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THE INFLUENCE OF WESTERN VISUAL ART
ON JAPANESE MEDICINE

by

Nelson W. Hee

B.F.A., California College of Arts and Crafts,
Oakland, 1973

THESIS

Submitted in partial satisfaction of the requirements for the degree of

MASTER OF ARTS

in

MEDICAL AND BIOLOGICAL ILLUSTRATION

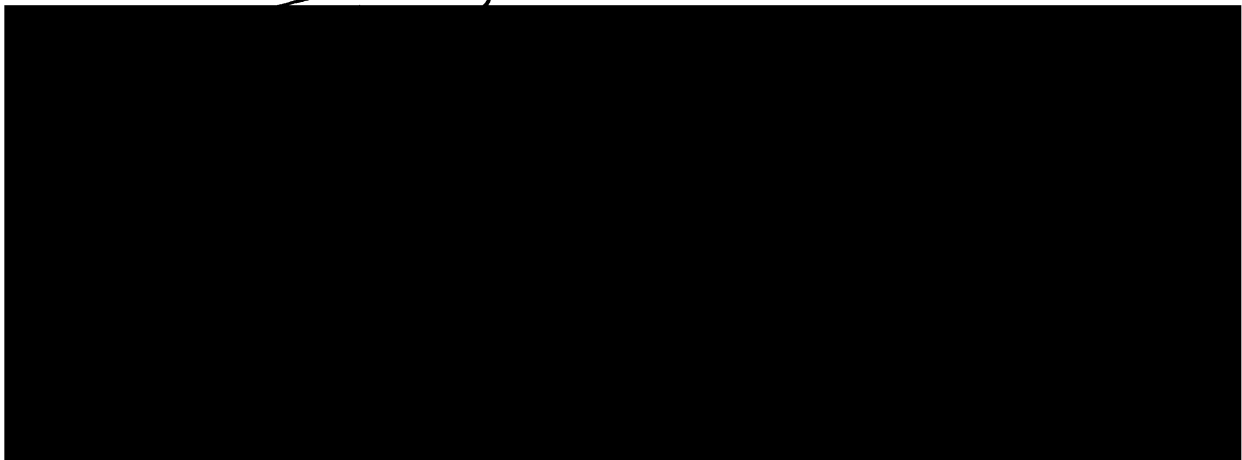
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"Works of art have been preserved and handed on from one generation to the next because the ideas that lie behind them are and always have been considered vital to the abundant life. Works of art are timeless pieces of currency for which ideas, ideals and aspirations have been exchanged for nearly thirty centuries."

Francis Taylor, Director
The Modern Museum of Art
New York City, New York
"The Taste of Angels"

ACKNOWLEDGEMENTS

I wish to thank Mrs. Atsumi Minami who is the librarian in charge of the Oriental Medicine Division at the University of California, San Francisco. I am very grateful for her patience, kindness and generosity in translating the scrolls and books for me; also for exposing me to a deeper understanding of my Asian ancestors.

I also wish to thank my parents and my sisters for their support and, more importantly, for offering me the best of two cultures.

Nelson W. Hee

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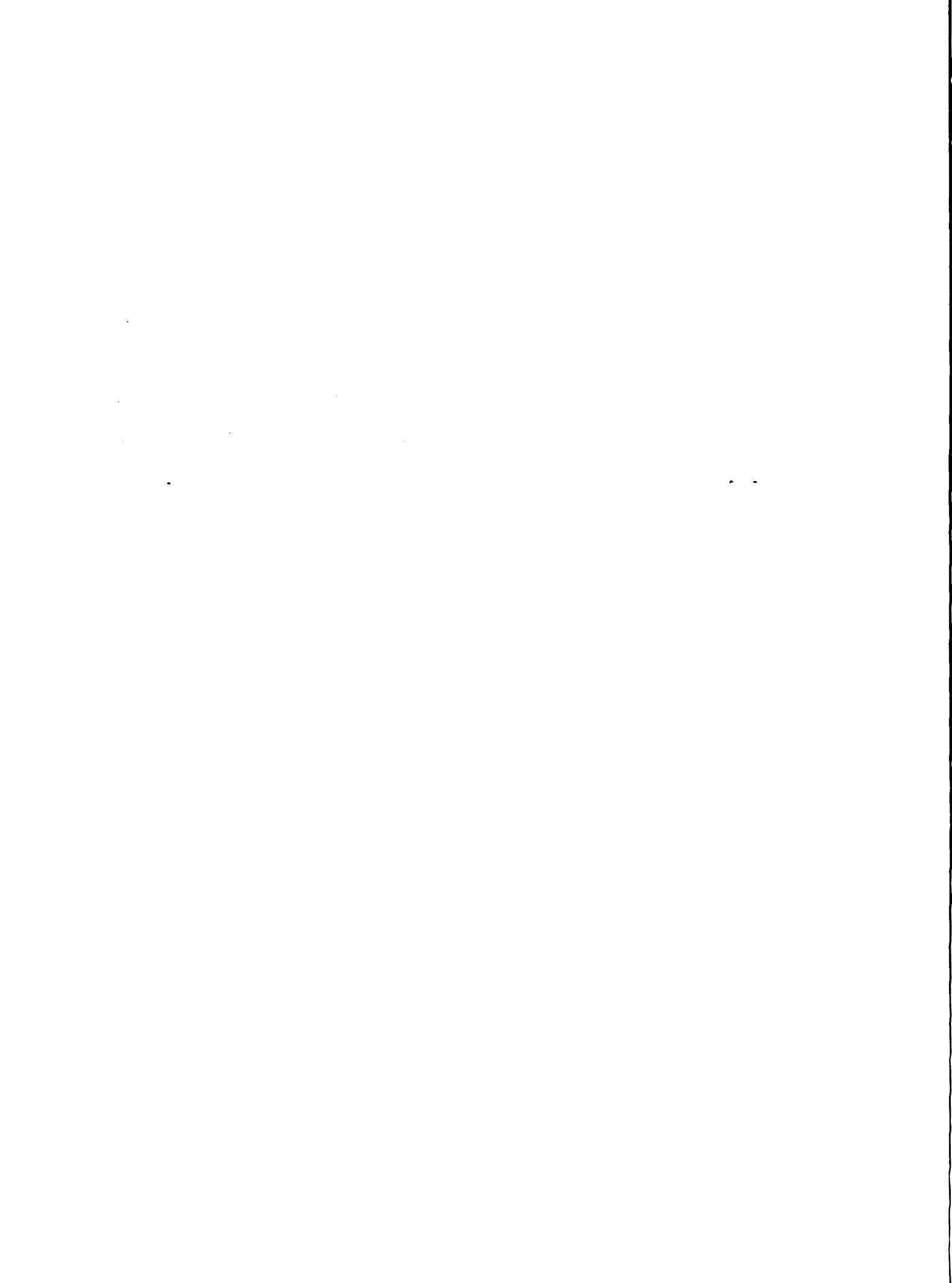
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THESIS STATEMENT

Through use of existing art, scrolls and translatable materials, this thesis will document the impact that Western visual art had in the modernization of Japan, especially within the fields of science and medicine, and will summarize the events and artists of the Tokugawa Period (1639-1854 A.D.) during which the impact was most noticeable.





PRE-TOKUGAWA PERIOD

To understand the transformation that took place in Japan, it will be helpful to summarize very briefly the historical events that led up to the Tokugawa Period.

Between the 2nd millenium and the birth of Christ, during the age in which China acquired its basic physiognomy, China was cut off from other high cultures. To the North and the West were the steppes, the desert and the mountains; these were obstacles to the Chinese peasantry. These regions, however, were inhabited by nomadic tribes unfriendly to the Chinese. To the East was the sea which the Chinese rarely attempted to voyage across. The South alone was a route of expansion. Thus, China slowly and uninterruptedly pushed southward until Southeast Asia was indoctrinated with the Chinese culture. From the Southeast, China pushed into India.

The self-confidence produced by China's cultural superiority was accentuated by China's proximity to less civilized people as well as by its isolation from other high cultures. Unrivaled, proud and refined during the Medieval Period, China infiltrated Korea and then the islands of Japan.

Much earlier in the Archaic Period, China came to know herself as CHUNG-KUO, "the middle kingdom". A classic book of documents, SHU-CHING, reflects this attitude in the poli-



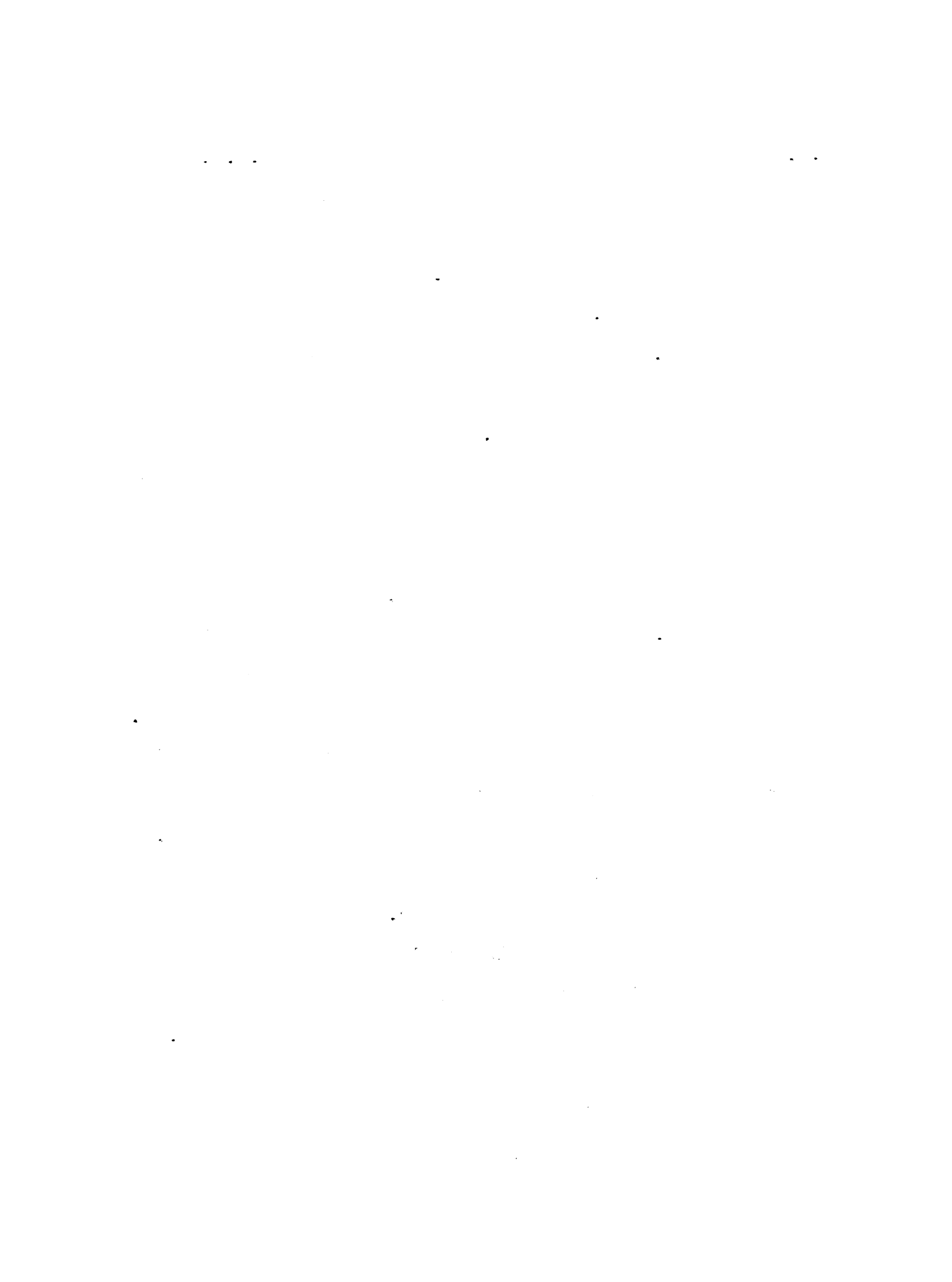
tical and social ethos of the Shang Dynasty (2nd millenium B.C.) as later mediated by Confucius (552-497 B.C.).

Described in SHU-CHING was the concept that lands inhabited by the Chinese were the world navel, the hub of the Universe and the home of all true culture. Anything outside was considered barbaric. The Great Wall was built to keep the barbarians out. When the Westerners arrived and ushered in the age of imperialism, they were also viewed by the Chinese as devils and barbarians.

This sense of living at the center of the world contributed to the development in the Far East of a centralized system of rule by an Emperor, believed to be the son of Heaven and imbued with supreme power. This also influenced urban planning. Thus, the palace was designed to sit in the middle of the city; and the city and the palace were planned in accordance with the directions of the Universe.

Politically, the feudal lords who owed their positions to the Emperor were dominant and their urban culture was transmitted directly to the remainder of the population. Later, this group was replaced by a hierarchically organized bureaucracy sworn to obey the Emperor.

The Eastern culture originated and centered in China but was passed "down" to the Koreans and the Japanese who, in turn, added modifications to fit their own cultures. Japan, isolated as a group of islands, assimilated the Chinese influence and created a culture distinguished from that of China in many ways. The various years of relative



receptiveness to foreign Chinese and Korean influences were followed by periodic Japanese isolation creating cultural introversion and self-sufficiency.

Between 200 B.C. and 500 A.D., through commercial intercourse with Korea, Chinese medicine slowly found its way into the Japanese archipelago. The Japanese, known for their mercenaries in the Orient, were defending the kingdom of Paikche in Korea against the kingdom of Silla which was the dominant of three provinces in Korea. The kingdom of Paikche in return for this protection paid tribute to Japan. During the 4th century, the king of Paikche sent envoys to Japan in hope of converting the Japanese to Buddhism. The chancellor of the Japanese Empire, Soga Iname, was the only one in the Imperial court to accept this new religion but that year an epidemic of measles broke out. The epidemic was viewed as a punishment by the angry gods and Buddhism was banished. But later when the Emperor's son, Yomei, succeeded to the throne, he became very ill. The Korean Buddhist priests, somewhat skilled in the art of Chinese medicine, set about to cure Emperor Yomei, thus to show the "power" of Buddhism. Yomei was cured and without giving up Shintoism, he showed the Imperial court that Buddhism could be accepted. Korean priests, utilizing the arts of healing, propagated Buddhism. The priests had a double function as priests and as physicians. Buddhism was accepted by the Imperial court of Japan circa 552 A.D.

Han Confucianism was also introduced into Japan by the

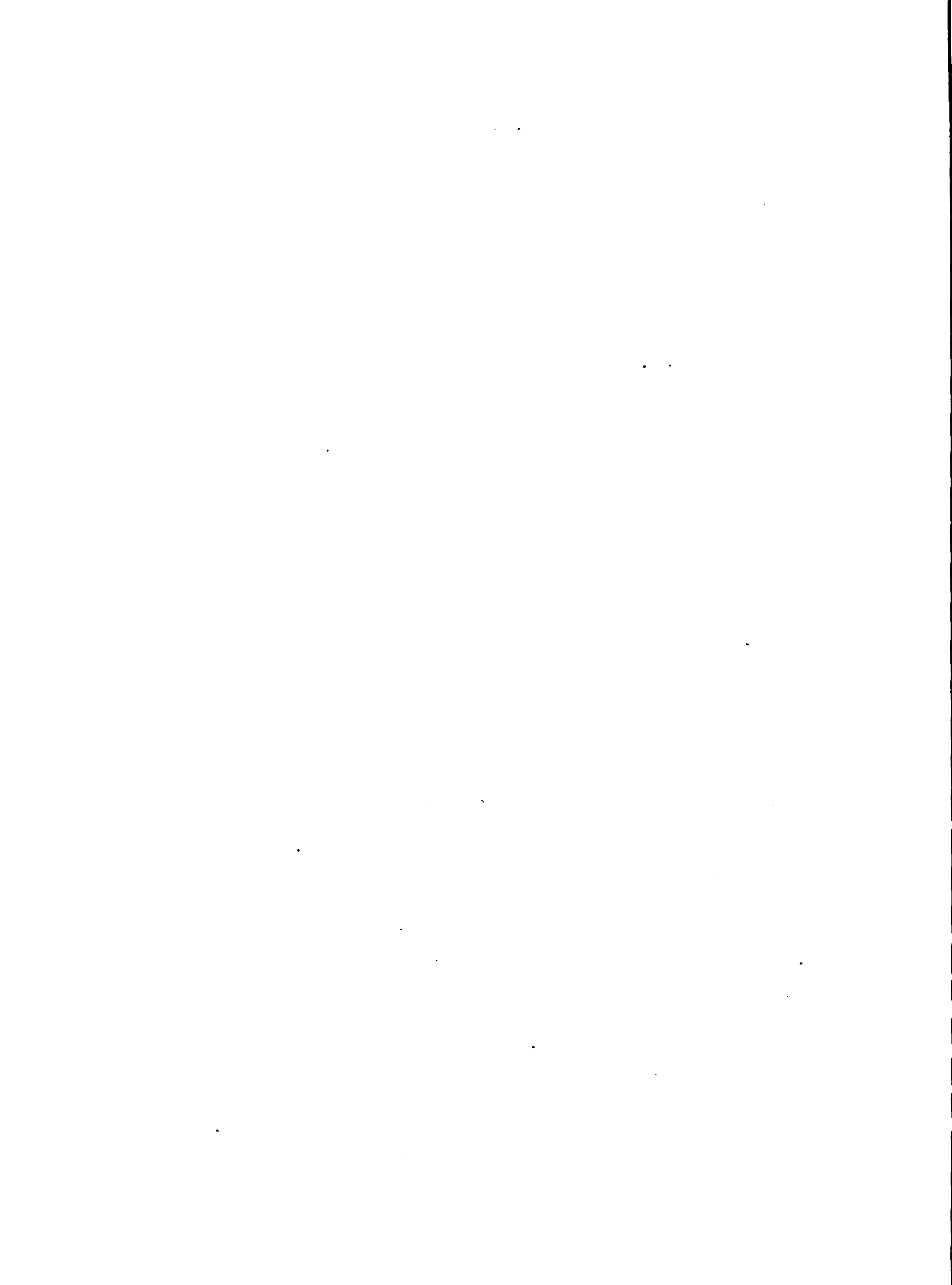


Korean Buddhists (c.404 A.D.) and through Chinese books of literature and philosophy, Chinese script was also introduced. But it would be at least 200 years until the Japanese would be able to read and write Chinese; thus, the Japanese for that period of time had to rely on the Koreans for interpretation of Chinese culture.

