“PAISAJES INTERIORES” – LA RECEPCIÓN EN JAPÓN DE LAS CONCEPCIONES OCCIDENTALES DEL CUERPO

Michel, Wolfgang (Michel-Zaitsu)
Kyushu University : Professor emeritus

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Wolfgang MICHEL-ZAITSU

“Inner Landscapes” — Japan’s Reception of Western Conceptions of the Body

Rudiments of Old Japanese Views

How did Japanese talk about their bodies before the arrival of the first Europeans? From ancient times, they had their own vocabulary for the head, trunk, limbs, and other externally perceivable parts of the body. However, Chinese terms were unavoidable for describing the internal organs, and the words for heart, lung, stomach, large and small intestines, liver, spleen, and many other organs testify to the heavy influence of China. Old sources such as the Wamyō-rujūshō (倭名類聚鈔), a 10th-century dictionary, contain some native Japanese words, such as kimo for liver, yokoshi for spleen, fukufukushi for lung, murato for kidney, harawata for large intestine, hosowata for small intestine, kusowata for stomach, and yubarifukuro for bladder. However, with the general spread of Chinese terminology, virtually all of these terms disappeared, and it may be presumed that they were not originally part of the everyday language.

The idea of the abdominal region (hara 腹) as the seat of thought and emotion may have had old Japanese roots, although this concept also appears in the Chinese “Book of Difficult Issues” (Nânjīng 難經) and in the “Treatise on Febrile Diseases” (Shânghân lùn 傷寒論). Western writers such as Karlfried Dürckheim noted this interesting connection several decades ago. We encounter it in theories of meditation and in many expressions still in use today:

- hito no hara wo yomu (“read the inside of the abdomen” = read someone’s mind)
- kare no kuchi to hara ga chigau (“someone’s mouth and abdomen are different” = he says one thing and means another)
- hara wo watte hanasu (“split or open one’s abdomen and talk” = be frank with a person)
- hara no naka (“in the abdomen” = at heart, at bottom)
- hara ga kuroi (“the abdomen is black” = conceal one’s real intention)
- hara ga suwaru (“the abdomen is stable” = to have guts / to be unwavering in one’s
hara ga tatsu ("the abdomen rises" = get angry)
haragitanai ("a dirty abdomen" = black-hearted / nasty)
harazumori ("an accumulation in the abdomen" = intention)
hara wo kimeru ("decide one’s abdomen" = make up one’s mind)
hara-ise ("a cure for one’s abdomen" = retaliation / revenge)
hara gei ("an elaborate performance of the abdomen" = ability to handle situations tactfully)

From this tradition also stems the cutting open of the stomach (seppuku 切腹), well known in the West as hara-kiri, as an expression of the assumption of responsibility or guilt, or as a final expression of protest.

Some of the parasites affecting humans can be observed with the naked eye, and worms (Jap. mushi) have been considered a cause of diseases in many cultures. In Japan, however, those in the stomach were also linked to human emotions:

hara no mushi ga osamaranai ("the worms in the abdomen do not settle down" = cannot contain one’s anger / unable to contain oneself)
hara no mushi no idokoro ga warui ("the abdominal worms are in a bad place" = be in a bad mood / get up on the wrong side of the bed)
mushi ga sukanai ("the worms do not like it" = disagreeable)
fusagi no mushi ni toritsukareru ("being possessed by blocking worms" = be depressed)

Here, the Daoist “corpse worms” (Chin. sānshī chū chóng, Jap. sanshi kyūchū 三尸九竈), residing in the upper, middle, and lower parts of the human body and reporting a person’s foolish wrongdoings to Heaven every 60th night, may have also had some influence. These conceptions were transmitted to Japan in the Heian period and were incorporated into popular customs and medical texts.

Fig. 1 Masuda-style abdominal diagnosis in a manuscript by Murai Kinzan (1733–1815)
During the repeated revisions of Chinese traditions in the Edo period, the Japanese emphasis on the abdomen led to new and inventive writings on abdominal diagnosis (Jap. *fukushin*, 腹診) by Gotō Ryōzan (後藤良山, 1659–1733), Hisada Tensen (久田典膳, 1702–1773), Yoshimasu Tōdō (吉益東洞), and many others. In the late 19th and early 20th centuries, texts such as Taki Mototaka’s (多紀元堅) “Precious Rarities of Diagnosing Diseases” (*Shinbyō kigai* 診病奇偽) attracted a great deal of attention among physicians in China and were reprinted there.

Independent thinkers such as Mubun (夢分), a Japanese monk who lived in the second half of the 16th century, went even further and elaborated a comprehensive and unique system. Rejecting the Chinese concept of “tracts and canals” (Chin. *jīngluò*, Jap. *keiraku* 経絡), Mubun took the abdomen as a kind of representative map of the entire body for purposes of both diagnosis and therapy (Fig. 2). After having achieved a pure and empty heart, the therapist uses a comparatively thick golden needle and a tiny hammer to puncture quickly at various angles and depths. Some of his teachings, which are compiled in the “Secret Compendium of Acupuncture” (*Shindō hiketsu-shū*, 鍼道秘訣集, 1685), found their way to Europe through the writings of Engelbert Kaempfer (1651–1712).

Fig. 2 Abdomen with the areas relating to internal organs. *Shindō hiketsu-shū*
Views of the Body Adopted from China

Japanese writings adopting Chinese traditions contain essentially three basic types of visual representation of the human body.

