

Special Article

## Kanehiro Takaki and Sei-I-Kwai Medical School

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### TAKAKI PROMONTORY IN THE ANTARCTIC CONTINENT

There is a place called Takaki Promontory in the Antarctic Continent. The British Board on Geographic Nomenclature of Antarctic named the promontory after Kanehiro Takaki (1849-1920) in 1959, throwing light on his significant work. As his introduction, it is written "Baron Kanehiro Takaki, Director-General of the Medical Department of the Imperial Japanese Navy succeeded in eradicating beriberi by improving the quality of meals for the first time in 1882". Surrounding Takaki Promontory, four other places are named after other distinctive vitamin scholars, such as Eijkmann Promontory, Funk Glacier, Hopkins Glacier and McCallum Peak. These names include winners of the Nobel Prize in Physiology and Medicine.

Unlike within Japan, Dr. Takaki is overwhelmingly famous in Western countries as a pioneer of vitamin research, in comparison with any other Japanese nutritionists and vitamin researchers.

In 1880's, when Dr. Takaki was working in the frontline of the society, Japan's whole medical world had a strong tendency toward German medicine and the research oriented medicine, in particular, with University of Tokyo leading such trends. Dr. Takaki raised a theory that beriberi is caused by a nutritional deficiency and can be cured with better meals. However, despite remarkable proofs he exhibited, his theory continued to be ignored, because no researches were believed to deserve trusts unless they were conducted by some authorized institutions such as the University of Tokyo then (majority of doctors at this



Kanehiro Takaki  
(1849~1920)

university believed beriberi is an infectious disease that spreads via bacteria). This is the reason why Dr. Takaki is not known well as a nutritionist or a vitamin researcher within Japan.

In contrast, Western countries were astonished at his initiative, when he said in his special lecture held in Britain in 1906, a year after Japan had defeated the Japanese-Russo War, "What prompted Japan's victories in the wars against Chino-Japanese and Russia was my work that abolished beriberi from soldiers through improved food". After the lecture was published in an international medical journal *Lancet*, the impact over Western doctors and nutritionists expanded further. What impacted most was that

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there was a Japanese, who had abolished beriberi by improving meals, on his theory that lack of nutrition causes the disease. It was 20 years before vitamin was suggested as a cause of beriberi for the first time.

At any time of the history, it is very rare that a sole doctor figures out the cause, a preventive method and treatment of a disease like beriberi, which was once called as Japan's national disease. It was extremely natural Dr. Takaki was spotlighted as one of the five distinctive scholars from all over the world.

### KANEHIRO TAKAKI'S CHILDHOOD

Dr. Takaki's childhood name was Toshiro. He was born on September 15, 1849, in Hyugano-Cunty, Higashimorokata-District, Mukasa-Village, Sirasuzaka His family served the Satsuma clan for generations, but its warrior rank was low and his father usually made living as a carpenter. Since Toshiro was born vulnerable, his mother always told him, "You cannot succeed the family job as other children. You must study hard and establish yourself as a scholar". His parents were very enthusiastic about education, which was unusual in the traditional Satsuma customs. Basically, the Satsuma clan was never fond of education. All it expected its samurais to be was a brave warrior, who never behaves like a coward and always holds high morale. Studying was paid small significance there.

Fortunately, Toshiro loved to study twice as much as others. At the age of seven, he entered a small school run by Keisuke Nakamura, an antiforeign samurai, and studied the Nine Chinese Classics. When the teacher praised him, he studied even harder with pleasure. He never forgot the satisfaction he learned, when he finally figured out the teacher's exercises without sleeping.

He began to learn the Jigen School of swordsmanship, when he was nine. The Jigen School is a unique swordplay in Satsuma and teaches the way to kill a man with a single sweep. Toshiro became enormously healthy since he had started the swordsmanship, with his spirit simultaneously toughening like a rock.

At the age of twelve, he confessed to the school master Nakamura that he wanted to be a medical

doctor. Toshiro was longing to be like Ryosuke Kuroki, a Chinese medicine doctor in *Mukasa* Village, who captured respects from many villagers. Since it was common for boys to succeed their family jobs in those days, he needed tremendous courage to make this unconventional confession. As Nakamura had always lamented it was pity for such a smart boy to spend his whole life within a small village, he went to consult a local lord Kyobei Mohri at once. Lord Mohri, who had also hoped for a long time to send this intelligent boy to the heart of the country, totally agreed with Nakamura and went straight Toshiro's home to persuade his father. His father must have wanted the son to take over the family job, but he had to bend before these men's ardent persuasion.

