# **PERMEAT SON**



How centuries of assiduous acquisition of Western medical knowledge prepared the ground for the transformation of Japanese feudal society into a major modern power

Shiro Kira, J. Patrick Barron, Yuko Atarashi

BookWay

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#### Foreword

By the term "ancestor of Western Medicine", most people in both the East and West think immediately of Hippocrates, who was active in medicine on the island of Kos in Greece four centuries before Christ. He observed human health and diseases scientifically as kinds of natural phenomena, and separated medicine from magic. He has been referred to as the originator of empirical science. Thereafter, medicine was transmitted to Egypt, then to Greece, Rome, and the Arab world. The Arab school responded calmly and rationally to western medicine and added Arabic refinements such as the number "zero". However, the Crusades brought some medical knowledge back again to Europe. With the Renaissance, Western medicine started afresh and assumed a new look. Leonardo Da Vinci painted exquisite diagrammatic structures of human beings. However, the physiology of the heart and blood circulation was not completely known.

Modern medicine can be traced to the research of William Harvey in England who clarified the physiology of the circulation of the blood (*Exercitato Anatomica de Motu Cordis et Sanguinis in Animalibus*). He went to northern Italy to study at Padova University at the end of the 16th century. Medicine was extremely advanced there at that time. Foucault commented in his work "Naissance de la Clinique (The birth of clinical medicine)" that clinical medicine was born with both the development of percussion by Auenbruger in 1761 and the invention of the stethoscope by Laennec in 1819.

That is to say, due to the acquisition of the techniques of percussion and auscultation, medical doctors came to understand clinically the diseases within the body, which were recognized for the first time and anatomically shown by the study of Morgani "*De Sedibus et Causis Morborum per Anatomen Indigatis* (The locations and causes of disease investigated by anatomy)" in 1761.

Hence, modern western medicine was born about 400 years ago, and modern clinical medicine, about 200 years ago. With the Renaissance and the Period of the Great Maritime Voyages, the knowledge of Europeans was enhanced and they used this knowledge practically, accelerating progression throughout the development of the Industrial Revolution.

How was Western medicine introduced into Japan, and how did it develop within Japan? The development of medicine in Japan in the last 500 years was somewhat after the historical movement in Europe after the 15<sup>th</sup> century. Of course, this was affected by the national isolation policy of the Bakufu 'government' in Japan. Through a narrow window, the Dutch factory in Deshima, which was the only Western outpost in Japan, gradually but steadily, the Japanese absorbed the information of European modernization of medicine and this spread throughout Japan.

The story of its growth is fascinating. While being influenced by the historical changes of the world, they eventually reached equal status with the West, despite enduring severe oppression from various domestic sources.

The main reference books about the history of Japanese medicine include the following three books: "The History of Japanese Medicine" published by Fujikawa Yū (12) in 1941, "The History of Transmission of Western Medicine" by Koga Jūjiro (26) in 1942, and "The History of Medical Care" by Sakai Shizu (49) in 1982. Each book is voluminous and all three are especially helpful for those who wish to know more about the history of Japanese medicine. The first author of the present book (S. K.) was fortunate to be able to use his position to utilize the National Library, as an Associate of the Dispensary for the House of Councillors, after serving as the Dean of Juntendo University, to amass much material.

Through these books, the terms "Nanban Medicine", "Kōmō Medicine" and "Rangaku" appear intermittently. The readers may wonder why different words are used depending on the age for essentially the same medicine introduced from Europe. Portuguese and Spanish seamen, all Catholic, who started their travels for oriental countries in accordance with the Pope's desire to spread Catholicism, brought Western culture to Japan for the first time from 1543 onward. A half-century later, Protestant Dutch and English traders tried to expand their businesses within Japan. The religious friction among Christians, the difficulty of coexistence between Catholics and Protestants, suppression of Catholicism by Hideyoshi, and the Tokugawa fears of invasion, resulted in the Bakufu isolationist policy, which lasted over 200 years. During that time, the only permitted European contact was via Dutch trading ships, through their Nagasaki Deshima factory.

Throughout this history, different influences of Western medicine introduced from Europe were added to traditional medicine in Japan. Furthermore, accompanying the trickle of Western medicine, scientific information flowed increasingly into Japan from the period of the Industrial Revolution.

We believe that if there is sufficient knowledge and understanding of the history of medicine and medical care, especially of people who seek medical care for themselves or for their families, friendly relations and mutual understanding among various cultures will be further promoted and we will achieve positive relations in future among health givers and patients and their families.

#### Chapter 1 Nanban-jin Rainichi: The situation of the West and Japan at the time of the first appearance of Westerners in Japan (16th Century)

In August 1543, a Portuguese ship departed the colony of Goa, on the west coast of the Indian subcontinent, making for China, but encountered violent winds in the East China Sea, and landed at Tanegashima, off the coast of Kagoshima, Kyūshū. The Portuguese from that ship are said to be the first Westerners to have set foot on Japanese soil.

