

Pharmacy and Pharmaceutical Education in British India: A Historical Perspective

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Abstract

Indian Civilization is undoubtedly one of the oldest civilizations in the world. The noteworthy role of Indian civilization is being revealed in medical science also. In this context, it is worth mentioning that introduction of western medicine and its allied pharmacy and pharmaceutical education in colonial India has nowadays become a rapidly expanding subject of research concern. Against such a backdrop, the present paper hopes to investigate the beginning of medico pharmaceutical profession and parallelly the beginning of pharmaceutical education in different Presidencies of British India in a condensed and unwavering manner. Both primary and secondary sources have been used for the present study. Finally, the paper reveals that the institutionalization of pharmacy and pharmaceutical education also acted as a vital agent to accept western medicine more convincingly

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Introduction

In this era of the 21st century, both pharmacy and pharmaceutical education occupy a significant space so far as medical education is concerned. In life and civilization, the pharmaceutical industry stands synonymous with human existence. It is one of the fastest-growing segments of the global economy and the world's largest developing industry. The present paper tried to chronicle the historical introduction of this discipline from the first half of the seventeenth century to mid-twentieth century.

Since later half of the nineteenth century, colonial India witnessed a significant change with new knowledge and experiments in the history of medical discourse in British India (Majumdar, 2018). The rise of western medicine was completely based on a different understanding of the body. The Imperial government was mainly concerned with the health concern of their European military personnel due to pervasiveness of dissimilar epidemic diseases. The emergences of medical education in colonial India mostly focus colonial medical policy as 'enclavist'. British had to take such type of medical policies to combat the tropical environment. In such a consequence, all related medical education policies aim to provide scientific medical facilities, proper hygienic atmosphere to the military personnel and civil population (Ramana, 2002). Initially, medical education facilities were restricted in urban areas only and the rural populace was neglected (Palit and Dutta, 2011).

But the gradual necessity and need to serve more population, medical education facilities rapidly spread throughout India.

In this context, it is worth mentioning that medical education was made essential in all Indian provinces under colonial domination. Two major reasons drove them to introduce 'western medicine' on a massive scale on the Indian sub-continent. First, the then India was a reservoir of different epidemics and the only prevailing system of medicine was Ayurveda, which could not prevent death because of epidemics. Because of prophylactic effects of western medicine, quick recovery easily saved the population from epidemics. Second, the vast population and domestic necessity raised the commercial viability of western medicine to a great extent. In such connectivity, it added the practice of pharmacy and related pharmaceutical education as an inextricable consequence. Keeping these two interwoven factors in mind, the business-minded imperial administrator successfully introduced western medicine in all provinces under their colonial domination. In such a way, the Eurocentric mentality of the colonizers introduced western medicine as a double edged word, which conjointly helped them to pave their scientific superiority more convincingly.

In British India to familiarize western medicine, pharmacy and pharmaceutical education was introduced which in the present era becomes a speedily intensifying subject of concern. Initially, it was only the concern of historians, but gradually the subject attracted scholars from a range of disciplines. To theorize this introduction of western medical education, earlier historiography proposed varied theoretical propositions like 'imperial metro pole' and 'colonial periphery'. Here mention may be made of the Three Staged Diffusionist Model of Anglo-American historian George Basalla (1967). He mentioned about the diffusion of science from the centre to the periphery cultures. Though this model was highly criticized by scholars despite this model, simply trying to depict the global transmission process. Later, MacLeod (1982), Sangwan (1991), Krishna (1991), Raina (1999) and Chakrabarti (2004) attempted to explain this transmission in their way. Being a social historian, this transmission starts a different theoretical understanding form. Since time immemorial, we see an accumulating body of knowledge to which India had made its contributions by its methods of investigations in different spheres of life including medical science also. It is Ayurveda which attests to ancient medical heritage also. As a system of medicine, it was very much person-specific and, for this reason, commercialization of medicine was not possible. Here, the colonial invasion not only created a congenial environment for introducing western medical science or western medicine, but also scientific nature made it more convincing and commercially viable. Instead of any diffusionist perspective, this kind of cultural consequence acted as an important mediator in the receiving of colonial medicine vis-à-vis pharmacy practice and pharmaceutical education in a more considered manner.

In such a wider canvas, the present paper attempts to understand the beginning of pharmaceutical education specifically in British India and to do so the present paper hopes to investigate the beginning of medico pharmaceutical professions in British India and parallelly the beginning of pharmaceutical education in different Presidencies of British India in a condensed and unwavering manner.

However, the present author attests the importance of both primary and secondary sources. The archival sources contributed immensely. Personal papers, diaries, letters of correspondence,

minutes of meetings, news paper articles, government reports, proceedings, micro-films etc. were very significant to realize the stand point with diverse implications. Now the present author endeavours to discuss the discourse of pharmacy and pharmaceutical education in British India comprehensively.

Beginning of Medico Pharmaceutical Professions in British India

Western medical education occupied an important position during the colonial era. It was a two-edged word that not only emphasized the fundamental differences between the two but also aims to establish a scientific hegemony. (Kumar, 1997).

Mills (1999) in his study on Lunatic Asylums of British India mentioned that colonialism and medical discourse were interwoven with each other. It is noteworthy to mention that the imperial power not only introduced the western system of medicine in British India but also familiarized pharmacy and pharmaceutical education to pave their scientific sovereignty for controlling the Indian population externally. The cultural negotiation between the colonial system of medicine and our indigenous system was neither smooth nor seamless enough rather; it was a cultural collision between the two. Most times, our indigenous system tried to accommodate the western hegemony, but they suppressed it with their supremacy. In India, western medicine was first introduced by the Portuguese in the 16th century. East India Company's medical officers took western medicine with them in 1600. Initially, East India Company established medical departments for the treatment of their soldiers and personnel. Basically, Indian Medical Service (IMS) was a military service. During two World War periods it provided medical officers (both British and Indian) with the Indian Army and remained operative till independence. Hospital board was formed by them in each presidency in 1775. This board included Surgeon, Physician and Commander-in-Chief of the British Indian Army. To provide medical care to the British personnel (both civilians and military) medical departments were established in three presidencies of British India, namely Bengal, Bombay and Madras in 1785. In spite of several initiatives, a paradigm shift thus occurred after the 1857 rebellion. Several medical services were formed like Central and Provincial Medical Services, Subordinate Medical Services etc. The basic intention was to provide medical services and improved public health care. In 1759, a hospital was built in Panaji. The first medical school in South East Asia was Escola Medica-Cirurgica de Nova Goa in 1842, in Panaji. Initially, it was started in 1801 and persists as the Goa Medical College. In Pondicherry, the French established the L'Hopital Militaire in 1690 and L'École de Médecine de Pondicherry in 1823. In such a way, introducing the western medical system drastically altered health care practice in colonial India (Chukerbutty, 1864).