In 553 A.D., there was a recurrence of the measles epidemic and the Emperor, Kimmei, of Japan sent a request to the king of Paikche to send physicians. The king of Paikche dispatched one of his court physicians, Nasotsu Nurioda (Oyo-Ryoda), and two herbalists to seek medicinal plants in Japan. Later, this group was followed by more physicians who began instructing the Japanese on the art of healing.

As a result, Japanese scholars became increasingly interested in the Chinese texts brought from Korea and the ideas of Confucianism which they contained presented a system for regulating the relations of men according to beliefs in the fundamental forces of Nature and Society.

According to Confucianist teachings, the universe consisted of three realms: Heaven, Earth and Man between the two. The basis of all authority and order lay in Heaven and was demonstrated to Earth by the orderly movements of the sun, moon and the Five planets. A sovereign was a sovereign because of Heaven's will and good or ill fortune that befell a nation or an individual were determined by Heaven. It was the ruler's task to make sure that his domain was governed



in accordance with the pattern set by Heaven so that all were assured of balance and harmony. The calendar played an important role because unless the "time" were correct, the government on Earth would be out of step with the movements of Heaven.

Thus, in 604 A.D., Prince Shotoku established for Japan the "Seventeen Article Constitution" buttressing the position of a central government and emphasizing the duties of the people. Mencius (371-289 B.C.), a Chinese Confucianist wrote:

Some men use their minds while others use their muscles. He who uses his mind governs others, while he who uses his muscles is governed by others. He who is governed by others has the duty to feed others while he who governs others is fed by them. This is the principle of the world.¹

The number seventeen may have been derived from the combination of the largest YIN number, eight, and the largest YANG number, nine.

Because of the acceptance of Confucianist ideals, the Japanese also adopted the Chinese script which in turn opened new avenues to explore in the Chinese culture. In the quest for more information and a clearer understanding of things, the Japanese sent their first ambassador to China in 607 A.D. This gave the Japanese the opportunity to deal directly with the Chinese. China sent its artisans to Japan

¹Hane, trans., Studies in the Intellectual History of Tokugawa Japan by Masao Maruyama, (Princeton U. Press and U. of Tokyo Press, Tokyo, 1974), p. 9



to instruct the Imperial court on the esthetics of art shortly after this time. In 608 A.D., young Japanese scholars and physicians were sent to China to study the art of healing at first hand.

By 702 A.D. under the Code of Laws of the Taiho Era, medical schools were started. This offered the Japanese the benefit of increasing the numbers of Japanese physicians (decreasing their reliance on foreign doctors) and increasing their firsthand knowledge of medicine. There were basically two schools which taught general education as well as medicine: the DAIGAKU which was a university located within the Imperial court and the KOKUGAKU which latter were schools located within the various provinces. In the Daigaku, the sons of the Imperial court and the Shogunate were admitted. In the Kokugaku, the sons of the governors and the high provincial officials were admitted; also, within this provincial school, a small number of men were enrolled who had no social status but who were seriously interested and promising.

Confucianism encompassed the art of healing and therefore influenced the actions of the physician. Since Man was the highest manifestation of Heaven's activities, it was incumbent on him to live as closely as possible in harmony with Heaven. The art of healing, then, was a oneness with Nature and the Universe.

All of Creation, according to the teachings of Confucianism, came about through the WAY and unlike the Western

GOD, the Way was a power or a great energy rather than a supreme being. The Way (Tao) was divided into the Yin and Yang which constantly moved about each other maintaining all things in a constant flow through balance and harmony. From the Yin and Yang, came the Five Elements (water, fire, wood, metal and earth) of which all things were made. Thus, all things are moving in accordance with the pattern set by Heaven. Because of this concept, floods and other such disturbances or disasters were disturbances in the balance and harmony of the Yin and Yang. Man, who came about with the Universe and in its image, owed himself the harmony and balance of the Natural Forces. Man, by not behaving in harmony with the Universe, would upset the balance and the results would be disease and/or death. Thus, a function of the physician was not only to administer to the sick but to teach those who were not yet sick.

Medical treatment at this time was entirely external because Man was a microcosm of the macrocosm. Man could not be mutilated in any way because one could not defile Nature which would upset the harmony throughout the Universe.

Human anatomy and physiology were explained by analogy to the Universe and the Way. "Five" was an important number as it represented the Five Elements, the Five Modes of Music and the Five Planets (the planets seen at that time were Mercury, Venus, Mars, Jupiter and Saturn). The human body had five storing organs (liver, heart, spleen, lungs and kidneys) and five eliminating organs (stomach, large intestines, small intestines, urinary bladder and the gallbladder)



plus an imaginary organ divided into three and placed in the upper, middle and lower parts of the body called the "Three Burning Places". The organs were connected together by two kinds of vessels: blood and pneuma (soul). Man was the outcome of concourse between Heaven and Earth and achieved perfection through the Four Seasons. Therefore, the body had 365 parts, 12 main vessels and 12 pulse points (6 on each wrist, the left was Yin for females and the right was Yang for males) and the body had four limbs which was explained by the existence of the four seasons of the year. There were 360 joints in the human body representing the 360 degrees of the celestial positions.

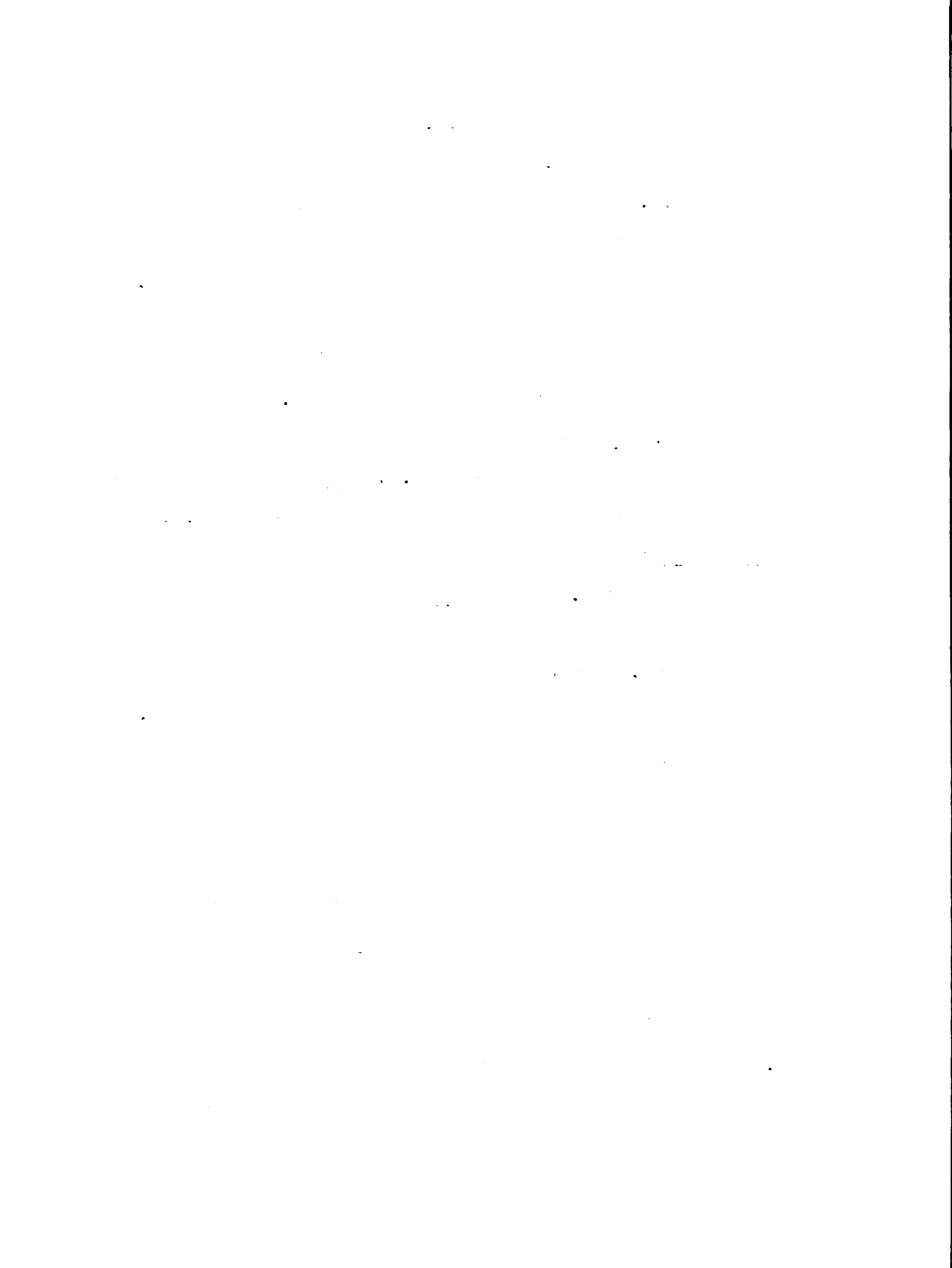
With this pattern, it was not surprising that the physicians had five methods of treatment: the Cure of Spirit (physicians advised the patient about the right way to live); the Nourishment of the Body (curing the imbalance through the use of the five tastes -- sweet, sour, bitter, pungent, and salty); the True Effects of Medicine (the use of an herbal pharmacopoeia); How to Combat Disorder of the Bowels (massage, evacuation of the bowels and elimination of water); and finally, Acupuncture and Moxibustion or Moxa (365 points on the body to which needles or burning herbs are applied to reach balance of energy flow).

Although Confucianism offered the ideal in political structure, Buddhism remained the leading faith in Japan because of its elaborate ritual practices. Pomp and ostentation were featured in the luxurious and cultivated court

of the Emperor during 709-794 A.D. and the Imperial house was devoted to Buddhism.

In 984 A.D., Yasuyori Tamba compiled abstracts from more than a hundred Chinese medical texts and wrote the Ishinho. This is the oldest Japanese text existing today. Some of the texts read by Japanese medical students were Confucianist books such as the Book on Filial Piety, the Analects and Classic of a Thousand Characters. The medical texts included: Tai-so-kiyo (an Indian Buddhist sutra) which was from the Sui Dynasty (596-618 A.D.), Mei-do-kiyo (Treatise on Acupuncture) from the Sung Dynasty (960-1278 A.D.) and Miya-ku-kiyo (Classics of the Pulse) which was also from the Sung Dynasty. The Ishinho not only made learning less difficult but also elaborated on the five treatments of the physician. The Japanese adapted the teachings of Chinese medicine into what was pertinent for the Japanese. Thus, the Ishinho contained the headings: General Medicine, Acupuncture, Diseases of the Pneuma, Diseases of the Intestines, Skin Diseases, Diseases of the Eyes, Ears and Teeth, Diseases of the Hands and Feet, Abscesses and Tumors, Wounds, Diseases of Children, Gynecology and Midwifery, Hygiene, Sexual Hygiene, Dietetics and Medicines.

Confucianism in the 10th and 11th centuries took a secondary position in Japan as Buddhism came to the forefront. Buddhism offered salvation to all men regardless of their station in life; of course, this was attractive especially in a time where uncertainty and continual warfare



existed. Buddhism dealt with the metaphysical whereas Confucianism was socially centered and humanistic.

Buddhism was the guardian of literary traditions; during this time, legends of Buddhist saints, folk tales and heroic romances were composed. The Buddhist teaching of transience of all earthly things appealed to the military lords to whom it offered the spiritual basis for knightly courage and fidelity.

Disorder and instability were the distinctive characteristics of Japan until the stable rule of the Tokugawa clan which brought unity and peace at the end of the 16th century. Thus, in the Pre-Tokugawa Period, Buddhism offered the only true "peace" as its reward was not earthly but spiritual salvation.

During the first half of the 13th century, Zen Buddhism was brought into Japan from Sung China. Zen became the motivational force for Japan in terms of the further development of art and the Japanese civilization as a whole.

Zen was the basis of a new style which affected many aspects of Art. The most memorable was monochrome ink painting. Unlike the art of the earlier periods, the ink lines in these paintings suggested form and shape due to the varying widths of the lines themselves and also, a real sense of emotion attributed to the expressiveness and the concentration on the direction of the brushstrokes. This style greatly enhanced the concept of capturing the "essence" of a thing. Esthetics were the mark of spiritual progress.



The portraiture of the Zen masters was a special category of Zen painting. These portraits strove to convey the living presence of the masters and were presented to students of Zen as a symbol of spiritual progress. The faces of the masters were depicted realistically while the rest of the portrait was done in the conventional manner. The student honored by this painting would then practice meditation before the portrait as if the master were present.

Narrative scrolls during the Kamakura Period (1192-1338 A.D.) were also enjoyed. Painters in the monasteries directed their work toward the public attempting to awaken in the masses the need for salvation. These painters depicted terrifying pictures of illness, suffering and hellish torments in addition to scenes from the lives of famous monks. On the other hand, the court painters were drawn to depicting the turbulence and heroic romances of daily life and illustrated poetic works and novels of the period.

Although wars raged during the fourteenth, fifteenth and sixteenth centuries, surprisingly the contribution to art continued. The ruling Ashikaga clan (1338-1573 A.D.) became the patrons of art, being indifferent rulers and removed from territorial wars. Because of their influence in the arts, various aspects of a cultural and aristocratic way of life were elaborated. This climate nourished the No drama which was a mixture of Zen and theater. The Buddhist spirit of withdrawal from the world was evident in the No drama in that the main characters in the plays wore masks

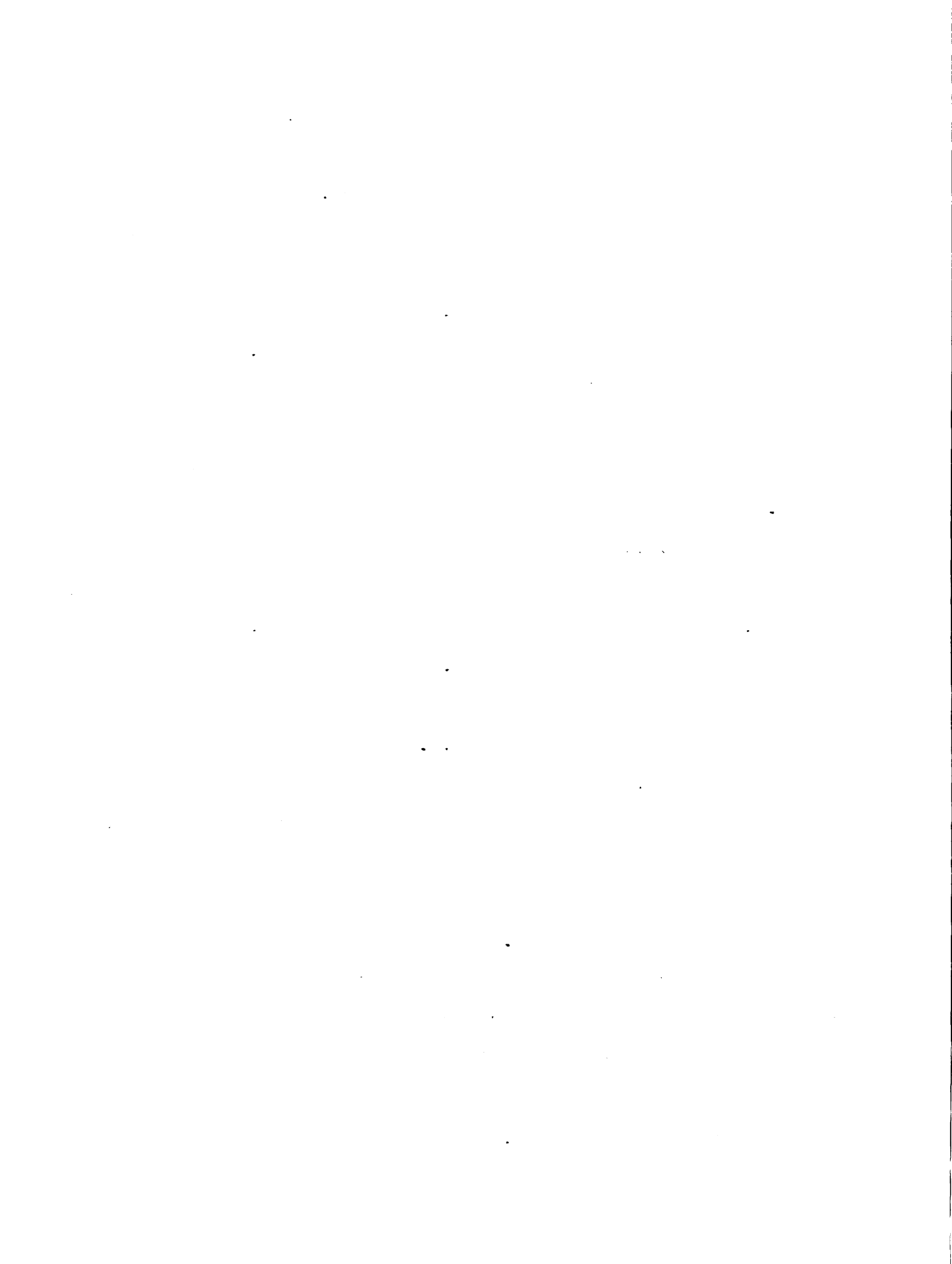


reducing them to types instead of real people. Also exemplary of simplicity in art, the tea ceremony and the art of flower arrangement took shape in the 15th century.

Zen monasteries were becoming the true centers of spiritual life and Zen influence deeply affected the structure of the Japanese life and society. Poetry and poetic theory were shaped by Zen as was the art of landscaping. Kare-sanzui (dry-landscaping) made up of selected stones and beds of raked pebbles fittingly compared with the ink paintings in representing an abstraction of Nature done by simple means.