This is the period known in Western history as the Navigaciaos Grandes (Great Maritime Voyages) of the Portuguese, from the mid-15th to mid-17th centuries, roughly contemporary with the travels of Marco Polo. Through the actions of the Portuguese Prince Henry the Navigator, who established the maritime policy of Portugal, there was great interest regarding Asia among European nations in general, but in particular in Portugal and Spain. With the support of Isabella, Queen of Spain, Columbus had travelled to the Americas in 1492, while in 1498 Vasco da Gama, under the patronage of Manuel I, discovered the maritime route to the Indian Ocean, thus strongly promoting the advance towards the Far East. In 1493, Pope Alexander decided to divide the world into Western and Eastern hemispheres, giving the rights to evangelize the former to Spain, and similar rights to the latter to Portugal. He encouraged both to dispatch talented missionaries to these areas and to convert the inhabitants to the Catholic faith. At that time, those who were not Christian were considered heathen barbarians and it was thought essential to convert them to Christianity (Catholicism).

At that time, both countries were major naval powers. The Portuguese had moved southward down along the coast of Africa, establishing colonies and had discovered the Cape of Good Hope. In 1510, they reached Goa, proceeding to Malacca, then in 1516 arrived in Macao. They sent many fleets to Goa, beginning in 1502, and after much conflict with Indians in the hinterland and Islamic regions trading with India, finally established their foothold.

After Spain landed on the American continent, its expeditions crossed Mexico, defeating the Aztec Empire in 1520, and vanquishing the Incan Empire in 1533. In 1519 Magellan set sail from Spain and established the route through the Straits of Magellan at the southern tip of the American continent, and, after continuing to sail westward, arrived in the Philippines in 1521. Realizing the huge difficulties involved in reaching the Orient from Spain, crossing not only the Atlantic but also the Pacific Ocean, they decided to create a fleet in Mexico for dispatch to the Orient. The fleet arrived in the Philippines in 1543, after passing through the Marshall Islands and Palau Islands. Despite resistance from the inhabitants and protests from the Portuguese, who had come as far as Macau, the Spaniards tried repeatedly to conquer the archipelago, eventually succeeding in 1565, deciding on Manila as the capital in 1571, and giving it the name The Philippines, in honor of the king of Spain at that time, Philip II (30, 56).

In essence, the Portuguese had reached the Orient traveling eastwards, while the Spanish had done so traveling westwards, so together they literally encircled the globe and were within reach of Japan. In fact they seemed ready to swallow the Orient. In 1540 the king of Spain laid claim to the Pacific Ocean, naming it the Sea of Spain, and forbade vessels of other nationalities from trespassing in this maritime region without permission from Spain.

Coincidentally, 1543, the year in when the Portuguese vessel drifted ashore on Tanegashima, is about the time of the flowering of the Italian Renaissance. It has been pointed out by Prof. Kawakita Yoshio of Chiba University, that this period was still long before the work describing circulation in the human body by the Englishman William Harvey, in 1628, which is considered the founding point of modern medicine. In fact, that year (1543) was that in which Vesalius, in Padua, painstakingly produced "De humani corporis fabrica", which was the first published work on human anatomy. Leonardo Da Vinci (1452-1519) had created many detailed anatomical diagrams (Fig. 1), while at approximately the same time Ambroise Pare (1519-1590), the former barber/surgeon who is considered to be the father of modern surgery and is famous for his statement "Let us bandage him and let the Lord heal him" was at his most active. Against this background, what was the situation in Japan? As far as we can judge from the Travels of Marco Polo, the Mongol Yuan Empire, which had conquered China, was relatively accepting of Europeans, yet in the 13th century they twice attempted to invade the northern coast of Kyūshū. On both occasions, the military government of Japan (with some help from the natural elements) was fortunately able to repel the invasions. This resulted in the construction by the feudal lords of Kyūshū in western Japan of ocean-going vessels (known as *wako*) to trade with the southern Korean peninsula, the southern coast of the Chinese mainland, and even as far as Southeast Asia.

At the end of the 16th and beginning of the 17th centuries, Japan was unified by Toyotomi Hideyoshi. Later, the Tokugawa regime assumed power and affixed their red seals of permission to requests by the major traders in Sakai and Nagasaki to initiate trade with Vietnam, Thailand, Cambodia, and Java. One of the representative figures was Yamada Nagamasa, who settled in Thailand with other Japanese, establishing a functioning Japanese community there. The development of foreign trade contributed greatly to the improvement of shipbuilding ability and navigating ability.



Figure 1 From the anatomical drawings of Leonardo Da Vinci

This drawing appears on the inside of the front cover of the "Leonardo Da Vinci Anatomical Drawings", the original drawings of which are in the collection of the Royal Library, Windsor Castle. In it, it seems as if we are looking at the human circulatory system composed of arteries and veins extending to the extremities of the arms and legs, including the liver and the kidneys, from the living body surface.

It is quite realistic and fairly accurate. If it were shown without the name Leonardo, most people would guess it was a modern illustration. There are also records that he dissected pigs and dogs, so it is quite probable that he had experience in human dissections, judging from his many detailed sketches of anatomical structures, paying attention to the function of the muscles in the heart and peripheral tissues. After he died in 1519, Vesalius in Padua published his own great work "*De humani* corporis fabrica" in 1543, the same year that a Portuguese ship from the colony of Goa, drifted ashore at Tanegashima, driven by violent winds in the East China Sea off the coast of Kyūshū. It is widely agreed that Vesalius's book is the first text of anatomy, but it seems that Leonardo's drawings would have been quite helpful to him if he could have had the opportunity to see them.

While these trading activities are small in comparison with the efforts of the European powers in penetrating to almost all corners of the maritime world, there was much trade and exchange between South East Asia and Japan, and there was interest in Japan in previously unknown foreign cultures.