Therefore, for a concise and exhaustive understanding of pharmacy and pharmaceutical education in British India, the discussion first tries to cover the whole gamut of medico-pharmaceutical professions and then highlights the discourse of pharmaceutical education in different presidencies of British India. The author hopes to assume that such elaborative discussions will positively be able to explore a comprehensive understanding of pharmacy and pharmaceutical education in British India in its entirety.

Medico Pharmaceutical Professions

Apothecaries

The term ‘Apothecary’ is derived from the Latin word ‘apothecia,’ which described a place where medicines and herbs were stored. However, the term ‘apothecary’ borrowed from Britain, where the apothecary profession developed a little differently (Matthews, 1962). Originally, the term ‘Apotheke’ or ‘apotheca’ mean tastore house. Apothecaries studied medicinal formulas, the rapeutic compounds, and even practised surgeries and diagnosed diseases. Apothecary shops were laboratories and dispensaries. The apothecary shops that developed into today’s modern pharmacy, however, have their roots in Europe around the thirteenth century. During nineteenth century, the assistant surgeons trained apothecary and hospital assistants in compounding and dressing, besides their tuition in elementary medical science. In earlier times in England, drugs formed a part of commodities known as ‘spicery’. In the mid-thirteenth century, ‘apothecary’ acquired a pharmaceutical meaning. At the beginning of the seventeenth century, it formed a distinct section of the Grocers’ Company. In 1617, the apothecaries severed relations with the Grocers’ Company and gradually formed the ‘Society of Apothecaries (Trease, 1964). Apothecaries achieved some recognition as medico-pharmaceutical practitioners in the early part of the eighteenth century. However, the chemists and druggists were distinguished from the apothecary through practice of medicine. Apothecaries Act was passed in 1815. The act not only controlled the practice of apothecaries but also helped the apothecarist to get an intermediary status between a chemist and a doctor (Poynter, 1965). This Act provided firm ethics, regulator for practice by the apothecaries and impetus to specialize in the practice of medicine. An active interest in pharmacy was taken by the Society of Apothecaries. The society offered a Licentiate in Medicine and Surgery (LMS) which is also a registrable qualification and further it also held an examination for Assistants in Dispensing (Matthews, 1980).

In 1825, a modification was made to the Apothecaries Act which allowed apothecaries to practice as apothecaries without any examination by the Society of Apothecaries (Matthews, 1962). Madras Medical College (MMC) admitted five candidates for the grade of a native apothecary in 1847. Madras Medical College is the oldest medical college in India. It was instituted after Ecole de Medicinede Pondicherry and Calcutta Medical College [1] on 2nd February 1835 (Annual Report of Madras Medical College, 1873-4). Three of them passed out in the year 1852. In 1873, the natives were disqualified admission to the ranking of the apothecary. Regarding official status, right from the beginning, a feeling of inferiority had crept in among the apothecaries. In early 1850s, a society was formed by the apothecaries, which in 1864, renamed as the Madras Apothecaries’ Society which provided prospects to the apothecaries for skilled improvement and systematic study (Madras Apothecary Society, 1865). Being a trainee in the apothecary class, their major duty was to serve European troops, hospitals, and depots (Subordinate Medical Department of India, 1868). Medical records thus reveal the skill enhancement of the apothecaries for the army hospitals. Here mention can be made of the context which published in the *Journal of Medical Profession in India*, 1877.

“..... A European boy between the age of fourteen and eighteen could take admission in a hospital of the British regiment to work as a hospital apprentice for two years. After successful

completion in an examination about the elements of anatomy, medicine and surgery, and more particularly in the preparation and doses of medicine, the boy was sent to the Medical College in Calcutta for three years. On completion of this term, he became an assistant apothecary and, after passing, moved up to become a first-class apothecary. In every hospital of the British troop, there was one apothecary, one assistant apothecary, and two or more hospital apprentices. An apothecary was in control of medicine and medical gadgets. He could make medicine as well as supervise the native compounder while he was making them (Medical Profession in India, 1877)."

However, any apothecaries styling himself as compounder, was not allowed. Ultimately in 1894, the designation changed from Army Apothecaries to Assistant Surgeons (Indian Medical Record, 1894). Only the Madras Presidency organised the Civil Apothecary class which in 1875, it acquired the place of military apothecaries at Civil Stations (Medical Reporter, 1895). It was five years course. During first two years training was conducted at Civil Dispensary and then the rest three years were spent at the Madras Medical College including a periodical examination (Maclean, 1885). For gaining more popularity, the qualification at the entry-level was open even to matriculate. There was a similarity of this training with the training of the students of L.M.S. (Licentiate Medical Service). Here it should be mentioned that the Government took the financial responsibilities of the civil apothecaries while the L.M.S students borne their own cost. However, L.M.S students were recruited since 1883 (Medical Reporter, 1895). From 1895 onwards, civil apothecaries became the in charge of both hospitals and interior dispensaries. In spite of their sufficient qualifications, they were deprived both in designation and salaries which changed later on (Indian Lancet, 1901). Ultimately, in 1904, those apothecaries who were possessing L.M.S qualifications were shifted to the Civil Assistant Surgeons (Rao, 1929).

