The Silent Killer: Tracing the Trajectory of Tubercular Deaths in Colonial Bengal

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Abstract

The incidence of tuberculosis was progressively increasing towards the end of the 19th century though the colonial government in Bengal was not willing to acknowledge it initially. The paper tries to argue this by drawing primarily from archival records. Mortality from epidemic malaria, cholera, plague and smallpox in colonial Bengal has been recorded more or less with varying degree of certainty. But unfortunately mortality from tuberculosis was never recorded until the beginning of the 20th century presumably because tuberculosis carried with it the elements of social stigma and people used to hide it from neighbours.

Key words: All India Sanitary Conference, Bengal, Mortality, Phthisis, Pulmonary disease, Respiratory disease, Sanitary Commissioner, Tuberculosis, *Yakṣmā*.

1 Introduction

> In India, the prevalence of tuberculosis is gradually increasing. While the disease is diminishing in the most of the civilized countries of the world, it is our grave concern that it has increased in India.[1]

The present paper intends to look at how at the beginning of the 20th century the colonial government in Bengal, putting aside its initial lackadaisical attitude, began to take a serious note about the tubercular disease which was steadily proliferating in colonial Bengal. It also seeks to find out why this disease failed to draw adequate attention of the government for a long time. And finally it will try to follow the trajectory of its mortality and make a more realistic estimation of the population dying from this silent killer.

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[1]Upendranath Brahmachari, 'Bharotejokhharogsamasya', *Ayurbignan Sammilani*, 7th year, *Magh* 1334 (B.S), translation is mine.

Over the past few decades, history of disease has developed as an important field of enquiry in social history writings. Recent works of medical historians have analysed multiple aspects of various diseases and their implications in society and economy (Arnold 1993; Bala 1991; Harrison 1994; Samanta 2017; Kumar 2001; Bhattacharya, Harrison and Worboys 2005; Chakrabarty 2004). Recently, Arabinda Samanta has engaged in the social construction of tuberculosis in the context of colonial and post-independent India (Samanta 2013). Similarly, B. Eswara Rao discusses the prevalence of tuberculosis in colonial Madras Presidency (Rao 2006). Bikram Kumar Choudhary has addressed tuberculosis especially from the perspective of gender (Choudhary 2013). Mark Harrison and M. Worboys have shown how this 'Cinderella disease' has emerged as 'disease of civilization' in the context of Africa and India (Harrison and Worboys 1995). Achintya Kumar Dutta's *Trauma in Public Health: Tuberculosis in the Twentieth Century India* (2017) covers nearly a hundred years of history of tuberculosis in India. Several articles

by Neil Brimnes have brilliantly illustrated the BCG vaccination vis-à-vis tuberculosis control programs initiated by the Indian state, the politics of health and the human response to it (Brimnes 2011, pp. 397–407).

All these works are very important indeed and certainly add to our knowledge on the subject, but, nevertheless, none of these works had focused on Bengal. The emergence of tubercular diseases in colonial Bengal is indeed a fascinating story which has not been addressed historically. Its attendant mortality still remains an important desideratum, and the present essay is a humble attempt in that direction.

Upendranath Brahmachari and many of his contemporaries were greatly concerned about this silent but deadly killer disease. In the first half of the 20th century, tuberculosis was viewed as a major public health problem of British India. Tuberculosis alone used to kill one lakh people every year and infect more than ten lakh people in colonial Bengal (Roy 1998, p. 76). The abysmal poverty and squalor created by the colonial intervention and the negligence in recognizing the tubercular diseases along with a lack of initiative to ensure proper treatment and record of mortality created a situation that tuberculosis became an endemic disease.

There was a famous proverb in rural Bengal that someone who gets infected by dropsy, intestinal obstruction and tuberculosis cannot escape, but has to die (Chandra 1994). It had already existed in India from several centuries earlier (Wujastyk 2003). There is a reference to the origin of tuberculosis in *Tattiriya Saṃhitā* (2.3.5.1-2). According to this, King Soma had thirty-three wives, who were the daughters of *Prajāpati*. Soma, however, took a fancy only on *Rohini*. This angered the other wives and they returned to their father. Soma followed and requested them to be back but *Prajāpati* would not return them unless Soma swore to consort with all of them equally. Soma agreed to it but on their return, associated only with *Rohini*. Since he broke the oath given to *Prajapati*, Soma was seized by *Yakṣmā*. This was supposed to be the origin of *Rājayakṣmā* and to be freed from this affliction; one must make an offering to the *Ādityas*, who have the power to appease a *Yakṣmā*. *Yakṣmā* has been characterized as the internal disease-demon affecting both humans and cattle alike (Zysk 2009, p.12). It is interesting to note that even the later traditions preserved the older notion that the *Yakṣmās* are sent by the gods because of a sin committed against them.

