

## DUTCH INFLUENCE ON JAPANESE OPHTHALMOLOGY IN THE 19TH CENTURY

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Close relations between Japan and the Netherlands have existed since 1640 for well over two centuries. This relation has left a mark on the development of Japanese medical education in general, and on ophthalmology in particular. **Sakai** has discussed this fascinating chapter in his History of Japanese Ophthalmology some years ago<sup>1</sup>.

The present study is meant to amplify Sakai's paper, particularly concerning two representatives of western medicine of the middle of the 19th century, **Pompe van Meerdervoort** and **Bauduin**.

To understand the medical situation in Japan in the last century, it is necessary to retrieve some major historic facts.

After the Portuguese landed on the coast of Japan in 1541, they established trading posts. Shortly after, Spanish missionaries entered Japan. The success of Christianization was such, that the Shogunate was forced to forbid in 1585 all missionary work, followed by harsh measures: outlawry and expulsion of all Portuguese and Spanish missionaries and Japanese proselytes<sup>2</sup>.

Up to that time, the medical history was ruled by portuguese and spanish doctors and surgeons, the latter being much sought after, as european surgery was flourishing at that time, while traditional chinese medicine was still the foundation of japanese medical knowledge.

The Dutch, being opportunists, were allowed to fill the gap and to replace the Portuguese on the markets, because Hollanders were not interested in propagating Christianity. The Dutch, however, were on sufferance. They were allowed only to occupy a small trading post at Hirado, which in 1641 had to be moved to the tiny artificial island of Decima, off the coast of Nagasaki. This dutch settlement served for over 200 years as the only window on the western world (*figure 1*).

Dutch medical officers – mostly naval surgeons – in the service of the Dutch East India Company were stationed at Decima mostly for a period of two to four years. During their term at the trading post, they were allowed by the japanese government to teach science and medicine (particulary surgery) to a small selected group of japanese doctors and interpreters.

Decima possessed a reasonably well-provided library of dutch books. Most learning was transmitted through translations done by learned Japanese, the so-called '*Ranga Kusha*' which means: the 'Dutch scholars'.

Although Western medicine was in the 17th and 18th century no better or worse than chinese medicine, as practiced in Japan at that time, the lead of the european medicine came from the fact that the latter was based upon knowledge of anatomy, whereas chinese medicine was almost deprived of anatomical knowledge.

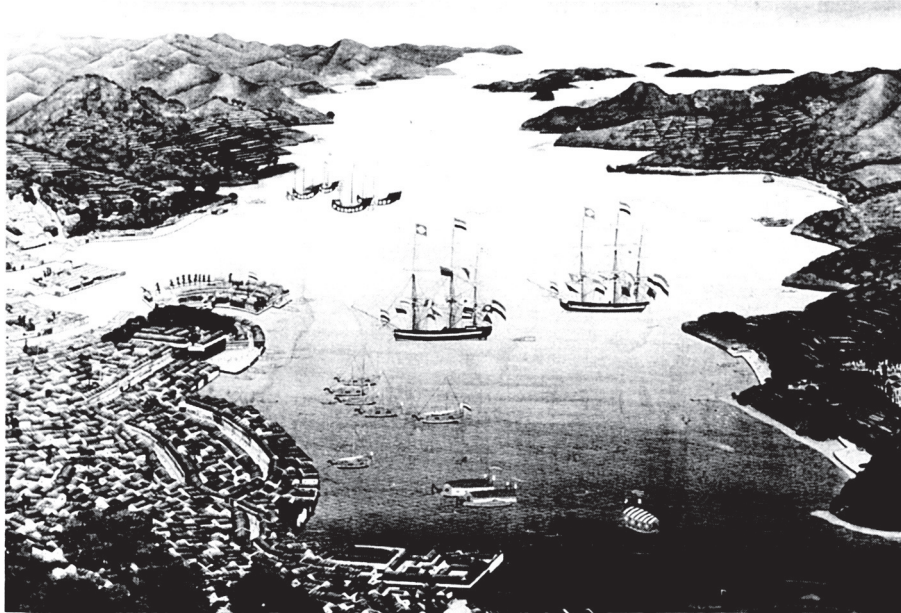
Teaching of anatomy, therefore, was one of the main subjects for which the dutch surgeons at Decima were asked for.

*Figure 2* illustrates post-mortem preparations depicted on a 17th century scroll, now in the possession of the library of the University of Chiba.