Hospital Assistants

The term 'hospital assistant' was considered being too vague. It also refers to a compounder or a ward boy. Initially, they were designated as 'dressers'. Before the establishment of the Madras Medical College (initially Madras Medical School), they trained dressers at General Hospital, Madras, who assisted the East India Company regiments (Sibthorpe, 1896). In course of time, the 'dresser' designation was replaced by 'hospital assistants' (Public Department, Govt. of Madras, 1861) and (Education Department, Govt. of Madras, 1869). The essential qualification for this grade was to qualify in English and Arithmetic along with one year compounding at the Presidency hospitals. The two years course conducted at the Madras Medical College, and the curriculum comprised instructions in compounding anatomy and physiology, Materia Medica [2], genetics and surgery. Hygiene and child birth have been part of the curriculum. Social workers had their jobs in government hospitals and treatment centres, where as hospital assistants perform medical duties. However, during first half of the nineteenth century, military hospital assistants received training at selected schools in western and southern India including Lahore and Agra (Joubert, 1908). They had changed the curriculum from three to four years. Besides, three schools in Madras and two in Bombay where teaching was conducted in English where as in rest of the school teaching was conducted in native language. Although after matric, the students were able to take in Madras. There were entrance exams at all the other schools. In spite of everything, both social recognition

and salaries of the public hospital assistants were low. These consequences made them very much dissatisfied. Even they expressed their grievances in 'All India Hospital Assistants Journal' (Indian Medical Gazette, 1910). Finally, in 1910, they succeeded in improving their position not only in the Assistant Physician but also in improving their leadership scales which continued more than half a century.

Compounder's community

The term 'Compounder' will not be found in any citizen pharmacy history activities. During the colonial period in India, the theme was very common. By a standard order dated 15 June 1812, it was stated that 'gatekeepers and dressers' were the first step of training as apothecaries assistant (Crawford, 1914). The word 'compounder' began to spread from the beginning. However, the compounders did not have the necessary technical condition. They were a lot depressed and neglected. However, for the first time, training as a facilitator began in Bengal in 1881, followed by that in Madras. But no training pattern was developed for the whole of India.

They made official educational provision and testing of compounders in 1881 (Indian Medical Gazette, 1881 and Municipal Department, Department of Medicine, 1882). Section 23 of Act 6(B.C.) of 1881 (Calcutta Municipal Integration Amendment Act) made it mandatory for the owner of a Medicine Store to hire a man whose drug knowledge had been tested. Without contact with a trained producer, they could not register a European drug store. This amendment became mandatory throughout colonial Bengal. In Calcutta arrangements were made at Campbell Medical School [3], in Patna it was made at Temple Medical School, in Dacca it was made at Dacca Medical School and in Cuttack it was arranged at Orissa Medical School respectively (General Department, Department of Education, 1882). In order to be accepted, it was compulsory to read and write in English sufficiently, to read instructions and to write instructions on labels. It was also compulsory to go to the medical centre of this centre every year to get instructions at the Materia Medica pharmacy and to read the instructions from the apothecary or head compounder. The inspection was conducted by a committee comprising the superintendent of the centre, as well as any of the two teachers at the institute. After successfully completing his studies, the baptism candidate received a certificate that enabled him to compile and manufacture European drugs. Later, Scotland Mission Church Hospital was recognized, Kalimpong [4] (Darjeeling district) (Municipal Department, Medical Branch, 1894), Hospital of Dublin University Mission, Hazaribagh [5] (Municipal Department, Medical Branch, 1896). Besides, they established a class for female compounders in the Campbell Medical School, Calcutta (Municipal Department, Medical Branch, 1899). In this context, it should be mentioned that an Amendment made further (Bengal Act 3 of 1884) was instructed that no person will be eligible to compound, mix, prepare, dispense or sell any drug prescribed by the British Pharmacopoeia unless he had the eligibility (Wigley, 1914). Modifications were done and made it compulsory that besides knowledge of Materia Medica, pharmacy and reading of prescriptions, they examined the candidates to write English directions in prescriptions (Municipal Department, Medical Branch, 1895). However, there were modifications in the training process in 1928 (Report of the Drug Enquiry Committee, 1930) and (Government of Bengal Notification, 1928) through academic qualification to qualify for admission (matriculation), duration of the course (two years) and also in the course curriculum.

But this did not bring any material changes (Acharjee, 1954). For years, the compounders made up a category of employees who received poor emoluments. In 1888, their pay scale was improved (Education Department, Government of Madras, 1889) along with an instruction that a compounder must communicate and write English and should be familiar with the vernaculars of the district. Further, it was made compulsory that they have trained the probationers for the grade of compounders at a major dispensary for a term of six months and qualify for a suitable examination. Based on recommendations of the Committee, the Government decided that the training course for compounders should extend to at least nine months at major dispensaries and the ability to read and write in English along with knowledge of one vernacular language (Education Department, Govt. of Madras, 1898). They sanctioned the revised scheme in October 1937. They made the duration of the training one year (Education and Public Health Department, 1937). The first nine months at specified hospitals, followed by three months, training for all candidates at the Government General Hospital, Madras. To take care of the training in Madras, the position of pharmacist was approved. At the end of the training, they held a test at Madras General Hospital in the Department of Medicine. Overtime, they limit the number of candidates to five in each training center (Department of Education and Public Health, Madras Government, 1938; Department of Education and Public Health, Madras Government, 1948). In 1948, there were seven teen compounders training centers and the number of trainees at public institutions each year was seventy (Department of Education and Public Health, 1938).

In the office of the President of Bombay, there were no rules regarding computer training (Training of Compounders, 1930). Those who passed VI level in an English language school were eligible for admission. However, the qualifications for adopters vary from state to state. In Bihar, Orissa, and Assam, they issued a certificate after a year of training at a specialized medical school. The training of compounders in the United States began in 1928 at six centers: Allahabad, Banaras, Lucknow, Agra, Meerut, and Bareilly. At the entry level, graduation was the VIII class of the well-known English School with ten months of training. In Nagpur, in the central provinces, the titles were similar to those of the united provinces. In Punjab, there was no standard training program for compounders. There has been talk of a dispenser and dresser class center with a two-year course at Amritsar Medical School. Amritsar Medical School was established in Lahore in 1864, which moved to Amritsar in 1920. The college took special care both in medical education and patient care. They developed the school to the level of Medical College in 1943; they laid the foundation stone by Lt. Col. Nawab Khijar Tiwana, Prime Minister of Punjab on 1st February 1944. From Medical Records (1886-7), they reported that in the Presidency of Bombay, Goanese compounds from Goa were rented in a private area Dispensaries. They were selected because they knew English well and were better equipped to do dispensary work. So, it is clear from the above discussion that in pre-independence India, the situation regarding the functioning of the pharmacy remained dire. Although high-level medical care was provided by the hospital's assassins and assistants, they did not pay enough attention to upgrade the lower-level medical services. Trained breeders had to 'work like dumb cows' to keep their masters happy for fear of losing jobs (Acharjee, 1940). The producers were not paid and their wages were very low. But they did a lot of work ranging from the manufacture, production, manufacture and sale of drugs and chemicals to acting as laborers, laboratory assistants, anaesthesiologists, surgical assistants, nurses and clerks in