In 1542 A.D., Portuguese sailors were shipwrecked on the island of Tanegashima (southeast of Kyushu) during a typhoon. They were the first Europeans in Japan. The Japanese were at war with one another. The shipwrecked Portuguese under the command of Fernao Mendez Pinto were equipped with firearms which were soon (1545 A.D.) adopted by the army of the Nobunga clan; thus, the Nobunga army achieved superiority over the other armies through the use of modern weaponry.

By 1549, trade was established with the Portuguese and by 1599, Portuguese merchants had been followed by Spanish, Dutch and English merchants. The Shogun and the daimyos traded for guns, medical knowledge (with the first Portuguese, one can assume that there was a ship doctor who may have practiced his art in Japan), instruments of navigation and eventually other knowledge to satisfy growing Japanese interest in the natural sciences.



With the arrival of the first Europeans, European religion also appeared. In 1594, Father Francisco Xavier, a Jesuit, arrived in Kagoshima, Kyushu with a Japanese disciple. From Kagoshima, Christianity began to spread towards the north. Christianity converted many of the common people and soon appeared among the provincial officials. In 1582, Japanese Christian envoys were sent to Europe by various daimyos of Kyushu. They arrived in Rome in 1585 to meet with Pope Gregory XIII. When they returned to Japan in 1591, they were granted audience with Toyotomi Hideyoshi. During 1587, however, in their absence, the shogunate had become suspicious of the motives of the foreigners, the spread of Christianity and the possibility of the shogunate losing power. Therefore, Emperor Hideyoshi issued an order for the expulsion of the Jesuits from Japan.

This order to exile the Jesuits was unheeded and by 1591, the Jesuits had set up a printing press in Nagasaki. Catechisms were printed and also Japanese dictionaries and grammar books. These books were printed utilizing the Roman letters as well as the Japanese. Because his orders were not followed and indignant about the Spanish Jesuits still propagating Christianity, Hideyoshi flew into a violent rage and as a result, in 1596 A.D., at his command, twenty-six Jesuit missionaries were crucified in Nagasaki.

With the death of Toyotomi Hideyoshi in 1598, the guardian of Hideyoshi's son, Tokugawa Ieyasu, being no less powerful than Hideyoshi, made himself regent. In 1603 with power



over the Toyotomi clan, Ieyasu was confirmed Shogun and with him began two and a half centuries of peace for Japan. This period became known as the Tokugawa Period. Under Ieyasu, the feudal system was strictly contained including close supervision over the daimyos. The feudal system had originated in 1588 wherein Ieyasu's predecessor, Hideyoshi, had prohibited the peasants from possessing arms and swords. Since the samurais were superior and were armed to keep the peace, law was the basis of social order. The Tenno (emperor) was reduced even more than before to a ceremonial figurehead. The government was strongly centralized under the Tokugawa Shogun and this central government was moved to Edo (Tokyo) which also gives its name to this period. People in Japan were rigidly divided into four classes: samurais, peasants, artisans, and merchants. The heirarchical order from samurai to merchant reflects the heirarchy of political power which existed until the end of the Tokugawa Period.

THE TOKUGAWA PERIOD:

The Birth of Modern Science through Art

The Tokugawa Period is considered by historians as the beginning of the Modern Era in Japan. The Tokugawa Period involved a vigorous reorganization of Japan's national life as well as its initiation into an active role in the modern world.

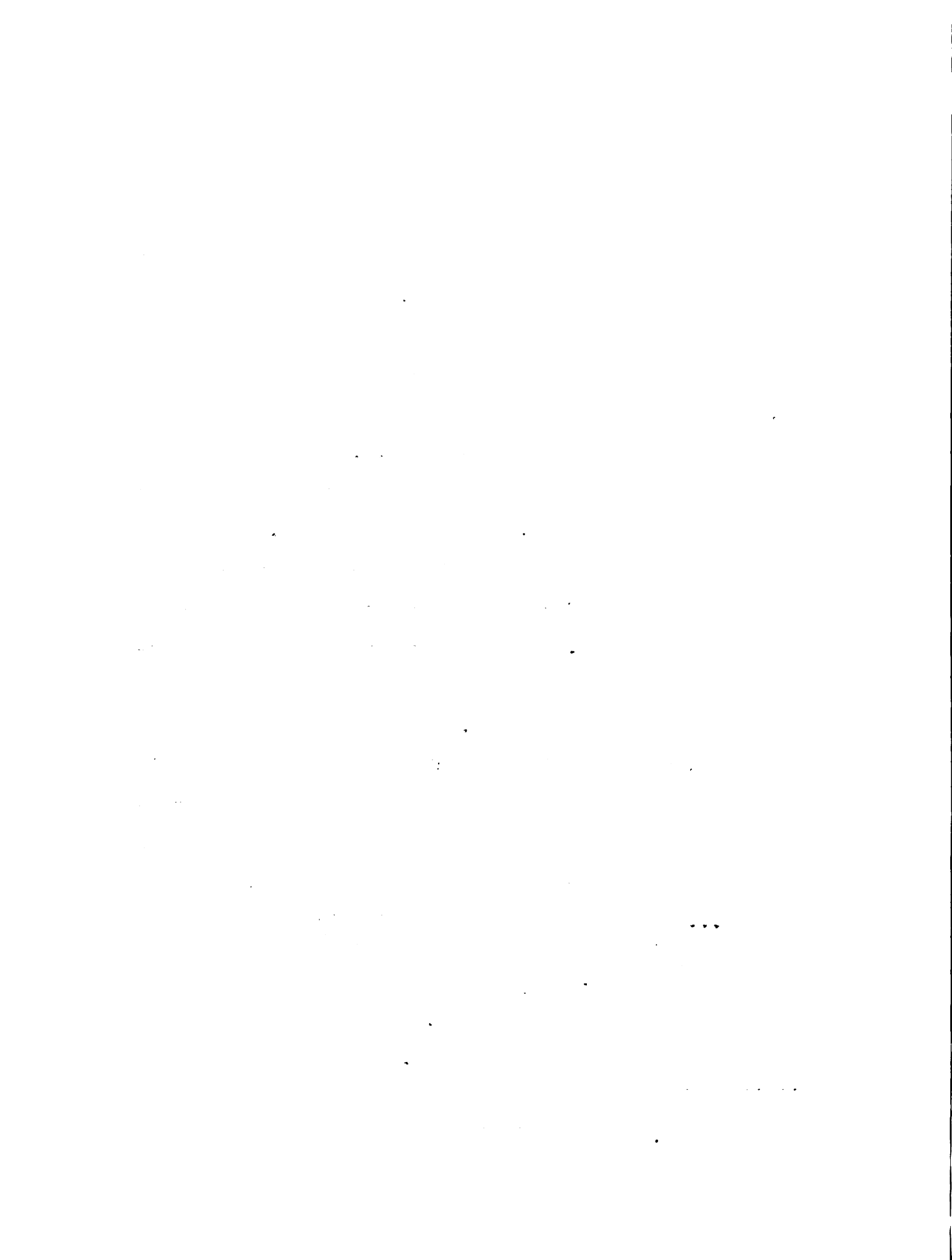
When Tokugawa Ieyasu (1542-1616 A.D.) became Shogun in 1603, he welcomed Christianity and encouraged foreign trade with the Dutch, Portuguese, Spanish and English.

The Tokugawa government sought peace for the nation and turned towards Confucianism which devoted itself to social order and peace. Confucianism was the secular ideology that would confirm their rule and thus, began the Golden Age of Confucianism in Japan.

In 1610, as recorded by Hayashi Razan who was Ieyasu's advisor on government reorganization, ceremonies and learning, Ieyasu was looking for an effective way to keep peace. He believed he could do this through Confucianism:

...if the Way of human morality is not understood, society will be chaotic, the nation will not be at peace and disorders will never cease. To bring forth an understanding of the principles of the Way, there is no better means than books. The printing and diffusion of books is the most important task of a benevolent government.²

²Smith, Confucianism in Modern Japan, (Hokuseido Press, Tokyo, 1973) p. 10

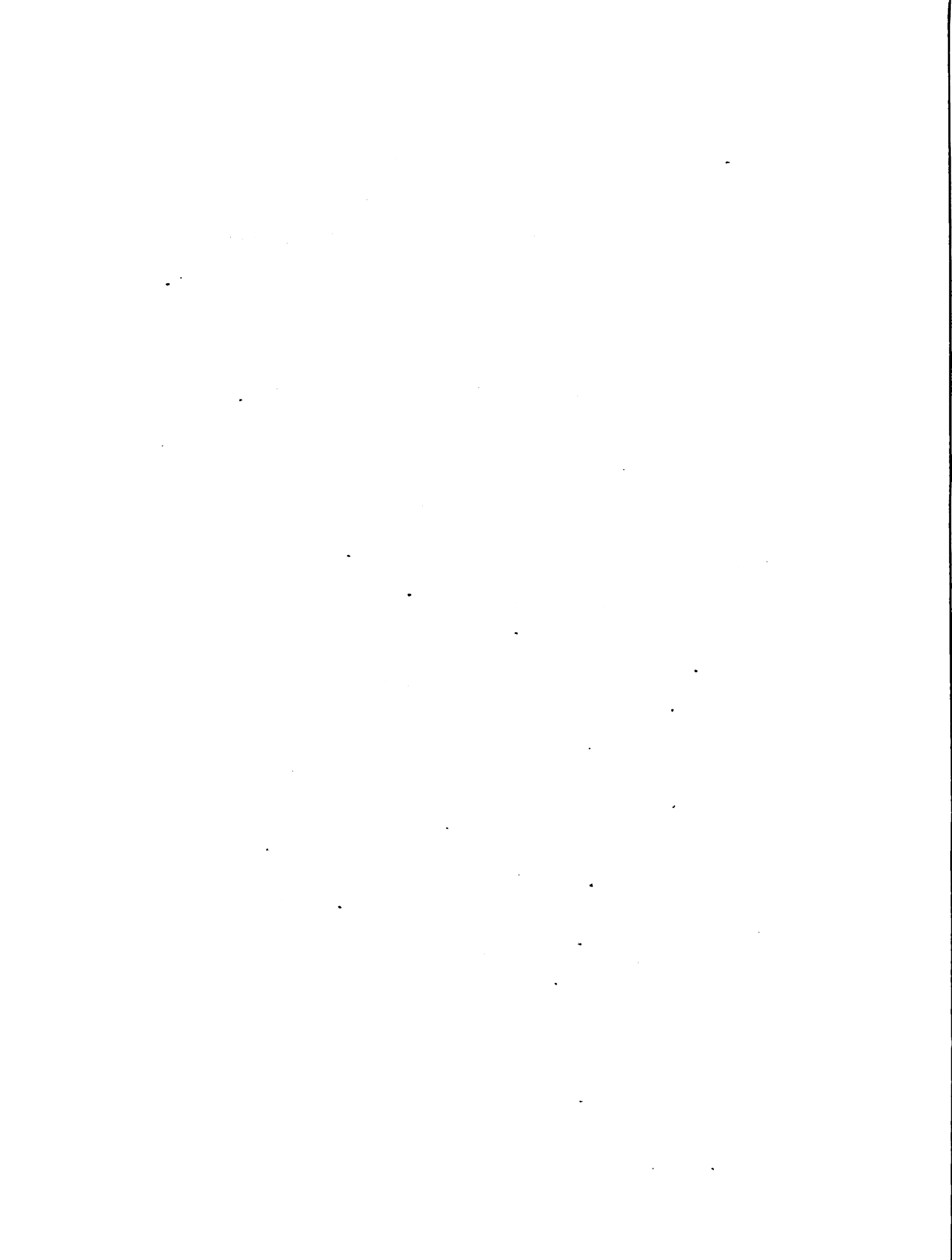


In this way, Ieyasu became the founder of Neo-Confucianism in Japan. His plan for a stable government was based on the Five Relationships of Confucianism which gave the order between Heaven and the lord, lord and subject, husband and wife, father and son, elder brother and younger brother. This concept was advantageous to the superior persons who had all rights and no duties and disadvantageous to the inferior persons who had no rights and all duties. The path to a stable government was also found in the Confucian Book of Great Learning:

The ancients who wished to illustrate illustrious virtue throughout the kingdom, first ordered well their own states. Wishing to order well their own states, they first regulated their families. Wishing to regulate their families, they first cultivated their persons. Wishing to cultivate their persons, they first rectified their hearts. Wishing to rectify their hearts, they first sought to be sincere in their thoughts. Wishing to be sincere in their thoughts, they first extended to the utmost their knowledge. Such an extension of knowledge lay in the investigation of things. Things being investigated, knowledge became complete. Their knowledge being complete, their thoughts were sincere. Their thoughts being sincere, their hearts were rectified. Their hearts being rectified, their persons were cultivated. Their persons being cultivated, their families were regulated. Their families being regulated, their states were rightly governed. Their states being rightly governed, the whole kingdom was made tranquil and happy.³

In 1614, Ieyasu had second thoughts about Christianity and ordered the exile of the principal Christians to the Phillipines and Macao. During this time, the Jesuit press

³Ibid., p. 13

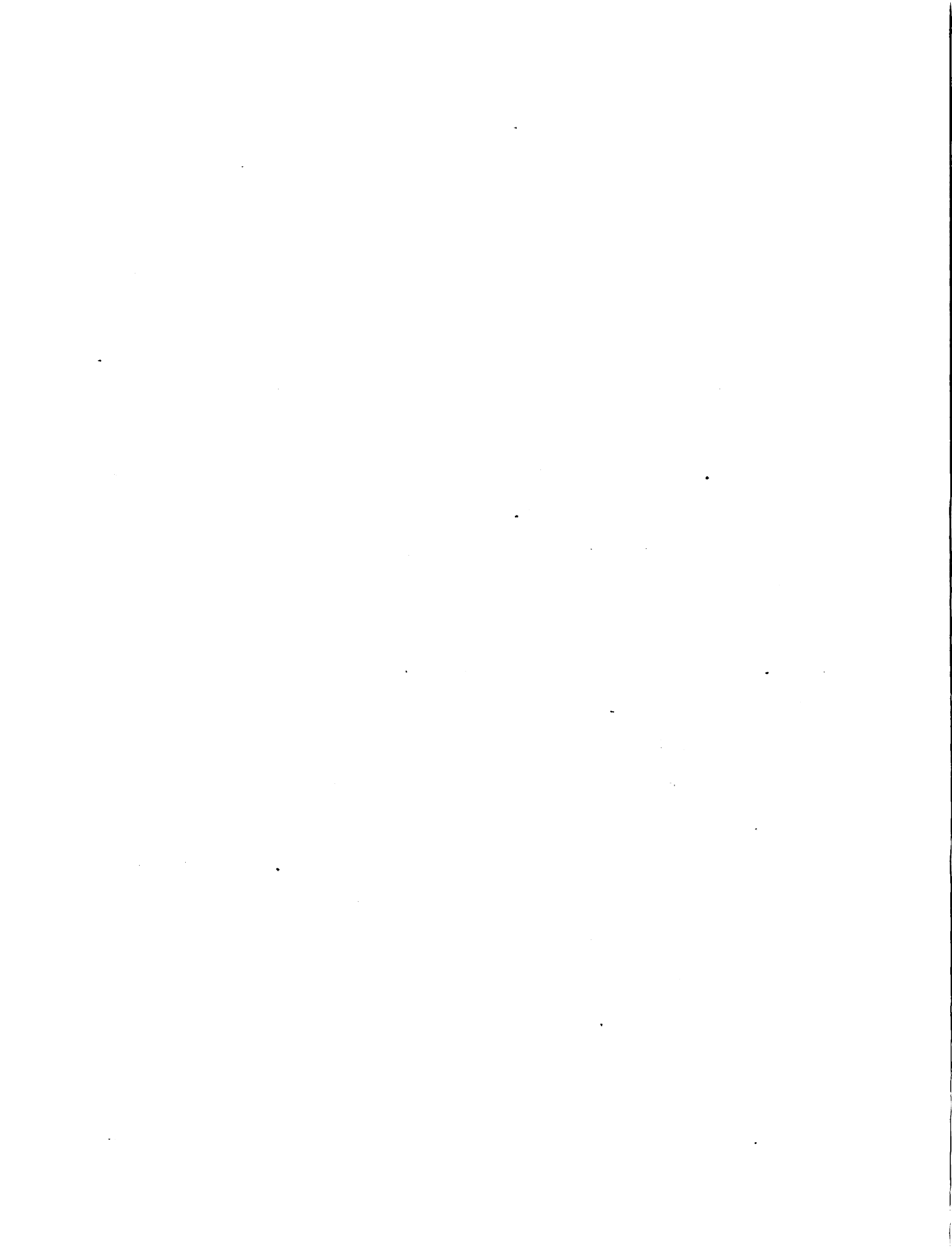


in Nagasaki was dismantled. In 1618, Hidetada, Ieyasu's son, prohibited Japanese trade with the Europeans. He ordered his retainer, Ibi Hanzaemon, to Europe to investigate Christianity and he believed his suspicions were well founded when Hanzaemon reported that the Christians couldn't even agree among themselves - the Spanish and the Portuguese were Catholics and the English and the Dutch were Protestants. Hanzaemon's report convinced Hidetada that Christianity was dangerous to Japan and he became determined to quell it completely. By Hidetada's orders, during 1622, many missionaries were burned to death.

Finding that business was poor, the English closed the British East India Company in 1623 and in 1624, the third Shogun, Tokugawa Iemitsu, forbade the Spaniards access to Japan. The only Europeans remaining in Japan were the Dutch and the Portuguese.

In 1633, the capitan (director) of the Dutch factory (Dutch East India Company) was required to pay homage to the Shogun. The Dutch entourage which included a doctor stayed at the Nagasakiya hotel in Honkokucho near Edo. The Japanese at Edo were required to have permits to talk to the Dutch but upon receiving these permits, they (particularly physicians) were allowed to mix freely and to make inquiries through translators.

By order of Shogun Iemitsu in 1634, all foreigners were required to live in Deshima, a manmade island in Nagasaki harbor. Included in the edict was the decree that all Japan-



ese were forbidden to travel abroad and those already abroad were forbidden to return. Conversion to Christianity was prohibited.