The first is a sort of flow chart of the network in the body comprising tracts and canals in which the so-called ki (Chin. qi き) circulates (Fig. 3). This ki, one of the central notions in traditional Chinese medicine and natural philosophy, bears a certain resemblance to the Greek concept of the pneuma. It pervades the microcosm of the body as well as the macrocosm of the environment in various forms and, put simply, keeps the life processes going. If the circulation is obstructed — in other words, if there is a local excess or deficit — the result is illness. This is why therapy aims chiefly at removing an excess or supplementing a shortage of ki and ultimately restoring harmony within the body. In Chinese, as in the everyday Japanese language, the continued use of a large number of words and expressions about health, sickness, emotions, and even atmospheric phenomena containing the character ki reflects the predominance of this old concept.

Fig. 3 Tracts and canals, taken from a Japanese edition of Lèijīng túyì

Representations of this type show the male body from the front, side, and back. The organs are usually missing. In addition to pictures of the entire network, we also find some that demonstrate individual tracts. In many of these cases, half-naked figures are depicted that remind us of monks and
scholars. This type of representation invariably displays the human body as alive and pervaded by dynamic flows.

The second type presents 11 organs that were considered important. Most of the illustrations of this type give a lateral view of a limbless male body (Fig. 4). These “inner landscapes” (Chin. nèijìng, Jap. naikei 内景) are without doubt based on anatomical observations. They are said to go back to the “Truth-retaining Illustrations” (Chin. Cúnzhēn-tū, Jap. Zonshin-zu 存真図) or “Truth-retaining Illustrations” (Chin. Cúnzhēn huánzhōng-tū, Jap. Zonshin kanchū-zu 存真図) compiled by Yáng Jiè (楊介), a Chinese physician of the Song dynasty (960–1279). The original drawings have not been preserved, but all later versions indicate that they have hardly changed since their creation. These drawings are confined to the so-called “five full organs” or “five viscera” (Jap. gozō 五臓) (i.e., the liver, heart, spleen, lung, kidney, and pericardium) and “six hollow organs” or “six bowels” (Jap. roppu 六腑) (i.e., the large intestine, gall bladder, urinary bladder, stomach, small intestine, and “Triple Burner”) plus the spine. The body is shown not as dissected but as transparent. The oldest Japanese version of this type can be found in the “Quick Guide to Medicine” (Ton i-shō 頓医抄) compiled by Kajiwara Shōzen in 1304.

Fig. 4 The “Inner Landscape” of the male body, taken from a Japanese edition of the Lèijìng túyì

Kajiwara’s work also contains frontal and dorsal views of a torso, which has been reduced to the lungs, heart, spleen, liver, kidney, small intestine, large intestine, stomach, and — as a kind of “entrance” and “exit” — the trachea and anal canal (Fig. 5). In both China and Japan, this kind of work depicting the human organs was less widespread.

Fig. 5 Frontal and dorsal views of organs from Terajima Yōan’s pictorial encyclopedia *Wakan sansai zue* (1712)

Certain characteristics of the 11 organs mentioned above are described in many texts, but these organs were always seen in terms of their functional relationships with the tracts and canals and the
flow of *ki*, and not as rigid, isolated objects. Thus, when the body was ill, individual organs were never considered as isolated objects for diagnosis or therapy. This also explains in part why little need was felt for more precise anatomical observations and descriptions. The two basic types of anatomical illustration mentioned above — the “flow chart type” and the “organs type” — are found in books of the so-called “main path” of medicine (Jap. *hondō* 本道), which corresponds roughly to present-day internal medicine.

The third basic type of anatomical illustration involves the representation of “swellings” (Jap. *shumotsu, haremono* 腫物). In present-day medicine, we talk about tumors, furuncles, rashes, and their corresponding symptoms in relation to a wide variety of diseases. However, in pre-Meiji Japan, there were only a few categories — such as *yō* (瘡), *so* (痘), *chō* (疔), and *setsu* (瘰) — that do not correspond well with Western notions. As maladies of the body surface, these “swellings” belonged within the domain of surgery. Here again, the human figures portrayed were alive and sparsely clad, and the swellings were often depicted in color (Fig. 6). This kind of illustration can be found even in early manuscripts on Western-style medicine.

Fig. 6 Chinese-type illustration of “swellings” in a manuscript of “Dutch style” surgery

In all three basic types of illustrations, no muscles or shadows are shown, and nor are there any
signs of death or even of dissection. Standing figures do not strike the pose of a supporting and a trailing leg, which has been predominant in Europe since Greek antiquity.

In the East and West, medical illustrations of women’s bodies generally focused on their reproductive organs. However, impeded by religious taboos and a general lack of interest, European physicians only gradually acquired a correct understanding of the womb. However, in a social environment of “thinning out” new-born babies (mabiki 間引き) in times of economic hardships, Japanese surgeons who traditionally dealt with birth and artificial abortion accumulated more knowledge than their Western colleagues. The 18th-century pioneer Genetsu (賀川玄悦, 1700–1777), for example, was well aware of all stages of pregnancy even for twin fetuses.

Finally, portrayals of gymnastic exercises and massage are not of an anatomical nature. The same is true of depictions of patients and their treatments in the “Scroll of Diseases” (Yamai no sōshi 病草紙), going back to the Late Heian and Early Kamakura period. These illustrated scrolls have a certain value for the history of medicine, but like similar European works, they belong essentially to the realm of art.

**The Medicine of the “Southern Barbarians” in Japan**

After a brief contact in 1543, direct cultural exchange between Europe and Japan began in 1549, with the landing of the eminent Spanish Jesuit Francisco de Javier (Xavier) (1506–1552). In the 90 years that followed, it was chiefly Portuguese and Spanish missionaries and merchants that brought European culture to the Far East, and Japanese culture to the West.

Although the Japanese called them by the less-than-flattering name “Southern Barbarians” (nanbanjin 南蛮人), they certainly respected European weapons and skills in astronomy, navigation, surgery, and art. The strangers’ imposing galleons sealed with pitch, dubbed “black ships” by the Japanese, carried European wares and important goods such as silk, tropical wood, and medicinal drugs from all over Southeast Asia and even from Central and South America.