hospitals and medical centers (Indian Journal of Pharmacy, 1944). Despite having enough training and skill, they were looked down upon as masters. To work for their grievances, the organizers organized themselves into various organizations such as the All-India Compounders and Dispensers' Association (AICDA), All Bengal Compounders' Association (ABCA) etc. Finally, the Pharmaceutical Society of India accepted the compounds as joint members with different organizations like Bengal Pharmaceutical Association, the Indian Pharmaceutical Association and the Indian Pharmaceutical Congress Association who assisted the compounds on a large scale. We provide a brief account to these two compounders' organizations below.

All India Compounders and Dispensers' Association (AICDA)

This movement was started in 1920 by some coalition of affiliated provinces (Bahadur, 1941). It held the first annual general meeting of the organization in Lucknow in February 1921. The third conference was held in Delhi in 1923, chaired by Colonel Lieut JN Walker, IMS (Chief Medical Officer), at which the provincial organization was transformed into the All-India Compounders and Dispensers' Association (AICDA), which became a Registered Society on 3rd March, 1925. Raj Bahadur, former Secretary General of the United Provinces Compounders' Association, became General Secretary of AICDA. The organization continued to appeal to the cause of compounders' year after year and issued decisions that proved to be effective.

All Bengal Compounders' Association (ABCA)

Sri Karuna Kumar Acharjee of Dacca Mitford Medical School started the ABCA in Calcutta in 1929 (Mukherjee, 1994). At first, it did not work well because of a lack of proper guidance. As a result, the future of the ABCA was bleak. The confusing thinking about the prospect of emigration was fixed during Col. Ram Nath Chopra interviewed the man presided over the ABCA (Indian Medical Gazette, 1934). The annual meeting of the ABCA was held in January 1934, where it was transformed into the Bengal Pharmaceutical Association (BPA). BPA had abroad vision and continued to introduce compounders. However, after the seventh meeting in Aligarh in October 1933, AICDA and ABCA began working together. Eventually, both adopted the Indian and Eastern Chemist, as their official method (Singh, 1996). In this context, it should be noted that the Indian Pharmaceutical Association (IPA) has done an excellent job for producers and pharmacists who have not been fortunate enough to receive formal pharmacy training.

Qualified Indian Chemist and Druggist

During the seventeenth century in England, apothecaries separated shops (Matthews, 1962; Trease, 1964; Poynter, 1965; Matthews, 1980). They gained some recognition as medical professionals in the eighteenth century. Gradually, they form two types of apothecaries. Category-I was interested in the practice of medicine and Category-II interested in pharmacy. In time, from phase II, pharmacists and drug users emerged who gained practical knowledge of the pharmacy. In the early nineteenth century, they formed the Pharmaceutical Society of India. In the year 1842, this community established a school of pharmacy. In course of time, the teachers got recognition from the University of London (Fish, 1963).

Madras Medical College started pharmacy in the later part of the nineteenth century. Before discussing the history of classes of pharmacists and classes of drug doctors, it can be said that the

situation of pharmacy in the Portuguese era was much better than in all of colonial India (Cordeiro,1963). The doctors came from Portugal and had to associate with a pharmacist. In 1846, a medical school was established in Goa, where there was also a pharmacy. Prior to independence, a Goa school offered a three-year diploma at a pharmacy. However, Portuguese experts made up a very small part of the entire sub-continent.

In British India, the advent of medical prescriptions dates back to 1860. Pharmacy classes began at Madras Medical College (Department of Education, Govt. of Madras, 1866). In colonial India, it was the first time that students had received formal training in order making and integration. It also instructed the mon how to prepare the main pharmacopoeia compounds and everything related to dispensary work. Here it should be mentioned that British Pharmacopoeia was published in 1864. This was the first attempt to harmonize drug standards. A pharmacopoeia in its modern technological sense, a guide book. A compilation, and published by a government authority or medical organization. However, the Pharmacy class continued until the end of the 1861-2 session. Then, because of other issues, the pharmacy class was cancelled. But again, it started in April 1866. However, the term 'Chemist and Druggist' was borrowed from the British. These skilled personnel were trained scientifically during second half of the nineteenth century. Thus, the class of 'Chemicals and Drugs' began in 1874 (Srinivas Varadan, 1954). However, in the Tamil Nadu Archives, Annual Report of Madras Medical College per session, 1879-80 (Department of Education, Government of Madras, 1880) and 1880-1 (Department of Education, Govt. of Madras, 1881) mentioned about the examination of chemists and druggists. The 1887-8 reports wrote that, 'students who have completed two years' curriculum appeared before the Board and passed successfully (Department of Education, Government of Madras, 1888). In 1894, the Pharmaceutical Journal and Transactions noted, a 'certificate' from a pharmacist and drug doctor' was issued in Madras to a student studying full-time studies of material medica, chemistry, chemistry and practical pharmacy (Medical College Pharmaceutical Journal). 1894). Initially, the study of 'chemists and drug users' was one year (Department of Education, Government of Madras, 1898). Gradually, it was extended to two years and after that, the entry level qualifications changed from a secondary school examination to a matriculation (Department of Education, Government of Madras, 1893). Later, many changes were made to the pharmaceutical and drug rehab process. But the study found little popularity and suggested termination of studies. But it did not happen and continued for a while at the beginning of the three years (Records, 1893). The course attracted a few students but despite so many obstacles, chemistry and drug dealers remained active and eventually received government sanctions to continue at Madras Medical College as a permanent subject (Local Self Government, Govt. of Madras, 1924). A 'chemistry and drug use' course was re-introduced at Vishakapatnam Medical College in 1937 (Bradfield, 1938). In reviewing medical education at Madras Medical College, in 1940, the name of the Diploma course in 'Chemicals and Drugs' was changed to Diploma in Pharmacy. The duration of the study was two and a half years (Department of Education and Public Health, Government of Madras, 1948). The study was recognized by the Indian Pharmacy Council in 1957 (Minutes of the Pharmacy Council Meeting, 1957) and the contribution of pioneers such as Prof. A N Ratnagiriswaran, Prof. K S Srinivasa Varadan and Prof S. Rajagopal Naidu, who have been the pillars of the Pharmacy in the Province of Madras, have made great strides (Singh,1998).