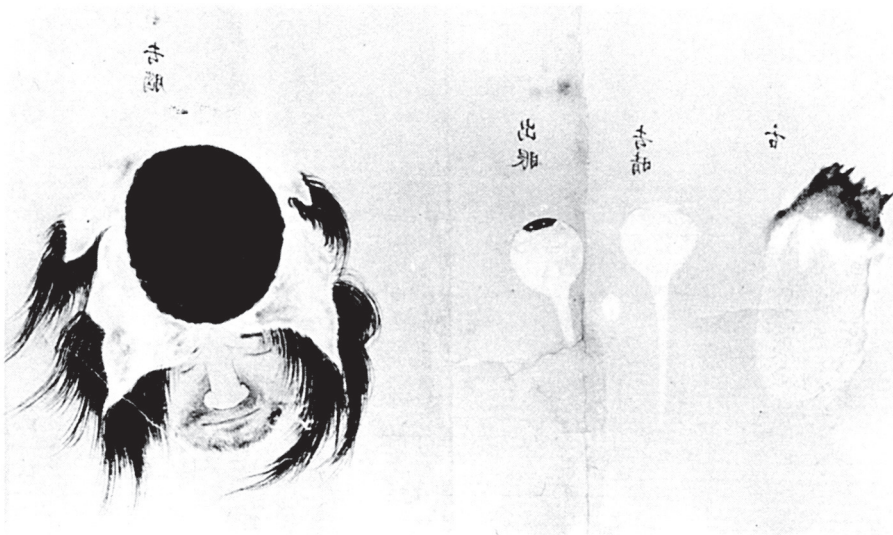
The beginning of the 19th century is marked by important changes, especially concerning regular teaching, including ophthalmology.

**Ph.F.B. von Siebold** (1796 – 1866), a german scientist, botanist and physician was sent to Decima at the age of 27, with a special commission of the dutch government to carry out research in natural history (*figure 3*).

The same year, 1823, von Siebold started his medical course, including ophthalmology. Two of his students were at that time already eye specialists: **Ryosai Ko** and **Shoteki Ito**. Ryosai Ko translated a number of dutch books in Japanese.



*Fig. 1:* The small artificial isle of Decima in the bay of Nagasaki with two dutch frigates. Nagasaki-print, around 1820. (Collection Maritime Museum, Rotterdam)



*Fig. 2:* Post-mortem preparations. 17th century scroll; University of Chiba.



*Fig. 3:* Von Siebold depicted by a Japanese artist in the uniform of a dutch surgeon-major.  
(Collection Institute for the History of Medicine, University of Nijmegen)



*Fig. 4:* Examination of the external eye by a dutch physician.  
(P. Huard: *La médecine Japonaise*, Plate XIV)



*Fig. 5:* Pompe van Meerdervoort, Matsumoto Ryojun and students.  
(J. Bowers: *Medical education in Japan*. Harper & Row, New York, 1965).



*Fig. 6:* Bauduin and his students.  
(private collection)



*Fig. 7:* Nagasaki bay with Decima in the background, around 1865.  
(private collection)

Under von Siebold's influence, **Genseki Habu**, famous ophthalmologist, changed from Chinese to Western medicine. *Figure 4* illustrates an eye examination in von Siebold's time, before the ophthalmoscope was invented.

Due to the so-called von Siebold-incident of 1828 (when von Siebold was about to set sail to Batavia, it was revealed that he was to carry back with him copies of maps of Japan and a 'hoari', a gown bearing the Shogun's crest, under no circumstances allowed to be taken out of the country), the ruling Shogunate forbade any further study of Western medicine, except general surgery and ophthalmology, and sentenced von Siebold to eternal expulsion from the country.

Regular medical courses were thus disrupted as the authorities were not willing any longer to have their doctors study under the Dutch at Decima. It took almost 30 years, before regular medical courses were resumed.

At the request of the Japanese government, **J.L.C. Pompe van Meerdervoort** (1829–1908), a naval surgeon belonging to a group of Dutch officers who were officially invited to assist in building up a modern Japanese navy, started at Decima a course in medicine and surgery.