Because of this situation, the feudal lords realized that it was advantageous to maintain trade with the Portuguese, who were followed by the Spaniards then the Dutch and the English. The foreign traders were therefore allowed to travel freely, without hindrance. The Portuguese ships traded with Kagoshima, Hirado, Nagasaki, and Sonogi on the Shimabara Peninsula, navigating as far as the Inland Sea and Sakai Harbor, near Ōsaka. There were also no restrictions on missionaries, who were allowed to proselytize in feudal domains. In the towns of Hirado, Nagasaki and Sakai there were no restrictions on Western dress. This situation is a far cry from the later period when only the Dutch were allowed to trade and were restricted to the artificially built island of Deshima, off Nagasaki, and allowed only one trip per year to pay tribute to the Shōgun in Edo. They spent at least two months making that round trip.

Oda Nobunaga, the man who had brought an end to the Warring States period in 1569, soon invited missionaries to Azuchi Castle, where they were astounded by the castle fortifications, the seven-storey entertainment pavilion and the exquisite beauty of the demesne, and they realized that it was in no way inferior to the most refined establishments in Europe. Nobunaga did not give recognition to Christianity as a religion, but through the missionaries he was trying extremely hard to understand the culture of Europe. He was also, in his own way, recognizing the efforts of those who had undergone so much to reach the other side of the globe in order to spread their religion.

The aristocratic and wealthy families of Japan became fascinated with what was seen as the symbol of Western culture – the muskets brought ashore in the distant southwest of Japan, the small island of Tanegashima. In fact for a time, the Japanese term for a musket was Tanegashima. These were looked on as very effective weapons. Thereafter, while they were also actively imported, their domestic production was significantly increased by ironwrights such as Kunitomo of Shiga. As a result, their production multiplied. This shows that the Japanese of that time had the technological means to understand the structural aspects, and the metallurgical skill to immediately replicate them, without any particular education.

### Chapter 2 Nanban Igaku; Medicine brought by Catholic missionaries

#### Xavier's Arrival in Kagoshima

After the Westerners drifted ashore at Tanegashima in 1543, trading began between the Portuguese and the Japanese, and gradually expanded due to the welcome extended by the lords in Kyūshū. In 1549, the missionary Francis Xavier, sent by the King of Portugal, arrived at Kagoshima to promote the spread of Catholicism, accompanied by Father Come de Torres and the lay brother Joao Fernandes. Xavier, having been acquainted with Ignatius Loyola during his study at the University of Paris, had initially objected to studying philosophy. However, through Loyola's passionate persuasion and invitation and thorough self-training, in 1534 Xavier became acknowledged as a member of the "Company of Jesus", at age 27.

Because of the Reformation, through the presentation of "*Disputatio pro declaratione virtutis indulgentium*" by Martin Luther in 1515 and the movement initiated by John Calvin in 1541, the Catholics lost many believers in Europe. The Pope asked Loyola to send some members from the "Company of Jesus" to East Asia to increase the number of Christians in those areas, which is why Xavier was selected (52, 33). It was widely accepted that the members of his society were simple and sturdy, stood aloof from worldly things, and devoted themselves to the Church.

Xavier sailed from Lisbon in 1541, arrived in Goa in May 1542 and engaged in missionary work in India for five years. He moved to Malacca in December 1547, where he met the Japanese refugee Anjiro. There is no accurate description in the historical records in Japan of what kind of person he was, but he had escaped from Kagoshima and learned Portuguese, becoming converted to Christianity in Malacca. When he met Xavier, Anjiro enthusiastically explained the significance of the spread of Christianity in Japan and requested that he go to Kagoshima (Fig. 2). There was evidence that Japan was receptive not only to foreigners but also to foreign religions during that part of the 16<sup>th</sup> century (69).





Celebrations of the 450<sup>th</sup> anniversary of Xavier's landing in Japan were held in various places in Japan in 1999. Coincidentally, when the Portuguese vessels drifted ashore on Tanegashima in 1543, the Portuguese held an absolute and undisturbed monopoly of maritime trade from the Cape of Good Hope to the Moluccas (Spice Islands) eastward of the Celebes. On that vast expanse of water no other European flag was to be seen. This was almost 100 years after the start of the maritime policy of Portugual by Prince Henry the Navigator. However, the voyage to the east took a year and was not easy or safe, as will be explained later in

#### Vignette I.

Xavier set sail from Lisbon on his 31<sup>st</sup> birthday – April 7, 1541 – and reached Goa on May 6, 1542 by way of the Cape of Good Hope. He remained in India, with a visit to Ceylon, till the autumn of 1545. He arrived at Malacca on September 25<sup>th</sup> of that year. During his stay there, he set forth on a missionary expedition to the Moluccas for 18 months until July 1547. The timing of his departure from the Moluccas is not clear. Xavier stepped ashore at Kagoshima in Japan on August 15<sup>th</sup>, 1549. As shown on the map in Fig. 2, he visited many cities and towns in Kyūshū, around the Inland Sea archipelago and in Ōsaka and Kyōto, chiefly in the western part of Japan. Following Xavier's travels, the Jesuits and Nanban traders carrying western medicine and culture expanded their sphere of influence to these cities and towns.

#### Almeida Introduces Nanban Igaku

After Xavier's landing, priests from various Catholic countries came to Japan for missionary purposes. Several of them had some knowledge of medicine and shared it with the new believers, as did Buddhist priests, although they were not specially trained in medicine. This was the first Western medicine to have appeared in Japan, where previously Chinese medicine had held complete sway.