During the colonial period, it was not as easy to do pharmacy as it is today. In India, to regulate and bring some order to the state of pharmacy operations, others qualified chemists and druggist at Madras Medical College organized and built a community. The society began in 1923 under the name 'The Pharmaceutical Association' (Chemist & Druggist, 1928 and Pharmacy in India, 1928). In 1925, it changed its name to 'The Pharmaceutical Society of India' (PSI). The Society aims to establish a common education system in order to obtain a degree as a pharmacist and to have a compulsory registration of a pharmacist and to regulate Indian pharmacies (Pharmaceutical Society of India, 1929). A. N. Lazarus was a distinguished Secretary of the Society. To expand the work of a better project, he published society's magazine 'The Pharmacist', in July 1939, and K. Venkatapathi Naidu as an editor. The Society plans to organize an All-India Pharmaceutical conference and exhibition in Madras in January 1940 (Chawhan, 1939). Undoubtedly, PSI was the oldest organization of its kind. In colonial India, his place of work remained the President of Madras, because, with the exception of Madras, he did not conduct training for pharmacists in any other part of India. Outside of PSI, in order to protect commercial interests, pharmacists and drug dealers set up their own corporations. These organizations protect the interests of pharmacists and drug addicts.

City and State Level Chemist and Druggists' Associations (CSLCDA) formed various organizations to different Presidents of India. Calcutta Pharmacists and Druggists form the Calcutta Chemists and Druggists' Association on 30 November 1920 (Chemist & Druggist, 1921). In the city of Madras, Pharmacists and Drugs founded the 'The Chemists and Druggists' Association' in 1926, and began its publication- The Journal of the Chemists and Druggists Association, Madras, from October 1961 (Siramulu, 1961). In Bombay, the Chemists and Druggists' Association started in 1925 (Gupta, 1925). However, the Chemists and Druggists' Association of Delhi began in 1935 (Gupta, 1935). All these organizations sought to protect the interests of the chemical and drug use during World War II.

All India Federation of Chemists and Druggists (AIFCD)

The cataclysmic effect of World War II greatly influenced the basic interests of pharmacists and druggists to a large extent. The Indian government under the Défense of India Rules, passed the Drugs Control Order, 1943 (Indian Journal of Pharmacy, 1963). According to this order, no retailer or retailer can sell a drug at a higher price than stated under the order schedule. Even entry for new comers was banned. This order affected all categories of retailers to a large extent.

To resolve the matter, he convened an assembly in Bombay in January 1944, under the chairmanship of S. Lalchand Dadha. They formed the All-India Association (Souvenir, All India Chemist and Druggists' Federation, 1946). The following year, another conference was held in Calcutta and the All-India Chemists and Druggists Federation was held. Later, representatives from Bombay, Delhi, Madras joined the Federation (Gupta, 1945). They made Sir Hari Shankar Paul the first President of this Federation. Some years later, the Federation became known as the 'All India Federation of Chemists and Druggists' (AIFCD). The biggest problem for the Federation was drug prices and an average of twenty-five percent on the retail price. But that was not the end. Much

more has been done and it can no doubt be said that AIFCD has provided an effective platform for drug traffickers since its inception (Indian Journal of Pharmacy, 1950).

In India, drugs continued to be traded for over a century. With the advent of qualified pharmacists, the idea gradually changed and is now considered a mixture of trade and industry. Pharmacists, distributing pharmacists, pharmacists and pharmacologists who are remnants of the colonial era, hopefully they will be called pharmacists and retail stores will be described as pharmacies.

Colonial Modernity and the Beginning of Pharmaceutical Education

The British invasion of India and with it the introduction of western medicine and pharmaceutical education is undoubtedly a historically significant event. To pave the scientific supremacy in the Indian soil was nothing but a colonial mission which ultimately in course of time drastically altered our traditional health care system to a great extent (Supe, 2016).

The Western medical system is making its introduction to the European sub-continent. With the introduction of a new medical system in India, it has naturally followed the emergence of pharmacy houses to meet the needs of western medicine and other resources. India became a major market for British producers, a lucrative business destination. Understandably, European pharmacists and drug experts also find this world promising to do their job. Gradually, the Indian economy and social development are completely under the control of the British economy (Singh, 2014). It attracted them to places where the population was large enough to make a profit. The British population was concentrated in large cities and suburbs. Both civilian and military personnel and their families became the main customer of European drug dealers. Other than that, there was no pharmacy where ordinary people could reduce their needs.

It should be mentioned here that in colonial India there were many instances of chemical stores. Since there were no drugs or drug laws in the country, there were no restrictions on the opening of drug stores. The drug situation and the effectiveness of the pharmacy remains a major concern. Emphasizing, there were no proper legal restrictions on drug control and pharmacy performance. There was a flaw in the import and sale of drugs. The situation regarding the operation of the pharmacy was deplorable. To my surprise that the dispensing of prescriptions was carried out by compounders, who had a very low level of preliminary education and training. The absence of adequately qualified pharmaceutical personnel compounded the sad state of affairs. This situation disturbed the people who love the community as it exists. In such a socio - political climax, the present author feels to present a detailed sketch of the development of medical education in British India.

