Prologue to the Original Study

There are three main reasons why I chose to do a study on Dyer in particular. First of all, the value of Dyer’s achievements cannot be ignored in considering the relationship between industrialization and education in Japan. He was requested to come to Japan by the Department of Public Works and stayed for nine years, during which time he devoted himself to the organization of engineering education in Japan and trained a number of engineers to a high level of competence. The education at the Imperial College of Engineering was of an experimental nature and it was unparalleled in Britain or in other Western nations. Dyer's excellent work at the Imperial College of Engineering was one of the forces that made Japan's industrialization such a success. Studies on Dyer are of great importance in the analysis of the relation between industrialization and education.

Dyer was the first Westerner to undertake intensive research on Japan’s industrialization and education, and he played a leading role in the national projects of industrialization and education as a foreign teacher hired by the Japanese Government. He had a unique and important role in the industrialization of Japan and in the training of the Japanese youth who would maintain it. He devoted himself to the foundation of machine industry at the Akabane Works, which was under the supervision of the Department of Public Works. He also utilized the factory for the practical training of his pupils at the Imperial College of Engineering. Teaching mechanics and civil engineering, he was also involved in the construction work by the Department of Public Works. Dyer compiles his many experiences into the theory of Japan’s national evolution, which revealed that the engineers were supported by the solid educational system on the national level.

Secondly, Dyer’s achievements illustrate the dynamics of Japan’s educational exchange with other countries. Dyer brought the findings at the Imperial College of Engineering back to Britain and utilized
them for the establishment of an engineering college in Glasgow. In other words, he was the trail-blazer of the 'boomerang phenomenon' in the history of educational exchange. Ayrton and Perry, who were Dyer's subordinates, also brought the findings at the college back to an engineering college in London.

Dyer was in the vanguard of observant studies on international relations within Japan's educational system. *Dai-Nippon*, one of Dyer's books, was published at the beginning of the twentieth century, when hundreds of Chinese students were being sent to Japan in preparation for the coming reform in China. Dyer noted in the book:

Hundreds of Chinese students are now in Tokyo and other parts of Japan fitting themselves, in many ways, for their future work in China; so that in a sense Japan is repaying to China the debt she owed to her former civilization.

He stated that Eastern philosophies and ideas were 'streaming back' to the West, and expected Japan to play the principal role in the 'blending' of Eastern and Western cultures.

By using words such as 'repay', 'streaming back', and 'blending', Dyer was the first to express clear and accurate views on the international aspect of Japan's education.

The third reason why I chose to do a study on Dyer is that Dyer was the pioneer of studies on Japan. He published a number of books and essays covering Japan, which, unlike the records of personal experience of Japan that had been compiled as primers, was grounded upon the methodology of history and comparison.

In his writings, Dyer succeeded in unraveling the secret of Japan's evolution in terms of social science and in pinpointing Japan's mission to assume a place within the global community. By providing lessons from Japan, Dyer's studies served as an incentive to slump-ridden Britain, in addition to making Japan known to the rest of the world. Dyer's work also had a profound influence on the studies of Japan by other foreign teachers of the time.

Above all, *Dai-Nippon* (1904) and *Japan in World Politics* (1909) are Dyer's longest works, extending to nearly 500 pages each. These books show his comprehensive and positive study of Japan's past, her existing condition and her plans for the future.

Both books received good news. The back flap of *Japan in World Politics* shows eight excerpts from reviews of *Dai-Nippon*. A review from *The Times* noted:

Since the termination of his service, Dr Dyer has closely followed the progress and history of Japan, and in his book which he describes as a study in national evolution he furnishes us with a carefully compiled description of present-day Japan.
The Glasgow Herald remarked:

There are few men in this country better qualified than Dr Dyer to speak with authority on the processes which, in the course of comparatively few years, have evolved from a feudal state to the Japan of to-day.

The Manchester Guardian observed:

I would be difficult to speak too highly of the merits of Principal Henry Dyer's new book on Japan. Philosophic in conception, scientific in method, minute and reliable in its information, it combines many excellences seldom united.

As I will recount later, Nature also carried a two-page review on the book. It would be hard to find another study on Japan that attracted so much attention.

Despite Dyer's many achievements, Dyer had been forgotten for years in Britain and in Japan. I published my first paper on Dyer entitled 'Henry Dyer as a Principal of Kobu-Daigakko' in the Japanese Journal of Educational Studies in 1976, and then went on to publish a number of other papers on Dyer.