1.1 Tuberculosis in Pre-colonial India

Tuberculosis was perceived to be a hereditary disease in ancient India. Caraka described it as *rājayaksmā* or the disease of king. *Rājyakṣhmā* of the vedas is believed to be tuberculosis. In *Suśruta Saṃhitā* (300–500 CE) the word *yakṣman* occurs in the term *rājayakṣman* and tends to denote a state of general decay and paralysis of a particular limb or organ, characterized by the symptoms of food aversion (*bhaktadveśa*), fever (*jvara*), cough (*kāśa*), appearance of blood (*sanitadarśana*) and laryngitis (*svarabheda*). According to Caraka, the causes of tuberculosis were "severe physical exertion, suppression of natural urges, emaciation and the habitual use of unwholesome food". These causative factors unsettled the *doṣas* (balance of humor), which in turn dried up the body. He also describes the disease as "transmissible" and it affected both the chest (*uras*) and lungs (*kloma*) (Rao 2006). The *Atharvaeda Saṃhitā* had pointed out that *yakṣmā* killed both children and adults: 'The *satavara* amulet, the killer of the evil named ones, has destroyed all the childish *yakṣmās* and those who speak as adults'(*Atharvaveda* 19.36) (Wujastyk 2001, pp.16–17). Likewise, since it is divinely sent, gods like *Agni*, *Sāvitrī*, *Vāyu* and *Āditya* have the power to destroy it. Water was also helpful and used extensively in the therapy. Charms, gods, and other plant materials were utilized to prevent attacks from the *yakṣmās*. In medieval India, tuberculosis (*Tapedique* in Arabic) was known as 'sill' and physicians used simple rainwater for its treatment. Ghalib has mentioned that poverty was the cause of 'sill'.[2]

2 Trajectory in Colonial Bengal

Colonial expansion not only brought exotic diseases to the colonies, but also drastically changed their aetiologies. Europeans brought deadly viruses and bacteria, such as small pox, measles, typhus, cholera to America for which

[2]Ghalib adopted his wife's nephew Aka Arif who died in tuberculosis at the age of 35, Ghalib wrote:

"O eternal sky, *Arif was still young,*
How would it have harmed you
Had he lived a little more"
(see Varma 1989)

Native Americans had no immunity. As they had no previous contact with Old world diseases, they were immunologically defenseless. It is estimated that 80–90% of the Native American population was decimated within the first 100–150 years following the discovery of Columbus (Nunn and Qian 2010, pp. 163–188). In dealing with pre-contact New World tuberculosis (as with the most other disease) a word of caution was in order[3]. However tuberculosis was widespread and became a serious problem, 'a mass killer' after the arrival of the Europeans (Watts 2003).

Tuberculosis was not a new disease in India but as a result of colonization coupled with urbanization and industrialization, the physical and social environment had changed. Initially tuberculosis was considered to be widespread only in the urban areas. However, after 1900, tuberculosis had spread to the rural areas through the migrant populations (Watts 2003), who had migrated to the cities and towns in search of work. Once infected, they had no other option but to return to the countryside, thus spreading it to rural areas. By the middle of the 19th century, tuberculosis was thought to be common in some districts particularly among English troops,[4] and in some areas common among natives as well, such as in the districts of Madras (Rao 2006).

3 Colonial Response

In colonial India, probably for the first time, a representative from India, Dr Alexander Crombie, was sent to attend the Congress on Tuberculosis in Berlin in May 1899. He submitted a report on "The recent congress on tuberculosis at Berlin with special reference to the prevalence and prevention of the disease in India" to the Government of India in October 1899. This was the first official documentation on the causes, prevalence and prevention of tuberculosis in India (Choudhary 2008, pp. 65–84). Dr Crombie nomination to the Congress in 1899 can be seen as landmark in Indian history of tuberculosis. Interestingly, the archival records show that the then Viceroy of India, Lord Curzon (1859–1925 CE) had refused to send any medical man from India on the ground that the disease could not spread from here. However, no specific reason for not sending a representative from India was given in the reply to the Crown. The response of the Viceroy to the letter from the Secretary to the Crown in Britain mentioned: "...We could not spare any officer from India for tuberculosis conference and suggest that you should select officer (from) those (who are) now (on) leave in Europe" (Choudhary 2008, pp. 65–84).

But Crombie's report (1899), acknowledges various causes for the low incidence of tuberculosis in India. However, these reports accepted that tubercular disease was due to the presence and multiplication of tubercle bacillus, discovered by Dr Robert Koch. The book entitled *Phthisis and its Cure* (1907) by an anonymous author accepted a similar explanation for the prevalence of the disease. Two later reports by Arthur Lankasterin (1916) and Lyle Cummins (1932) also adopted a similar view. From 1860 onwards, the colonial government directed its attention to the importance of the proper statistics for registering birth and death. From 1885, the rise of tuberculosis was noticed among the jail population. The death rate from tuberculosis in Indian jails was remarkably higher than that in England and Wales. Hence we find greater attention being paid to the incidence of tuberculosis among the jail inmates from 1900 onwards.

The British Congress on Tuberculosis was formed in Britain to discuss a wide range of issues regarding the spread and causes of tuberculosis. Participants and representatives from all over the world including colonies were invited in their annual meetings. Thus, such organizations played an important role in spreading scientific ideas as well as setting agenda for implementation in respective colonies and other regions. The British Congress on Tuberculosis passed three resolutions in the meeting held in London in 1901[5]: (i) *Tubercle bacilli bacterium* is transferable from man to man, (ii) Voluntary notification should be given to authority and (iii) A permanent international committee should be appointed.

In response to these resolutions, the Government of India gave instruction to all local governments on 2nd June 1902 to pay special attention on the problem of tubercu-

[3]Medical historians argued that tuberculosis was present in pre contact New World. The sort found there was a slow acting killer, which would not have resulted in dramatic number of deaths at any one time. In this tuberculosis in the pre contact New World differed greatly from the massively contagious tuberculosis found in raw industrial cities in 19th century Europe and early 20th century Japan and among the poor in the world today.

[4]*The Imperial Gazetteer of India, The Indian Empire*, vol.1, Descriptive, Oxford, at the Clarendon Press, 1909, p. 527.