Madras Presidency

The beginning of medical education in British India began at Madras Medical College in the year 1860 (Department of Education, 1866). For the first time, students are systematically learning how to do instructions and integrate. The Pharmacy class continued until the end of 1860-61, and throughout the period 1861-62. There has been an 'un authorized termination of the pharmacy class. They point to this omission in the General Hospital Examination Report of January 1866. However, the pharmacy class, which had declined, was renewed and resumed in April 1866. Madras Medical College had three departments; the Central Department qualified for job training. Doctoral degrees from the University of Madras, the Second Department qualified for the field of ingredients, and the third or lower Departments qualified for hospital assistants. However, students in all these classes have enjoyed there sources of the Pharmacy class (Department of Education,

1866). The latest third-grade center would prove to be useful for students who aspire to qualify as pharmacists and drug addicts. It did not take long for the formation of pharmacy and drug classes at Madras Medical College. In an unwritten article, they summarize those studies began about 1874 (Varadan, 1954). Annual reports of sessions 1879-80 (Department of Education, 1880) and 1880-81 (Department of Education, 1881), discussed the testing of pharmacists and drug doctors. In 1894, the Pharmaceutical Journal and Transactions referred to, a "chemist and drug doctor's certificate" issued in Madras to a student studying full courses of Materia Medica, chemistry, chemistry and active pharmacy at Medical College (Pharmaceutical Transaction., 1894). In the beginning, the Chemists and Druggists course was one year, and it lay no examination. In course of time, entry qualifications had been reviewed (Department of Education, 1898). But the Chemical and Drug class was not popular. As a result of the proposed termination of the class (Department of Education, 1903). But the class continued for a while, continuing to be allowed for three years or a year at a time. Despite so many upheavals, the Chemicals and Drug category continued to operate and received Government sanctions to continue at Madras Medical College on a permanent basis. In 1937, a class of Chemicals and Drugs also began at the College of Medicine, Vishakapatnam (Bradfield, 1938). In 1940, they changed the name of the course to Diploma in Pharmacy. This study was the only such study in colonial India.

Bengal Presidency

In 1881, in Bengal, it made the official provision of education and testing of compounders (Indian Medical Gazette, 1881; Municipal Department 1882). Section 23 of Act 6 of 1881 obliged the owner of a drug store to hire a man whose drug knowledge had been tested. The rules of education and testing of compounders were planned, and arranged for the opening of classes in Calcutta, Patna, Dacca and Cuttack (Department of Education, Department of Education, 1882). Entering the class room, they discovered that the student should read and write English, read the instructions correctly and write the instructions on the labels. Up on successful completion, the baptism can did ate received a certificate that enabled him to compile and produce European medicine. Overtime, for the purpose of integrated awareness classes were relocated to Kalimpong Hospital and Hazaribagh Hospital (Municipal Department, Department of Medicine, December 1886). A women's coordinator class was established at Campbell Medical School, Calcutta (Municipal Department, Department of Medicine, April 1899).

The above discussion marks the beginning of intermediary education in Bengal, and the training program improved in 1928 (Government of West Bengal Notification, 1928). The course was made of two years' duration and entry qualification was raised to matriculation. There has been a general awareness of the high quality of Medical Education in Calcutta. The importance of improving medical education and its industrial value was emphasized by several comments and editorial documents published during 1920-21 (Indian Medical Record, 1920, 21). In 1920, the University of Calcutta introduced the M.Sc in Applied Chemistry and Pharmaceutics as a specialist since 1940 (Rakshit, 1940). Another development was the establishment of the School of Chemical Technology in Calcutta by a medical enthusiast, Jyotish Chandra Ghosh. He made a significant contribution to the medical and social sciences of his time. In his professional career, Ghosh was a

late beginner. Forty-two years old, he graduated from chemistry at Manchester University (1912). He worked as a pharmacist in the Department of Pharmacies, Government of India, Madras (1912-18). Here tired early and established the School of Chemical Engineering in Calcutta. The school was located in Bowbazar and also used the resources of St. Paul's College. Recommended work in Pharmaceutics (Indian and Eastern Druggist, 1922). This encouraged Ghosh to desire to associate with his school and the Pharmaceutical Society of Great Britain (Ghosh, 1922). At one point, the school ceased to function and Ghosh' pioneer work in medical education was unsuccessful.

Bombay Presidency and the Provinces

In the Office of the President of Bombay, there were no general rules regarding the qualifications and training of moderators. In Bihar and Orissa, laws were enacted in 1926 to certify compounders after one year of training at certain schools and medical centers. The same was true in Assam. In the United States, a program of co-ordinators began in 1928 at six centers: Allahabad, Banaras, Lucknow, Agra, Meerut and Bareilly. In Punjab, there was no standard training program for compounders. In Nagpur, in the central provinces, the training was for one year (Report of the Drug Investigation Committee, 1931).

Degree Level Programme

Degree level pharmaceutical education in India began in 1932. In addition, the Diploma in Pharmacy, introducing the Degree Course in Pharmaceutical Chemistry, was recommended to oversee Pharmacy production and drug suspension and drug control. Prof. Madan Mohan Malaviya was inspired by these institutions and founded Medical Education at Banaras Hindu University in 1932 (Pandit and Prasad, 1931). He was born in 1861 and died at the age of eighty five. Since his boyhood he was distinguished from others by his important role in Indian independence and faith on Hindu nationalism. In his later life, his contribution changed his popularity as Mahamana. He was President of the Indian National Congress four times. He is remembered world wide as the founder of the largest Asian residential university in Varanasi, Banaras Hindu University, in 1916. However, the responsibility for organizing medicine education at Banaras Hindu University fell to Mahadeva Lal Schroff, who was born in 1902 in Darbhanga., known as the maker of pharmacy education in India. He was not legally trained as a pharmacist, but he had the ability to understand and vision to provide realistic and practical guidance not only in pharmacology but also in organizing the work of Pharmacy in India. He was instrumental in the development of pharmacy and medicine education, particularly in India (Srivastava, 1970). Banaras Hindu University (BHU) founded the College of Technology, with the Department of Medicine in 1939. Initially, the department did not own the building, but eventually the University made arrangements for a new building and the Department relocated to it in July 1940 (Banaras Hindu University, 1940). It established the beginning of medicine studies at the University of Andhra in 1926. We may follow Walt air in 1937 (Rangaswami, 1959). The main teachers who accompany these courses are Professor T. R. Seshadri, M L Khorana, S Rangaswami. In September 1938, the University of Madras instituted a two-year degree course leading to a B. Sc degree. The Madras Medical college began studying for a degree in Chemistry and Drugs in 1939. In 1946, a separate Department of

Medicine was accredited at Madras Medical College and entrusted the department with the teaching of Pharmaceutics, Pharmaceutical Chemistry (Srinivasa Varadan, 1954-55).