The Jesuits took little interest in surgical activities because “the Church eschewed blood” (Ecclesia abhorret a sanguine) ever since the famous Council of Tours in 1163. However, Luís de Almeida (1518–1584), a licensed surgeon who had become rich as a merchant, joined the Society of Jesus in Japan. At Funai, Eastern Kyūshū, he founded a hospital with 100 beds where, as one missionary wrote, “the body was treated with medicines and the soul with prayers”. In a country wracked by civil wars, there was no dearth of patients. The enthusiastic letters and annual reports from the mission testify to
the popularity of the Southern Barbarians’ hospital\textsuperscript{20}.

These years are regarded as the beginning of European medicine in Japan, although the innovations were not as revolutionary as might first appear. Some authors noted the treatment of gunshot wounds (a new type of wound) as well as the hitherto unknown practices of washing wounds with alcohol and the use of pork fat and olive oil. However, injuries caused by firearms had not been known in Europe for very long either, and the controversy over their nature and treatment continued throughout the 16th century\textsuperscript{21}. The missionaries were wise enough to appreciate local knowledge and traditions. In the hospital at Funai, “internal medicine” was left entirely to converted Japanese physicians, some of whom were praised by name.

The approach to pharmaceuticals was likewise pragmatic. The bulk of the drugs used in the hospital at Funai came from the surrounding mountains and from Macao, Malacca, and Cochinchina. Documents show that Chinese remedies and instruments could be found in de Almeida’s dispensary. The missionaries had Chinese texts explained to them. Jesuit letters and dictionaries contain many indications that they also delved into acupuncture and moxibustion. Luis Frois, a layman in the field of medicine, wrote that he knew how to take someone’s pulse in the Japanese way. When they fell ill, many of the European priests sought Japanese doctors\textsuperscript{22}.

In comparing European and Japanese cultures in 1585, Luis Frois also expressed regret that the Japanese would not accept urine diagnosis, phlebotomy, enema, cauterization, and other traditional methods highly esteemed in the West\textsuperscript{23}. Nor did Japanese field surgeons (kinsō-I 金槍医) follow the example of many of their Occidental colleagues who would pour boiling or hot oil into wounds.

Thus, the interchange of medical expertise was fairly balanced and the conditions relatively favorable for a new symbiosis between the East and West. However, this enterprise was aborted as early as 1587, when the hospital at Funai fell victim to the strife between Japanese warlords. From the 1580s, the mission ran into trouble everywhere. The decades that followed until the Iberians were expelled from the country were marked by destruction, expulsion, exhaustion, illness, and death. “No one knows how to venesect,” complained father Coelho in 1589, when three members of the order fell ill from the strain of persecution and died. In 1591, when João Rodriguez fell ill in Kyōto, he had to travel 700 kilometers to Nagasaki for treatment. The last Christian nursing homes run by the Japanese disappeared around 1620. To make matters worse, criticism of such medical endeavors was mounting within the Society of Jesus itself. In the end, everything relating to medicine disappeared from the writings of the Jesuits under the categorical ban (“obediencia”) imposed by Francisco Pasio in 1612. Nothing remained in Japan of what had been established under the Europeans\textsuperscript{24}. 
Japanese “Southern Barbarian-Style” Surgery

Today there are no known Japanese sources from which to glean how Western medicine was perceived during the second half of the 16th century. Most likely, exposure to Western concepts and methods of healing was confined to a very small group of people in a few places and during certain brief periods. There was no opportunity for continuity because of the changeable and increasingly difficult situation of foreign and native Christians. In the wake of the destruction of de Almeida’s hospital, it was hardly conceivable that a group of Japanese doctors could have developed along the lines of Thomas Kuhn’s concept of paradigm change — whereby all members of a group undergo similar technical training, and possess and hand down a common canon of problem-solving approaches.

It is certainly not by chance that mention of the Southern Barbarians did not appear in Japanese books until the early 17th century. The “Anthology of Everything for the Outside” (Mangai shūyō 万外集要), which dates from 1619, is considered the oldest work of Southern Barbarian-style surgery (nanbanryū geka 南蛮流外科). The mention of five plasters, washing wounds with spirits, and instruments such as scissors and the lancet shows that, even after seven decades of East–West interchange, a writer like Yamamoto Gensen (山本玄仙) knew almost nothing about Western surgery.

Standard Japanese works on the history of medicine name Kurisaki Dōki (栗崎道喜, 1582–1665) as an exponent of surgery in the style of the Southern Barbarians. Writings passed on from generation to generation in the Kurisaki family explain that Dōki went to the Philippines as a child and received his surgical training there. From 1617, he worked as a physician in Nagasaki, where some Portuguese continued to live until 1639 and where, two years later, the Dutch East India Company was to set up a trading post. The teachings compiled by his pupils, however, reveal a blend of Japanese, Chinese, Iberian, and Dutch elements. If he really had received an education in Western surgery at such a young age, one ought to find more European elements. What is missing is anatomy, for instance, to which great importance was attached in European universities and in the surgeons’ guilds. The presentation of furuncles, a focal point of Kurisaki’s teachings that became a family tradition, does not bear much resemblance to the systematic arrangement one finds in Western works on the subject. Either Kurisaki’s pupils set down only what they understood or he had merely acquired some practical skills and rudimentary knowledge in the Philippines. He clearly became one of the most notable surgeons in 17th century Japan, but he can hardly be regarded as representative of Southern Barbarian-style.

It is not purely by chance that, to this day, not a single reference to any Western work on medicine, surgery, anatomy, or pharmacy is known in any manuscript dating from the long period between the arrival of the Iberians in 1549 and their final expulsion in 1638. This is despite the fact that the
language barriers were not significant then; they were certainly much less significant than in the following two centuries. Some of the Europeans spoke excellent Japanese, and many Japanese spoke Portuguese and some even Latin.