[5]File No-79/80, Sanitary Branch, National Archives of India (NAI).

losis.[6] The Government had initially asked the respective authorities to pay particular attention to the incidence of the disease among the employees of factories and the jail population. The government made provisions to carry out steps such as isolation of infected people, providing good ventilation and observance of cleanliness in jails and factories.[7]

The Government of India in 1904, on the occasion of the amendment to the Indian Emigration Act, XXI of 1883 clearly stated to all Presidencies, including Bengal that safeguarding the health of emigrants from tubercular infection was essential.[8] In the Act of 1883, the word "tuberculosis" was added only after smallpox. The Home Department had always wanted the Sanitary Commissioner to certify that there was only a marginal prevalence of tuberculosis in India. However, the Sanitary Commissioner of India B. Franklin clearly stated that: "...tubercle is a very serious cause of mortality in country.... being in a great degree a preventable disease, it behooves the Government of India to adopt any reasonable measures of precautions to limit its prevalence" (Choudhary 2008). This was the beginning of the notification of tuberculosis as a serious cause of mortality.

4 Identification, prevalence and causation of tuberculosis in colonial Bengal

Bengal Presidency came to be increasingly imagined as a hotbed of tropical diseases. For example, the British had regarded the city as 'a dangerous arena' where precious English lives were lost. Ronald Martin in his *Notes on Medical Topography in Calcutta* (1837) referred it as, 'disease arising from the deteriorating conditions in Calcutta,' and called for an urgent need for medical institutions for the laboring poor. Sir John Strachey had given a decaying picture of Calcutta in late 19th century in his book *India* (Edition 1903). He wrote:

> Compare for instance, what Calcutta was when Lord Lawrence became Viceroy in 1864 and what it is now....The filth of the city used to rot away in the midst of the population in pestilent ditches, or was thrown into Hooghly; there to float backwards and forwards with every change of tide. To nine-tenth of the inhabitants' clean water was unknown. They drank either the filthy water of the river, polluted with every conceivable abomination, or the still filthier contents of shallow tanks. The river, which was the main source of ordinary filth; it was the great graveyard of the city. I forgot how many thousand corpses were thrown into it from the Governments hospitals and jails, for these practices were not confined to the poor and ignorant; they were followed or allowed, as a matter of course, by the officers of the government and the municipality. I remember the sights, which were seen in Calcutta in those days in the hospitals, and jails and markets, and slaughterhouses, and public streets. The place was declared, in official reports written by myself in language which was not, and could not be, stronger than the truth required, to be hardly fit for civilized man to live in. There are now few cities in Europe with which many parts of Calcutta need fair comparison, and although in the poorer quarters there is still much room for improvement...there is hardly a city in the world which has made greater progress.[9]

Tuberculosis was discovered by Europeans in India only in the 1840's. But it is interesting to note that there was no 'virgin soil'[10] the way that African ground had been. The regions such as Africa and the Pacific Islands were commonly regarded as 'virgin soil' since the population there had not been infected before; it was more likely to be infected and vulnerable because of 'inherent immunity'. This theory was in wide circulation in the early 20th century, when African troop, posted in France during 1914–18, were infected with tuberculosis. Even the incidence of high mortality among black migrants in South Africa

[6] File No-79/80, Sanitary Branch, National Archives of India (NAI).

[7] File No-79/80, Sanitary Branch, National Archives of India (NAI).

[8] Amendments in the rules under the Indian Emigrants Act XXI of 1883, Progs., Nos.,773,1904,National Archives of India (NAI).

[9] Quoted in W. W. Hunter, *The Imperial Gazetteer of India, The Indian Empire*, vol. iv, Administrative, 1908, p. 474.

[10] In the early nineteenth century western medical practitioners believed in the theory of virgin soil. According to this theory, some races and regions were virgin or less infected with the tubercle bacillus, particularly among African races and tropical regions. For details, Harrison Mark and Worboys Michael, 1995, pp. 110–111.

was seen in light of this theory (Jones 2001). However, India was not regarded as virgin soil and it was widely believed that its inhabitants enjoyed a partial immunity to the disease, and lower incidences of tuberculosis were accounted among the Indian as opposed to the European soldiers. The tuberculosis as a disease and its prevalence had been discussed widely from the second half of the 19th century. For example, the Bengal Branch of British Medical Association, established in 1863 discussed issue of tuberculosis in one of their meetings held in January 1868. Dr Ewart discussed the comparative increase in the number of tuberculosis patients in the Calcutta Medical College. Gobinda Chandra Chatterjee, one of the speakers pointed out that how tuberculosis in Calcutta was gradually increasing day by day due to the climatic intervention and habitual changes of the people. He blamed the construction of brick houses, which obstructed the free circulation of air. But however, the medical men of Bengal in general still believed that tuberculosis was rare in India and very few people were attacked by this disease compared to the European countries (Roy 2005, pp. 324–325). Soorjocoomar Goodeve Chuckerbutty, the first Indian to join Indian Medical Service, recorded that phthisis was rapidly becoming fatal among the natives and East Indians and took many victims annually.