During early forties, the Department of Chemical Technology under the University of Bombay [6], developed as an important centre for the study of medicine and research. (Department of Chemical Technology, 1985). The University of Punjab introduced the Bachelor of Pharmacy Degree Course in Lahore in 1944. Dr. Khem Singh Grewal, Professor of Medical Sciences at King Edward Medical College [7], was instrumental in establishing medical education at the University of Punjab (Punjab University Proceedings, 1942); Bhatnagar, 1969) In 1947, with the establishment of the Lallu bhai Motilal College of Pharmacy [8] in Ahmadabad, the first full-fledged Pharmacy College in India (Patel, 1959) emerged. Thus in this radical way, the seeds of pharmaceutical chemistry gain momentum in the colonial era.

Conclusion

The theoretical understanding of the present paper lies within the framework of science-society and history. In such a backdrop, the present paper portrays socio-historical developmental consequences of pharmacy and pharmaceutical education in British India. The discussion reveals that to initiate their supremacy, British rulers introduced western medicine as a new scientific weapon. This scientific penetration undoubtedly strengthened the foundations of the British rulers to a great extent. In such a historical moment, institutionalization of pharmacy and pharmaceutical education came as a new colonial discourse. At the end, the author hopes to say that the three hundred years of British rule made this subject an important profession in independent India. In addition to thinking as a profession, in the context of life and civilization, pharmaceutical industry stands synonymous to human existence. This industry is one of the most vibrant and fastest growing segments of the global economy. In the present era, this industry is engaged in the health protection of the entire world. At the end it is expected that further research, comprehensive understanding and discussion will create a deeper understanding of this science in its entirety.

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Notes

[1]Calcutta Medical College was established on 28th January 1835 by Lord William Bentinck. It is the oldest medical institute teaching western medicine in Asia.

[2]Materia Medica is concerned with the study of drugs used for treatment of disease. The term originated from the work of Greek physician Pedanius Discords in the 1st century AD.

[3]Campbell Medical School which was renamed from Sealdah Medical school on 1st December 1873. After independence of India, it was renamed as Nil Ratan Sarkar Medical College in 1950.

[4] Kalimpong is a hill station situated in the Darjeeling district. It was an important place for missionary interactions particularly in the context of education and health.

[5] Hazaribagh city is situated in the state of Jharkhand. It was a district head quarters during the British period. It became a cantonment in 1790 and continued till 1884.

[6] The University of Bombay was established in a historical moment of 1857. It is one of the oldest and premier universities in India.

[7] King Edward Medical College was named after Edward VII, the eldest son of Queen Victoria. He was the king of the United Kingdom. This college established in 1860. It is the second oldest educational institution in British India. On 12th May, 2005, it became King Edward Medical University.

[8] Lallu bhai Motilal College of Pharmacy (LMCP) was established in the year 1947 by Ahmadabad Education Society. It was the first full-fledged pharmacy college in India. The college was named after late Seth Shri Lallubhai Motilal.

References

- Acharjee, K. K. 1940. 'Condition of the Profession of Pharmacy in India', *Indian Journal of Pharmacy*, (2):50-51.
- Acharjee, K. K. 1954. 'Training of Pharmacists for India', *Indian Pharmacist*, (10):9-10.
- Anderson, S. 2005. *Making Medicine: A Brief History of Pharmacy and Pharmaceuticals*. London: Pharmaceutical Press.
- AnshuSupe, A. 2016. 'Evolution of Medical Education in India: The Impact of Colonialism', *Journal of Postgraduate Medicine*, 62(4) (2016): 255-259.
- Bahadur, R. A. 1941. 'Short History of All India Compounders and Dispensers,' *Association Indian and Eastern Chemist*, (22): 113-119.
- Basalla, G. 1967. 'The spread of Western science. A Three-stage Model Describes the Introduction of Modern Science in to any Non-European Nation', *Science*, 156(3775):611-622.
- Bender, G. A. 1966. *Great Moments in Pharmacy*. Detroit: North wood Institute Press.
- Bradfield, E. W. C. 1938. *An Indian Medical Review*. New Delhi: Government of India Press.
- Chakrabarti, P. 2004. *Western Science in Modern India: Metropolitan Methods, Colonial Practices*. Delhi: Permanent Black.
- Chawhan, M. Y. 1939. 'Pharmaceutical Society of India—All India Conference contemplated', *Indian and Eastern Chemist* (20): 49.
- Chopra, R. N. 1931. *Report of the Drugs Enquiry Committee 1930-31*. Calcutta: Government of India, Central Publication Branch.
- Chukerbutty, S. G. 1864. 'The Present State of the Medical Profession in Bengal', *British Medical Journal*, (2): 86-88, 109-112.
- Cordeiro, J. M. 1963. Profession of Pharmacy and Drugs Control in Goa. *Indian Journal of Pharmacy*, (25): 190-193.
- Cowen, L. D. And H. H. William. 1990. *Pharmacy: An Illustrated History* New York: Harry N Abrams.
- Crawford, D. G. 1914. *A History of the Indian Medical Service 1600–1913, Volume II*. London: Thacker & Co.
- Current Topics. 1910. '*All India Hospital Assistants Journal*', *Indian Medical Gazette*, (45): 228.
- Editorial. 1881. 'The Grievance of Civil Hospital Assistants', *Indian Medical Gazette*, 16 (8):145.
- Education and Public Health Department. 1948. Government of Madras, G. O. No. 3962 P. H., dated 24th November, Tamil Nadu State Archives, Chennai.
- Education and Public Health Department. 1937. Government of Madras, G. O. No. 2797, dated 20th October, Tamil Nadu Archives, Chennai.
- Education and Public Health Department. 1938. Government of Madras, G. O. No. 1651, dated 3rd May Tamil Nadu Archives, Chennai.
- Education and Public Health Department. 1948. Government of Madras, G.O. No. 3962 P.H., dated 24th November Tamil Nadu Archives, Chennai.
- Educational Department. 1869. Government of Madras, G.O. No.63, dated 20th February, Tamil Nadu State Archives, Chennai.