Because of this edict prohibiting oversea adventures, shipbuilding in Japan came to a halt and in due time, Japan lost its knowledge of seamanship and naval power. The fear of Christianity by the shogunate led to riots by the Japanese Christians. In 1637, during the riot of the last Christian stronghold on Shimabara (a peninsula), tens of thousands of Japanese Christians were slaughtered at the Shimabara Castle. The Dutch gained the favor of the Japanese government by lending their artillery to the government forces at Shimabara. The Dutch had verified that, unlike the proselytizing Portuguese, they were in Japan for trade. In 1639, the Portuguese were expelled and the Dutch moved to Deshima.

Although the Christians were virtually extinct in Japan, it was through Christian art that Japan would indirectly discover modern science. When Father Francisco Xavier arrived in 1549, he had brought with him an oil painting of the Virgin and the Child. As time went on, the Japanese Christian demand for religious paintings could not be met by the European sources and thus, the Japanese Christians at the seminaries established in Japan became the sources for religious art. (Fig. 1) Almost certainly, European painters were imported to instruct the Japanese the style of Western painting. For example, Giovanni Nicolao, an Italian painter, was brought to Japan and Western painting was taught to the

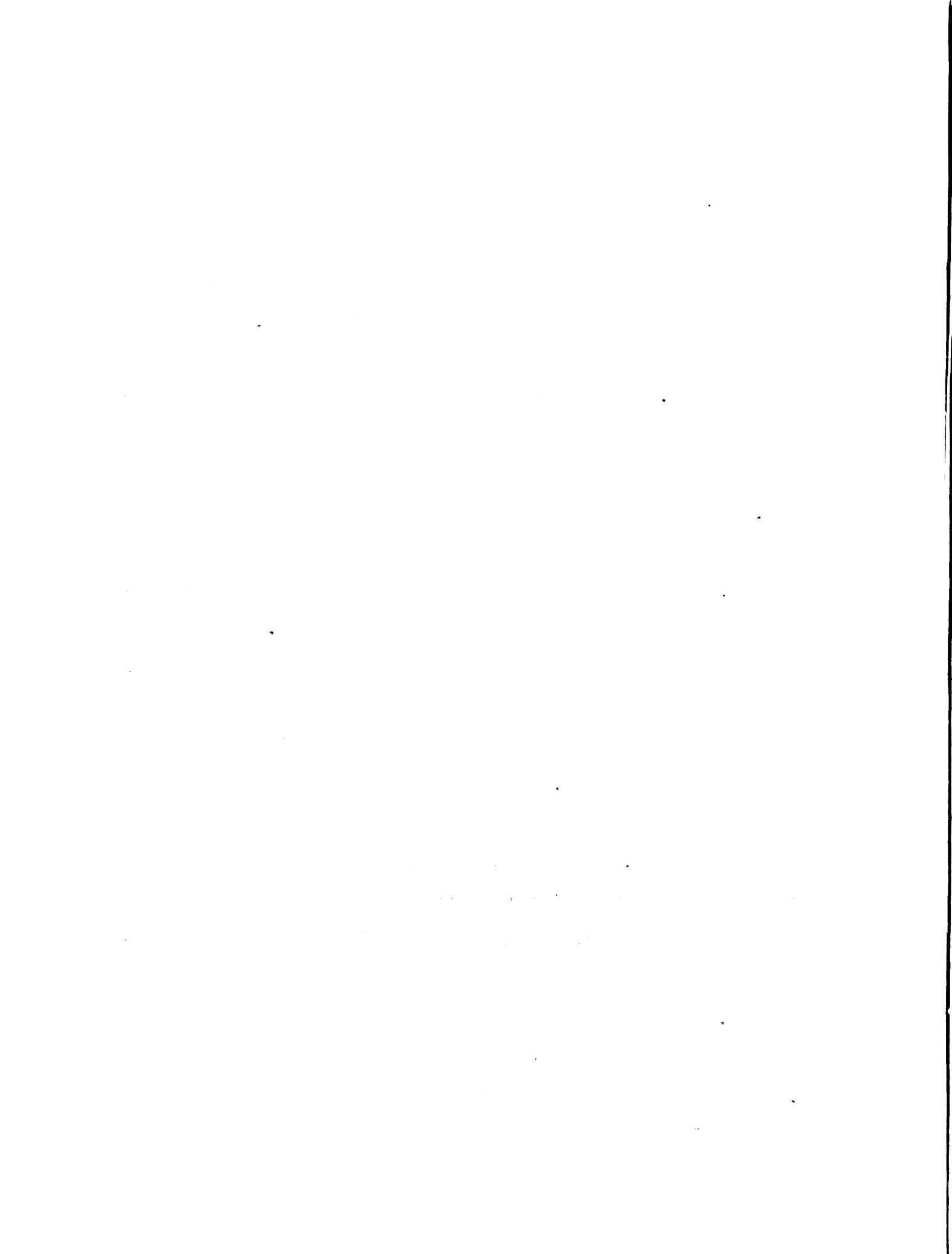




Figure 1 Japanese copy of a "St. Francis" painting from Europe



Figure 2 Namban byōbu depicting a European ship, Europeans and a Japanese Christian church

Japanese at the Seminario in Hachirao, Kyushu. This art instruction was mainly to train Japanese artists to reproduce the Western "originals".

Fortunately, the technique of Western painting eventually made its way north to Kyoto. The artists of the Kano school were influenced by this style. The Kano school taught traditional art in the Chinese academic style and was supported by the military rulers. The techniques of Western painting were also incorporated into the Japanese painting style on non-religious themes. This form of art called NAMBAN-GA depicted European subjects on screens (byobu); thus, most characteristic of this curious hybrid of art were the "namban byobu" which showed a Christian church, European ships and some aspects of trading. (Fig. 2) The name "namban" means "southern barbarian" as the Portuguese had come from the south. The nambanga approach (although depicting scenery similar to old forms of Japanese art) was a strange form in which the foreground depicting Europeans would be painted with European oils while the backgrounds were done with Japanese oils. These namban artists also used colors of lapis lazuli, gold leaf and malachite. The paintings accurately depicted European costumes, ships and churches utilizing the Chinese imaginary way of depiction and the typical Asian strength of lines drawn by a brush.

In May of 1641, the Dutch moved their trading to Deshima in Nagasaki Bay. (see Figs. 3&4) This was a tiny island created for the traders who, by this time, were only the





Figure 4. Map of Deshima in Nagasaki Bay (detail from a map of Nagasaki harbor)

Dutch, perhaps a dozen in number. With no threat of Christianity from the Dutch, the shogunate received an annual report translated into Japanese of the movements abroad by the Capitan of the Dutch factory. The Japanese scholars in Edo anxiously awaited this homage although because of translation difficulties, the information received was often loose and fragmented.

Nagasaki and Edo were the primary centers of Western learning in Japan. This intellectual intercourse, initially, centered about geography, navigation, mathematics, astronomy (comets and meteors), maps and globes. The Japanese made maps and globes depicting races; the nationalities depicted other than Japanese, Chinese, Portuguese, Dutch and American Indian often suffered from the absence of life models and were based on myths and imported Dutch pictures. (Fig. 5) Eventually, Dutch art styles became incorporated into Japanese art and this new hybrid was called KOMO-GA which meant "red hair" pictures since "all Dutchmen" had red hair like the "demons" depicted in Chinese paintings.

The namban-ga and komo-ga were the beginnings of the realization of Western art in Japan but maintained in the same style as Japanese traditional art. Perspective and shading, present in Western paintings, had not yet made any impact on the art of the Japanese. Much later a small group of scholars and artists secretly studied this form of "realism". This group of scholars and artists whose interests lay in anything Dutch, studied the Dutch language, books and art. They justified this study on the grounds of Neo-

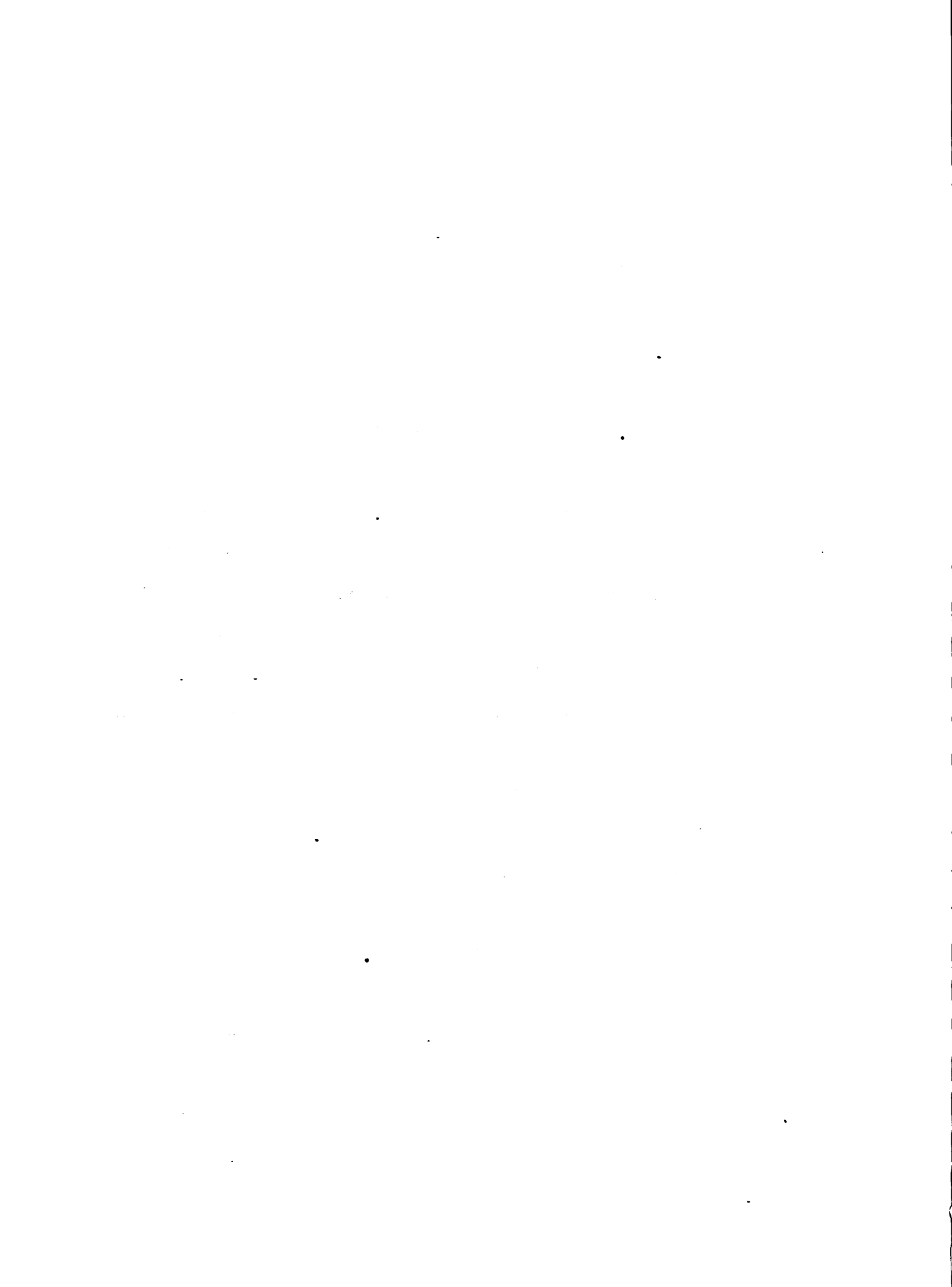




Figure 5. Detail showing Japanese illustrations of the nationalities

Confucianist emphasis on learning the practicality of things for the betterment of the Japanese Empire. The group became known as the RANGAKU-SHA (scholars of Dutch studies). The name came from "Oranda" which was the name for Holland; thus, the study of Dutch things was named RAN-GA.

Because of Neo-Confucianism, all of the cultural and intellectual exchange was maintained within the court of the Shogun and never reached the rest of the population. Most of the scholars and artists were of the Samurai class who, as such, had access to this information gained during the annual Dutch homage to Edo or by securing a pass to go directly to Nagasaki to interrogate the Dutch. The Rangaku-sha sought information that was science related to enhance their understanding of the Universe. They were not interested in becoming Westernized since surely these "barbarians" could not possibly understand the Way (Tao). The Dutch were unlike anything the Japanese had seen before and appeared to be the demons described in their ancient books. The Dutch were likened to animals by some who had observed that the "Dutch urinated raising one leg like dogs!"⁴ Thus, the rangaku-sha enlightened by the inventions and ideas of the Dutch were by far the minority.

Living in the confines of Deshima wasn't enjoyed by the Dutch who found themselves as virtual prisoners. Fortunately, there were several consolations as the Japanese were

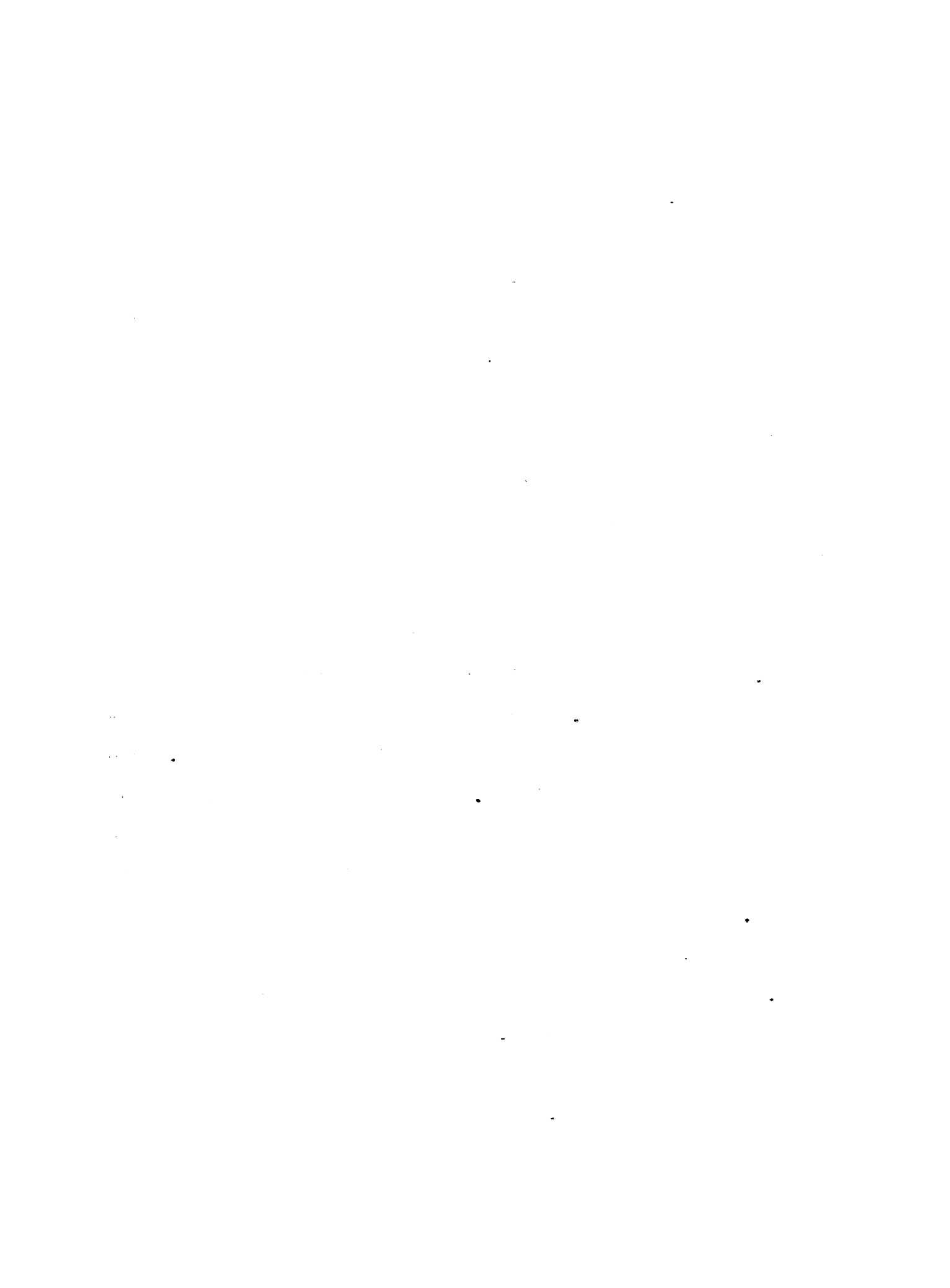
⁴Keene, The Japanese Discovery of Europe, 1720-1830, (Stanford Univ. Press, California, 1952), p. 17



polite and housekeepers, food, translators and even concubines were supplied by the Japanese government although at a small price. While the majority of the Dutch found their time in Japan unrewarding, there was a group of men who found Japan to be exciting. The latter wrote of their life in Japan creating a somewhat improved European understanding of their Asian neighbors. The best known of these men were the Capitans and the medical doctors who served in Japan: Jan Crans, Engelbert Kaempfer and Philip Franz von Siebold, to mention a few.

Many of the aristocratic intellectuals of Japan maintained that very few things could be learned from the Dutch but these same persons were very curious when presented with inventions that were given by the Dutch as tribute to the Shogun. These inventions included such things as telescopes, compasses and watches. Also the Dutch presented to the Shogun books on such subjects as life sciences, astronomy, geography, weaponry and medicine. Unfortunately, these inventions and books were conversation pieces only in the shogunate and among wealthy dilettantes who wished to impress their friends.

By 1670, a few Japanese were beginning to read and speak Dutch. These Japanese guarded their knowledge of the Dutch language as a family secret. Therefore, it was very difficult for others who wished to gain new insight by absorbing knowledge of Dutch ways. The earliest Japanese dealings with the Dutch had been in Portuguese but with the banish-



ment of the Portuguese that language lost its importance. The first privileged Japanese to undertake the assignment of learning the Dutch language were the Japanese interpreters who previously had been the Portuguese translators. Unfortunately, these interpreters gained their positions through inheritance and their understanding of the Dutch language varied greatly. Their competence was unimpressive and, in fact, even after being in constant contact with the Dutch in Nagasaki, these interpreters barely knew the Dutch language. The Dutch traders tried to aid these interpreters and would write information in Chinese beside the Dutch original but the Chinese copy was so poor that the Japanese had to know Dutch to understand the Chinese communication! Truly, the problem was not just learning another language with a totally dissimilar grammar but also coping with subtleties of the language and with Dutch consonants and vowels; all of this without the use of dictionary, grammar books or competent teachers!