Padre Luis D'Almeida (1525-1580) was a well-known Portuguese trader in Japanese medical history. He was not particularly proficient in theology, but he was medically educated and had studied surgery as a youth in Portugal. As a trader he was successful in Macao in 1548, and furthermore in Kagoshima, Hirado and Yamaguchi in 1549, and he finally became a full member of the Society in 1555. With the cooperative support of the lord of Bungo (modern-day  $\overline{O}$ ita), he founded Western-style hospitals there for the care of patients of leprosy, syphilis and common diseases (Bungo-Funai Hospital), together with an orphanage for the care of destitute children, with his own money. He introduced Western methods into the orphanage to rear new-born babies with cow's milk for the first time in Japan. Within the hospital, he also designed rooms for surgical operations and medical teaching. (The present medical society hospital in Ōita is called the Almeida Hospital). It was reported that the hospital was full of medical and surgical patients until Almeida left the hospital for the sake of his missionary work (39).

This was called "The Era of the Importation of Western Medicine" by Fujikawa Yū (12) and "The Era of the Introduction of Nanban Igaku" by Professor Sakai Shizu (49). In the hospital, baptized former Buddhist priests and baptized Kanpō physicians provided medical care, so it seems that there were no serious conflicts at that time between Christianity and Buddhism or between Nanban medicine and Kanpō medicine. There were also quite a few Japanese who were medically educated by Almeida and the priests who had been medically oriented, and participated as helpers in medical care after their baptism.

This was actually the first opportunity for Japanese to encounter actual Western medicine. The medicine they taught was not very specific, such as giving ointment or applying plasters or oil to burn lesions. According to the reports from the priests to the center in Macao, at that time in Japan there was no surgery and they did not specially treat diseases by surgery, because they thought almost all surgical lesions were incurable. In Kanpō, the knowledge of surgery was originally very limited.

Almeida thereafter actively engaged in missionary activities mainly in Kyūshū, though he had a few chances to visit Kyōto, Nara and Sakai (39). He passed away in 1580 at Amakusa.

Mainly due to the suppression of Christianity by the Bakufu in the 17<sup>th</sup> century, the records of the Bungo-Funai hospital activities and the actual situation of their medical education are unclear.

In the late 16<sup>th</sup> century, Hideyoshi, the successor to Nobunaga, came to realize that the missionaries denied the divine nature of the Emperor, Buddha and the Shintoist gods and, in their doctrine, the Jesuits and Japanese converts were willing to destroy Buddhist temples and Shinto shrine. He reached the conclusion that Christianity could eventually become a constant source of unrest in the country. Based on this view, Hideyoshi's first edict of expulsion was issued in 1587, followed by a second decree of expulsion and the first martyrs in 1596. When Hideyoshi went on his Kyūshū expedition, he found the city of Nagasaki administered by the Church as if it was their own estate, due to a gift from a neighboring *Kirishitan* (Christian) lord. It is said that Hideyoshi was very afraid of the possible invasion of Japan, having heard news of Spanish actions in South America and the Philippines.

Nevertheless, even in the last quarter of the 16<sup>th</sup> century, many lords of Japan preferred to continue trade with the Portuguese, because of interest in finance and commerce, import of culture and civilization, rather than for the sake of Christianity. Along with the spread of religion in Japan, conflicts among the Catholics themselves and attacks on Buddhist temples and Shinto shrines increased. Such antagonistic acts by missionaries were the reason for Hideyoshi's decrees.

Until the second expulsion decree and the first martyrs in 1596, contact between feudal lords and missionaries remained friendly and missionaries were still active. There were many opportunities for Kampō physicians to watch them and to inquire about their medical activities. However, it was true their medical care was based only upon their experience, not through proper medical education and training, except for Almeida. Even in the case of Almeida, his major work was missionary activity and, furthermore, his medical activities were limited to Kyūshū.

#### Contemporary Japanese Medicine

Looking back on Japan at that time, the practice of medicine was extremely empirical or even considered magical partly because of the great influence of Chinese traditional medicine. It is possible to trace Japanese medicine back to about the 5<sup>th</sup> century, when it was brought to Japan by doctors from Silla, on the Korean peninsula, who treated the Imperial family.

The direct transmission of medicine from China is thought to have occurred in the 6<sup>th</sup> century. Later, embassies were sent from Japan to China, and some of those stayed more than 15 years to study medicine, before returning to Japan. In the 7<sup>th</sup> century, it became increasingly common to send embassies to China and they imported many documents concerning Buddhism and medicine. In the 8<sup>th</sup> century, the eminent Chinese priest Ganjin was invited to come to Japan by the Japanese Imperial Court, and he gave instructions in the collection of medicinal herbs, how to combine them, and how to administer them. This is considered the origin of Kanpō medicine in Japan.

Chinese doctors at that time used Chinese herbal prescriptions (Kanpō), acupuncture and moxibustion. The origins of acupuncture have been traced back to the dawn of history in India and China, possibly even back further than the beginnings of surgical practice. Acupuncture is based upon the ancient belief that diseases are caused by evil spirits that are imprisoned in the body. By inserting sharp-pointed stones or needles into the skin, openings are made to release them. In cases of very severe sickness, they placed *mokusa* (burning mugwort or other herbs) on multiple points on the skin. Mokusa, rolled up into round pellets, burns slowly. In two days, the ash would fall off leaving a scar. As for the effective points on the body surface for these treatments, more than 300 locations were illustrated on a human body figure "Keiketsuzu" from the late  $7^{\text{th}}$  century.

