarkar, 'David Hare', *Dictionary of National Biography*, Institute of Historical Studies, Calcutta, 1970, reprinted in Reference No.13, pp. 97-100. Sarkar quoted Reference No. 56.
66. Reference No. 60, pp. 43-44. Radhakanta Deva's letter dated 04 September 1847 to Peary Chand Mitra.
67. Reference No. 60, pp. xiv-xv.
68. Reference No. 60, pp. 54-57; 147-150; xiii-xv; xxviii-xxx. Beautiful descriptions on David Hare's schooling system and personality have been provided by the two brothers, Peary Chand and Kishory Chand.
69. Reference No. 10, p. 33.
70. Calcutta School Book Society's 3<sup>rd</sup> Report, 11<sup>th</sup> October 1820, Appendix No. III; Reference No. 51, pp. 38-40.
71. *IJHS*, 29.1(1994), A collection of 11 papers in 119 pages presented at a seminar on 'Calcutta and Science', in the Tercentenary Celebration on Calcutta in December 1989. The information provided in the paragraph is quoted from the paper of Deepak Kumar entitled 'Calcutta: The Emergence of a Science City' (1784-1856), pp. 1-8
72. S.N. Sen, Scientific and Technical Education in India: 1781-1900, Chapters I-V, in *IJHS*, 23.1&2 (1988), five Chapters in pages 1-220.
73. *Ibid*, Chapters VI to XI, pp. 221-537, *IJHS*, 23.3& 4(1988) 221-537. A superb gift of 537 wonderful pages!
74. S.N. Sen, 'The Pioneering Role of Calcutta in Scientific and Technical Education', Reference No. 71, pp. 41-47.
75. Reference No. 72, pp. 104-111.
76. Reference No. 7, p. 39.
77. Reference No. 60, pp. 138-143.
78. Reference No. 73, pp. 224-225. S.N. Sen refers to the controversy regarding the priority and dates.

79. Reference No. 71, Debasis Bose's article 'Madhusudan Gupta', pp. 31-40. Bose accepted Madhusudan's priority, citing Jogesh C. Bagal's article, *Modern Review*, September and October, 1947; Sundarimohan Das's article *Amrita Bazar Patrika*, Sunday 27 January 1935, Supplement Section; *Ekshan* (a Bengali journal) 17.5, pp. 22-25 etc. Jogesh C. Bagal also wrote the famous article: The Hindu College, Predecessor of the Presidency College: Story of its Foundation, *The Modern Review*, July 1955, pp. 55-60.
80. Reference No. 60, p.88
81. Reference No. 58; reference No. 60, pp. xxxv-xxxvi
82. R.K. Dasgupta, Reference No. 14, the Bengali article Derozio, pp. 70-82.
83. Report of the Operations and Expenditure connected with the Trigonometrical Survey of India, 15 April, 1851, p.18; *Hindoo Patriot*, 18 April, 1864; Clements R. Markhan, *A Memoir on the Indian Surveys*, 1871, p. 90-91; Colonel Macdonald, Friends of India, 24 June 1876; the Bengali Periodical *Āryadarshan*, *Āśvin*, *Kartick* and *Magh*, 1291 B.S. (1884-85); S.G. Barard, 'Mount Everest: The Story of a Long Controversy', *Nature*, 10 November, 1904; *Mount Everest – The Reconnaissance*, 1921, pp. 9-10, introduction by Sir Francis Younghusband; Jogesh Chandra Bagal, Radhanath Sikdar, *Unabimāea Śatābdir Bāṅgla*, 1963; Arup Ratan Bhattacharyya, *Bāṅgāḷir Vijñānbhāvanā O Sādhana*, (History of Science in Bengal), Dey's Publishing, Calcutta June 2006, pp. 83-84, 89-92 and 104-107.
- We are strongly indebted to Bhattacharyya (2006) for having compiled these useful earlier references all of which negate the negative remark of R.K. Kochhar<sup>84</sup>.
84. R.K. Kochhar, Science in British India, *Current Science*, Vol. 63.11&10 December 1992 and Vol. 64.1(10 January 1993)55-63, reprinted in *IJHS*, 34.4(December 1999) 317-346. In p. 331 is to be found the remarks on Sickdhar (Sikdar). Vide also A.K. Chakravarty, *IJHS*, 30.2 & 4(1995)151-8
85. Reference No. 13, pp. 164-165
86. Tapan Raychaudhuri, *Europe Reconsidered: Perceptions of the West in 19<sup>th</sup> Century Bengal*, Oxford University Press, New Delhi, 2001, p. 357. Raychaudhuri has merely quoted the other authorities, and has not gone deep into this question. He is known to be an erudite scholar in Medieval History, knows Arabic and Persian, and yet!
87. F. Max Müller, *Rammohun to Ramakrishna, A Compilation*, Sushil Gupta (India) Ltd. Calcutta, 1952, pp. 16-18.

Rammohun Roy, his younger contemporaries and spiritual heirs had opened the self-value and dignity of human as a person and independent subject. Unlike of European the Renaissance humanists who sought for human right of happiness, Bengal thinkers built their humanism from an idea of human suffering. This synthesis helped him to prove for his own compatriots that a society with callousness towards human, his life and fate is antihuman. Thus, Rammohun has switched the theme of suffering from metaphysical to social-and historical area. Hence, Bengal thinkers and reformers from Rammohun Roy and Iswarchandra Vidyasagar to Keshubchandra Sen and Swami Vivekananda saw in the relief of sufferings the main condition for achievement of happiness. IV. Rammohun Roy was born in an orthodox Brahmin family, the members of which had for a long time been in the service of the Mohammedan rulers of Murshida-bad. Rammohun's father, Ramkanta Roy, was an orthodox Hindu strictly following the Sastras, and his mother, Phulthakurani, was a woman of intelligence and considerable firmness of character. Phulthakurani had two sons, Rammohun and Jagmohun, and a daughter. Rammohun had his first rudiments of study in the village school and also studied Persian under a Maulavi. After some years of study in the village home, Rammohun's father sent