The History of Western Medicine in Japan is somewhat sketchy. With the arrival of the first Europeans, the Japanese apparently came in contact with the ship doctors (and missionaries trained in medicine) and had required their services at one point. (Fig. 6) Japanese physicians became interested in European medicine since the only medicine the Japanese physicians were acquainted with derived from Tang China (618-906 A.D.). Western medical concepts were incorporated into the Japanese forms of practice and remained only as additions to the practice of external medicine.

Several schools taught what was called NAMBAN-RYU (Western Medicine). Some of these were founded by interpreters of the Portuguese such as the Nishi school founded by Nishi Kichibei, an interpreter; others were incorporated into the traditional and influential schools of Japanese Medicine such as the Katsuragawa school which contributed many physicians to the high court. There were only a half dozen schools of Namban-ryu. Most of them were started by Japanese, only one is said to have been founded by a European. This was the Casper school. Presumably, in 1643, a Dutch ship in distress came into Yamada Bay in the province of Nanbu and on board was a ship physician by the name of Casper. Casper was said to be detained by the Shogun for four years to instruct the Japanese in the art of surgery. According to the European historical records, there was no one by the name of "Casper" aboard that particular ship. However, in 1650, there was a physician named Casper Schaemburger who arrived in Japan with the Dutch merchants and was detained in Edo for eleven months by the Shogun for the purpose of teaching surgery to the court physicians. (Fig. 7)

Throughout this commercial intercourse with the Dutch and the homage in the spring each year to Edo, the Shogun acquired quite a collection of European gadgets and books. Unfortunately, these objects and books were stored within the confines of the court and were rarely seen except during the annual visits by the Dutch. In 1659, the Kruydt-Boek (Book on Botany, Antwerp, 1644) by Rembertus Dodoneus was

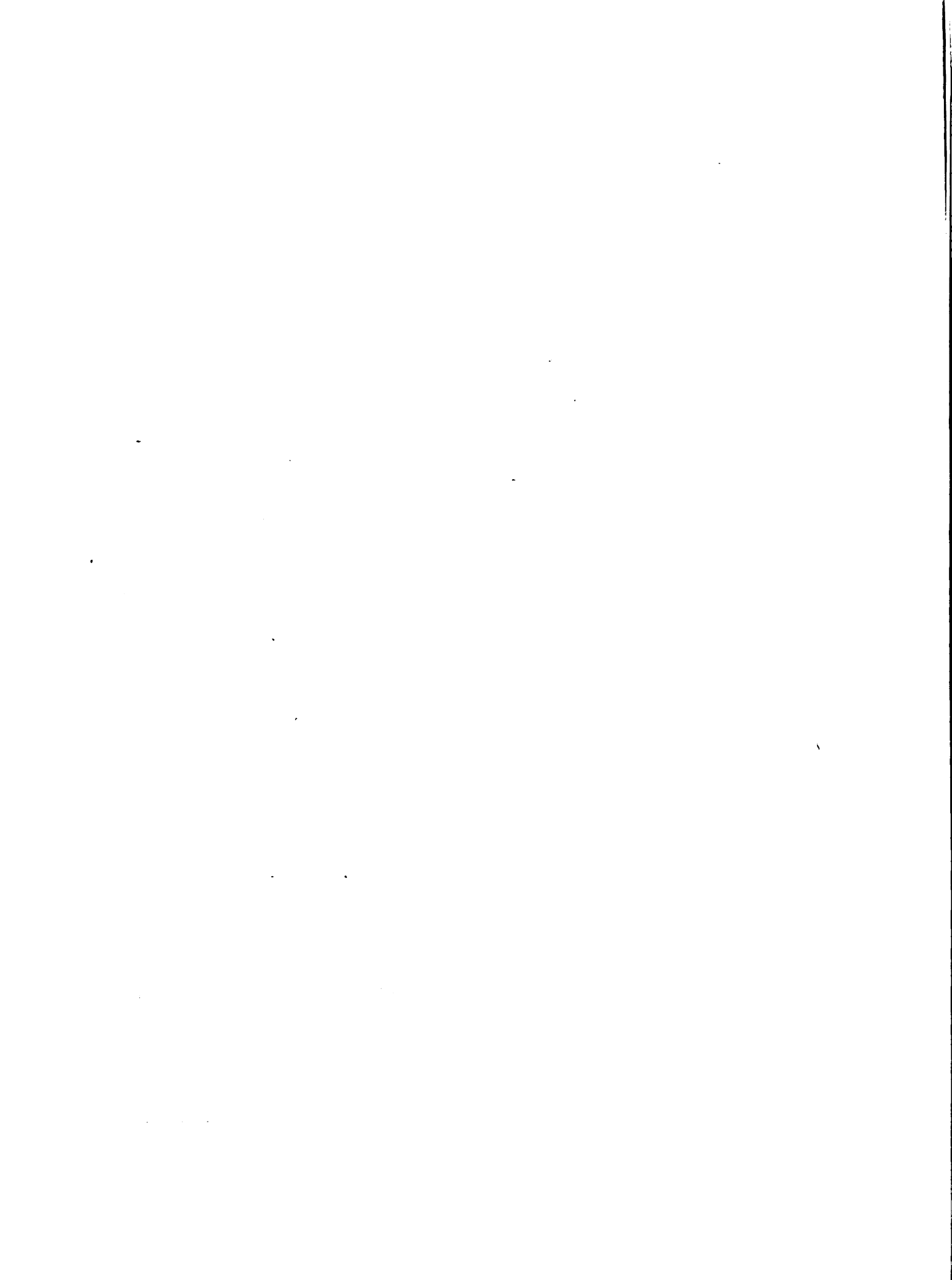




Figure 7. Japanese court physician performing minor surgery on his lord's arm.

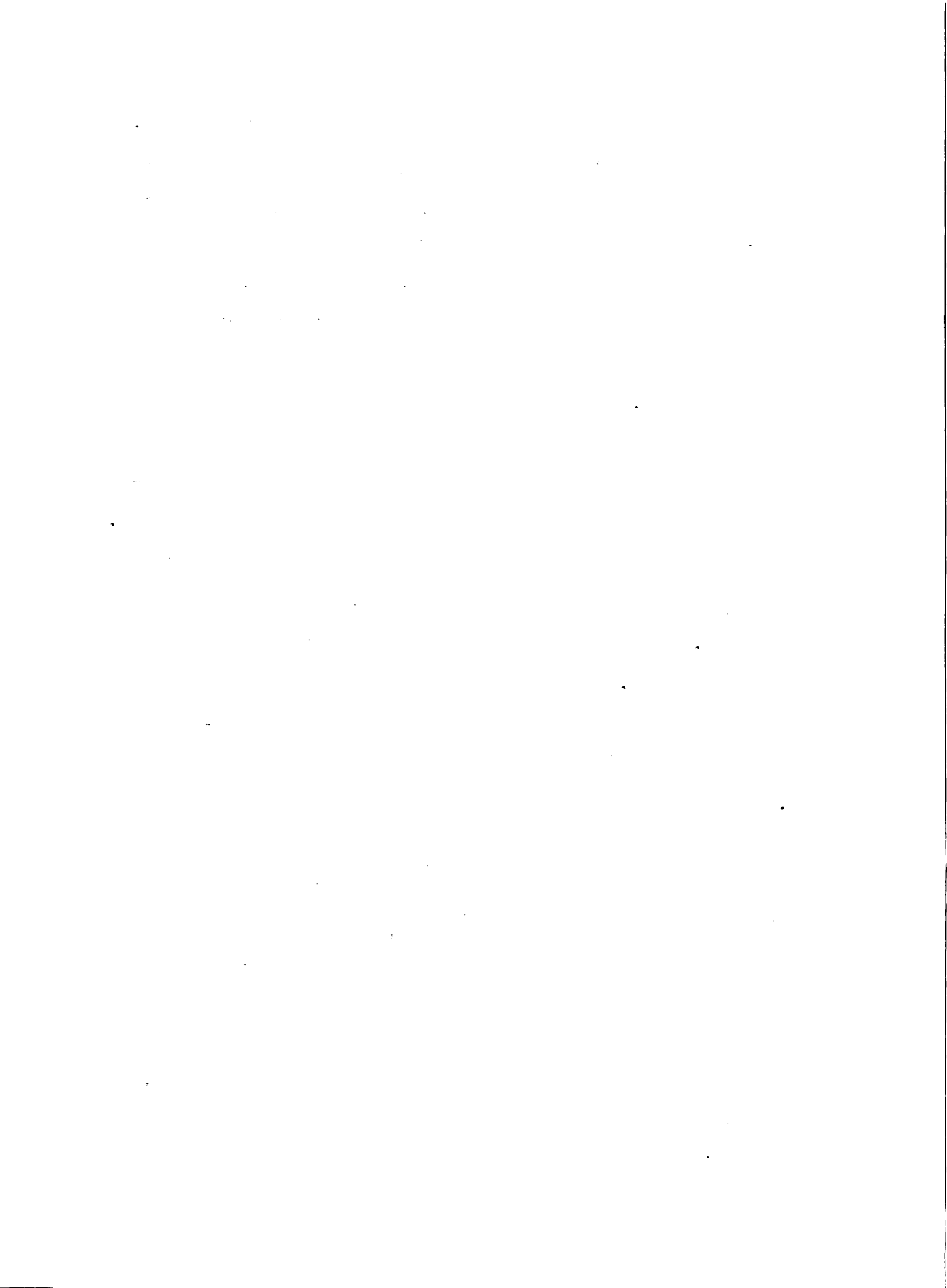
donated to the Shogun by the Capitan of the Dutch factory. In 1663, Nauwkenrige Beschryving van der Natuur der Viervoetige Dieren, Vissin en Bloedlooze Water-Dieren, Vogelen, Kroukel-Dieren, Slangen en Draken, a book on Zoology written in Amsterdam in 1660 by Jan Jonston, was donated. These books were eventually stored in the Shogun's collection and from them, ultimately, an understanding of European Science would be derived. This understanding would be obtained not necessarily through translation of the words but, more specifically, through the many illustrations these books contained which led ultimately to the deciphering of the words.

Accounts of the annual homage to the Shogun are found in History of Japan published in London, 1727 by Engelbert Kaempfer (b. 1651) who was a German physician on Deshima from 1690 to 1692. In this book, Kaempfer describes waiting for an hour before being received by the Shogun. Upon finally being received, the Capitan was beckoned to draw near.

Accordingly he crawled on his hands and knees, to a place shew'd him, between the presents rang'd in due order on one side, and the place, where the Emperor sat, on the other, and then kneeling, he bow'd his forehead quite down to the ground and so crawl'd backwards like a crab, without uttering a single word.⁵

This formality of respect to the one in power was humiliating to the Dutch but they submitted to it because their motive was trade and they did not wish to antagonize the Shogun.

⁵Ibid.



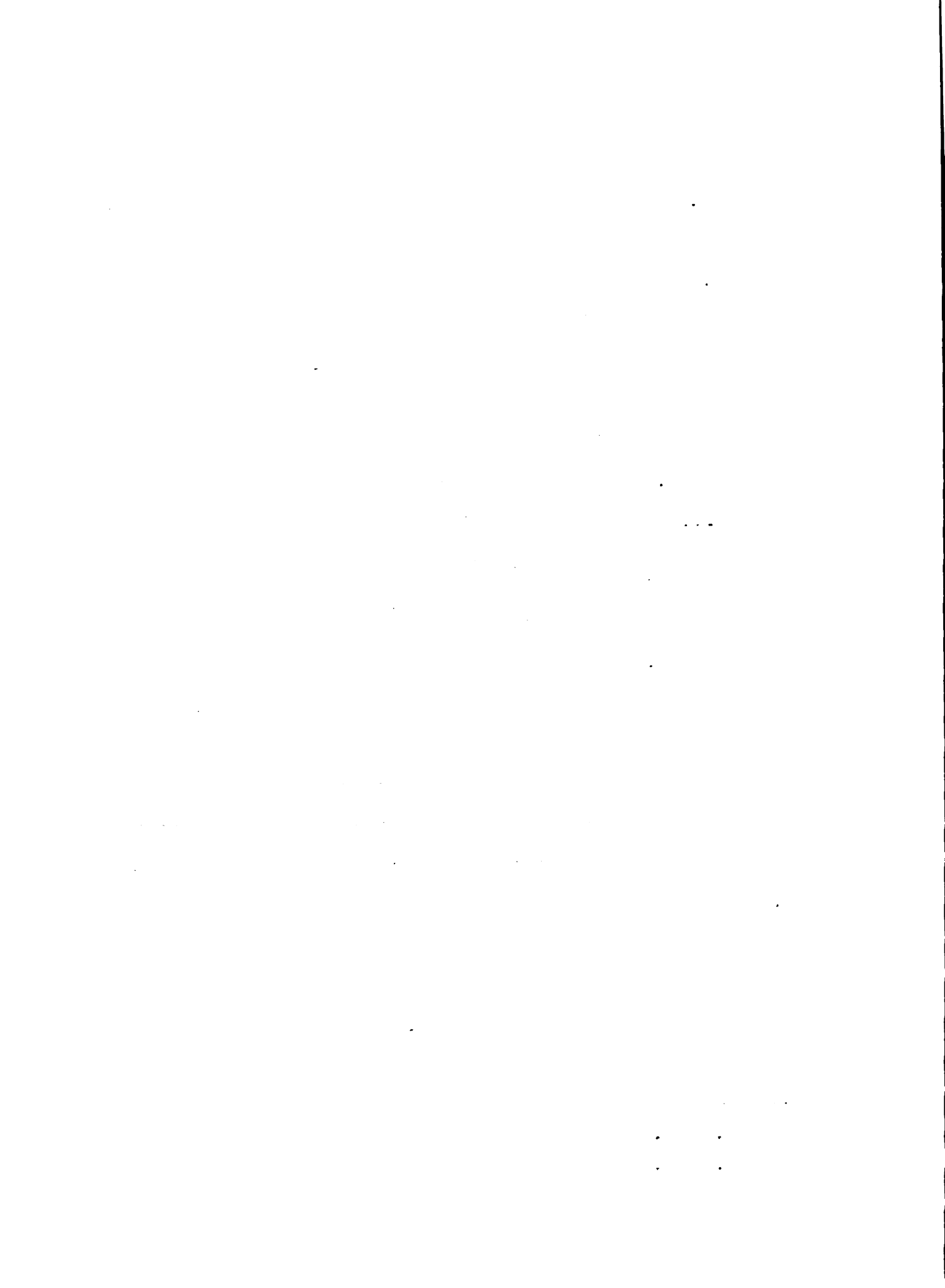
Of course, without an adequate understanding of Dutch the resulting intellectual pursuits of the Japanese accomplished very little. The books and inventions brought from the previous visits were brought out annually and the Dutch were questioned. Although the Dutch were to answer carefully, on the next annual visit they would be subjected to the same questions asked of the previous group. They were asked such questions as "Do you have false teeth in your country?", "Who is the commanding general in Holland?", "What is meant by 'mummies'?"⁶ Kaempfer writes:

...he (shogun) order'd us to take off our Cappa, or Cloak, being our Garment of Ceremony, then to stand upright, that he might have full view of us; again to walk, to stand still, to compliment each other, to dance, to jump, to play the drunkard, to speak broken Japanese, to read Dutch, to paint, to sing, to put our coats on and off.⁷

During the reign of the 8th Shogun in 1716-1745, Shogun Yoshimune was convinced by the Rangaku-sha (represented by Nishi Zenzaburo and Yoshio Kozaemon) to study the "language written sideways" because the Japanese could be deceived by the Dutch if they did not have knowledge of the Dutch language. In 1720, Yoshimune lifted the ban on all foreign books except those which pertained to Christianity. Seeing the books by Dodoneus and Jonston, Yoshimune permitted two persons in his court to study Dutch. The Shogun himself had interests in astronomy and mathematics and even more so

⁶Ibid., pp. 3-4

⁷Ibid., p. 19



in seeking an accurate calendar as it was during this time that a food shortage became apparent in Japan and the Shogun didn't wish his domain to be out of synchrony with the Universe; agriculture was dependent on Nature and Nature being one with the Universe was the livelihood of all things.

The individuals selected were Genjo Noro (1693-1761), an official physician and Kon'yo Aoki (1698-1769), a Confucianist. Noro sought knowledge in Dutch sciences and Aoki planned to translate a dictionary. The tasks presented to the two proved difficult as the books were confined to the court and Noro and Aoki could only obtain their information from the interpreters who accompanied the Dutch to Edo. Thus, the information gathering occurred only for a few days of each year. Noro completed his task in 1750 based on his intermittent conversations with the Dutch and translations made for him of European Botany. His book was called Oran-da Honso Wage (Japanese Explanations of Dutch Botany).

Aoki finished his project in 1758 but unfortunately, he had only got as far as the 26 letters of the alphabet and a few simple nouns: zun (sun), maan (moon), aard (earth), mensch (man), sterre (star), hemel (heaven), draak (dragon), tiiger (tiger), pruimeboom (plum) and bamboea (bamboo).

This was terribly unimpressive but still historically important. The rangaku proceeded cautiously so as not to be accused of studying Christianity and without true permission of the Shogun. With limited knowledge of the Dutch language, these Japanese scholars translated few (if any) Dutch books and the illustrations proved the route to take --

to communicate cross-culturally through pictures.