Kanpō medicine was closely related to the introduction of Buddhism. According to one theory, Kanpō medicine also contained elements of the natural philosophy of India, and the study of medical treatment was included in Buddhist ascetic training.

In the 8<sup>th</sup> century, the Ishitsuryō (Medical and Disease Registration) controlled education based on the medical system of the Tang dynasty, and officials were dispatched to various regions, but to what extent the common people benefitted from this system is unclear.

In the 12<sup>th</sup> century, the military came to control most rural areas, and the legal system of the central government (*ritsuryō-seido*), including the Ishitsuryō, was destroyed. In the 13<sup>th</sup> century, self-styled physicians and Buddhist priests became the main medical providers, and it became even more difficult for commoners to access real medical treatment.

Throughout this period, Kanpō was the main component of the system, but by the 16<sup>th</sup> century, uniquely Japanese aspects had also been added.

The Jesuit missionaries who landed in Japan and continued their work through the 16<sup>th</sup> century left records concerning their impressions of Japanese medicine at that time. "Western treatment of the sick is totally different from theirs. We give Westerners strong medicine and good stew, and we also give strong soup with meat, but they are given very salty food that is difficult to digest in order to stimulate the digestive tract, and they throw away what the patient does not eat. Of course at a time like that, it seems that anything at all that the patient wants is good.... Japanese doctors paid much attention to the pulse due to the Kanpō influence, they spent about half hour evaluating the pulse to determine the cause of the disease. In addition there were no pharmacists. However, the acolytes of the doctors carried wooden boxes which were divided into 44 small drawers holding different kinds of ingredients. Depending on the diagnosis, the doctor selected from them, in the home of the sick person, and mixed the ingredients, boiling or straining them. Depending on the patient's condition, the doctor added acupuncture or moxibustion."

Furthermore, in the 11<sup>th</sup> chapter of the late 16<sup>th</sup>-century "Nihon Memorandum of Flois" (31), he described Japanese medicine of the time in comparison with European methods.

"At that time, there was no surgery in either Japan or China. Japanese disciples who received surgical education and training from Almeida in Funai Hospital, Ōita, were able to excellently treat gun wounds which were still quite rare in Japan, and they showed the excellence of the Nanban Igaku surgical education."

About the difference between the two,

- "1. In Europe, scrofula, stones, foot pain (gout?) and plague are extremely common diseases. These are almost never seen in Japan.
- 2. Normally, we let blood from the arm, but in Japan, they use either leeches or a small knife to let it from the forehead.
- 3. In Europe, we use irrigation and enema, but they never use such methods.
- 4. In order to examine the condition of the patients, European doctors carefully examine the urine, but in Japan it is never examined.
- 5. Europeans have weaker flesh on their bodies and the healing process of wounds is generally quite slow, but the Japanese bodies are very strong and so serious injuries, fractures, ulcers, or burns recover extremely quickly.
- 6. We have to pass an examination in order to become a doctor. In Japan, anybody who wishes to become a doctor for economic reasons can do so."

The method of treatments and the use of medicine were also quite

different from that of Nanban Igaku, but the missionaries were not negatively disposed to Japanese medicine. Manase Dosan (1507-1574) was a well-known person involved with the medical treatment of the most famous people of his day. There are several records of his having consulted a Jesuit priest.

#### The Japanese language ability of the missionaries

It is not possible to recognize how fluently the missionaries spoke Japanese language in their medical and missionary activities, or also how clearly any Japanese could understand and speak Portuguese. How clearly and exactly could the disciples of medical education in Funai Hospital understand Almeida's lectures (30). In comparison with the period of Komo Igaku when persons other than official interpreters were rigidly prevented from coming in contact with the Dutch language, it was relatively easy in the period of Nanban Igaku. The printing press had been introduced by the missionaries in the late 16<sup>th</sup> century in Shimabara, and a Japanese-Portuguese Dictionary had been compiled in 1590 in Nagasaki (Fig.3). Due to repeated suppression and expulsion of Portuguese and Spanish missionaries in the 17<sup>th</sup> century, the existence of this dictionary had been kept obscure for a long time. Through the efforts of many persons, a facsimile edition of the dictionary was reprinted 400 years later in 1975 by the publisher Iwanami, in Japan. It was the product of the huge effort by many priests to spread Catholicism in Japan at that time. As a result, the Saint Anna Hospital in Kyōto, San Lazaro Hospital in Nagasaki in 1595, in Edo in 1602, in Wakayama in 1608, and in Omura in 1610, many hospitals were established throughout Japan.

Figure 3

Japanese-Portuguese Dictionary published in 1603 in Nagasaki by the members of the Company of Jesus.

Ζ. 971 (1) GLOGID +14+ GLOGID +14+ GLOGID +14+ GLOGID +14+ GLOGID VOCABVLARIO DA LINGOA DE TAPAM com adeclaração em Portugues, feito por ALGYNS PADRES, EIR MAGE BA COMPANIE DE 18 1 Y. COM LICENCA DO ORDINARIO, & Superiores em Nangafaqui no Collegio de la-ANNO M.D. CIII. (\*) 03 ete 0001 je e 00 (\*) Dit and a Dit 赤 the attender the the the the the DOS VOCABVLOS QVE' COMECAM POLLA A aberta como cafa, parede, Sec. & Vi, Caso qi, cabe abarani xiic ame, caje zama-canu Ellando afebe, & paredes desfei-tas entra o vento, & a chuna por todas at 2 A os estril Arremetida de cá peralá Por or Tirar feita , & estroncada .

