Benevolence of American Henry Phipps and the birth of Pasteur Institute of Southern India, Coonoor, The Nilgiris

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‘The Indian Empire: A Brief Description of the Chief Features of India and Its Medical and Sanitary Problems’ edited by Christophers1 includes the following remark on the Pasteur Institute of Southern India, Coonoor (p. 298):

‘The establishment of a Pasteur Institute at Coonoor was rendered possible by the generosity of Mr. Henry Phipps, an American, who gave several lakhs (Note 1) of rupees to the Viceroy, Lord Curzon. One lakh was handed over to the Madras Government to help in the establishment of a Pasteur Institute in Southern India. At the time it was considered essential that Coonoor was agreed upon as the most suitable location, being cool and on the railway and fairly central. The Institute was opened for the reception of patients on 1 April 1907.’

Although not highly relevant to the specific context of this article, I would consider it useful to know a few details about Christophers, the editor of the above book, in India. Samuel Rickard Christophers, a surgeon by training and a malarialogist—sanitarian by practice, had a distinguished career in India. He was elected to the fellowship of the Royal Society in 1926. He died on 19 February 1978, at the age of 104 years. Through his scientific contributions to tropical medicine, malariology and mosquitoitology, he equals his famous peers Patrick Manson and Ronald Ross2.

Before I refer to the Pasteur Institute of Southern India, Coonoor (PISI), I present here brief details on Henry Phipps.

Henry Phipps

Henry Phipps (1839–1930) (Figure 1) grew up in poverty-stricken conditions in Pittsburgh, Pennsylvania, along with Andrew Carnegie (1835–1919) another immigrant to the US from the UK. Phipps’s close association with Carnegie led him to invest in 1861 in a steel-works operation—the Carnegie Company. In 1901, this operation became the US Steel upon sale to J. P. Morgan. At this point of time, Phipps retired, far wealthier than what he expected to achieve in his life. He spent the rest of his life donating generously to scientific efforts made both within the US and elsewhere. The Phipps Conservatory and Botanical Gardens in Schenley Park, an edifice that arose in the city of Pittsburgh, commemorates the generosity of Phipps. Phipps was of the conviction that those who acquired great wealth should return it for public good and create institutions dedicated for that purpose3.

An unverifiable Internet-site note indicates that Henry Phipps came to India in 1903 to witness the Delhi Durbar, planned pompously by Lord Curzon (George Nathaniel Curzon), the Viceroy of India celebrating the coronation of Edward VII and Alexandra as the emperor and empress of India. Whatever that be, Phipps’s visit to India enabled him to perceive the pains of famine, which had swept India on a massive scale during 1899–1900 (ref. 4). Phipps volunteered to support embellishment of the science of agriculture in India, which he thought would enable educating the people of India towards achieving food security. Historians (e.g., ref. 8) rate Phipps as a practical genius, who was in the active habit of dealing with industrial problems; David Semple was its first superintendent7. However, the distance to Kasauli from southern India was so far that it could not be reached easily without several days of travel (Note 2). The second contribution of £10,000, which Phipps gave Curzon, was at the behest of the Indian Pasteur Institute at Kasauli (IPIK, 30°54′N76°58′E; 30°9′N76°96′E; Solan District, Himachal Pradesh; presently known as the Central Research Institute) existed. IPIK functioned from August 1900 treating people, who suffered dog bites and similar problems; David Semple was its first superintendent7. However, the distance to Kasauli from southern India was so far that these people suffering animal bites, and a laboratory be developed for research to develop antidotes and remedies for poisons of animal origin. Based on Curzon’s decision, the new Pasteur Institute was to be situated in the Madras Presidency. The Government of Madras offered to provide a site and undertook the responsibility of maintenance, whereas the central government agreed to grant an annual subsidy corresponding to the
value of the services rendered to soldiers sent there for treatment.8

The Pasteur Institute of Southern India, Coonoor (1907–1977)

The Pasteur Institute of Southern India (Figure 2) started functioning in Coonoor (11°21′N76°49′E; 11°35′N76°82′E; The Nilgiris) from 6 April 1907 (Note 3). John Wolfran Cornwall of the Indian Medical Service was the first Director, who served for many years, Anderson H. McKendrick, also of the Indian Medical Service, was the Assistant Director, M. Kesava Pai served as the Assistant Surgeon and S. Ramasamy Aiyar was the Hospital Assistant. A PISI document9 lists J. W. Cornwall, T. H. Gloster, K. R. K. Iyengar, H. W. Mulligan, M. L. Ahuja and N. Veeraraghavan as its successive directors.

Until 15 November 1908, people suffering from dog bites were treated at PISI using dilutions of cords preserved in glycerine in an ice chest (Note 4). Between 16 November 1908 and 31 January 1912, people were treated using Högyes’s dilution methods (Note 5). Treatment using carbolized vaccine started from 1 February 1912 and this practice continued until 28 February 1927. Up to 1922, all persons bitten by rabid animals had to go to Coonoor for treatment. Because carbolized vaccine (Note 6) did not undergo any appreciable loss of immunizing power in the plains, several centres which used the vaccines prepared and sent out from the Institute, were started. By 1922, more than 60 centres were established in hospitals in Madras and in other Indian states. The vaccine was sent out in sealed ampoules. Instructions were clear that vaccines could not be used after 14 days from the date of dispatch. One key development of this process was decentralization, which was brilliantly effective.