There was a great deal of paucity of statistics and sources regarding tuberculosis in Bengal in general and India in particular. Throughout the colonial period, deaths were reported by the ignorant village headmen or watchmen who described every kind of illness as 'fever' (Fox 1912, p. 294–298). The primary data suffered from limitations and it was acknowledged by the official authority. A letter dated 7th December 1868 clearly showed the urgent need for proper statistics.[11] D. B. Smith, the Sanitary Commissioner for Bengal wrote to J. M. Cunningham, the Officiating Commissioner with the Government of India some-time in September 1868:

> The system of registration of births, marriage and deaths, as it is at present practiced in Bengal, I believe to be very worthless indeed. In large towns, it is supposed to be regulated by municipalities; the police being the immediate agency employed. I have hesitation in stating it as my opinion that the results are such as to be unproductive of any precise or valuable information.The mortality statistics of the Calcutta municipality are replete with palpable and absurd errors. No valuable or accurate conclusion can be drawn for them. On the whole it may fairly be said that the present system of registration in Bengal is capable of affording little, if any useful evidence on medical or sanitary topics.[12]

The organization for reporting births and deaths to the authorities was rudimentary. In the rural areas this duty was generally conducted by the village watchman.[13] Most provinces did not use tuberculosis or phthisis as a separate category in their statistical returns. Instead, deaths from tuberculosis were supposedly registered under the more general category, 'respiratory disease' (this was also including pneumonia and bronchitis). In 1932 Public Health Commissioner, opined that majority of the deaths from tuberculosis were reported as fevers or other diseases, primarily because of the fear of social disabilities or quarantine or other disinfection measures. Three years later, the Commissioner estimated that between 10 to 20 per cent of deaths reported under 'fevers' and 20 per cent reported under 'respiratory diseases' were actually from tuberculosis. If we accept this estimate to be correct, between 400,000 and 800,000 people might have died from tuberculosis every year in India.

The subject had, in fact, been engaging attention in India for quite some years, and was dealt with in series of papers read before the Medical Section of the Asiatic Society of Bengal in 1908. Subsequently a resolution was passed making a reference to the wide prevalence of tubercular disease in Bengal. One such paper[14] titled 'Prevalence of tuberculosis in India' by Lt. Colonel E. Wilkinson provides the details of proliferation of tuberculosis over the years (Table 1).

There was no way of accounting the incidence of tuberculosis in Bengal Presidency before the 20th century. The

[11] From David B. Smith, ESQ., M. D., Sanitary Commissioner for Bengal, to J. M. Cunningham, ESQ, M. D., Officiating Commissioner with the Government of India, NAI.

[12] First Annual report of the Sanitary Commissioner for Bengal for 1868, Appendix-F, on a uniform system of registration, p. 54.

[13] Tuberculosis inquiry by Dr. A. C. Ukil, 1929, File No-74/29, Public Health (sanitary) Branch, National Archives of India (NAI).

[14] For full paper: (`https://www.ncbi.nlm.nih.gov/pmc/article/pmc2002951`) Accessed on 12/3/2017, at 6.55 P.M. at Jadavpur University.

Table 1 Statement showing the mean number of persons treated for all diseases and for tubercle in Bengal province, during 1891–1910 and 1911–1912.

Bengal						
Year	Calcutta			Presidency (excluding Calcutta)		
	Mean number of persons treated	Mean number treated for Tubercle	Ratio per 1000 for Tubercle to total	Mean number of persons treated	Mean number treated for Tubercle	Ratio per 1000 for Tubercle to total
1891–1895	271,448	503	1.85	1,960,316	1076	0.87
1896–1900	261,819	1145	4.37	3,031,438	2975	0.98
1901–1905	286,670	2152	7.50	3,731,297	4164	1.11
1906–1910	315,753	2401	7.60	2,855,888	3984	1.39
1911–1912	*329,229	2837	8.61	*3,270,299	5675	1.73

*These figures are for the year 1911.

transactions of the First Indian Medical Congress at Calcutta in 1894 included a paper entitled "The possible antagonism between malaria and phthisis" but this merely mentioned that both diseases existed in India. But there was nevertheless a general notion gaining ground that tuberculosis was increasing in Bengal. Table 2 shows the incidence of tuberculosis in jail mortuary statistics in the second quarter of the 19th century.

Thus large proportion of cases of tuberculosis was hidden away under different headings. A.C. Ukil wrote in an article in *The Calcutta Municipal Gazette*:

> We have reason to believe that the medical profession and public health officers have not yet co-operated with the provisions of the law as they should have done in the interests of public health reform. The result is that a large proportion of tuberculosis cases is being wrongly entered under the heads of fever, respiratory disease and the various categories of infantile mortality from recent enquires made by us and other workers, it appears that nearly 50% of the deaths under other heads and that very few of infantile and higher age period deaths from tuberculosis are recognized and entered as such.[15]

The Public Health Commissioner, in his annual report for the year of 1933 suggested that, a rough estimate of tuberculosis mortality might be made on the assumption that about 10–20% of the deaths under "fever" and about 20% of those under "respiratory disease" were actually due to pulmonary tuberculosis. Sir Leonard Rogers, I.M.S., examined 1000 fatal cases in the very feverish district of Dinajpur in lower Bengal in 1903. He remarked:

> I thus found that one third of the deaths attributed to fever were due to diseases such as dysentery, tumors, etc, in which fever was not even a marked symptom; another third were caused by such diseases such as pneumonia, bronchitis, phthisis (the last consisting 9% of total) and typhoid; while the remaining third were probably due for the most part to malaria and kala azar (Lankester 1920, p. 21).

The Lieutenant C. J. Fox in a paper at the All India Sanitary Conference held in Madras, 1912, had expressed an almost similar view:

> I would not like to say India was not a civilized country, but in a matter of statistics we have not attained to any degree of reliability. As long as the registration of deaths is left to the village *chowkidar* in villages or registration clerk in towns, we can never hope for reliable statistics in regards to mortality in any disease, particularly in disease such as tuberculosis, deaths from which might quite easily be attributed to other conditions such as fever,

[15]A. C. Ukil, Combating tuberculosis in Bengal: the outline of a scheme, *Calcutta Municipal Gazette*, 9th April, 1938.