(2)

(3)

▲. ア(あ) I, RO, FA(い, 5, は)で始まる日本語のアル ファベット四十七個の音筋文学10方ちの一つの名称. [また, A(s)は、日本語の五つの母音 A, I, V, YE, VO (あ,い, 5, た, s)の第一の母音. ★1)原文は47 Syllabar do al/dotto. syllaba(音節)は、ここでは日本の音節文 冬, すなわち, 仮名文年ともす.

Aa. アア (ああ) 苦しみや,悲しみの感動詞。【例, Aa canaxij cana.(あみ渡しいかな) あみ悲しいことよ.【また. 時としては驚嘆の感動詞。例, Aa voitaixiya.(ああ祭 しや) なんと大きなことよ,または、6のすごいことよ、【また. 窓びの感動詞。例, Aa vrexiya.(ある嬉しゃ) なんと嬉し いことよ.【また,疑いの感動詞。例, Aa vobotcucanai coto cana.(あか変束ないことかな) なんと疑わしいことよ. 【また、co語は、Aoの言ったことに同意したり、是認したり する時に、?そうだ、と答える助的にである. トAh.

**Aara. I, ara.** アアラ.または, アラ (ああら. または, あら) 感動詞: 意味は上の語に同じ. ただし, Aa (ああ)よりも 頻繁に用いられ, 一層普通の語. 例, Aara vrexiya(あ あら嬉しや), Aara canaxiya(ああら悲しや), など.

#### Bの前のA

Aba. ティ(網場) 撤卸場(ほ)1)のような場所で,島に 網を打ちかけたり,島網を仕掛けておいたりする所、¶また, 魚を捕る網を引く所. \*1)原文は ceuadouro. 狩の時に 島を集めるために餌をまいておく所.

**†ABAqe, uru, eta.** アバケ, クル, ケタ(観け, くる, けた) 例, Faremonoga abaquru.(腫物があばくる) 腫物がひ とりでに破れたり、口が開いたりする. 下(X.)の語.

Abaqemono. アバケモノ(あばけ者) 話しぶりなどが 軽率でがさつな者・

Abaqi, u, aita. アイキ, ク,イタ (おぼきく,いた) 普 通は否定形で,入りきれないという意味に用いられる. 1 例, Cono ninjuga cono zaxiqini abacanu.(20人数 ポロの座敷にあばかね) この大勢の人々は、この座敷(Zaxiqi)に入りきれない、時には背定の現在形が,あり余ると か,溢れるとかの意味に用いられる。

Abarabone. アバラボネ(肋骨) 脇の肋骨.

Abaragaqe. アパラガケ (荒ら駆け) あちらこちらを駆け回りながら、隊列を乱して敵に襲いかかること.

Abarana、アバラナ(荒らな)たと大ば、家々壁などで、 こわれて崩れ落ちた(もの)、あるいは、酸切向できた(もの)、 賃例、Caqi、cabe abarani xite ame, caje tamaranu. (垣、壁あばらにして雨、風たまらね) 垣や壁がこわれている ので、いたる所から風が吹きこみ、雨が降りこむ. Abarani、(洗らに) 副詞.

Abaraya. アバラキ (荒屋) こわれて崩れ落ちた古家. Abare, uru, eta. アバレ,ルル,レタ (党・暴れ、るる,れ た) 矢如動詞。家が荒れはてて自然にこわれる. この 意味ではあまり用いられない. 乳例, Jveua cajeni abare, ameni cutçuru.(家は風に荒れ、雨に朽つる)家は風に1 って崩れ、雨によって腐る。 [また、Abare, uru.(最れ、 る) 子供が読ね回る時などのように、騷々しくてむちゃくち ゃである。 [Cono varanbega abarete tamaranu.(この 童部必要れてたまらね) この子供がこんなに読ね回って騒 ぎ立てるのには、何とも手の下しようがない、 [Abareta fito.], abaramonol3.(最れた人、または、あばら者) しつ けが悪く、態度が現れていて、性格が激しやすい32ような希 『Nezumiga abaruru.(鼠が暴るる) 話が野原や田 畑に自由に出て来ては、そこらを死らす. m:)abaremono の説描か、次来に Abaremono がある。2) 原文の impertuoso 12 impetuoso の別りか.

Abaremono. アバレモノ(暴れ者) しつけが悪く,素 行がよくないなど,だらしのない者. ▶前条.

Abi, uru, 1, abiru, 1) ita. アビ, ブル, または、ビル, ビ タ (浴び,ふる, または, びろ, びた) 体を洗う、 1 例, Yu, mizzuva aburu. (港, 大を添ぶる) 湯か水で 含身を洗う、 \* 1) 浴ビ, ブル, ビタ' という二段活用影と、浴ビ, ビル, ビ タ' という一段活用影とが遊び存することを示したもの。こ の一段化形は、Guiðaui, Youcuhiの 灸にも 見える.