A brief report on the results of antirabic inoculations carried out at PISI is available in the British Medical Journal10, wherein Cornwall reports occasional jackal bites in humans and the vaccination carried out at PISI on such occasions. He also mentions that dogs proved rabid in laboratory tests have been found to bite humans without infecting them. He infers that different strains of the rabies virus differ in infectivity. He concludes that treatment offered at PISI saves one out of every two persons who would have otherwise developed hydrophobia and died.

In addition to routine work on preparing and administering vaccines for rabid dogs, PISI did extremely well in investigating kala-azar, filariasis and aspects of medical entomology, which were regularly published in the Indian Journal of Medical Research.

A news item in Nature London11 indicates the following:

‘The annual report for 1931 of the Director, Major Iyengar (Note 7), of the Pasteur Institute of Southern India, which has only recently been received, states that Semple’s carbolised sheep vaccine was in use throughout the year, and that 130,821 doses of antirabic vaccine were issued. The number of patients treated at the Institute was 545 and 8,056 persons were treated at the centres. The deaths from hydrophobia in these two groups numbered 7 and 60 respectively, giving mortality rates of 1.28 and 0.74 per cent. Hydrophobia is still very prevalent in the Madras Presidency, no less than 661 deaths from this disease being reported during 1931. The remainder of the report gives a complete analysis of the work of the Institute and of results obtained in a series of statistical tables.’

The website of the National Library of Scotland (http://digital.nls.uk/indiapapers/browse/pageturner.cfm?id=74915316) carries at least three issues (numbers) of the Bulletin of the Pasteur Institute of Southern India, Coonoor (Figure 3). Number 1 dated 1908, published in 1909; Number 2 dated 1909, published in 1910 and Number 3 dated 1910, published in 1911. I could not verify whether this bulletin continued into later years or ceased to publish after Number 3 (1910; 1911). A quick browse through the available numbers reveals that they include reports (papers) on studies carried out at the PISI and do not include any publications from scientists outside the PISI.

Figure 2. The Pasteur Institute of Southern India, Coonoor. (Source: S. R. Christophers, 1927.)

Figure 3. Cover page of the inaugural issue of the Bulletin of the Pasteur Institute of Southern India, Coonoor (1908). (Source: http://digital.nls.uk/indiapapers/browse/pageturner.cfm?id=74915316)
The Pasteur Institute of India (1977–till date)

The Pasteur Institute of Southern India was renamed as the Pasteur Institute of India (PII), and was authorized to function as an autonomous body under the Ministry of Health and Family Welfare, Government of India, New Delhi from 10 February 1977. PII is administered by a governing body.

The 2005 website of the Pasteur Institute of India (with the name changed from PISI) identifies the following as its current activity.

- Production of DTP-group vaccines (DPT, DT and TT vaccines), Vero-cell-derived rabies vaccine for human use.
- Research and development into cost-effective tissue culture rabies vaccine, training scientists from India and abroad in vaccine production and testing, and cost-effective new vaccines and sera.
- Other activities that include running of rabies diagnostic laboratory and a dog- and animal-bite treatment centre (24 hour service).

In conclusion, support from the US occurs notably in the history of Madras’s public-health management in the 1920s. For instance, to tackle guinea-worm disease (GWD, Dracunculiasis), which was affecting Madras Presidency’s population immensely, the then newly established Madras Health Council (MHC) designed a major demographic study on GWD. This study was launched by MHC with funding and technical support from the Rockefeller Foundation’s International Health Board (RF–IHB) under the aegis of its far-east operations. In this epidemiological study, the Government of Madras provided several medical officers, George Paul and John Kendrick, supported by RF–IHB, who worked with two American epidemiological study, the Government of Madras was set up in Coonoor.

3. The Eastern Daily Mail and Straits Morning Advertiser (18 May 1907) published from Singapore includes a news item under ‘India Notes’ [newspapers.nl.sg/Digitised/paper/easterndaily19070518.1.1.aspx, accessed on 6 June 2012] shown here: ‘The new Pasteur Institute at Coonoor has been formally opened by the Governor of Madras.’ The referred Governor may have been Sir Arthur Lawley although his name is not mentioned in the newspapers.

4. An article without author identity published in the Bulletin of the Pasteur Institute of Southern India explains different trials conducted at PISIC in preserving the spinal cords of fixed-virus rabbits in 100% glycerine, 50 : 50 glycerine–distilled water, 25 : 75 glycerine–distilled water.

5. Lyzza Högyes, Budapest claimed that Pasteur's method of attenuation merely reduced the number of rabies organisms. This diminution, Högyes proposed, could be more accurately accomplished by means of gradually diluted suspensions of finely divided suspensions of fresh fixed virus. Högyes started trialling with a 1 : 10,000 dilution and gradually strengthened the dose until the 14th day of treatment, after the 14th day, the patient received a 1 : 100 dilution.

6. David Semple (Superintendent, PIK) gave up research on serum therapy and started working on a conventional antirabic vaccine. He was of the opinion that serum therapy would not work on its own and therefore decided to opt for a straightforward treatment method using conventional vaccine strategy; he developed carbolized vaccine at PIK from the brains of rabbits deliberately infected and then killed.


Notes

1. One lakh = 0.1 million.
2. A dog bit one Lily Packenham Walsh, the wife of a senior British officer in Coonoor in 1902. At that time, anti-rabies vaccine was available only in Kasauli located at an ‘unreachable’ distance. It is said that this was one of the reasons, why the Pasteur Institute of Southern India was set up in Coonoor.
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8. PISI, Pasteur Institute of Southern India Golden Jubilee Souvenir, 1907–1957, Pasteur Institute of Southern India, Coonoor, 1957, p. 150.