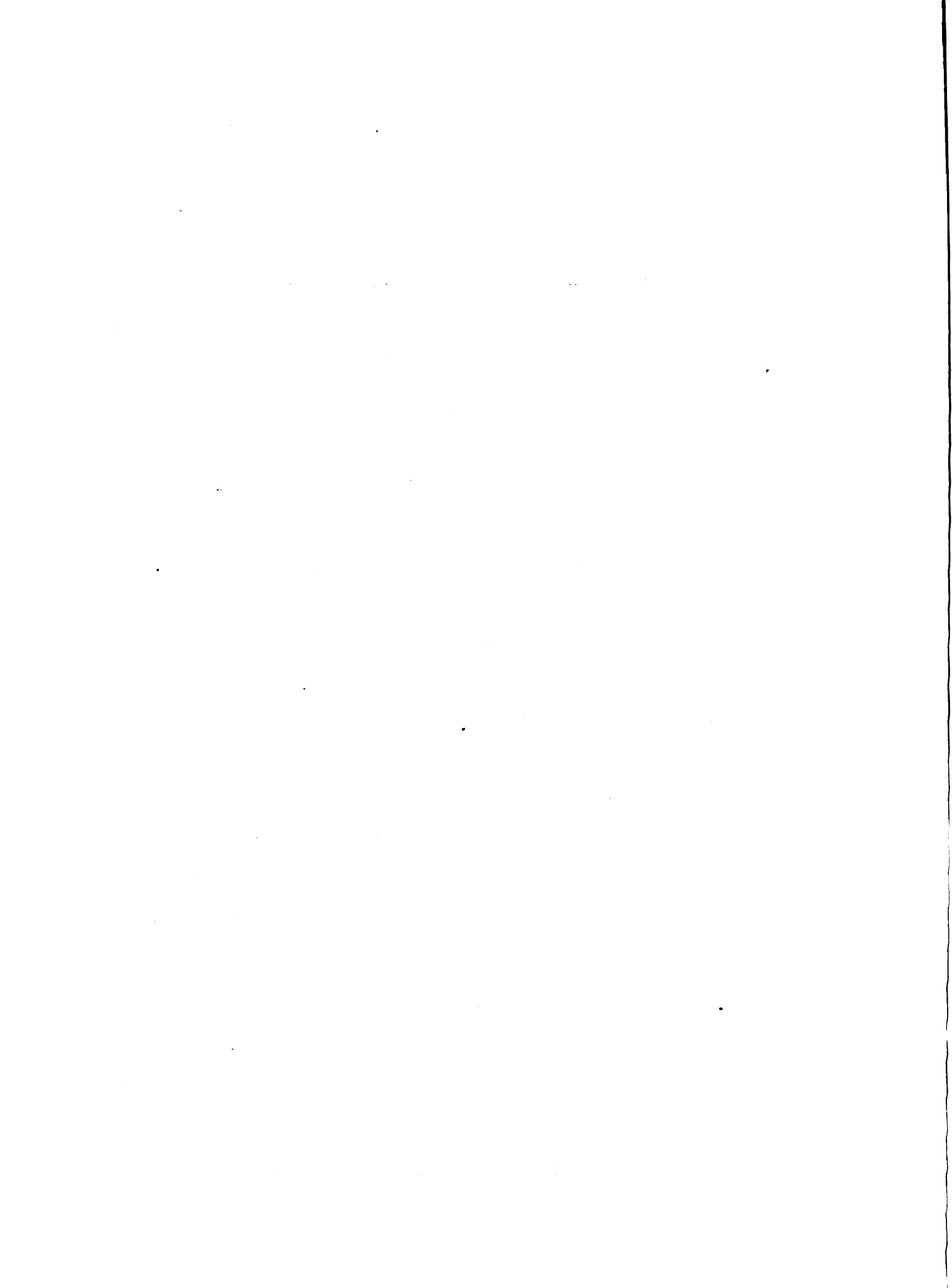
With the cultivation of Dutch studies by Yoshimune, the rangaku began to grow further under a high administrator (roju) named Tanuma Okitsugu (1719-1788) who was in charge of the State during 1760-1780. Tanuma was a RAMPEKI (a devotee of things that were Dutch) although he did not officially encourage the study of Dutch science. Tanuma ordered the building of a Western style ship which indirectly led to the study of Dutch since by now the Japanese had forgotten the art of navigation and shipbuilding. It had been well over a century since Iemitsu's edict of 1634 banning Christians from Japan. During Tanuma's administration, the taste for exotic and foreign made things increased among the upper class samurais and among the merchant class who because of expanding commerce were rising economically above the samurai. A wider and closer contact with the Dutch was established and because of the demand, importation of Dutch books increased. The expanding of Japan's production continued and studies of botany, zoology and geology were carried on with enthusiasm. The practical importance of Dutch sciences began to be appreciated as a result of increasing needs. The name "Ran-ga" became the sign of respect given to Dutch studies in comparison to the title "Komo-ga" given previously.

Painting in the Western manner was pursued almost entirely for reproduction of European religious art. Christian missionaries and their imported European artists introduced the arts of printmaking (copperplate engraving and etching),



oil painting and "fish glue" painting. Namban paintings (those not typically depicting the Madonna and Child or the Saints) were characterized by sincerity and sacrifice. Although the scenes depicted were of gaiety and parade, the underlying emotion was serious because of the continuing suppression and persecution of anything related to Christianity. With the lifting of the ban in 1720 on books except those dealing with Christianity, Yoshimune's Japan assumed a new outlook and the study of painting in the Western manner closely paralleled the study of Dutch sciences. The new school of art was to have little if any support from the Japanese government in its fervor for art technique. Interest in Western art technique was encouraged by the rangakusha who found that Western art greatly enhanced their understanding of Dutch sciences of medicine, herbs, astronomy, geography and military science.

Rangakusha scholars realized the importance of the European illustrations in the communication of ideas and art as supplementary to language; unlike traditional Japanese art, the European illustrations were greatly admired because they were executed in great detail utilizing the rules of perspective and the division of sunlight into light and shade. One of the first books written on Western art in Japan was by a scholar named Shimada Dokan of Edo. In 1734 and probably through conversations with the Nagasaki interpreters, Shimada compiled a summary from Abraham Bosse's 1664 Dutch text Algemeene Manier von de Hr. Desargues Tot



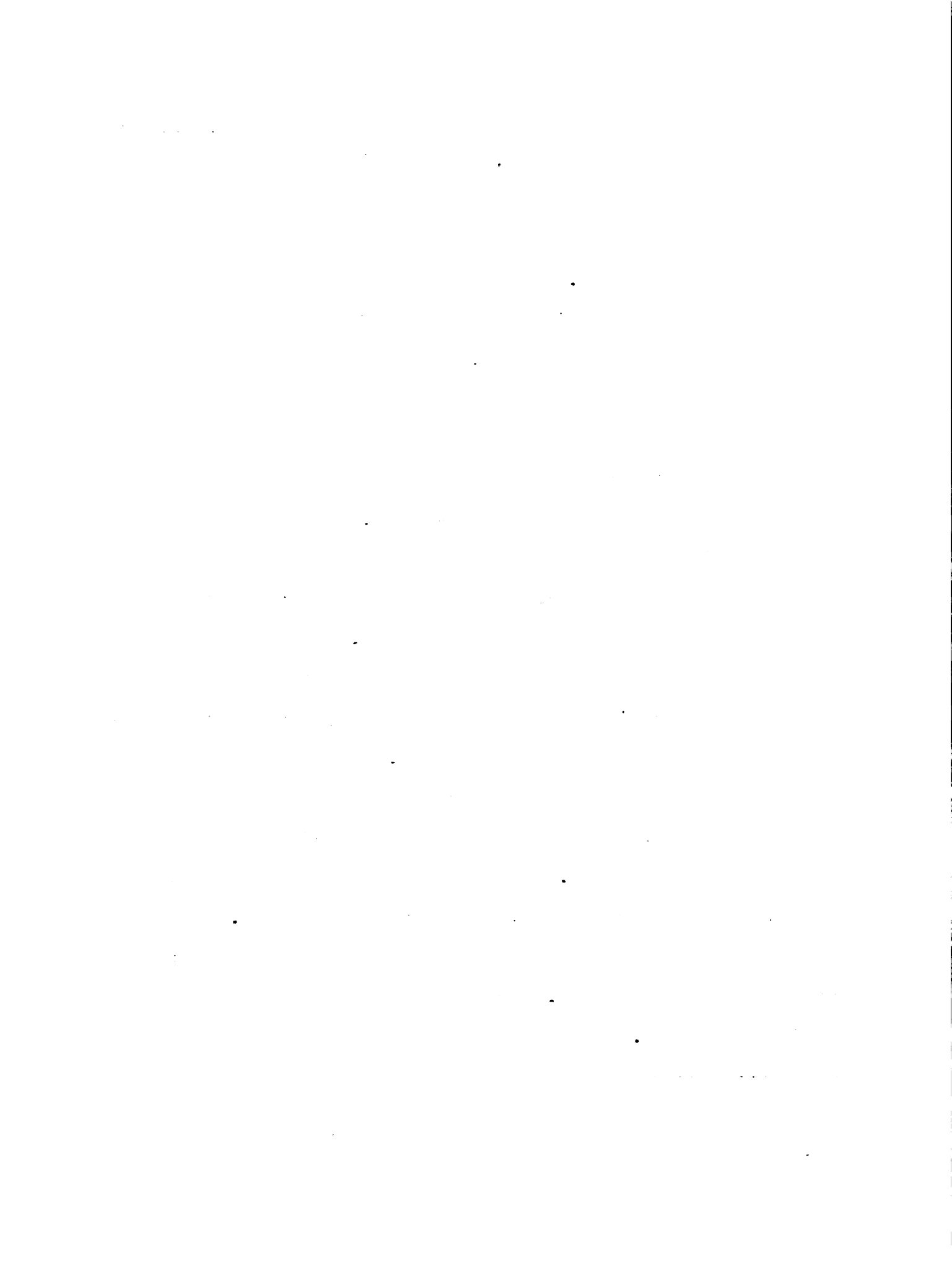
de Pratiijk de Perspectiven, gelijk tot die der Meet-kunde, met de Kleyne Voet-maat (Mr. Desargues' General Rules for Drawing Perspective, Using both Geometry and Precise Measurements) which was based on a 1636 text by French geometrician Gerard Desargues. Shimada's book was called Kiku Gempo Choken Bengi (A Layman's Explanation of the Rules of Drawing with a Compass and Ruler).

Hiraga Gennai

One of the leading figures in the Western style painting in Japan was Hiraga Gennai (1727-1779).

Born in Shinshu (mid-Japan), Hiraga Gennai was the son of Monzaemon Shiraishi who was a low rank retainer of the daimyo Matsudaira of the Takamatsu clan. The feudal lord Matsudaira bestowed upon Hiraga the title of physician and because of Hiraga's prolific scholarship, Hiraga was eventually made RONIN (masterless samurai). Hiraga Gennai was the "Leonardo Da Vinci" of Japan; besides his great interest in Western culture, he was continuously engaged in a variety of research activities. Hiraga Gennai was an inventor, herbalist, novelist, geologist, physician and painter. His main interest was the practicality and usefulness of things: this was a Confucianist idea. He said, "People read books but don't apply them."⁸ With this belief, Hiraga left his pro-

⁸Nishimura, Nihon Shoki Yoga No Kenkyu (Study of Early Western Paintings in Japan, Zenkoku Shobo, Tokyo, 1946) pp. 77-92 translated to the author by Atsumi Minami



vince and arrived in Nagasaki in 1752. It was here in Nagasaki where most of Hiraga's contact with Western art and Western technology took place. He collected various European inventions and brought them back to Edo with him.

While involved in a mining and geology expedition in 1757, Hiraga succeeded in repairing one of the inventions he had brought back with him, an electricity box. Hiraga was one of the first in Japan to understand the workings of electricity; his machine was called EREKITERU. By 1770, he had begun writing about electricity and invented a second machine. Hiraga had hoped that this erekiteru could be used to cure the sick since "electricity takes the fire from one's hands"⁹; therefore, an instrument that could be used for confusions. Unfortunately, Hiraga also stated that "anything unusual came from Christianity and therefore, it was good".¹⁰ Hiraga's book was banned because of the Christian scare. Hiraga was responsible for many "firsts" in Japan. To name a few: invented a water level (1765), wove asbestos into cloth (1764) and made the first Japanese thermometer (1768).

Hiraga's greatest contribution was in painting, not so much for what he did as an artist but for the influence he had on younger artists.

I was brought up in a peaceful time and to fight is opposing the wishes of Heaven. So I'd like to go into Art and make my family's name famous.¹¹

⁹Ibid. ¹⁰Ibid. ¹¹Ibid.

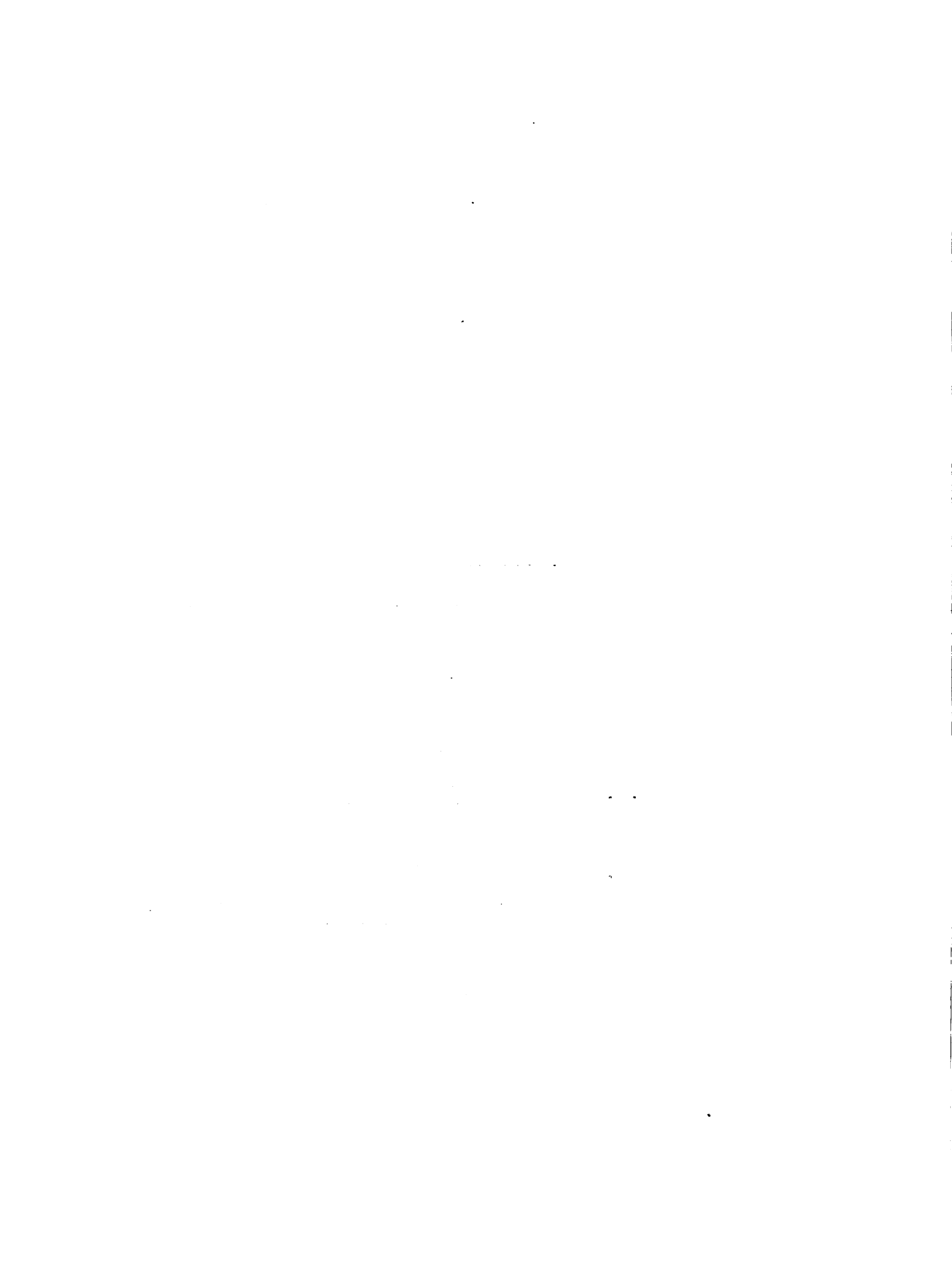


Hiraga did just that. He was the first to have painted thoroughly in the Western style although no one knows who introduced oil painting to him. Hiraga's idea of Western painting was that it could be "used for the purpose of the country. This was generally the idea of the painters of Western painting of this period."¹² This idea had nothing to do with Confucianism or the materialistic historical idea but that Western painting used rules about three dimensionality that the Japanese painting had never employed and also, Western painting was more vivid.