Due to various issues, Toshiro had to wait more before he eventually started medical study in Kagoshima at the age of seventeen. He studied under Ryosaku Ishigami, a Dutch medicine practitioner. Lord Mohri offered his home in Nishida Town, Kagoshima, as an accommodation for Toshiro.

However, the Boshin Civil War began soon after he started studying. Toshiro had to head for the front as a medical officer of the Satsuma clan, quitting his study in the middle. In this war, he was forced to realize his immaturity in medicine. It was not only his problem, but was actually a crucial issue to the entire group of medical surgeons in the army of Satsuma clan. Reflecting the prevailing number of Chinese medicine practitioners in the clan, most treatments were incorrect and did not work at all in the battlefield.

### STEP INTO BRITISH MEDICINE

Severely hit in the Boshin War, the Satsuma clan recognized the significance of Western medicine and established Kagoshima Medical School (a forerunner of Medical School of Kagoshima University) on its expense. Takaki determined to study over medicine again and entered this school to begin with.

Shortly after Takaki entered the school, William Willis (1837-1894), a British doctor, took his post as principal. Dr. Willis once had been assigned director of Igakko-ken-daibyoin (Medical School and Hospi-

tal), present Faculty of Medicine, the University of Tokyo, as a reward for his service during the Boshin War, but he was sent down to Kagoshima in December 1869, on the heels of the hospital's decision to introduce German medicine.

Kagoshima Medical School immediately established organization and launched its medical education for the regular course (study in original language, for four years) and the special course (study with translated books or simplified manners, for two years). Among others studied in this regular course were Hajime Mitamura, Koken Kagami and Toyosu Kawamura. These intellectuals later joined the Navy and promoted to the surgeon general post along with Takaki.

Takaki studied British medicine for the first time under Dr. Willis, for whom he concomitantly worked as an educational assistant (he lectured himself or as an interpreter). Anatomy was the subject he was assigned to. He studied hard and helped Dr. Willis well, despite small amount of salary he received. Dr. Willis always resented Takaki's poor salary and often requested the provincial authorities for a raise for him. It was written in his request form, "Takaki has completely learned anatomy and works as my assistant professor. He is worth far more than a hundred of ryos (then-yens) per month. Anatomy is the very base of medicine."

In light of the information that Dr. Willis mostly ordered medical books from his own country, Takaki appears to have read all these books and absorbed new knowledge one by one. Dr. Willis seems to have been strongly impressed by his enthusiasm and told such a story on Takaki. Shortly after the school opened, Dr. Willis asked Takaki questions about the book he had read. Takaki answered every question Dr. Willis asked, no matter what part of the book it was about. This incident seems to have been so impressive to Dr. Willis that he handed down the story to posterity. This could be a factor behind Takaki's appointment as his assistant professor.

Dr. Willis liked Takaki's manly frank personality as well as his remarkable talent. Takaki was likable as he was not secretive as other Japanese, lively, friendly and determined to carry out his decisions

without hesitation. Based on his belief that a man like Takaki should go abroad and expand his knowledge, Dr. Willis started to frequently suggest he should study in Britain. Needless to say, Takaki had no objection. As a short cut, he decided to join the Navy and plan to be sent to Britain.

He was lucky to be invited by Ryosaku Ishigami, who had become a housemaster of Navy surgeons after retiring from Kagoshima Medical School, and began to serve the Navy from spring 1872. Dr. Willis continued his aggressive support for Takaki by making an offer to give some money for studying abroad and commending him for a scholar to be sent overseas on expense of Kagoshima Prefecture. Due to several circumstances, it was the Navy eventually sent Takaki to Britain for a scholarship.

Takaki was dispatched to a medical school of St. Thomas' Hospital. Its education style was similar to Dr. Willis', but the context was much more solid. Takaki studied diligently as he had in Kagoshima and recorded outstanding marks (won a total of 13 awards including the William Cheselden student gold prize and the silver prize).

