

## Scotland and Japan/ Glasgow University and Soka University: Past and Present Connections

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### **Introduction:**

I am delighted to be here again at Soka University. It is now over eight years since I was last on this campus, and I see quite a number of changes – in buildings and people. But the warmth of the welcome never changes, and I am glad to have the chance to speak to Soka undergraduates again. I wonder if there is anyone here from Aomori-ken? The reason I ask is that a week ago, Professor Kita took me to Aomori-ken for a visit. There was a purpose for the trip, and I want to use it as a way of introducing my lecture.

As you may know, in June 1994 Dr. Ikeda came to the University of Glasgow to receive the Honorary Degree of Doctor of the University. It was a splendid occasion, held in the University's historic Bute Hall, and many of you will have seen photos of the event. I had the privilege of presenting Dr. Ikeda to the Chancellor, Sir Alexander Cairncross, for the award. In my speech I quoted from a poem that Dr. Ikeda had written about a waterfall in Oirase Gorge in Aomori-ken:

Like the waterfall fierce  
like the waterfall unflagging  
like the waterfall unfearing  
like the waterfall merrily  
like the waterfall proudly  
a man should have the bearing of a king

I chose these words because the image of the waterfall seemed to me to convey something about the bearing and character of Dr. Ikeda – steady, dependable, proud, a true leader. After the ceremony, one of his advisers asked me how it was I had come to choose that particular poem. I replied that I had thought that its words were appropriate. On reflection, however, I believe that there was more to it than that. Out

of all the many fine poems that Dr.Ikeda has written, I responded to that one because it also evoked memories of my own childhood and youth.

Let me explain. My country, Scotland, is about the size of Hokkaido in terms of area and population. I was born and raised in the most northerly part of the mainland, in the region called the Highlands, and I therefore grew up in a countryside very similar to that of Aomori-ken. It is a land of mountains, lakes and fast-flowing rivers; a land of ancient castles and small historic towns. And where you have mountains and rivers, you have waterfalls. This is the waterfall closest to my family's ancestral home. It is called the Falls of Rogie, and it is a spot I visited regularly with family and friends when I was a boy. As you see, our rivers in Scotland are home to the Atlantic salmon, and one of the finest sights at our waterfalls are the annual runs of salmon leaping the torrents to reach the quieter spawning grounds upriver. So I now realise that when I first read Dr.Ikeda's poem about the Oirase waterfall – thousands of miles away on the other side of the globe – I was attracted to it not just because it seemed to say so much about its author. It also conjured up for me another set of images and emotions – of family, roots, community and the sense of security that goes with them. I think these sentiments are understood and shared by the people of Aomori-ken, and underlie their pride in the way that Dr.Ikeda wrote about the Oirase waterfall.

While I was in Aomori, I discovered that it shares something else with my homeland. Aomori is the main centre in Japan for the sport of curling. But I wonder if you are aware that Scotland is the original home of curling? It is a game that we invented and exported to the rest of the world. The game started centuries ago. The oldest curling stone that can be dated is from the 1560s. It was a pastime of country people, played on frozen lochs (or lakes) when, in the depths of winter, there was little farming work to be done. During the 1930s and 1940s, however, it moved indoors, into ice rinks, and became a sport enjoyed as much by urban as by rural people. It also became extremely popular in Canada, to which many Scots emigrated, and in other parts of northern Europe. I am pleased to see it putting down roots in Japan.

Scottish people also invented and exported another game. I wonder if you know what it is? Yes, golf. In Scotland, golf is not a sport for businessmen or rich people. Even I play it.

While we are on the subject of shared sporting passions, let me show you a picture of someone. Do you know who he is? Yes, Shunsuke Nakamura is the first Japanese to play professional soccer in the Scottish Premier League. He plays for Glasgow Celtic, currently the best team in the league, and his considerable skills are much admired by my countrymen.

So Scotland and Japan have much in common, despite their difference in size. There are many links that bind us. One of these is the connection between Soka University and Glasgow University that began when

Professor Kita arrived in Glasgow as a young postgraduate student in 1975, that grew with the introduction of a student exchange scheme in the 1980s, and that has seen several staff members of Soka University enjoy visiting researcher facilities in Glasgow. The award of an honorary degree to Dr. Ikeda in 1994 expressed support for this connection while also of course recognising Dr. Ikeda's great personal qualities. I want to say a little about the students who have come to Glasgow from Soka University over the last twenty years. But before I do, I want to go back in time a bit - to demonstrate that connections between our two countries have much deeper roots than the current presence of Shunsuke Nakamura in Glasgow or even me here in Soka University.