Then, Professor Masami Kita, who specializes in social and economic history at Soka University, published The People who Developed Japan: The Bond between Japan and Scotland (1984). This book was a compilation of papers based on materials collected while he was studying at Glasgow University. Professor Kita's excellent methodology based on positive historical science accelerated studies on Dyer by the Japanese.

Following in both Dyer's and Professor Kita's wake, I visited Glasgow in the late spring of 1987, hoping to blend materials from Britain and Japan into a substantial study on Dyer. When I left for Glasgow, I had identified eight questions that I wanted to investigate. With these eight questions in mind, I embarked on a tour to Glasgow and London in order to search for data. The questions provided me with a viewpoint which was different from that of Professor Kita, and which was lacking in my previous work.

1. Why was Dyer appointed principal of the Imperial College of Engineering at the age of 24?

It is known that Hirobumi Ito, who was later to be the Prime Minister of Japan, visited Britain as an ambassador and asked H. M. Matheson, who had earlier accommodated Ito when he studied in Britain, to name the principal of the Imperial College of Engineering. It is also known that Dyer was appointed after Matheson's discussions with
L. D. B. Gordon, a former professor at Glasgow University, and with W. J. M. Rankine, who was then a professor at Glasgow University. However, it is not clear why Dyer was entrusted with the responsibility of the principalship while the teachers who came to Japan with Dyer were senior to him.

2. On what did Dyer model the educational plan of the Imperial College of Engineering?

In Japan, it has been argued that Dyer modelled his educational plan on the politechnicm of Zurich. My research shows, however, that he undertook a unique educational experiment based on the British people’s practicality-oriented outlook on education, while also taking the educational systems of the Continent into account. It is of immense interest how a mere engineer, who was not a specialist on education, succeeded in such an unusual educational experiment.

3. How was the news about Dyer’s educational experiment at the Imperial College of Engineering delivered to Britain?

People in Britain may have dismissed Dyer's educational experiment as something minor that took place in an insular country in the Far East. It is doubtful whether it occurred to them that the experiment would lead to Japan’s industrialization actually threatening Britain’s status as an industrially-advanced nation.

4. Why did the Institution of Civil Engineers reject Dyer’s proposals?

During his stay in Japan, Dyer wrote a long letter to the Institution and insisted that Britain should initiate a reform in engineering education. I wanted to know why his proposals had been turned down.

5. Why was Dyer unsuccessful in his attempts to become a professor at Glasgow University?

Dyer left Japan for Britain in June 1882. A new post of professor of naval architecture was established at Glasgow University in the following year, and Dyer applied for that position without success. He made his second attempt in 1886, only to fail once again.

Dyer had gained the opportunity to go to Japan as the most brilliant graduate recommended by Professor Rankine, and returned with flying colours, convinced there would be an opportunity to teach at his alma mater. I wanted to find out why his two attempts had failed.
6. What ideas from the Imperial College of Engineering were adopted for Dyer’s new technical college and what effect did they have?

Leaving Glasgow University, Dyer contributed to the establishment of a new engineering college in Glasgow. He admitted that he then applied his findings at the Imperial College of Engineering, which I call the boomerang phenomenon, and on which I have done some research. It is not absolutely clear what ideas were adopted and what effects they had.

Dyer’s engineering college is now Strathclyde University and is almost as prestigious as Glasgow University. It is important to collect materials on Dyer from that university.

7. Did Ayrton and Perry bring their experiences and findings at the Imperial College of Engineering back to Britain?

W. H. Brock pointed out another form of boomerang phenomenon. Ayrton and Perry, who were Dyer’s subordinates, worked on his educational experiment at the Imperial College of Engineering. It is thought that some of the findings at the college were brought back to Britain by Ayrton and Perry when they were appointed professors at an engineering college in London. How can this be proved?

That particular engineering college in London is now called the Imperial College of Science and Technology, which is one of the best institutions for research and education in Britain. The achievements of Ayrton and Perry at the college remain to be examined.

8. What led Dyer to pursue studies on Japan?

Dyer came back to Glasgow and carried on his research in industrial evolutionism and social evolutionism, and he himself became a social revolutionist.

In his later years he focused on the study of Japan. He regarded Japan as a typical example of national evolution, and maintained that the Japanese model should be given due consideration in British social reform. I wanted to find out more about his reasons for focusing his studies on Japan.

Although I was not as capable of clearing up mysteries as Sherlock Holmes, my quest was nevertheless rewarded with some interesting findings. I have left a number of points unexplored, and younger scholars may shed light on these in their research in future years. Here I compile my findings on these questions under one cover, in the hope of providing some insight into Dyer’s role in the UK-Japan exchange.