Table 2 Incidence of Tuberculosis in Jails.

Prisoners in the jail	Period	Admission to the hospital	Fever	Dysentery and Diarrhoea	Cholera	Pulmonary Phthisis	All causes
Bengal	1833–1854	1235	10.9	21.7	8.7	1.3	72.5
Bombay	1831–1853	1281	13.1	15.0	10.9	0.7	61.5
Madras	1844–1853	1050	4.4	17.0	15.1	2.6	61.3
India	——-	1230	10.8	20.7	9.3	1.3	70.7

Source: *The Imperial Gazetteer of India, the Indian Empire*, vol. I, Descriptive, Oxford at the Clarenden press, 1909, p 530.

> bronchitis, pneumonia, diarrhea, and dysentery. We have to rely consequently on statistics such as they are, for an idea of the mortality from this disease. The sanitary commissioners' reports contain figures showing mortality from this disease among troops and jail population, but there are no figures for the general population of India. But if the disease is so prevalent in countries like England, Ireland and America, with improve sanitation and less overcrowding, it is safe to assume that it is widely prevalent in India (Fox 1912, p. 295).

Major General Sir John Megaw estimated in 1933 that there were probably two million cases of tuberculosis in India, and he was alarmed at its progressive increase in Bengal. He concluded, "Tuberculosis is evidently very widespread throughout the villages of India but is especially serious in Bengal, Madras, the Punjab and Bihar and Orissa" (Megaw 1938, pp. 601–623). In Bengal, there were some local surveys on tuberculosis in the first decade of the 20th century, which were carried out by Leonard Rogers (1904), Stewart and Proctor (1906–07), C. A. Bentley (1911–12). These surveys revealed that the disease was widely distributed in different parts of Bengal. In 1909, the Medical section of the Asiatic Society of Bengal discussed the issue of tuberculosis and adopted the following resolution:

> The medical section of the Asiatic society of Bengal having discussed the subject of tuberculosis disease in Bengal and its wide prevalence, are of the opinion that it is extremely common cause of great suffering and mortality, both among the European and Indian communities, and therefore venture to call the attention of the government of India and local government, to the urgent necessity for providing a properly equipped sanatorium for the treatment of early phthisis, such as has now been provided with the most satisfactory results in nearly all civilized countries (Roy 1998).

5 All India Sanitary Conferences and the question of tuberculosis

5.1 First All India Sanitary Conference, 1911

Officially, it was not until the year 1911 that medical practitioners and sanitary officials began to believe in the widespread prevalence of tuberculosis in India. For the first time, the acknowledgement came from the medical professionals in their First All India Sanitary Conference, Bombay, 1911. The proceedings, which were held in the Council Chamber of the Bombay Secretariat, opened with the following speech by the President:

> There still remain, however, numerous sanitary research problems in India, as yet almost untouched. Some of these problems will I understand be brought before us by the provincial sanitary commissioners and deputy commissioners. In particular I may mention tuberculosis. Tuberculosis accounts for more than 75,000 deaths per annum in the United Kingdom and the interesting report recently published by Dr. Turner, Health officer of Bombay, shows that the mortality from this disease in large cities like Bombay and Calcutta is already considerably higher than in Glasgow, Birmingham or Manchester.[16]

[16] *The Proceedings of the first All India Sanitary Conference held at Bombay on the 13th and 14th November*, 1911, p. 2.

In this Conference, Kailash Chander Bose, L. M. S., in a paper titled 'Spread of tuberculosis in Calcutta' pointed out the high prevalence of tuberculosis in Calcutta. Relying on the sanitary reports of the local governments he had shown how "Tuberculosis is vigorously pushing its way through the crowded streets and lanes of the populous city of Calcutta and no step has yet been taken to resist its course". According to him:

> Within the last twenty years it has taken a firm hold on Calcutta from the rate at which it has been spreading, it is no exaggeration to say that at no distant date it will be a very serious problem. The tool which Calcutta and its suburbs annually pay to the assessor of death on this head is simply appalling (Bose 1911, p. 133).

He went on saying, "We may grudge to pay a penny over the fixed municipal rates to the assessor of the corporation for carrying out certain important improvements, and we may move, heaven and earth to rescue us from the oppression, but we are offering no opposition to the demands of the ruthless assessor of tuberculosis" (Bose 1911, pp. 133–137). He lamented that there was a severe lack of proper maintenance of the system of the registration of causes of the death, but more or less nearly one-eighth of the total number of deaths in Calcutta were accounted for tuberculosis. He pointed out various leading causes including overcrowding, housing conditions, habits of spitting on the roads, which in many ways helped to spread the disease. He had also suggested some remedies for eradication of this disease in Calcutta.

There are some methodological problems to comprehend the magnitude of the incidence of tuberculosis in colonial Bengal. There was a scarcity of reliable statistical evidence in the mortality returns of the general population published by the Imperial and Provincial Sanitary Commissioners. It did not contain any reference to tuberculosis, but those of cholera, small pox, plague, fever, dysentery and diarrhoea, respiratory diseases, injuries, all others causes and all causes. The heading had varied from time to time, and it is only from 1910 onwards that the heading "tubercle other than lungs" started appearing in official mortuary registers. The Government of Bengal reported that tuberculosis patients had increased from 4278 in 1914 to 4426 in 1915. In the first All India Sanitary conference, Kailash Chandra Bose, a Doctor by profession, had given figures for sixteen years on the deaths from tuberculosis in Calcutta (Table 3).

Table 3 Death-rates from Tuberculosis in Calcutta, 1876–1891.