In addition, the social and intellectual conditions were favorable for the reception of new knowledge and thought. Many scholars were parting with Buddhism, and the efforts of regional rulers, especially in Western Japan, to bolster their domains through overseas trade with East and Southeast Asia led to an influx of foreign innovations, many of which stemmed from China. These included, to name just a few, improvements in smelting and forging methods, in papermaking, silk weaving, book printing, shipbuilding, and navigation. Most of this expertise was disseminated not by Buddhist monks or scholars, as in the past, but by merchants and artisans; hence, the expertise was predominantly of a practical nature.

It was not due to a lack of intellectual receptiveness that the medicine of the Southern Barbarians did not take root firmly in Japan. Given the destruction of the mission hospital at Funai, the mounting persecution of Christians, and resistance within the Society of Jesus, there was no stable basis for an effective interchange. To take issue with the standard literature on the subject to date, I do not believe the Japanese ever came to practice Southern Barbarian-style surgery in the sense of a paradigm that could be handed down to succeeding generations.

Another Try

Merchants from the Dutch East India Company (Verenigde Oostindische Compagnie, VOC) reached Kyushu at the beginning of the 17th century, where they were dubbed “redheads” (komōjin 紅毛人) by the local people. In 1609, they were successful in obtaining permission to trade from Tokugawa Ieyasu, the founder and first shōgun of the Tokugawa Dynasty, and they established a trading post on the small western island of Hirado. Founded in 1602, the still-young company was struggling even in Batavia to provide basic services for its employees. Medical treatment in Hirado had to be performed by surgeons from ships anchoring in the bay or by local Japanese physicians. In 1640, things started to change when the Tokugawa government decided to restrict its foreign relations. After the expulsion of the last Portuguese, the Dutch were forced to move from Hirado to the small man-made island of Dejima (Deshima) in the bay of Nagasaki. Because of the Dutch’s lack of interest in proselytizing and their tactical acumen, the Netherlands now became the only European nation still permitted to land in Japan. Until Japan’s reopening to the West in the mid-19th century, the entire exchange of goods and information between Europe and Japan took place via this little trading post,
measuring about 200 by 65 meters. The company decided to establish a permanent position for a surgeon (chirurgjijn), who took care of the few Westerners stationed on the island and accompanied the trading post chief on his annual journey to the court in Edo.

During the 1650s, interest in the Western art of healing arose anew in Edo and Nagasaki after a German surgeon, Caspar Schamberger (1623–1706), arrived at Dejima in the summer of 1649 and, because of various circumstances, stayed in Edo for about 10 months. Probably without even suspecting it, he sparked a lasting interest in Western medicine, herbal lore, and pharmacology, and left his name in history books as the godfather of “Caspar-style surgery” (kasuparu-ryūgeka カスパルル外科). Under the influence of his successors at the trading post, further instructions on medicine and medical treatment methods followed. Combined with other disciplines, “Dutch studies” (rangaku 鴨学) arose, and from the latter half of the 18th century onward, this type of medicine matured into a serious rival to Sino–Japanese traditions and was to lay the foundation for the rapid modernization after the reopening of the country.

Here, as elsewhere, historical processes were influenced by a wide array of factors. For example, chance played a part when the shōgun Tokugawa Iemitsu (徳川家光, 1623–1651) fell seriously ill in 1650 and the Dutch special envoy Andries Frisius, who had been dispatched to Japan to solve some serious problems, had to wait for months for an audience at the court. Suffering from diseases of old age, some high-level officials sought out the idle Schamberger, a veteran surgeon seasoned in wartime Germany. His repeated visits to their residences gave prominence to some new treatment methods. At the request of these officials, Schamberger’s recipes and explanations were written down by his interpreter Inomata Denbei and were soon circulated in manuscript copies. In contrast to the former Jesuit hospital in rural Eastern Kyushu, Schamberger’s expertise found its way into Japanese society from the top of the social hierarchy. We do not know whether he actually performed better than his Japanese colleagues did, but his patients were satisfied, and their prestige contributed significantly to the acceptance and propagation of Western medicine.

There were also structural factors. By confining their external relations to only a few partners, those in power became acutely aware of their dependence on foreign expertise and certain goods, including materia medica. The adoption of Western treatment methods proved beneficial not only to their own health, but also to the further development of the regional domains and thus the consolidation of power. In addition to medicine, there was special interest in weapons, astronomy, and cartography.

These developments were also induced by the far-sightedness of influential individuals. For example, the dynamics of the 1640s and 1650s cannot be adequately explained without considering the activities of the imperial inspector general Inoue Masashige Chikugo-no-kami (井上筑後守政重), who acted as an intermediary between the East India Company and Japanese government circles. It was Inoue who introduced Schamberger to government officials, and who kept him in Edo even after
the return of the Dutch embassy. This bright man had obviously understood the necessity of a comprehensive approach to Schamberger’s healing methods, as can be seen by his orders conveyed in February 1652, which included drugs, an alembic, artificial hands and legs, as well as

“an illustrated book in Portuguese dealing with human anatomy; a herbal book with illustrations of live plants [...]; a model of the human body made of copper, wood, or other material showing all parts of the body and internal organs in as much detail as possible.”

There were no institutions for medical education, and young aspirants usually had to find a physician who was willing to share his wisdom. Although medical expertise was handed down only from teacher to disciple or from father to son, useful discoveries could not be kept secret and soon spread throughout the archipelago. Only two decades after Schamberger left Japan, the first books on this new field of expertise were printed under the title “Good Methods of Dutch Surgery” and “Collection of Secretly Conveyed Surgical Treatments of the Redheads”. Regional lords sent their personal physicians to the Dejima trading post, where they tried to absorb as much information as possible within the short time allotted to each of them. Books, drugs, herbs, and medical instruments were ordered at high prices. Despite an official import ban, many Western books on medicine, pharmacy, and natural sciences entered the country throughout the 17th century.