- Educational Department. 1889. Government of Madras, G.O. No.1677 L dated 11th September 1888 and G.O. No.1662 L dated 26th July, Tamil Nadu State Archives, Chennai.
- Educational Department. 1898. Government of Madras, G.O. No.491, dated 9th August, Tamil Nadu State Archives, Chennai.
- Educational Department. 1881. Government of Madras, G.O. No.315, dated 24th September, Tamil Nadu State Archives, Chennai.
- Educational Department. 1888. Government of Madras, G.O. No.554, dated 22nd September, Tamil Nadu State Archives, Chennai.
- Educational Department. 1893. Government of Madras, G.O. No.84, dated 6th February, Tamil Nadu State Archives, Chennai.
- Educational Department. 1866. Government of Madras, G.O. No.87, dated 27th March, Tamil Nadu Archives, Chennai.
- Fish, F. 1963. 'School of Pharmacy, Brunswick Square', *Pharmaceutical Journal*, (231): 120-122.
- General Department. 1882. Education Branch, File 62, Proceedings B1/2, dated 21st April, West Bengal State Archives, Kolkata.
- Jaggi, O.P. 1981. *Indian System of Medicine*. Delhi: Atma Ram & Sons.
- Joubert, C.H. 1908. 'The Indian Subordinate Medical Department', *British Medical Journal*, (2): 385-388.
- Krishna, V.V. 1991. 'The Emergence of the Indian Scientific Community', *Sociological Bulletin*, (40): 89-107.
- Kumar, D. 1997. 'Medical Encounters in British India 1820-1920', *Economic and Political Weekly*, 32(4): 166-170.
- Local Self-Government Department (Public Health). 1924. Government of Madras, G.O. No.590 P.H., dated 15th April, Tamil Nadu State Archives, Chennai.
- Maclean, C.D. (ed). 1885. *Maclean's Manual of the Administration of the Madras Presidency*, Volume I. New Delhi: Asian Educational Services.
- Roy, M. 1982. 'On Visiting the 'Moving Metropolis': Reflections on the Architecture of Imperial Science', *Historical Records of Australian Science*, 5(3): 1-16.
- Majumdar, A. 2018. 'Medical Education on the Colonial Periphery: A Study of Medical Institutions in Patna and Dacca', *Indian Journal of History of Science*, 53(1): 33-49.
- Matthews, L.G. 1962. *History of Pharmacy in Britain*. Edinburgh: E & S Livingstone Ltd.
- Matthews, L.G. 1980. *Milestones in Pharmacy*. Egham, Surrey: Merrell Division, Richardson Merrell Limited.
- Medical Correspondence. 1865. 'Madras Apothecary Society', *Madras Quarterly Journal of Medical Science*, (8): 466-473.
- Medical News. 1894. 'Army Apothecaries to Assistant Surgeons', *Indian Medical Record*, (6):312.
- Medical News. 1895. 'Civil Apothecary Course', *Medical Reporter*, (5): 184.
- Medical News. 1901. *Indian Lancet*, (18):445-446.
- Medical News. 1944. 'Memorandum', *Indian Journal of Pharmacy*, (6): 40-45.
- Mukherjee, S.N. 1994. 'History of the Bengal Branch of Indian Pharmaceutical Association', *Pharma Times*, 26(15): 17, 19, 22, 23.
- Municipal Department. 1896. Medical Branch, File 3C/81, 1, Proceedings 30-52, dated 20th December, West Bengal State Archives, Calcutta.
- Municipal Department. 1894. Medical Branch, File C/22, Proceedings 7-9, dated 7th January, West Bengal State Archives, Calcutta.
- Municipal Department. 1882. Medical Branch, Head Medical service, Collection1, Proceedings18-23, dated 24th April, West Bengal State Archives, Calcutta.
- Municipal Department. 1882. Medical Branch, Head Medical Service, Collection1, Proceedings 18-23, dated 18th April, State Archives of West Bengal, Calcutta.
- Municipal Department. 1899. Medical Branch, Proceedings B223 and 224, dated 19th April, West Bengal State Archives, Calcutta.
- Palit, C. And A. Dutta. (ed). 2011. *History of Medicine in India: The Medical Encounter*. Calcutta: Kalpaz Publication.
- Pandit, J. Kand C. M. Prasad. 1969. 'Banaras Hindu University-Department of Pharmaceutics', *Indian Journal of Pharmaceutical Education* 3(1): 27-31.
- Patel, R.P.L.M. 1959. 'College of Pharmacy, Ahmedabad', *Indian Journal of Pharmacy*, 21(11):213-216.
- Poynter, F.N.L. (ed.). 1965. *The Evolution of Pharmacy in Britain*. Springfield: Charles C. Thomas Publisher.
- Raina, D. 1999. 'From West to non-West? Basalla's three stage Model Revisited', *Science as Culture*, 8(4): 497-516.
- RamaRao, U. 1929. 'The Antiseptic through Quarter of a Century', *Antiseptic*, (26):193-228.

- Ramanna, M. 2002. *Western Medicine and Public Health in Colonial Bombay: 1845–1895*. New Delhi: Orient Longman.
- Sangwan, S. 1991. *Science, Technology and Colonisation: An Indian Experience, 1757-1857*. Delhi: Anamika Prakashan.
- Sibthorpe, C. 1896. 'Medical Education in Southern India', *British Medical Journal*, (2):67-68.
- Singh, H.1998. *History of Pharmacy in India and Related Aspects, Volume 2: Pharmaceutical Education*. Delhi: Vallabh Prakashan.
- Singh, H.2014. 'India'sMedico-Pharmaceutical Inheritance from the Colonial Period', *Pharmacy in History*, 56(4):90-95.
- Singh, H. 1996. 'The Indian and Eastern Druggist/Chemist', *Eastern Pharmacist*, (39):45-48.
- Special Correspondence. 1877. 'The Medical Profession in India', *British Medical Journal* (2):396-397.
- Srinivasa Varadan, K.S. 1954. 'Pharmacy Educationin the State of Madras', *Indian Pharmacist*, (10):309-311.
- Sriramulu,G. 1961. Personal Communication- Sriramulu has been president of the Tamil Nadu Chemists and Druggists' Association and Organizing Secretary of the All-India Organization of Chemists and Druggists. A part from other useful material heal so supplied a photo of R Ganesan.
- Srivastava, G.P. 1970. 'M.L. Schroff–The Architect', *Indian Journal of Pharmaceutical Education*, 4(2):57-58.
- Trease, G.E. 1964. *Pharmacy in History*. London: Tindall and Cox Ltd.
- Wigley, F. G. 1914. *The Bengal Code, Volume II*. Calcutta: The Bengal Secretariat Book Depot.

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