Year	Death rate
1876	407
1877	361
1878	302
1879	299
1880	454
1881	482
1882	482
1883	540
1884	525
1885	516
1886	536
1887	468
1888	572
1889	666
1890	743

Source: Kailash Chandra Bose, 'The spread of tuberculosis in Calcutta', *All India Sanitary Conference*, Bombay 1911, p. 134.

He had noticed that amongst the females in Calcutta in ward no. 14, Hindus in ward no. 4, Mohammedan females in ward nos. 4 and 5, had been worsely suffering from tuberculosis. The men living in ward no. 4 were especially prone to respiratory disease, and phthisis alone took away lives of many of them (Bose 1911, pp. 133–137). In 1901, tuberculosis accounted for 1064 deaths in Calcutta, but increased to 1608 in 1904 due to overcrowding, town planning, the effect of urbanization etc. Kailash Chandra was clearly pointing out that".....the disease has already spread all over the town and had not even spared the quarters in which dwell the most intelligent and wealthy classes of its people" (Bose 1911, pp. 133–137).

5.2 Second All India Sanitary Conference, 1912

In the Second All India Sanitary Conference of Madras 1912, there was an increased amount of discussion on tuberculosis. The statistics appear to show that this disease is rapidly increasing in India, especially in urban areas, but it is doubtful whether the increase is real or apparent

only or due to lack of more accurate diagnosis and registration. In view of the importance of this question a full and thorough inquiry seems desirable.

Divergent views on anti-tuberculosis programmes, such as establishment of anti- tuberculosis societies, sanatoria and dispensaries, improved ventilation of schools and homes, sanitation of towns and villages were expressed in this second conference. P. S. Chandrasekhar, Professor of Bacteriology, Madras Medical College brought the issue of tuberculosis as an important public health problem. Lieutenant C. J. Fox. in a paper entitled 'Tuberculosis and its relation to public health' argued about drawing 'attention not so much to what India is doing, as to what India might and should do for the eradication of this disease which, if the facts were appreciated, is more insidious and more to be dreaded than plague' (Fox 1912, p. 294).

5.3 Third All India Sanitary Conference, 1914

In the third All India Sanitary Conference (Lucknow 1914), Lankester strongly argued that situation of tuberculosis was devastatingly horrible throughout India. Four papers were presented on the issue of tuberculosis on the second day (Tuesday, 20th January).[17] Lankester too strongly believed in the value of tuberculin treatment, and soon he was asked by the Indian Fund Research Association to carry out further investigation of tuberculosis in India.

H. M. Crake, the Health officer of Calcutta in his report for the year of 1921 showed that mortality figures from tuberculosis had risen over 40% and one of Bengal's most urgently needed institutions would be a tuberculosis sanatorium for the city of Calcutta.[18] In 1926, E. Muir in an article in *Indian Medical Gazette* stated "while malaria is the most prevalent and perhaps fatal disease in the country district of Bengal, tuberculosis is undoubtedly the most fatal disease in larger towns" (Muir 1926, p. 326). The Table 4 by Dr Lankester shows that the mortality from tuberculosis had been generally high in three presidency towns. The reports of Health officer of Calcutta show an average mortality during the years 1919 to 1923 of 2104 or about 3.3 per thousand of the entire population (Muir 1926, p. 326). Sir Leonard Rogers provides us with figures from the postmortem records of the Medical College Hospital, Calcutta which show that 16.1% of the cases examined by him were due to phthisis.[19]

5.4 Reports of Public Health of Bengal

From the reports of the Director of Public Health of Bengal, it was clear that, the disease appeared to be spreading from the towns and started increasing in the rural areas during the years 1921–1924. An average death rate of 0.95 per thousand in the towns and 0.037 per thousand in the rural areas was prevalent in Bengal (Muir 1926, p. 326). The figures supplied by the Director of Public Health Bengal, during the years 1921–1924 demonstrate that there was a tendency of tuberculosis to spread from the towns to the villages (Table 5). Most of the Insurance Companies operated their Head Offices from Calcutta and it is interesting to note that the major portion of the insurance money was claimed on ground of tuberculosis (Houseman 1926, p. 261). Edward Houseman had shown death the claims of the Indians as well as European on the major diseases in an article, written in 1926. Interestingly enough, the Indian death claims for tuberculosis were quite higher than European counterparts (Table 6).

5.5 Bengal Public Health Report, 1933

The Public Health Commissioner in his annual report for 1933 stated that tuberculosis is now almost certainly one of the main public health problems in India, ranking probably next to malaria in this respect. In fact, it may be regarded as an epidemic disease. Bengal Public Health Report for the year of 1933 by Dr R. B. Khambata noted that during the year 1933 deaths reported from phthisis numbered 14,802 in the province showing an increase of 3001 against the previous year. The increase was shared to the extent of 2,583 by the rural areas and 418 by the towns, of which Calcutta was responsible for 315 deaths. The

[17]Dr W. J. Wanless, 'Tuberculosis in India: some suggestion on its spread and prevention'; A. W. R. Cochrane, 'The organisation of anti-tuberculosis measures in India' and 'Experience in the treatment of pulmonary tuberculosis in Indians by tuberculin; T. H. Gloster, 'A preliminary enquiry into the prevalence of tuberculosis amongst Bombay cattle'. For details see, *The Third all India Sanitary Conference*, Lucknow, January, 1914, p. 7.

[18]*Indian Medical Gazette*, 1923, May, p. 233.