In 1763, Hiraga Gennai completed two texts on the techniques of Western art, Butsumi Hinshitsu (Classifications and Different Materials) and Morishima Churyo Komo Zatsuwa (Heads, Hands, Feet by Use of Lines with a Compass). Hiraga was so obsessed with Western art, especially zoological things, that in 1769 he is reported to have sold all his furniture to purchase Jan Jonston's Zoology book, Dodonaeus' Kruydt-Boek and G.E. Rumphius' L'Amboinsche, Raritteitkamer, 1705, all from Jan Crans who was the Capitan of the Dutch factory at the time. Confirming this is a statement by Shiba Kokan (1747-1818) in his book Shumparo Hikki (1811):

To pay for it, Gennai was obliged to sell everything in his house, down to his very bed-clothes and washing things. This book gives pictures, drawn from nature, of all the living things in the world, including creatures, such

¹²Ibid.



as lions and dragons, that one cannot see in Japan. Nowadays there are several people who have the book; but at that time it was quite unknown.¹³

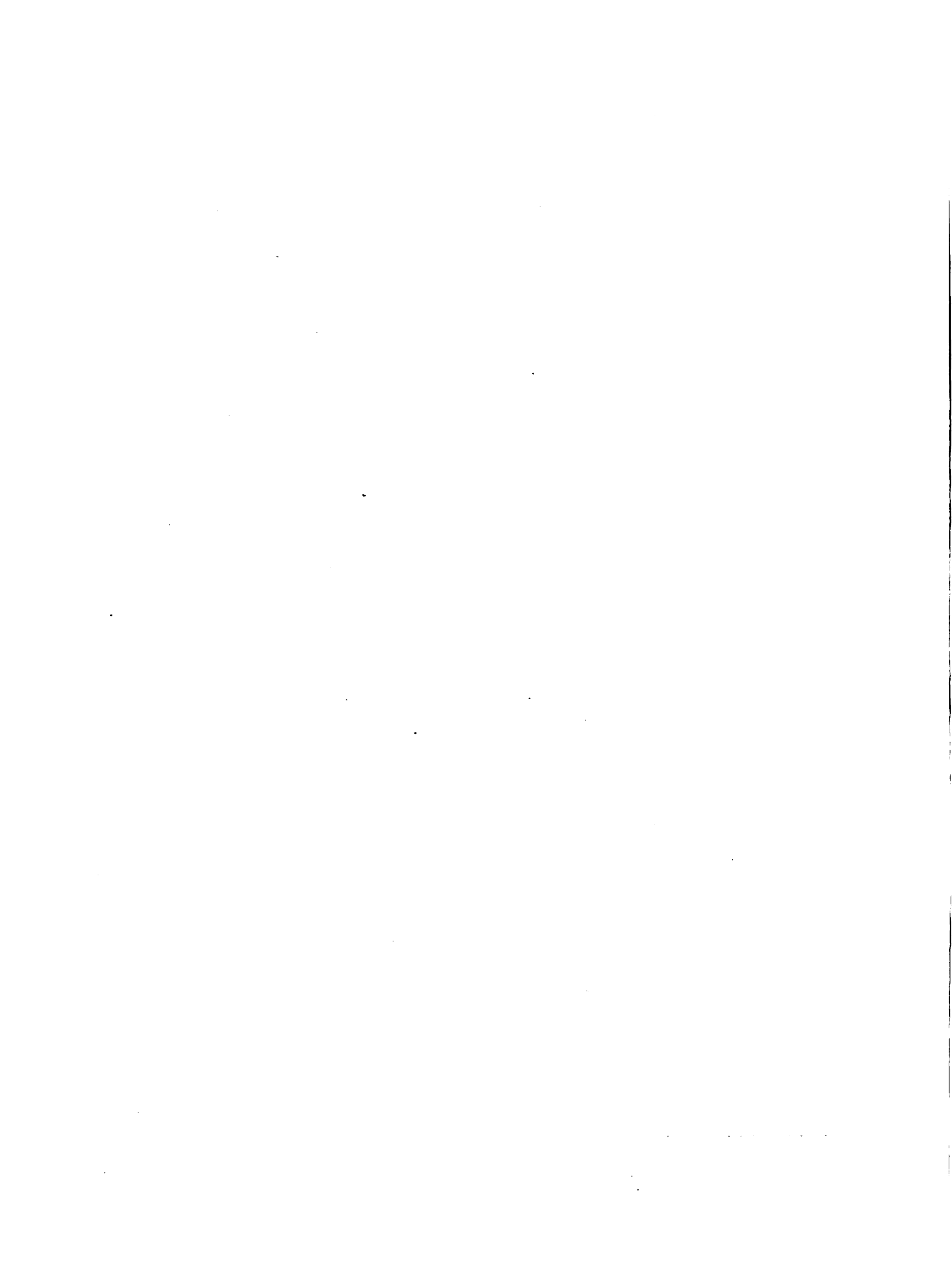
Hiraga gave his first art class in 1773 while on an investigation of mining possibilities in Akita. His first pupils were local samurais, the daimyo of Akita -- Satake Yoshiatsu (1748-1785), Satake Yoshimi (1749-1800), and Odano Naotake (1749-1780). Out of this gathering developed what was called the Akita-Dutch school of painting. When Odano Naotake appeared for his first lesson, Hiraga asked him to draw a flour dumpling from above. Hiraga rejected the finished drawing saying, "You can't tell whether it's a tray or a cartwheel"¹⁴ and proceeded to teach Odano the principles of shading that were absent in Japanese paintings. Odano learned this skill well as it was he who illustrated the first translation of Ontleedkundige Tafelen, a Dutch translation of Kulmus' anatomy book.

Sugita Gempaku

The only two well known rangakushas in Edo during the late 1750's were Hiraga Gennai and Sugita Gempaku (1733-1817). Sugita was a physician for Sakai, lord of Wakasa Obama and trained in Chinese medicine. He was interested in what Western medicine had to offer. In 1766, Sugita and a fellow physician, Maeno Ryotaku (1728-1803), visited the senior translator in Edo named Zenzaburo Nishi who became known as the man who discouraged these two physicians from learning the Dutch language.

¹³French, Shiba Kokan, (Columbia Univ., Weatherhill Publ., New York, 1974) p. 41

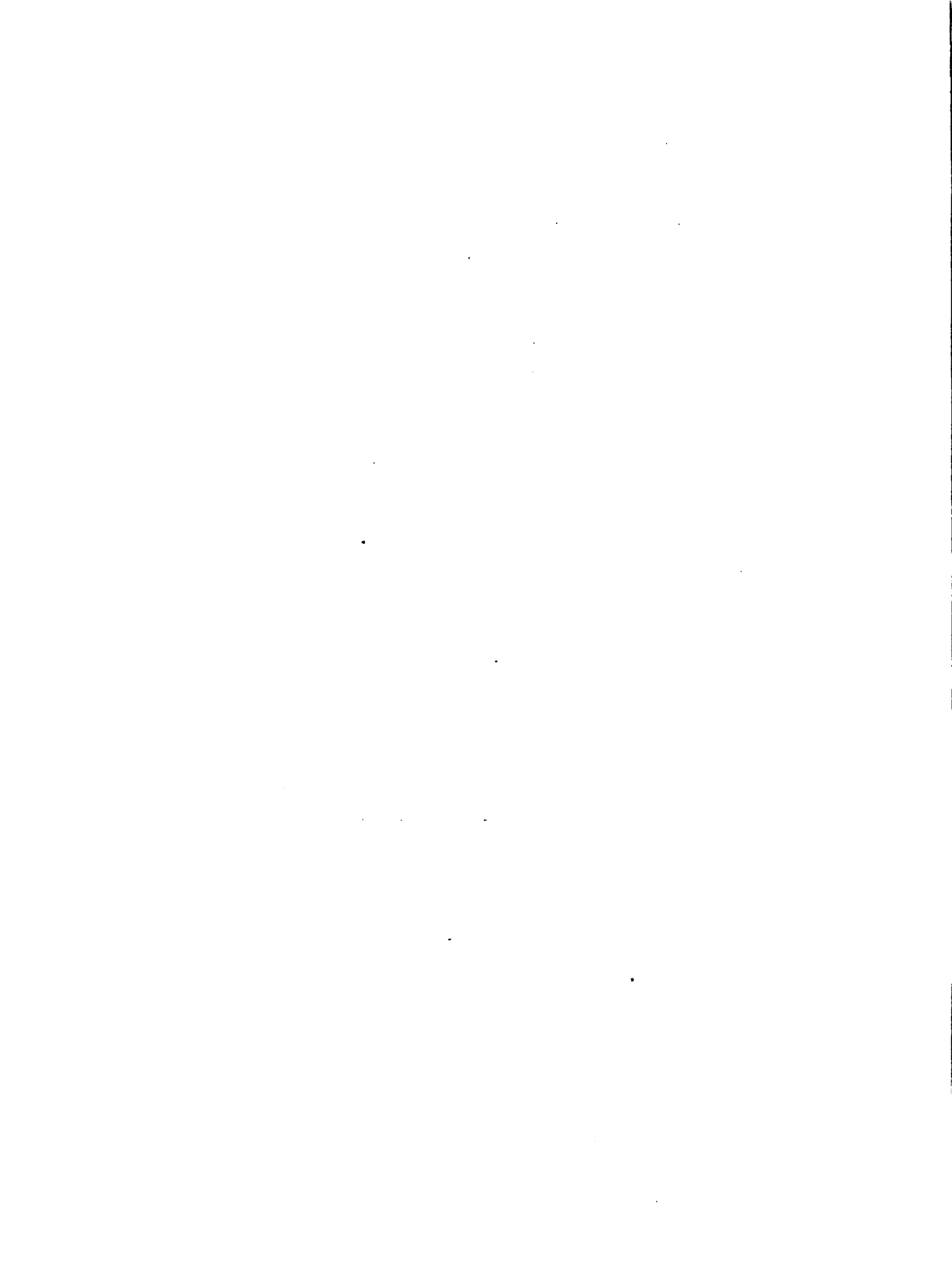
¹⁴Keene, Op. Cit., p.62



Nishi declared that it was virtually impossible to learn the Dutch language. It can be assumed that Nishi, not unlike other interpreters, jealously guarded the study of Dutch as a family secret. In 1767, Nishi was ambitious enough to undertake singlehandedly the project of compiling a Dutch-Japanese dictionary but he died the next year, having progressed no further than the letter B.

In 1767 during the time that Jan Crans was the Capitan and George Rudolph Bauer was the physician, Sugita Gempaku witnessed the first venesection in Edo. At this time, Sugita was a student of Kozaemon Yoshio who was an interpreter and a physician who had studied under Bauer. But discouraged by Nishi's advice, Sugita's interest in pursuing Western **medicine** was dampened until in 1770 when it was renewed during an annual visit by the Dutch. Sugita saw two medical books that Yoshio owned: Heelkundige Onderwyzingen (Medical Teachings) by Laurens Heister and Ontleedkundige Tafelen, a 1734 Dutch translation from the German Tabulae Anatomicae written by Johann Adam Kulmus in 1731. (Figs. 8,9) Sugita couldn't read the words but was enlightened by the illustrations and with the help of his clan leaders, he purchased these books for twenty barrels of Sakai sake. He then proceeded to copy the illustrations. Upon initially seeing the books, Sugita said: "I couldn't read a word, of course, but the drawings of the viscera, bones, and muscles were quite unlike anything I had previously seen, and I realized that they must have been drawn from life."¹⁵ Sugita was anxious to test the

¹⁵Ibid., p. 46



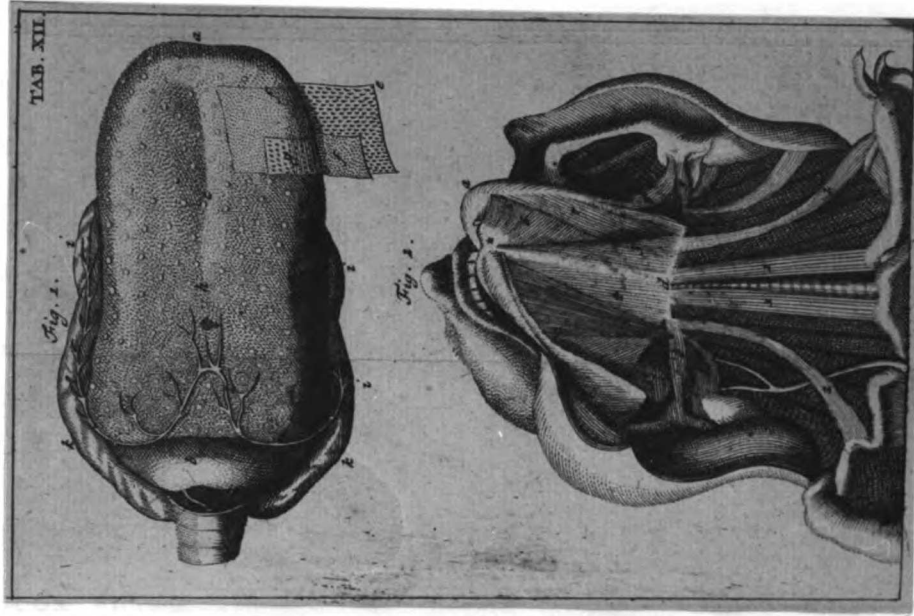


Figure 9

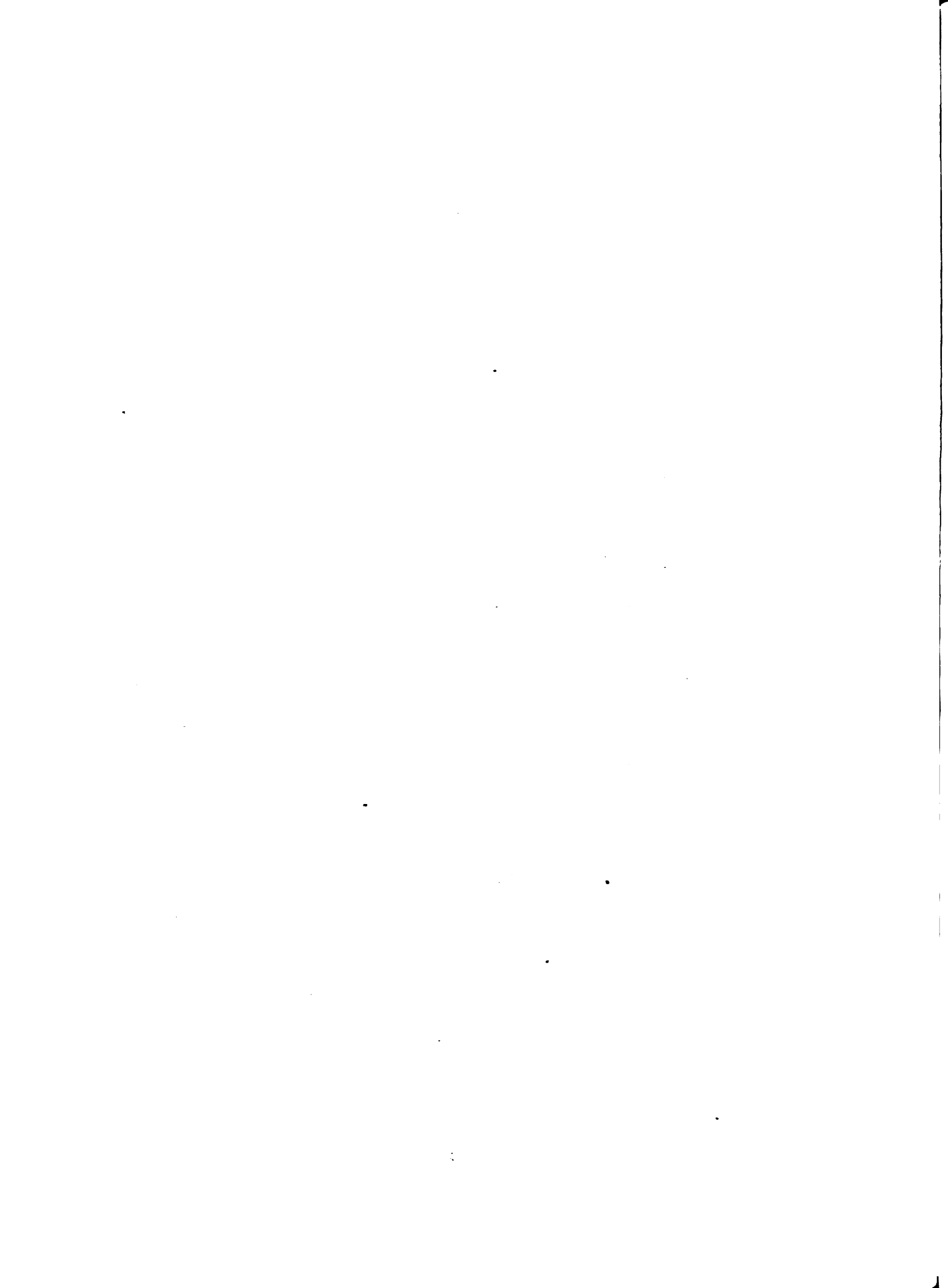


Figure 8

validity of these illustrations.

Previously, there had been at least seven autopsies performed on executed criminals. Opportunity to observe these was granted by the government to two court physicians (Okada Yosen and Fujimoto Rissen) who wished to reconcile discrepancies that existed in the Chinese illustrations when compared to actual life. Their conclusion was that the Japanese and the Chinese must be anatomically different. In 1754, a physician in Kyoto, Yamawaki Toyo, witnessed the first autopsy in Kyoto and did compile a Japanese anatomy book which appears to be a hybrid of Chinese and European medicine books. This book was called Zoshi (Book on Viscera) published in 1759. (see Figs. 10, 11) The illustrations were an attempt to render what was seen but nevertheless still reminiscent of the Chinese illustrations as the technique of shading was not understood by the illustrator.