It should be noted that it was always the Japanese who took the initiative, requested information, placed orders, and selected and took up or rejected what the sometimes reluctant Europeans had to offer. In view of this boom, it is surprising that the developments that characterized the 19th century did not materialize much earlier. However, closer scrutiny shows that the Japanese still had a number of reservations about Western medicine and that a new barrier had appeared.

The Limits of Redhead-Style Surgery

Japanese surgery in the style of the redheads did not go beyond the confines of European low-level surgery (chirurgica minor). This is not surprising in view of the professional background of the surgeons at the Dutch trading posts, who had usually been trained in Dutch or German guilds. Until the end of the 17th century, only two of the medical employees at Dejima (Willem ten Rhijne and Engelbert Kaempfer) had a university degree. However, even in the comparatively small field of low-level surgery, not everything was received with enthusiasm, as confirmed in Japanese manuscripts from that epoch.

The same subjects are dealt with repeatedly: plasters, ointments, and the treatment of wounds and fractures. There are no references to cataract operations, cystolithotomy of bladder stones, bone
trepanning, or amputation — operations that were indispensable for any ambitious surgeon in Europe. Cauterization and phlebotomy, which were practiced in the West until the early 19th century, were abhorred by the Japanese. Not a word was written about human anatomy, which was considered fundamental not only at Western universities but also in the training of apprentices by the guilds. No doubt, any Western surgeon at Dejima would have tried to convey his knowledge, considering that anatomy was one of the pillars of his education and was crucial to his ability to examine patients. However, any such endeavor is not evident in early Japanese medical manuscripts, which contain only a few names of bones and paltry remarks on arteries, veins, a “thin skin around the brain”, and the skin between the chest and abdomen.

European–Japanese communication had deteriorated dramatically since the days of the Christian missions. The Dutch were not allowed to train their own interpreters, and until the end of the 17th century, Japanese interpreters, most of whom had a good command of Portuguese, were not able to translate more than simple business negotiations and everyday conversations conducted in Dutch. Their lack of expert knowledge became an even greater obstacle to efforts to translate medical and scientific books. Hence, everything had to be explained and demonstrated to Japanese physicians with the help of as many interpreters as possible. As shown by the diaries of trading post chiefs, such instructions were a nightmare for everyone involved.

Because the Japanese could not understand many medical terms, they just noted the pronunciation in the Katakana syllabary. The meanings of the names of medicines and herbs were learned with time. The subject of humoral theory was dealt with by a single brief outline in a manuscript about “Caspar-style surgery” but was probably not understood by any Japanese readers. The philosophical bases of Western medicine and its dynamic advances remained inaccessible. What found its way into Japanese medicine did not go beyond specific treatment methods and recipes. This was insufficient to reduce the influence of Sino–Japanese teachings, which were based on a comprehensive view of the macro- and microcosm and a well-known set of materia medica.

Educated Japanese could read the literature from China, and Japanese thought had evolved over centuries through an ongoing interaction with China; thus, Chinese ideas could be assimilated more readily. It was in the 17th century that Chinese science and Confucianism were understood and embraced as comprehensive systems, possibly for the first time ever in Sino–Japanese intercourse. To consolidate its own power, the Tokugawa regime promoted the adoption of Confucianism as interpreted by the 12th-century Chinese scholar Zhū Xī (朱熹) or Zhūzǐ (朱子) — a comprehensive system of thought for understanding nature, man, and society, that placed a strong emphasis on submission to authority. Thanks to the establishment and expansion of libraries and a number of private and feudal clan schools, there emerged a kind of academic infrastructure. This served to enhance the prestige of Chinese medicine, particularly as many Confucian scholars earned their living.
Even those open to “Dutch” therapies had received a thorough education in Chinese classics and Confucianism and inevitably used Sino–Japanese concepts and notions when trying to understand Western teachings. Their thinking attached great importance to cosmic harmony and freedom from bodily harm, which left little room for invasive surgical measures. Presumably, Japanese doctors in the 17th century had some opportunity to see the internal parts of the seriously injured. They must have been aware that there were more than the small number of organs given by the classic scripts, and maybe they even took a closer look. However, the form, color, composition, and position of the stomach, liver, or heart meant nothing to them.

Small wonder, therefore, that they did not take much interest in Western books about human anatomy. For Japanese physicians, these explanations did not figure prominently in theory or in their day-to-day practice of medicine. In the second half of the 17th century, an interpreter at the Dejima trading post by the name of Motoki Shōdayu Ryōi (木村庄右衛門, 1624–1697) drew sketches from the Dutch edition of the anatomical atlas *Pinax Microcosmographicus* (Amsterdam, 1667) and provided a summarizing translation in Japanese. Johannes Remmelin’s work, printed for the first time in 1632 (Augsburg), was a famous anatomical “flap book” comprising three full-page illustrations with detailed anatomical illustrations of the organs superimposed. By lifting the layers, the reader accesses the internal parts of the body as they would appear during dissection. Motoki’s “translation”, with its multi-layered flaps, drew some interest among curious physicians — but only very few, such as Hara Sanshin (原三信) in Fukuoka, made a copy[^36]. Motoki’s manuscript had no noticeable impact during that period and was printed for the first time almost a century later[^37].