[19]C. Frimodt Moller, The Application of our knowledge of tuberculosis to Indian condition, *Indian Medical Gazette*, 1927, Dec, p. 332. (Paper read at the 14th Indian Science Congress at Lahore, January, 1927)

Table 4 The number of deaths from Tuberculosis in Calcutta, Bombay and Madras, 1904–1919.

Year	Calcutta		Bombay		Madras	
	Deaths from TB	TB rate per Mille	Deaths from TB	TB rate per Mille	Deaths from TB	TB rate per Mille
1904	1608	1.8	3548	4.57	318	0.6
1905	2052	2.4	3183	4.10	832	1.6
1906	2201	2.6	4052	4.14	736	1.4
1907	2241	2.6	3440	3.51	641	1.2
1908	2101	2.5	3023	3.09	717	1.4
1909	1919	2.3	2862	2.92	774	1.4
1910	1971	2.3	2830	2.90	459	0.9
1911	2060	2.3	2694	2.75	760	1.5
1912	1931	2.3	2794	2.85	672	1.3
1913	2196	2.5	2452	2.19	481	0.9
1914	2137	2.4	1889	1.92	738	1.4
1915	1920	2.1	1710	1.74	759	1.5
1916	1738	1.9	1902	1.94	876	1.7
1917	1539	1.7	2118	2.16	1067	2.1
1918	1826	2.0	2513	2.56	1488	2.9
1919	1889	2.1	2780	2.83	1309	2.5

Source: Arthur Lankester, Tuberculosis in India: its prevalence, causation and prevention, Calcutta 1920, p. 45.

provincial death rate from phthisis showed an increase of 30.4%. The increase in the rural areas and towns was by 33.3 and 13.0%; respectively while that in Calcutta it was by 14.2%. 70.6% of the phthisis deaths among all the towns occurred in Calcutta alone. Eleven towns reported death rate above the provincial urban average (1.0). Pabna recorded the lowest rate (.04 per mile). In 1933, Calcutta returned the highest death rate (2.17 per mile) from phthisis followed by Darjeeling (1.35).[20]

There were 11,130 deaths registered from phthisis in the rural districts and towns of the Bengal presidency during the year 1933.[21] Bengal Public Health Report gave detailed report of deaths from tuberculosis of the 24 Pargana district for the year 1933 where Calcutta had showed the highest rate of mortality (Table 7). In 1937, the All India Institute of Hygiene and Public Health conducted a small tuberculin survey in Kalimpongtown, which indicated that about 45% of those examined had been exposed to infection though they had not necessarily contacted the disease. Provincial mortality figures show that Darjeeling district was second only to Calcutta (now Kolkata) town in death rate from pulmonary tuberculosis. No full or district wise survey has been made but the information given above affords ground for suspecting that the disease had been increasing particularly in the hill areas of the District (Das, 1947, p. 90).[22] L. M. Biswas, The Health officer of Calcutta had shown in his report of 1934 that mortality rate from tuberculosis in Calcutta was increasing every year. He opined that, in 1934, almost whole of the mortality from tuberculosis was due to pulmonary tuberculosis. This variety of the disease accounted for 2759 deaths, out of a total of 3053 deaths from tuberculosis or no less than 90%. 294 deaths from other forms of tuberculosis were recorded in that year. He had noticed the high rate of mortality in the ward no. 29 (5.8 p.m.), 24 (3.8 p.m.), 19 (3.8 p.m.), 5 (2.7 p.m.), 28 (3.9 p.m.), 32 (4.4 p.m.), 27 (2.5 p.m.), 4 (2.3 p.m.), 6 (2.1p.m.), 7 (2.6 p.m.).[23]

[20]For details see, Bengal Public Health Report, For the year 1933 by Dr R. B. Khambata, D.P.H., Director of Public Health, Bengal, Superintendent, Government Printing Press, Alipore, Bengal 1935.

[21]Ibid, pp. 65–67.

[22]In the Darjeeling town conservancy department had been in existence before 1920, it was not until that a medical officer were appointed. A public health laboratory was established in 1922 and other sanitary inspectors were appointed.

[23]p.m. stands for tuberculosis death rate per mille i.e. per one thou-

Table 5 Deaths due to tuberculosis in Bengal towns and rural areas (1921–1924).

Year	Rural Areas		Towns		Total for Bengal	
	Death	Rate per Mille	Death	Rate per Mille	Death	Rate per Mille
1921	1394	0.03	2261	0.09	4055	0.01
1922	1496	0.03	2981	1.0	4477	0.01
1923	2079	0.04	2283	0.09	4492	0.01
1924	2326	0.05	3251	1.0	5577	0.01

Source: Dr. E. Muir, Tuberculosis in Bengal, *Indian Medical Gazette*, 1926, July, p. 326.

Table 6 Death claims of the Commercial Union Assurance and the Phoenix Assurance Company.

Disease	Indian (%)	European (%)
Pneumonia	12.2	9.6
Heart Failure	7.9	15.9
Apoplexy	5.2	4.1
Phthisis	6.9	3
Diabetes(including Carbuncle)	4.9	2.4
Liver Diseases (including Abscess)	4.2	3.6
Kala azar	0.09	0
Malarial Fever	2.8	0.6
Enteric Fever	4.2	3.9
Dysentery and Diarrhoea	5.1	2.7
Cancer	1.07	3.3

Source: Medical aspects of life insurance in India, with special reference to Calcutta, Edward Houseman (Chief medical officer in India to the Commercial Union Assurance and the Phoenix Assurance Company), *Indian Medical Gazette*, June 1926, p. 261.