The biggest influence he received at this school was epidemiology that developed in Britain. The method used to study epidemiology tremendously helped his study on beriberi in Japan. This is the reason why Takaki's research on beriberi is referred to even now as the dawn of epidemiology study in Japan and its methodical contents are flawless.

#### THE HEADSTREAM OF TAKAKI'S MEDICINE

After five years' study, Takaki returned to Japan in the end of 1880. The first disturbance he felt after coming back was unfavorable changes to Japan's medical atmosphere. The Restoration Government's policy to introduce German medicine, which started with making Dr. Willis descend to Kagoshima, had totally changed the medical circle into German tone, in which more emphasis is placed on research rather than medical practices. As soon as he returned home, Takaki built Sei-I-kwai Medical School (a forerunner of Jikei University School of Medicine), Tokio Charity Hospital (a predecessor of Jikei Uni-

versity Hospital) and Training School for Nurses (present Jikei Nursing School) in rapid sequence, stressing British medicine's essence that gives the first priority to medical practices.

### A HOSPITAL FOR THE POOR

Like its name shows, Tokio Charity Hospital was a hospital that gives people free medical care, funded by volunteers. Japan was not so wealthy in those days and there were many, who could not afford to see doctor and die once they got diseases. In the prospectus, the hospital founders' intent was written in the following manner. "People have good times and bad times. They sometimes enjoy luck, but a misfortune sometimes devastates their life. This is all heaven's will. We believe, to make a contribution to the society, those blessed with health and wealth should save those suffering from disease but too poor to receive treatment." "When the poor live out their allotted spans in an effort of the wealthy to cultivate virtue, our joy could never be any larger."

Takaki actually embarked on the construction of this hospital after finishing his study in Britain, but he appears to have already had plans when he was in Kagoshima Medical School. He submitted a memorandum called "A Hospital for the Poor" to the prefectural government, while studying under Dr. Willis.

### ANATOMY FOR MEDICAL STUDENTS

Dr. Willis placed emphasis on practice of basic medicine. In particular, he frequently used an manikin he brought himself when practicing anatomy, as well as cows, pigs and poultry. He also appealed the prefectural government how important autopsy was and received authorization in the end. Takaki was also distinctly eager in autopsy. He conducted autopsies of any men including executed criminals and those fallen dead on the street. Although the public's accusation was strong then, he is said to have taken no notice, citing it was all for research.

Probably due to such educational influence from Dr. Willis, Takaki worked as an anatomy assistant professor in his second year at St. Thomas' Hospital.

In addition, he was particularly earnest in anatomy classes at the medical school he founded after coming back (he let students conduct an anatomy for the first time in Japanese history). In a memoir in around 1881-1882, a female student wrote, "female students in those days sometimes could not well examine an anatomic specimen, pushed away by male students. So we secretly went to the cemetery in Sengakuji-temple, Takanawa, hanging lanterns in our hands, and collected skulls here and femora in order to closely examine them at home." This episode truly reflects Takaki's enthusiasm in medical education.

### ENTHUSIASM TO ENGLISH EDUCATION

The fateful encounter between Takaki and British medicine was a sheer coincidence, stemming from a British doctor Willis' glittering performance in the Boshin War and the agonizing descent to Kagoshima that ensued. Probably because his own "heart of medicine" resonated to its spirit that represents holistic care, Takaki kept on persisting in British medicine throughout his life. His medical school was famous for its English education. At the foundation, the school faced a major issue. Which should be the regular curriculum, English or German? Takaki chose English with confidence (it became the only medical school in Japan that used English as its regular curriculum). He explained to the Ministry of Education, "German is adequate to foster domestic doctors, but it is not qualified to raise international doctors. English, already an international common language, enables students to seek more knowledge overseas and consequently let all mankind benefit from our medical practices, which is the most important goal."

Reflecting prevailing influence of German medicine over the Japanese medical world, notably the University of Tokyo, the number of students, who wanted to learn German, grew even at Takaki's school and some students conducted a German workshop one day, without school's permission. When Takaki learned about it, he raged like fire and dispersed them in no time. He stated as a reason, "Since English is a global language, you must learn it first."

There is no need to learn German, because all the excellent German books are instantly translated into English.”