I want to take us back to the Meiji era, when Japan was modernizing rapidly and looked abroad for technology, for intellectual inspiration and for institutions and forms of organisation that could be adapted to Japanese needs. It did this both by sending government missions and students overseas, and by inviting Westerners of many nationalities to bring their knowledge and skills to Japan.

For engineering skills, and for the education and training of young engineers in particular, Japan looked to Scotland. By the mid-19th century Scotland was a major world centre of science and engineering. Its universities, especially Glasgow and Edinburgh, were leading institutions in scientific and engineering research and in the training of engineers. In 1840, for example, Glasgow University had appointed the first professor of engineering anywhere in the United Kingdom. The showpiece of Scottish engineering skills was the great cantilevered railway bridge across the Firth of Forth, near Edinburgh. But these engineering skills were also expressed in a range of other technologies – from the submarine telegraph cable to the triple-expansion steam engine – that drove the rapid globalisation of the period. They also contributed to more mundane, but no less important, improvements in the physical environment of the rapidly industrialising cities. Engineering held a very high level of respect in late nineteenth century Scotland, more so than in England. As a practical science and an academic subject it fitted well into Scottish educational traditions and it attracted some of the most talented young men of the time. As a desirable profession, it matched Medicine and the Law for young Scots.

It will not surprise you therefore that from the 1870s onwards, Japanese students came to Scotland in some numbers – mainly to study physics with the famous Lord Kelvin in Glasgow University, or to study mechanical engineering, marine engineering and naval architecture in the same university. This is a photograph of a party held by Japan's consul in Glasgow in the early 1900s – probably to celebrate the Emperor's birthday. The very serious young men, most with moustaches, are all Japanese students in the city. But look at the seated European figures. The small man in the middle is the honorary Japanese consul in Glasgow, a ship-broker and agent named A.R. Brown. The man on the right, the one with a full beard, is named Henry Dyer, and he, more than any other individual, can be attributed with laying the

foundations for these educational links between Scotland and Japan.

However, the story starts not with Dyer, but with another man, named Richard Henry Brunton. He was a lighthouse engineer and also the first the first *o-yatoi* or hired foreigner to be engaged by the Meiji government – in the year 1869. This came about because, with the rise of international shipping in Japanese waters, the safety of navigation around the shore-line became a prime concern. The Meiji government asked that a British engineer be sent to Japan to construct lighthouses. The government in London, realising that Japan's coastal conditions were more like those of Scotland than England, passed on the request to the Commissioners for Northern Lighthouses in Edinburgh, who in turn selected Brunton for the job. Brunton, who came from Aberdeenshire, was a railway engineer by profession. However, the famous Stevenson brothers, who were the engineers for the Northern Lighthouse Board, gave him a short training course in lighthouse construction before he set off for Japan. Between 1868 and 1876 he developed the government's lighthouse bureau, and constructed some 26 lighthouses on different parts of the coastline. He also worked on the public water supply and the harbour facilities at Yokohama, where a statue commemorates his accomplishments. In 1872 Brunton returned briefly to Scotland, to act as a guide to the visiting Iwakura Mission and to show its members what Scotland had to offer in terms of new technology. Part of the Iwakura's Mission's purpose was to recruit teachers of practical subjects for a new college of engineering being planned for Japan, and Brunton's introductions to engineering professionals and academics in Scotland was crucial to that purpose.

As a result of the Iwakura Mission, Henry Dyer was appointed as the first Principal and Professor of Civil Engineering of the new College of Engineering (*kobu daigakko*), and between 1873 and 1879, four successive groups of Scottish academics went out to Japan to teach in the new college.

Henry Dyer's home was in Lanarkshire, in the industrial West of Scotland. As a young man he became an apprentice engineer, and attended evening classes at Anderson College in Glasgow. He then moved on to Glasgow University, where he took a B.Sc. and Certificate in Engineering Science, and was selected by the Professor of Engineering to fill the new post at the *kobu daigakko* in Tokyo. At the time he was only 25 years old. Dyer was Principal of the Imperial College of Engineering from 1873 until 1882. During that period he laid the foundations for an entire academic curriculum, as well as providing for the residential and social well being of the students. He recruited the first Japanese member of staff – Kiochiro Sugi, who had been left in Edinburgh by the Iwakura Mission, and had studied Engineering Drawing at Edinburgh University. By 1881, the first batch of graduates from the college was being sent to the UK for further studies – mainly to Glasgow University. Dyer can truly be called the 'father of engineering education in Japan.'