The First Postmortem

It took about 100 years before a Japanese doctor opened a human cadaver to take a closer look at the “inner landscapes”. Interestingly, Yamawaki Tōyō, nowadays extolled as a pioneer in the modernization of Japanese medicine, was not a proponent of Western surgery but a practitioner of the so-called “Ancient Practice School” (*ko-ihōha* 古医方派). Under the influence of thinkers such as Itō Jinsai (伊藤仁斎, 1627–1705) and Ogyū Sorai (荻生徂徠, 1666–1728), the physicians of this school had liberated themselves from Neo-Confucian doctrines. Zhū Xī’s teachings were intellectually demanding but because they contained various speculative elements, they were often difficult to apply to real-life problems and had been criticized by Japanese scholars since the 1660s.

However, the physicians of the Ancient Practice School did not intend to modernize science in a
Western sense; they were more engaged in a kind of revisionism. They had come to appreciate the importance of observation and experience through studying the Chinese the “Treatise on Febrile Diseases” (Shānghán lùn) written by Zhāng Zhòngjīng in about 200 CE. At first, their interest focused on the symptoms of diseases and the effects of medicaments, but, gradually, they also turned to a field — anatomy — that would later pave the way for the success of Western medicine in Japan.

As early as 1722, Hattori Noritada (服部範忠) had raised the question of “how a doctor can keep someone alive without any knowledge of internal organs”. In his “Illustrated Explanation of the Inner Landscape” (Naikei zusetsu 内景図説), he presented a new system he had designed, along with the traditional Chinese teachings. This was the first Japanese work to criticize the traditional representation of the organs.

A certain influence may be attributed to the systematic studies of the skeleton performed by Negoro Tōshuku (1698–1755) on the decomposed bodies of two criminals who had been executed. The results, compiled in 1741 in the “True Shape of the Human Skeleton” (Jinshin renkotsu shinkei-zu 人身連骨真形図), are quite clumsy, and Negoro was soon surpassed by more skilled artists, such as Maruyama Ōkyo (毛利安重, 1733–1795). However, as an ophthalmologist believing in the power of the human eye as a mean of gaining new knowledge, Negoro was the first medical expert who tried to verify traditional depictions of the human skeleton through observation.

At this point, we should also consider other influences from the West. In the second half of the 17th century, and to a greater extent the 18th century, Japan imported mirrors, spectacles, magnifying glasses, microscopes, telescopes, and zograscopes. These aids had a substantial impact on the way things were seen, which was increasingly reflected both in language and in art, and had its influence on scholars, too.

Yamawaki Tōyō’s search for the “Nine Organs”

As mentioned above, the first major stride forward was taken by Yamawaki Tōyō (山脇東洋, 1705–1762), a member of the Ancient Practice School. The dissection of human bodies was never forbidden by any explicit law, but it conflicted with the tenets of Buddhism as well as Neo-Confucian thought. However, Yamawaki and Kosugi Genteki (小杉玄通, 1734–1791) managed to obtain permission from the authorities to perform a dissection. In 1754, they had the body of an executed criminal opened up in Kyōto. Five years later, Yamawaki published the results of this dissection under the title “Record of the Viscera” (Zōshi 葉志).

Yamawaki’s teacher, the famous scholar Gotō Gonzan (後藤良山, 1659–1733), had once suggested
he dissect an otter. When Yamawaki did so, he could find only eight of the nine organs (kyūzō 九臓) mentioned in the Chinese classic “Rites of the Zhou” (Zhouli 周礼). What he did then was typical of his generation. He went to his bookshelves and studied other old Chinese writings such as the “Book of Documents” (Shujing 書經), the book of “Master Lie” (Liezi 列子), and the “Sayings of the States” (Guoyu 国語). However, they presented widely different numbers of organs. Only then did it occur to him to open up a human body and find out for himself.42

It is doubtful whether this account by Yamawaki sufficiently explains his motivations for performing a dissection. One thing is clear, however: the dissection enabled him to confirm the nine-organ theory and, as a consequence, the authority of the “Rites of the Zhou”. Yamawaki was not looking to break new ground, and he took a revisionist position, which laid more solid groundwork for the future. His view of the body was wholly informed by tradition. Characteristically enough, he had the dissection performed by a member of the outcast caste, who performed work that was considered impure in Buddhist or Shinto beliefs. Thecrudeness of the illustrations in Yamawaki’s book cannot be attributed merely to the limited nature of the research objectives or poor artistic ability of his draftsman Asanuma Sukemitsu (浅沼佐滋). Because the authorities did not want to stir any public
unrest, Yamawaki had to conclude the dissection within a single day\textsuperscript{44}. Finally, he called for a Buddhist monk, who held a memorial service for the departed. This tradition is continued today in the anatomy rooms of Japanese medical faculties.

Most likely Yamawaki had hardly foreseen the consequences of his investigation. The attacks were vehement and came in part even from the Ancient Practice School itself. Its pioneer, Yoshimasu Tōdō (山脇東道, 1702–1773), for example, considered the clinical description of diseases and therapy more important than any contemplation of theoretical bases. In his “Medical Talks” (Idan 医談), published in 1759, he wrote that knowledge of anatomy was superfluous in treating the sick. That was not entirely untrue, because anatomical knowledge about internal organs could not be used in medical practice. An even more aggressive reaction came in 1760 from Sano Yasusada (佐野安貞) in his “Anti-Viscera Book” (Hi-zōshi 非臓志). In his opinion, the most important thing about an organ is not its shape, but its spirits (shin 神) and ki (気); once these are gone, the organ is but an empty shell. This view was rooted in Sino-Japanese traditions, but similar to the Western separation of body and mind, it eventually paved the way to the objectification of the human body\textsuperscript{46}.

The approving reactions, too, led in a different direction from what Yamawaki had anticipated. Even before his book was printed, further postmortems were performed, and the classical nine-organ theory that he had apparently corroborated was soon refuted by new observations\textsuperscript{47}.