Abigigocu. アビデコク(阿鼻地獄) インヘルノ(Inferno 地獄)の一つで、そこに落ちた罪人は息をつくことも できないような絶え間のない責苦を受けるところ.

Abu. アブ(虹) 大小の虹類,1) × 1) 原文は Abespa, ou abespāo. これは元来蜂類をさす語で、虹類をさす語に は tavão があり、abespā, abespão は俗用. なお, 羅竜日の Vespa の条に、葡語 Abespa, 日本語 Abu の対訳を示して いる。

Abumi. アブミ (鐙) 鐙. ¶ Abumiuo caquru.(鐙を 掛くる) 鐙を取り付ける. ¶Abumiuo fazzusu.(鐙を外 す) 鐙を取り外す. ¶Abumiuo ficayuru.(鐙を控ゆる) 馬に乗ろうとして鐙に手をかける. ¶ Abumiuo funbaru. (鐙を踏ん張る) 鐙の上に立ち上がって踏ん張る. 《Abumino fatomune.(鐙の鳩胸) 日本の鐙の前の方の部分. ¶ Abumino cutçugomi.(鑽の杳込) 鐙の,足をのせる所. 【Abumino caco.(鐙の紋具) 鐙の首の部分で, 革帯を さし込む締め金具が取り付けられ、結びつけられる所1). ¶Abumino chicaragane. (鐙の力金) 鐙の革帯をさし込 む締め金具. 《Abumino yanaiba.(鐙の柳葉) 鐙の底 部を円く取り囲んでいる鉄製の縁. ¶Abumino xita saqi.(鐙の舌先) 日本の鐙の先端. ※1)原文に por onde se toma ate afiuela とあるが、ここは日西辞書に por donde se toma, y ata la heuilla となっているのに従って, 一応 por onde se toma & ata afiuela のように訳す. Fumi, u; Fumifiraqi, u; Fumisucaxi, su; Qefanachi, tçu. **†Abumiya**. アブミヤ (鐙屋) 鐙を作る職人,または,鐙 を作る家.

Abunai. アブナイ(危い) 危険である(もの),あるいは, 危険にさらされている(もの).

In Vocabulario Da Lingoa De Iapam com adeclaração em Portugues (Vocabulary of Japanese language with explanations in Japanese and Portuguese), Japanese words were written phonetically in the Roman alphabet and explained in Portuguese. Figure ① is the frontispiece of the dictionary. Figure ② is the first page of entries for the letter A. Because it was not practical to print both Chinese characters and Japanese in the original kana for use by missionaries at that time, all Japanese words were written alphabetically. Explanations for these Japanese words were in Portuguese. Figure ③ is the first page of entries for the letter "A" translated into Japanese by T. Doi, T. Morita and M. Chōnan in 1980. The materials were gathered from conversations' in daily life between the priests and the average Japanese in the latter half of the 16<sup>th</sup> century. It also contains data to reconstruct colloquial Japanese pronunciation at that time. The priests in Japan at that time expended much effort to create the Japanese-Portuguese Dictionary for their missionary activities. It was essential to speak Japanese and to understand spoken Japanese in confession and to preach in their daily activities. They sent the dictionary back to Europe because priests going to Japan wanted to learn Japanese even before their departure. The printing machine they introduced to Shimabara in 1590 was delivered only 50 years after the arrival of Xavier in Japan. These efforts show the extreme dedication for the propagation of Catholicism in Japan. However, due to the edicts expelling all priests from Japan by Hidevoshi in 1587 and Jeyasu 1613 and the edict of the nationed isolation policy by Iemitsu in 1639, these important data on the Japanese-Portuguese Dictionary became difficult to find in Japan. It was more than 50 years later that Yoshimune ordered Aoki Konyō and Noro Genjo to learn the Dutch alphabet and more than 150 years after the edict of the nationed isolation policy when Inamura Sanpaku published the dictionary "Haruma Wage" (Dutch-Japanese Dictionary) even though the study of Dutch language had been strictly forbidden for that period. There was no record from that period of any attempt to organize a Dutch-Japanese Dictionary by Dutch members in Deshima unlike the Portuguese priests in Japan in the 16<sup>th</sup> century. Perhaps the lack of religious enthusiasm played a role.

#### Nanban-Surgery: The Kurisaki School and The Sawano School

Even after the middle of the 17<sup>th</sup> century, Nanban Igaku survived apart from any missionary activity. Kurisaki Dōki, son of a landholder of Kurisaki village in Kumamoto, left Japan through Nagasaki to go to Luzon in the Philippines at the age of 8 years old in 1590, because of his father's financial decline. He lived in Luzon for more than 20 years, and learned Nanban Igaku, probably from the missionaries there, although there are no records of the names of his teachers or schools. Fortunately, he had kept a lucky charm from a Shinto shrine in the Kurisaki village and on his return from Luzon he was quickly acknowledged as a native of Kurisaki, in 1617.

He opened a surgical clinic, and acquired a good reputation as a Nanban surgeon. All of his four children learned Nanban surgery from him. The oldest son, Kurisaki Dōki, became official physician of the lord of the Matsudaira family, relatives of the Tokugawa, in Echizen; the second, Kurisaki Dōetsu, served lord Matsuura of Hirado. The fourth, Kurisaki Dōyū, stayed in Nagasaki as the official surgeon of the Nagasaki magistrate's office, in spite of invitations from lords in other fiefdoms. Kurisaki Dōha, a son of Dōyū, was invited to Edo as an official surgeon. In this typical example of family traditions, all members of the family kept the family medical secrets and never disclosed them to outsiders. The negative effect of this is that their contribution to the field of medicine in Japan is not clear and has never been fully acknowledged.