For all his significance, however, Dyer was not the only prominent Scottish engineer and educator to come to Meiji Japan. The most brilliant, and most successful, was probably James Alfred Ewing who in 1878 was appointed as the first professor of mechanical engineering in the newly-opened Tokyo University. Ewing was then only 23 years old. He came from the city of Dundee on the Firth of Tay, and had studied engineering at Edinburgh University before setting out for Japan. There in the *Tokyo Daigaku* he taught courses on mechanics and heat engines to engineering students, and on electricity and magnetism to students of physics. He also collaborated with another Scottish academic, John Milne of the *kobu daigakko*, to develop a new and improved type of seismograph. It does not need me to point out to how important it was for Japan to possess an instrument for accurately measuring movements in the earth. Ewing returned to Scotland in 1883. He had a very distinguished subsequent career as an engineer and physicist in Dundee and Cambridge, contributing to the development of the steam turbine engine and to the field of naval code encryption. He became Principal of Edinburgh University in 1916.

In 1886 the *Tokyo Daigaku* and the *kobu daigakko* merged to become Tokyo Imperial University. The College of Engineering became the University's Engineering Faculty. A year later, in 1887, William Burton was appointed as the university's first professor of sanitary engineering. Burton was born and educated in Edinburgh, where his father was a distinguished lawyer and amateur historian. He undertook an apprenticeship with Edinburgh's leading firm of hydraulic engineers, and then moved to London, where he was active in developing an improved water and sanitation system for that great city. At Tokyo University, in addition to his teaching, Burton held the position of engineer to the Sanitary Department of the Interior Ministry. In that capacity he designed water and drainage systems for Tokyo, as well as other towns and cities in Japan and Taiwan. He also designed Tokyo's first sky-scraper – known as Asakusa 12-Stories. It was a concert and entertainment centre, housing Japan's first electric lift, and it survived until the Great Kanto earthquake of 1923. Burton had a Japanese wife and daughter, and died in Tokyo in 1899 at the relatively young age of 43 years. Probably more than any other single person, he ensured that the population of Japan's cities could expand without suffering the effects of cholera and other water-borne diseases.

It will hopefully be obvious that post-1868 Japan benefited considerably from the engineering knowledge and skills that were exported from Scotland to Japan. Men like Dyer, Ewing and Burton, as well as a number of others I do not have time to discuss, had a truly significant impact on the Japanese economy and society. Collectively, they contributed both to the development of Japan's physical infrastructure and to the training of its first cohort of graduate-level engineers. Many of their students, in fact, became the leading professionals in the on-going development of industry, public works and education in Japan. So the students trained by Scots in Japan and the students who went from Japan to Scotland – sometimes these were the same people – were inheritors of the accumulated engineering skills and knowledge of Scotland.

It is something in which I feel some pride.

Today, things are a little different. Japan is one of the most technologically advanced nations in the world, and has little need to look to Scotland, or anywhere else, for engineering skills. Meanwhile, Scotland has essentially become a post-industrial society – with employment mainly in financial services, energy production, tourism and cultural services, and, of course, whisky distilling. But our scientists and engineers are still at the cutting edge in such fields as biotechnology, nanotechnology and optoelectronics. Our universities also remain active and dynamic – with two of them, Edinburgh and Glasgow, rated among the world's top 100 universities. We recruit students from all over the world. So students from Soka University coming to Glasgow find themselves in a cosmopolitan city and university, and benefit from this in preparing for life and work in a more globalised economy than that faced by the students of Meiji Japan.

Compared with the students in the photo with Henry Dyer and A.R. Brown in the early 1900s, the Soka Glasgow students are a very different group of people. Many of them are now female as well as male, and they study a much wider range of subjects than their predecessors. Most come to Glasgow for a year, to study English, and to experience teaching and learning in an English-language academic environment. Some return to take postgraduate degrees – Masters or doctorates – and share in the pleasures of graduation days. Almost all of them seem to have benefited for their time in Scotland, and to have found interesting and rewarding employment back home in Japan in which they are able to use their experience of living and studying abroad. A number return regularly to Glasgow to see friends and revisit old haunts, and bring their families with them. So I confidently expect that within a few years we shall see a second generation of Soka Glasgow students, young people whose fathers or mothers also studied or researched at Glasgow University. Life, like a river, flows on – with an occasional majestic waterfall challenging the spirit, the intellect, the talents and the enterprise, and revealing them in all their power and glory. So perhaps one day we might think of adopting the Oirase waterfall as a symbol of the Soka Glasgow connection.

Thank you for your attention.