Due to his complete favor on English, even the professors were not given any options other than Britain or the U.S., when they went abroad to study. One scholar’s memoir tells us a typical episode. “In my case, too, the order was “Go to Britain”. It could not have been Germany, where I was going to be sent. However, wondering whether English would be enough to study medicine, I asked Professor (Takaki) to let me study in Germany as well. He said to me, “If you want to go to Germany, do it on your own expense.”

A sort of humorous poems once got rife for a while in Tokyo. The poem’s substance was “German wind does not blow in the south of Nihonbashi”. It means the south of Nihonbashi was far removed from the dominating German tide in the medical world, led by the University of Tokyo. It also implies there were no German medicine practitioners, medical schools and hospitals there. Actually, there were many Navy surgeons, who learnt British medicine like Takaki, working at the Navy Hospital in Takanawa and the Ministry of the Navy in Shibakoen, and living

in the district. However, what made such independent impression stronger were many of these Navy surgeons, who were exhibiting brilliant performances at the medical school and hospital Takaki founded in Shiba-Atagocho.

German medicine had built a pyramid that spread across the nation, topped by the University of Tokyo. Amid such circumstances, Takaki establish a free zone for British medicine in a small district in the south of Nihonbashi, and endeavored to maintain and spread it. His spirit should be paid more appreciation, also in terms of educational identity he was stressing.

What would Dr. Takaki say, if he saw current Japan thoroughly penetrated with British and American medicine? He would be taken aback and lose his words.

### SAD EVENING OF LIFE

From the Taisho Era (1912-1926), Takaki vigorously went around the country, focusing on elementary schools and junior high schools, to conduct lectures on health care and hygiene almost everyday. He poured all his energy to this new task. However,

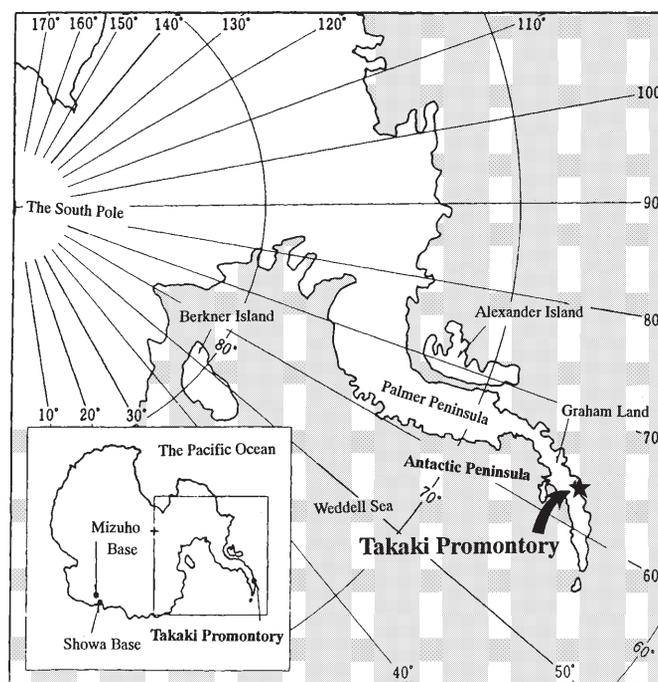


Fig. 1. Takaki Promontory in The Antarctic Continent.

when he was about to find a new purpose of life, his only daughter, Hiroko, died in 1915, leaving her little child behind (Kazushige Higuchi, the sixth president of the Jikei University). His grief was larger than anyone imagined. As one misfortune followed another, his second son Kenji and the third son Shunzo died suddenly in 1919 almost at the same time, trampling down Takaki's huge expectations for their future. To 70-year-old Takaki, this ordeal was too severe to bear. He had been fighting bravely against many adversities thus far, but only this time, he could not endure by any means. He became a state of

depression from the bottom up and lost energy to carry on any longer. In March 1920, a chronic nephritis recurred and he died on April 13, 1920, despite his family's devoted care.

On this day, he was invested with the Junii, an official rank next to the General, and awarded the Grand Cordon of the Order of the Rising Sun (he had already been awarded the Grand Cordon of the Order of the Sacred Treasure in 1915). Though few people know this, he was the first Doctor of Medical Science in Japan.