Another example of Nanban surgery at that time was that of the tradition transmitted originally from Christophe Ferreira. He is the hero of the novels "Seido no Christ" by Nagayo Zenro (41) and "Chinmoku" by Endō Shūsaku (7). He is even more clearly described in "Kirishitan Gidai-Junkyo to Kikyo no Gidai" by Endō Shūsaku (8). Ferreira was a priest who came to Japan specifically for missionary work at the age of 29 during the reign of Tokugawa Hidetada, the second Shōgun. Although the age of suppression and persecution had already begun, he continued to preach in fluent Japanese to Catholic believers in Kyōto in 1608. Because of the strict 1613 edict of Ieyasu, the priests and the former Kirishitan (Christian) lords were summoned to Nagasaki and ordered to leave either Japan or their faith. Of these 37 priests concealed themselves in order to minister to the needs of the faithful. Ferreira was one of them and he realized and accepted the possibility of martyrdom. In hiding, he continued to guide and assist believers and to communicate with other priests in hiding as the central person of the church and maintained communications with Portugal. He was captured in 1633 and after dreadful torture, finally became an apostate.

He was ordered to be naturalized as a Japanese and was given the name Sawano Chūan. He was also ordered to make the round trip between Edo and Nagasaki to act as a translator in the investigations of captured priests. Though he was not a specialist, he was learned in Nanban medicine and astronomy and contributed to Japan in both fields. He translated a book on astronomy and introduced an astronomical telescope through the Dutch trading factory in Deshima.

It is very difficult to understand how heavy and horrible the pressures he must have been feeling regarding his apostasy, and what he considered was his job as a Bakufu officer.

Aside from these images, he was immortalized in Japanese medical history as the transmitter of Nanban Igaku by his son-in-law, Sugimoto Chūan who was a Bakufu official surgeon. The senior translator Nishi Genpō in Nagasaki learned Nanban Igaku from Sawano Chūan, establishing the Nishi School of Nanban Igaku where he trained many disciples.

The news concerning Ferreira's apostasy, was promptly transmitted to Europe through the Dutch trading factory, and he was banished from the "Company of Jesus".

To atone for Ferreira's banishment and to offer support to believers in Japan, priests repeatedly infiltrated from Europe and from Luzon. Some of them suffered martyrdom after torture, some of them were imprisoned permanently in Kirishitan (Christian) residences. Arai Hakuseki, the famous Bakufu scholar, edited "*Seiyō Kibun*" (News of the West) in Genroku 14 (1701). It was based on his talks with the priest Giovanni Battista Sidotti, originally from Sicily, who tried to infiltrate Japan from the far southern island of Yakushima and was captured. Since this was 70 years after the expulsion of the Portuguese and Spaniards, there were no official interpreters of these languages. They communicated with each other using the peculiar Japanese language which Sidotti had learned in Luzon and a Dutch interpreter. Topics on this occasion included the map of the world and countries in Europe. It is recorded that they had difficulties understanding each other.

From the viewpoint of Japanese medical history, the period of about a century, from the landing by the shipwrecked Portuguese merchants on Tanegashima in 1543 to their expulsion from Japan in 1639 consists of two stages. The initial half was the period of Nanban Igaku, introduced by the missionaries, including Almeida, which is referred to as the period of Kirishitan (Christian) medicine. The latter half was maintained by Kurisaki, Sawano and the schools established by the interpreters specially interested in medicine, which is called Nanban Igaku.

#### Vignette I Voyage from Europe

Here, let us try to understand the contemporary voyage from Europe to Japan via the Atlantic Ocean, the Indian Ocean and the East China Sea which all missionaries took. It is said Nobunaga expressed his deep respect for the missionaries who came to Japan to proselytize their religion in spite of such hazards and personal difficulties.

In the middle of the 15<sup>th</sup> century, Prince Henry the Navigator decided to launch the "Navigaciaos Grandes" (Grand Maritime Voyages) after constructing large wave-resistant 100-200 ton ships with 3 masts and more than 3 separate decks. With such large boats, they were able to sail for long periods because they could store sufficient food such as pigs, chickens and water for 100-200 sailors.

The year of 1549 when Xavier landed in Japan was almost 100 years after the beginning of the "Navigaciaos Grandes". E. Kaempfer stayed in the Dutch factory in Deshima from 1690 to 1692, a quarter of a millenium from the beginning of the Great Voyages. Nevertheless the voyages from Europe to Japan were still full of hazards and difficulties, despite new maritime improvements during these periods.

It is not our intention to introduce their voyage diaries. Because of the expulsion of the Portuguese and Spaniards from Japan in 1639, such records were not allowed to be kept in Japan. Kaempfer, who sailed from Batavia to Japan in 1690, was a German physician who stayed until 1692 as a physician in the Dutch factory in Deshima. He left Batavia in May 1690 and enjoyed a smooth voyage under favorable winds and fine weather, and reached Ayutthaya, Siam, within 30 days. In the absence of wind, even if the weather were fine, the ship would ride at anchor after furling its sails to prevent being carried into a reef by the ocean current. The voyage at that time was completely at the mercy of the wind. They left Bangkok in July of the same year for Japan, when the high pressure