Without doubt, Yamawaki’s postmortem examination was revolutionary by Japanese standards at the time. A commemorative stone has now been placed at the very spot in Kyōto where the dissection took place. Nonetheless, one hesitates to accept this as the dawn of modern medicine in Japan. Yamawaki was not a discoverer like the Renaissance anatomist Vesalius, for instance. His approach shows more similarities to dissections performed in Europe during the Middle Ages. In the 13th century, for example, professors at the University of Padua and elsewhere read aloud from the works of grandsire Galen. Near the dissection table stood a surgeon, who cut open the cadaver and exhibited the parts as they were discussed: the “quintilobular” liver and other peculiarities of Galen’s anatomical teaching. Here, as in Yamawaki’s endeavors, the objective was to confirm the existing authority, not to demolish the tradition and make new discoveries. As in ancient Egypt and Peru, “seeing” does not mean “observing” in Yamawaki’s investigations. Japanese doctors had been seeing the insides of dead bodies for centuries: on the battlefields and at the sites of accidents. The razor-sharp swords of Japanese warriors split their enemies’ bodies in many directions. Yet the form, color, and consistency of the anatomical features the doctors saw there were of no great importance to them, for they perceived only what they knew.

Thus, Yamawaki’s historical accomplishment lies not so much in the nature and results of his dissection as in the mere fact that he performed a dissection. This established a precedent that would be cited by others when requesting permission to perform a dissection.
Sugita Genpaku and the “New Book on the Dissection of the Body”

In the history of Japanese medicine, the translation of Johann Adam Kulmus’ “Anatomical Plates” into Japanese is usually celebrated as the next great pioneering feat. Sugita Genpaku (杉田玄白, 1733–1817), Maeno Ryōtaku (前野良沢, 1723–1803), Nakagawa Jun’an (1739–1786), and Katsuragawa Hoshū (1751–1809), all experienced and ambitious physicians, had an opportunity to watch a dissection in 1771 at the execution ground in Kozukahara. Comparing what they saw with the illustrations in a Dutch edition of Kulmus’ Anatomische Tafeln (Anatomical Tables), they noted that the latter were precise. On the way home, they decided to translate the book. However, at that time, their language skills were inadequate to the task. In his memoirs on the “Beginning of Dutch Learning” (Rangaku koto hajime 荷学事始, 1815), which he wrote decades later, Sugita gives a touching account of their agonizing struggle with a virtually unknown language: how — in his words — they crossed a stormy ocean in a rudderless ship.

The translation came out in 1774 with the title “New Book on the Dissection of the Body” (Kaitai shinsho 解体新書) and was a tremendous success. In addition to showing a promising way to obtain new knowledge from Europe, thanks to Sugita and his partners, the realization spread that the
observation of singular phenomena should be combined with the search for the underlying fundamental principles. After more than 17 decades of continuous exchange between Japanese and European physicians, it had become clear that knowledge of human anatomy would eventually improve the practice of medicine.

Kawaguchi Shinnin (1736–1806)

I do not want to depreciate the historical achievements of Sugita and Maeno, but there was a physician who accomplished a similarly significant and pioneering feat even before these two.

As a young man, Kawaguchi Shinnin (河口信任, 1739–1811) studied first with Kurisaki Dōi (栗崎道意), a descendant of the above-mentioned surgeon Kurisaki Dōki, and then with the respected interpreter and scholar, Yoshio Kōgyū (吉雄耕牛, 1724–1800). During his stay in Nagasaki, he received and copied a great deal of material, including the *Syntagma Anatomia*, the famous work on anatomy by Johannes Vesling (1598–1649).

As physician to the House of Doi, Kawaguchi went to Kyōto in 1769 when Lord Doi Toshisato (土井利里, 1722–1777) was appointed “Kyōto Deputy” (Kyōto shoshidai 京都所司代) of the Tokugawa government. At that time, Yamawaki had been dead for seven years. In Kyōto, Kawaguchi became a pupil of the renowned court physician Ogino Gengai (荻野元凱, 1737–1806), who tried to incorporate Western phlebotomy into Chinese acupuncture. In and around Kyōto, permission for a dissection had to be requested from the Kyōto Deputy, which made things easier for Kawaguchi, being Lord Doi’s personal physician. In 1770, he was allotted two cadavers and a head at the place of execution. That was the fifth dissection to be performed in Japan.
Unlike Yamawaki and Kosugi, Kawaguchi did the carving himself — with one straight knife and one curved one. These were crude instruments. Western-style lancets had been known since the 17th century, but because a dissection had to be finished within one day, there was not much time for contemplation and delicate finesse. Kawaguchi later gave an impressive description of his actions, as follows. With a vigorous incision, the 35-year-old physician slashes open the thorax from the throat to the solar plexus. Before him, the heart and lungs lie exposed. After having determined their positions, he resects the organs. He notes their size, color, and consistency. Beside him is Harada Iki (原田維祁), also trained in Nagasaki, who has been waiting a long time for an opportunity like this. Harada takes the organs that are passed to him and subjects them to further scrutiny. He inflates the lungs with a bamboo pipe and then inspects the intestines inch by inch to see how the contents change. Their teacher, Ogino, is sitting nearby, naming the organs and commenting based on his previous experience in the dissection of otters. Another seven pupils are in attendance.55

Fig. 10 The brain and eye in Kawaguchi Shinnin’s “Notes on Autopsy”56

Kawaguchi and Harada’s attitude toward the cadaver differs greatly from that of Yamawaki. There is no searching through the classical Chinese literature, no detached reflection, and no awe induced by the knife and body fluids. Nor do they feel the need to compare their observations with illustrations in Western books. This is a cold and daring search for new insights. Kawaguchi was the first physician in Japan to dissect the brain, which did not figure very prominently in traditional medicine. He also
examined the eyes, which came to be considered, as in Europe, the most important human organ for collecting new knowledge by observing the world.