**Pompe** had received his training at the military medical school of Utrecht, the same school where such famous students as **Anthonius Mathijssen**, the inventor of the plaster-of-Paris bandage, and **Franciscus Cornelius Donders**, the great physiologist and ophthalmologist had been trained. Pompe was appointed in 1857 Head of the Medical School of the Shogunate and started almost immediately a one-man school. Just as his Japanese pupils, **Pompe** had no experience in teaching. Besides, his pupils lacked all elementary anatomical knowledge, on which his course had to be based. Pompe taught in Dutch mostly from concise manuals which he himself had composed, with the help of an interpreter. Invaluable was the strong and active assistance of **Matsumoto Ryojun**, a physician from Edo, the later Tokyo (*figure 5*).

**Pompe** met almost insurmountable difficulties but he insisted and won. When he concluded his 5 years' course, the number of students had increased from 12 to 61!

In 1861, thanks to the efforts of Pompe, the first teaching hospital of Japan was opened. The Nagasaki Hospital had 120 beds. On the opening day, the Dutch flag was allowed to fly from the building, side by side with the Japanese flag.

The last course **Pompe** gave, was a course in ophthalmology.

When Pompe repatriated in 1862, he handed the directorship of the Nagasaki Medical School to **Antonius F. Bauduin** (1822 – 1885), a teacher from the same medical academy from which Pompe graduated. Some students of Pompe, i.a. **Genpaku Ito** went with **Pompe** to Holland to continue their study of ophthalmology. Pompe thus instituted the first formalised study course in ophthalmology for Japanese students in Europe.

**Bauduin** started his courses in 1862. Unlike Pompe, he was an experienced teacher, who reformed the medical curriculum, introducing chemistry and physics. *Figure 6*, a photograph of Bauduin with his class of students (all samurai, with swords) was recovered from a photoalbum of the Bauduin-family and was made around 1865.

Bauduin's arrival in Japan has certainly been of great importance to Japanese ophthalmology. Bauduin introduced the ophthalmoscope. He translated books, i.a. the famous *Atlas* of **Liebreich** on the examination of the fundus of the eye. His lecture notes were printed in Japan.

Bauduin opened an ophthalmic ward at the Nagasaki Hospital; he operated on many patients and performed the first strabismus operations in Japan, as well as the first plastic surgery of the eye and adnexa.

During his stay in Japan, till 1867, **Bauduin** was an ardent photographer. From the letters to his family, we know that the same is true for Pompe van Meerdervoort. However, from **Pompe** no photos made by himself have been recovered thus far.

In the Bauduin family three photoalbums with a great many pictures are kept, made during Bauduin's stay in Japan.

One of the remarkably well-preserved photos depicts Nagasaki Bay with Decima (*figure 7*); another shows a Dutch party in the garden of Glover's House (where the Operette, Madame Butterfly is situated), with i.a. Pompe van Meerdervoort (*figure 8*).

Finally, *figure 9* gives an impression of a part of Nagasaki as observed and photographed by **Bauduin**. The influence of the Dutch medical officers on Japanese medicine in the middle of the last century, is best represented in an allegory (*figure 10*), depicting the encounter as seen in Japan of the three major trends in medicine: Chinese, Japanese and Western medicine. The Dutch medical officer is Pompe van Meerdervoort who represents the latter trend. The scroll is in the possession of the National Museum of Ethnology, Leyden, which museum was founded by **von Siebold**.





*Fig. 8:* Dutch party at Glover's House. Sitting on the ground, second from right: Pompe van Meerdervoort.  
(private collection)



*Fig. 9:* Nagasaki-impression.  
(private collection)



Fig. 10: Allegory depicting the encounter of Chinese, Japanese and Western medicine, middle of the 19th century. (Collection National Museum of Ethnology, Leyden)

### Summary

Due to the seclusion policy of the Shogunate, Japan was from 1638 till 1854, dependent for information from the outside world, on the dutch trading post at Nagasaki (Decima). Only through contacts with the dutch medical officers, Japanese were able to accumulate information concerning the medical – and in particular: the surgical – developments made in the Western world. For the first 70 years of the 19th century three outstanding dutch doctors have greatly influenced japanese ophthalmology: von Siebold, Pompe van Meerdervoort and Bauduin. The role of these representatives of dutch, i.e. Western medicine in Japan is enlightened.

### Literature

- (1) S. SAKAI: A history of ophthalmology in Japan. *Jap. J. Ophthal.* 21: 242 – 282 (1977); reprinted in *Hist. Ophthal. Int.* 1: 67 – 110 (1979).
- (2) P. HUARD, Z. OHYA & M. WONG: *La médecine japonaise*. Ed. Roger Dacosta, Paris, 1974.

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