According to him, the causes of tuberculosis in Calcutta might be briefly summarized as due to (i) poverty, underfeeding, the struggle for existing under adverse conditions etc. (ii) ignorance and carelessness resulting sputum loaded with bacilli being expectorated all over the place (iii) the *purdāh* system of women (iv) bad housing etc. (v) a dark damp, ill ventilated hut in an open suburb was noticeable just as deadly and badly not so lighted ventilated rooms in the heart of the city. This report also showed the high rate of mortality amongst young females between ages 15 and 30. It is important to note that the death rates from tuberculosis in some of the important cities in India already exceeded the corresponding rates in well-known cities abroad. Table 8 shows figures quoted from an editorial entitled "Tuberculosis as a public health problem in India" in the 1941 October issue of the *Indian Medical Gazette*.[24]

6 Global Scenario

There was similar kind of problems in other parts of the world too due to lack of statistical evidence for tuberculosis. Sir Robert Philip, Professor of Tuberculosis at the University of Edinburgh (he had been knighted for his contribution to the cause of tuberculosis), pointed out in his inaugural address[25] in 1917, "...what the patient died of and what he is said to have died of are not always one and the same thing. Many deaths are labelled as

sand. See, Report of health officer of Calcutta for the year 1934, by L. M. Biswas, L.R.C.S (Edin), D.T.M & H (Camb), D.P.H (Lond.), p. 28.

[24] *Indian Medical Gazette*, Editorial, October, 1941, pp. 613–614.

[25] Sir Robert Philip,'Present day outlook on tuberculosis', inaugural address to the institution of the Chair of Tuberculosis in the University of Edinburgh , 16th April 1918, Edinburgh Medical Journal, 20, 5, 1918, pp. 293-4, cited in Bryder, 1988, p.104.

Table 7 Deaths from tuberculosis in the 24 Pargana district for the year 1933.

Name of District and Towns	Phthisis	
	Deaths	Ratio
24 Pargana District		
South Sundarban	12	0.3
Tollygunz	8	0.2
Budge Budge	5	0.2
Baranagar	28	0.7
Kamarhati	20	0.7
Rajpur	5	0.4
Baruipur	8	1.2
Jaynagar	6	0.6
North Dum Dum	-	-
South Dum Dum	7	0.4
Khardah	1	0.2
Barackpur	4	0.2
Panihati	5	0.4
North Barakpur	10	0.6
Titagarh	-	-
Garulia	8	0.6
Naihati	7	0.2
Halisahar	-	-
Kanchrapara	5	0.3
Bhatpara	14	0.2
Barasat	2	0.2
Gobardanga	4	0.9
Bashirhat	10	0.5
Baduria	1	.1
Taki	-	-
Dum Dum	3	.1
Calcutta	2595	2.2

Source: *Bengal Public Health Report for the year 1933* by Dr. B. R. Khambata, D.P.H, Director of public health, Bengal, superintendent, Government printing press, Alipore, Bengal 1935, p. 200.

Table 8 Tuberculosis deaths per 100,000 Populations.

Paris	177	Cawnpore	432
Mexico	170	Lucknow	419
New York	128	Madras	290
Berlin	120	**Calcutta**	**230**
London	96	Bombay	140

from pneumonia, bronchitis, measles, whooping cough, or influenza, which is really referable to tuberculosis (Bryder1988, p. 104). Notification of tuberculosis, was compulsory in England, Wales and Scotland after 1914, despite that many cases did not reach the records. Linda Bryder showed in her article that false diagnoses of tuberculosis were not uncommon in England. Dr Stephen Hall, chest consultant to Buckinghamshire country council, wrote of good number of people in tuberculosis sanatoria with many physical signs but with negative sputum (Bryder 1996, pp. 253–265). Bronchitisis, pulmonary syphilis and actinomycosis of the lungs were frequently mistaken for tuberculosis. In 1917, two specialists from America reported extensively to the Rockefeller Foundation on tuberculosis in France. In their report they noted that in addition to 72,000 deaths from pulmonary tuberculosis in 1911, there were also 15,929 deaths from 'simple meningitis', and 17,442 deaths from 'chronic bronchitis'.[26] A very large percentage of the deaths under both these heads are recognized by the French authorities as being due to tuberculosis (Bryder 1996, pp. 253–265).

7 Conclusion

Mortality from epidemic malaria, cholera, plague and smallpox in colonial Bengal has been more or less recorded with varying degree of reliability and housed decently in colonial archives. But unfortunately mortality from tuberculosis was never recorded until the beginning of the 20th century though, as we have seen, the disease was making a steady progress ever since the second half of the 19th century. Such historical silence perhaps needs an explanation.

There might be a two-fold explanation for this. First, tuberculosis is a silent killer. Death from TB is neither spectacular nor instantaneous, and therefore inspires little or no awe and fear among the victims. Cholera, by contrast, used to kill people in no time, almost dramatically, so was plague. Deaths from cholera or plague were very sudden and so visible that they could hardly defy recorded registration. But it was not so with tuberculosis. Tubercular patient used to drag his life for a long time till death, which was marked by a relative silence and in-

[26]Tuberculosis in France, Report to the Rockefeller Foundation by H. M. Biggs and A. R. Douchez, New York, 31st March1917, p.17, cited in Bryder, 1996, pp. 253–265.

visibility. Secondly, tuberculosis carried with it elements of social stigma (Samanta, 2013). People used to hide it from neighbours. When a member of a family falls victim to TB, the course of action left to his/her kin followed one singular extreme; they would confine the patient in a room, severing all ties with the outside world for fear of social stigma. As a result, incidence of such TB infection or resulting death often went unnoticed and unrecorded.

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