Kawaguchi’s teacher Ogino was opposed to publishing the results of their findings. He did not want the famous Yamawaki to be contradicted. He was also afraid that their findings, which could not be used in practice yet, would rock the very foundations of traditional medicine and jeopardize medical care throughout the country. However, his opposition was in vain. These were no longer the obedient physicians of the 17th century, restrained by personal bonds in master–disciple relationships. Kawaguchi had the woodcuts executed for him by Oki Shunmei and proceeded to have his “Notes on Autopsy” (Kaishihen 解屍編) published in 1772. After Yamawaki’s “Record of the Viscera” (Zōshi 葉志), this was the second book of its kind in Japan.

What made it possible for these books to have a widespread impact was, at least in part, the open-mindedness of the new Senior Imperial Councilor, Tanuma Okitsugu (1719–1788). Tanuma had worked his way up to this powerful position from the lowest ranks, and he strove resolutely to develop the economy and trade further. Apparently, this dynamic and pragmatic man was well disposed toward the publications. When neither Yamawaki nor Kawaguchi and Sugita had met with a hostile reaction from the authorities, there was no more hesitation. Dissections ensued almost all over the country, accompanied by numerous publications and intensive studies of Western writings in other fields, too.

Fig. 11 “Muscle man” from Andreas Vesalius’ “De Humani Corporis Fabrica Libri Septem”. Basel, 1555.
Eighteenth-Century Japanese Illustrations of Dissections

From the days of Vesalius, European illustrators had endeavored to assuage the viewer’s fears by presenting the corpse as more or less alive. It was idealized in its proportions and often portrayed in the poses of Greek antiquity\(^61\), as if to show that although their bodies have been opened up, these figures feel no pain, and no body fluids are flowing.

The Japanese artists and physicians of the 18th century had a completely different pictorial language. They show a cadaver, usually with recognizably individual traits. Many of these bodies even bear their own names, such as *Heijirō* (平次郎), or a nickname like “old auntie Aocha” (*Aocha-baba* 青茶婆). Furthermore, most of the manuscripts and prints of that epoch are colored. In many cases, blood and other body fluids are shown flowing, and the “odor” of death and decay seems to transpire from the illustration.

![Fig. 12 (a) Dissection of a head by Minagaki Yasukazu (1785–1825), physician of the Yodo Clan\(^62\) (b) Dissection of a head in Thomas Bartholin’s “*Anatomia ofte Ontledinge des Menschelijken Lichaems*” (Leiden, 1653, p. 319)\(^63\)](image)

The scientific value of these illustrations is less than that of comparable old Western illustrations. However, in a certain sense they are more realistic because they depict not so much the results of a dissection as the dissection process itself. In hand-painted picture scrolls, we even find stories
extending from the execution to the preparatory arrangements for the postmortem, and on to the complete dissection of the cadaver. These images indicate the degree to which those involved were capable of looking directly at the exposed viscera.

Paradoxically, these images have their root in Buddhist meditation and art. From about the 13th century on, graphic paintings of human corpses appeared in Japan; these were stimulated by the “Commentary on the Sūtra on the Perfection of Wisdom”\(^6\) written by the great Indian philosopher and sage Nāgārjuna (c. 150–c. 250). These so-called “pictures of the nine stages” (Jap. kusō-zu 九相図) appeared until the 19th century in hanging scrolls, hand scrolls, and printed books. They served in the contemplation of impurity while helping man conquer carnal desires, and we find them in Buddhist temples such as the Anraku Temple in Kyōto, the Keikyō Temple in Kōyamura (Ako-gun), the Seishūrei Temple and Butsudō Temple in Shiga Prefecture, the Eizen Temple in Morioka, and the Dainenbutsu Temple (Osaka), to name just a few.\(^6\)
Fig. 14 (a) Dutch surgeon dissecting a female corpse, suspended in an early Western style. Unknown Japanese artist, late 18th century. (b) Suspended corpse in Vesalius’ “De Humani Corporis Fabrica Libri Septem”. Basel, 1555.

Usually starting with a picture of a beautiful young woman in the prime of life, these narrative pictures then show the decay and decomposition of her corpse in nine stages: “fresh dead”, “blowing up”, “exudation of blood”, “putrefaction”, “discoloration and desiccation”, “consumption by animals and birds”, “dismemberment”, “dispersion of bones”, and “burial mound.”

Scrolls depicting dissections show striking similarities to these “pictures of the nine stages”. Sometimes even the dogs appear again, sniffing around the cadaver. Both types of depictions usually end with a calm landscape. With the growth of anatomical knowledge among Japanese physicians, this narrative character faded away, but dissection and art were closely related in Japan, as in Europe. In addition, some artists started their own explorations and created pictures of women being dissected by using information from anatomy books.
Final Remarks

At the end of the 18th century, many obstacles on the road to a new conception of the body were removed. The subsequent strides were remarkable. At least among adherents of Western medicine, the conceptual separation of body and soul had made considerable progress. Their diagnosis and therapy were no longer aimed exclusively at the patient as a whole, but instead were targeted at specific organs or specific sites in the body, differing from case to case. The canonization of the old texts was abandoned, inevitably leading to the notions of “progress” and “development” and the dynamization of theory and practice. Nineteenth-century dolls and popular prints that revealed the secrets of the human body in a mechanical and functional manner testify to the rapid spread of this novel way of seeing things among the general public as well.

This departure was at once an expression of and a stimulus to sociopolitical change. In the Edo period, the foundations were laid for the unprecedented modernization of the country that followed the opening-up of Japan in the mid-19th century. The pioneers who painstakingly groped their way forward in a difficult state of isolation deserve our respect, in medicine as in any other field.

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