One day in 1771, Sugita heard from a friend that there was to be an execution on March 4, 1771. Excited by the opportunity, Sugita called upon his friends, Maeno Ryotaku and Nakagawa Jun-an. Sugita, Maeno and Nakagawa attended the dissection of the executed criminal at the Kotsugahara execution grounds in Edo. The subject had been a 50 year old female nicknamed "Old Mother Green Tea" who had been put to death for some great crime. The dissection was carried out by an eta (an untouchable) as all autopsies previously were. An eta served in occupations that were beneath the dignity of "normal" citizens; dissections were considered



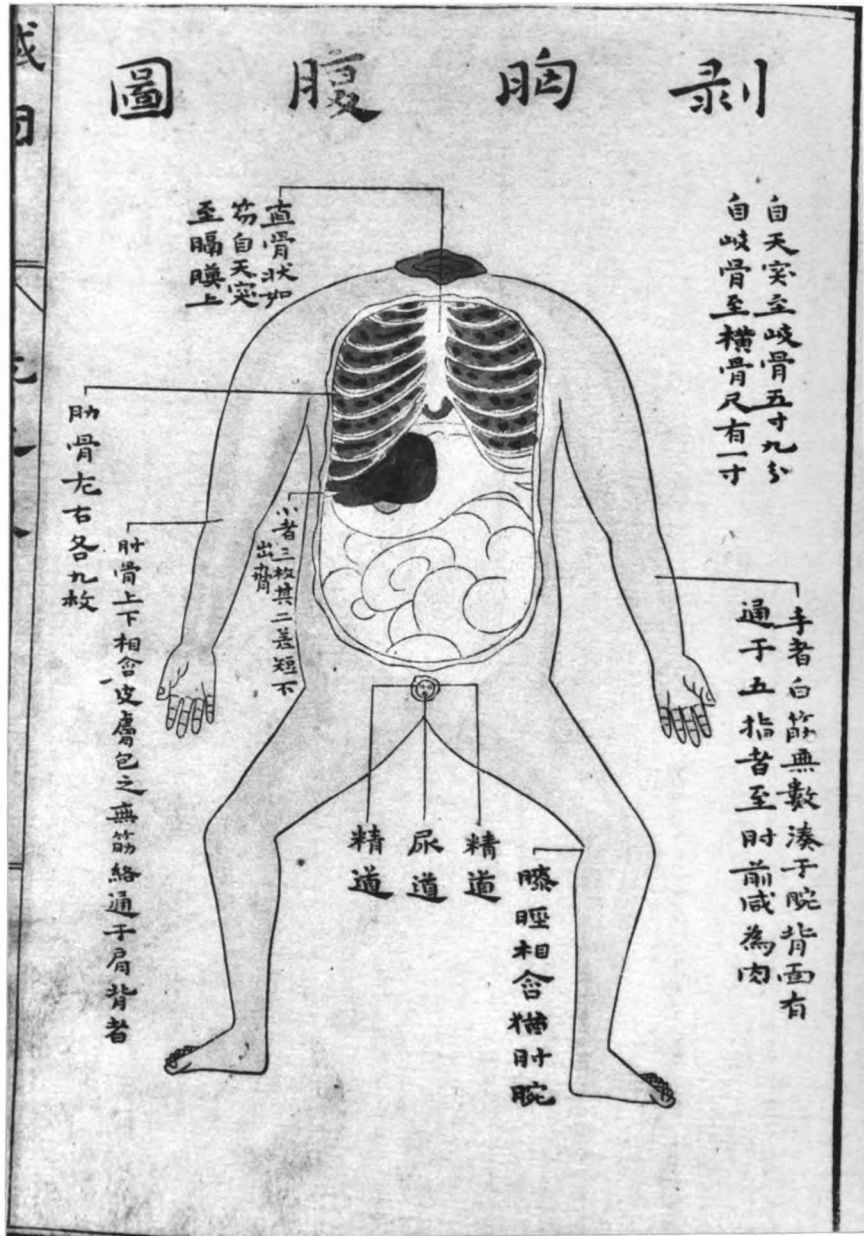


Figure 10

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滯 圖

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七

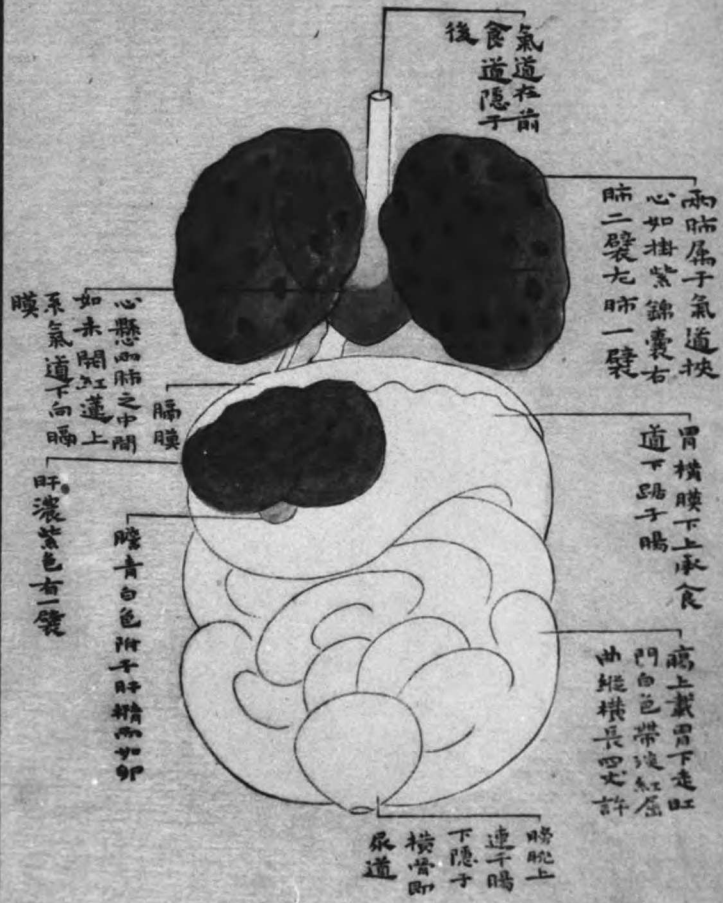


Figure 11

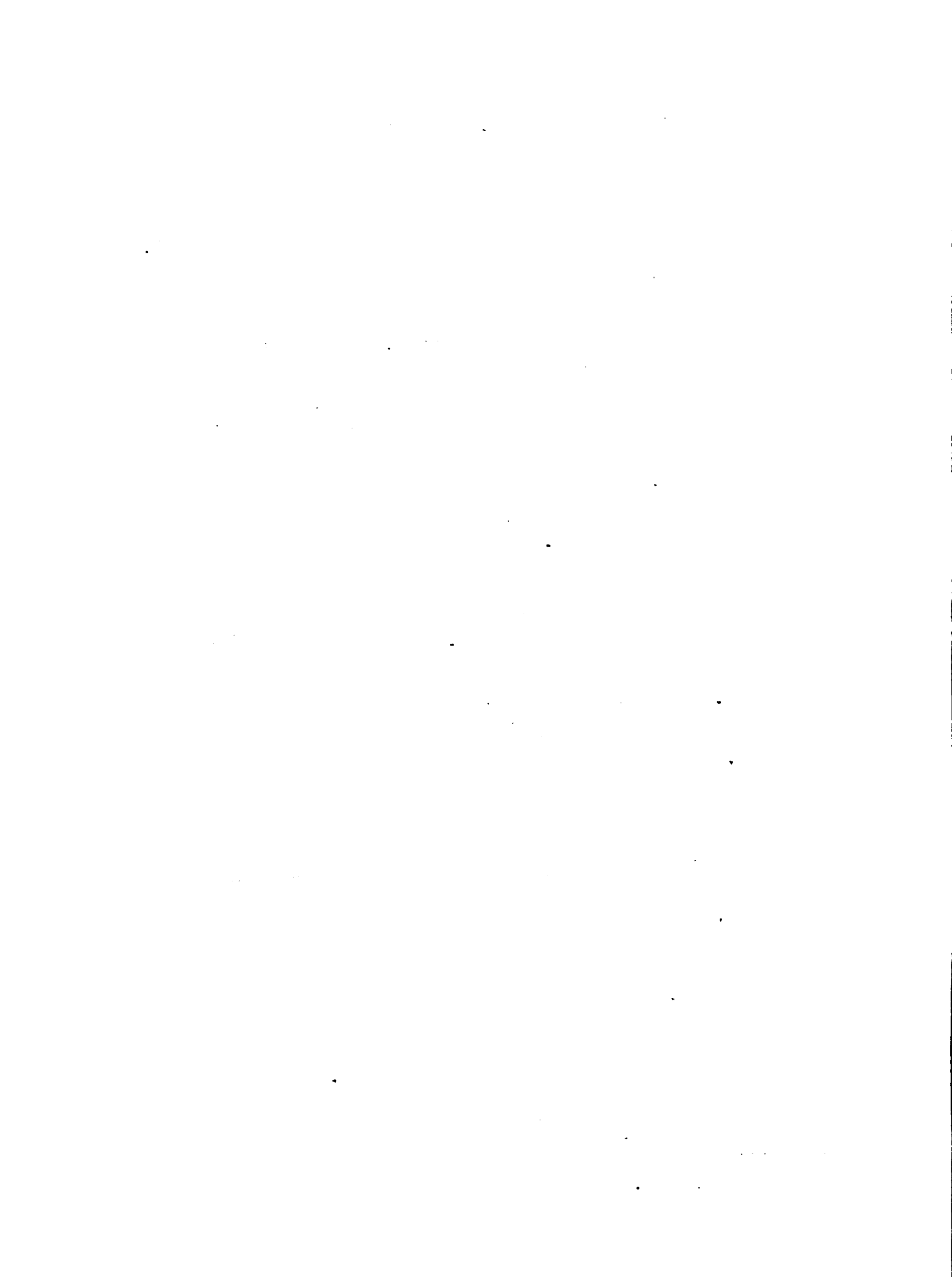
among the eta's proper tasks. Sugita had brought with him the Ontleedkundige Tafelen to compare its illustrations with the actual body and, to his surprise, Maeno also had a copy that he had apparently procured while in Nagasaki. Here is Sugita's account of what happened:

We all went to the place in Kotsugahara prepared for the anatomy lesson. The dissection was to be performed by an eta named Toramatsu, who was reputed to be skilled in this art and who had promised to come. On the day of the dissection, however, he suddenly took ill, and an old man of ninety years, said to be his grandfather, appeared to take his place. He was a robust old man, and told us that he had been performing dissections since his youth and had cut up a good many people in his time.

The dissections that had taken place up to this time had been left to the eta, who would point to a certain part he had cut and inform the spectators that it was the lungs or that other part was the kidneys. Those who had witnessed these performances would go away convinced that they had seen all there was to be seen. Since, of course, the name of the organ was not written on it, the spectator would have to content himself with whatever the eta told him. On this day, too, the old eta pointed to this and that, giving them names, but there were certain parts for which he had no names, although he had always found such things in the same place in every corpse that he had ever cut up. He also remarked that none of the doctors who had previously witnessed his dissections had ever wondered what these parts were.

When Ryotaku and I compared what we saw with the illustrations in the Dutch book, we discovered that everything was exactly as depicted. The six lobes and the two ears of the lungs, and the three lobes on the right and the four lobes on the left of the kidneys, such as were always described in the old Chinese books of medicine, were not so found. The position and the shape of the intestines and the stomach were also quite unlike the old descriptions.¹⁶

¹⁶Ibid., p. 21



This new discovery spurred their ambition to read the text now that they were convinced of the superiority of the Dutch book. The next day they (Sugita, Maeno and Nakagawa) met at Maeno's home to begin deciphering the text. This was the beginning of the Kaitai Shinsho (A New Book of Anatomy), five volumes in length, that resulted following four years of hard effort. (Figs. 12-14) The only aids to the translation were the crude vocabulary that Maeno possessed and often many hours were spent determining the meaning of a single word. The difficulty lay not only in the Dutch meaning but in the Japanese equivalent of that meaning. Sometimes they used the old Chinese words designating a particular organ and at other times they had to resort to inventing new words because there were no Chinese equivalents to the Dutch words. Eventually, in 1774, they finished their translation and the first volume was called the Keitai-meimoku Hen (Atlas and Nomenclature of the Human Body). "The first translation was on the internal structure of the human body, the very basis of medical science. Although we did not intentionally choose the book, we might call it providential occurrence." S. Gempaku¹⁷

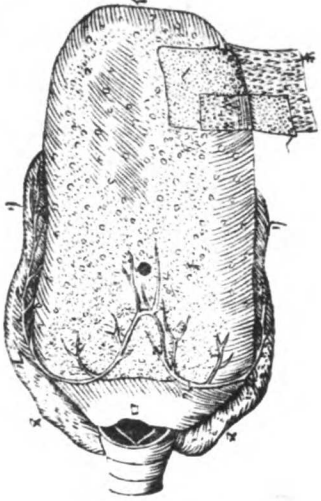
Initially on that first day of translating, the three men had gathered at Maeno's home bright and early and full of excitement. They picked out an area of the Dutch text that had appeared most familiar to them and set about trans-

¹⁷Ibid., p. 22



古篇圖

全形



諸筋

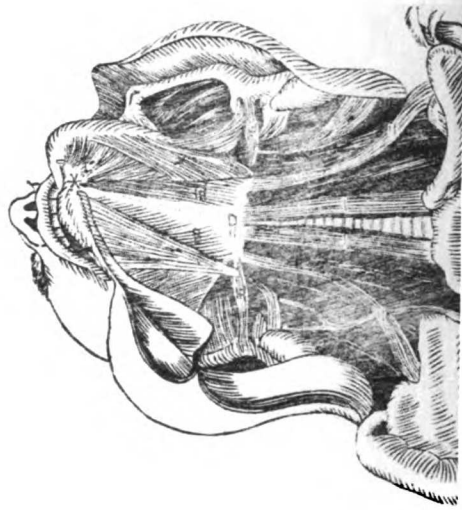


Figure 13

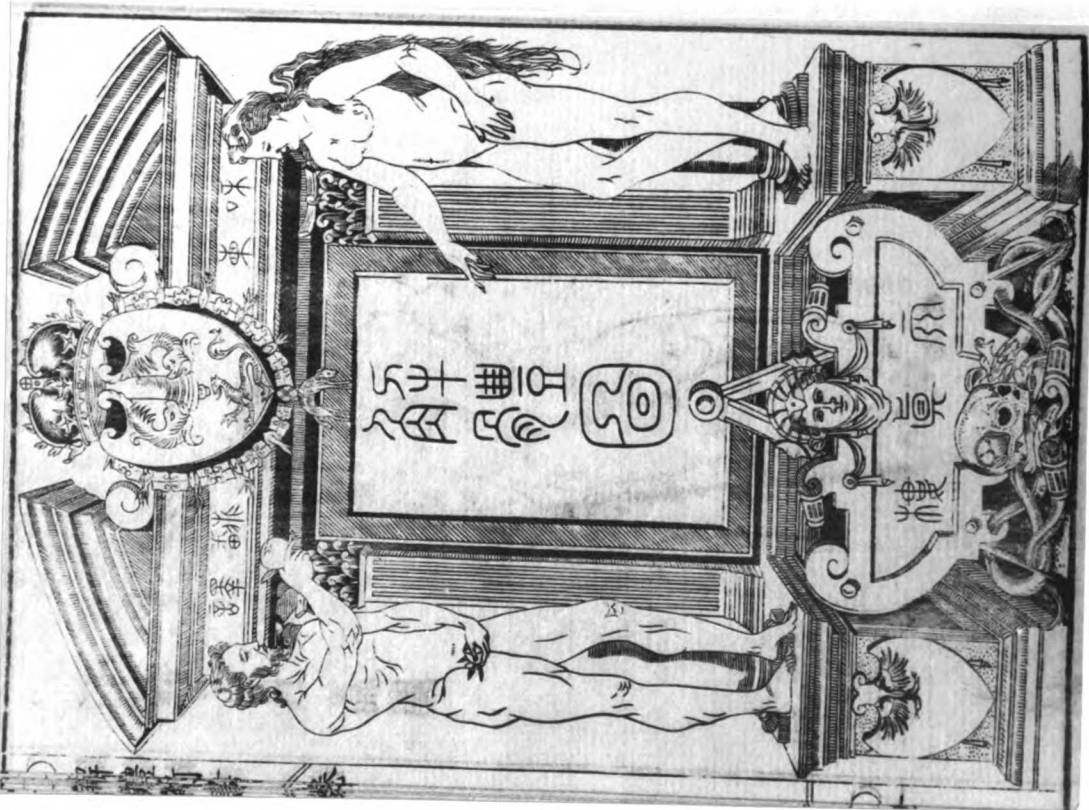


Figure 12



Figure 14

lating the first sentence. After spending all day and well into the early morning, they finally succeeded in translating this sentence - "The eyebrows are the hairs above the eyes."¹⁸ With this sentence, they fell back realizing the many days ahead.

This book was highly significant because it was the first systematic introduction and approach to studying European sciences by the Japanese people. It started a great wave of interest in Dutch learning on every level even though Western medicine remained the chief area of study.

When the time came to publish the Kaitai Shinsho, Sugita and Maeno knew that books containing the Dutch alphabet had been confiscated and the woodblocks destroyed. To eliminate this problem, they had copies made to present to the Shogun and the Council of Elders in Edo and the three families of the Imperial court. Thus, with no objections, they published their book which was circulated openly.

Besides these three scholars working on the Kaitai Shinsho, there were others. The most vital of these persons was Katsuragawa Hoshu (1751-1809) who had studied under the Deshima physician C.P.Thunberg, a Swedish scientist. The Katsuragawa family were among the prominent medical families in Japan. It was Katsuragawa Hoshu's father, Hosan, who presented the copies of the Kaitai Shinsho to the Shogun and the Imperial families. Also, a person to be noted in compiling the Kaitai Shinsho was Odano Naotake who imitated

¹⁸Gempaku, Rangaku Kotojime, (Hokuseido Press, Tokyo, 1969), p. 34

the copperplate engravings of the Dutch book using wood engravings, a much more difficult task than copperplate.

At last the inquisitiveness that had so characterized earlier Japanese dealings with the Dutch had been given a direction. The invidious appellation of BANGKU (barbarian learning) had given way to RANGAKU (Dutch learning); thus, the study of Dutch language and Dutch sciences was directly introduced to the rangakusha instead of through interpreters. The Japanese found C.P.Thunberg to be more learned than any of his predecessors and they plied him incessantly with questions both in Nagasaki and in Edo. Although Thunberg was impressed with the determination shown by the Japanese physicians, he had a low opinion of their skills stating that the Japanese would spend a long while feeling a person's pulse and lacked knowledge of internal medicine. Thunberg insisted on bleeding as a cure and the interested Japanese physicians performed phlebotomies, although with trembling hands.

The rise of the rangaku did not progress all that smoothly as the Confucianists were quick to attack their new rival. The formula established for the Tokugawa Japanese had been a combination of Chinese learning and Japanese spirit; the intellectual attainments of China were matched with the spiritual virtues of Japan and perfection of both made for the best of all men. What Japan lacked in learning was supplied by China. The rangaku had no place in this scheme of things. With the rise in Western knowledge, the

Japanese had to choose between Chinese and Western learning. It was not possible to add rangaku to what already had existed.

A student of Maeno Ryotaku and a follower of Sugita Gempaku named Otsuki Gentaku (1757-1827) defended rangaku:

Ever since in recent years Dutch learning has risen, there has been a tendency for the Confucian scholars to reject it, declaring that barbarian theories should not be adopted. What is the meaning of such criticism? Dutch learning is not perfect, but if we choose the good points and follow them, what harm could come of that? What is more ridiculous than to refuse to discuss its merits and to cling to what one knows best without hope of changing?¹⁹

Sugita Gempaku in defense of what he started:

What a shame it is that we have all this time attended lords as doctors without knowing the real construction of our bodies which is really the basis of the medical profession. Unless we practice medicine with knowledge of the truth about the body based on actual experiments, we have no excuse whatever in living as doctors.²⁰

The basis of experiments was always against the teachings of Confucius. In Confucian philosophy, all things were part of the Tao and could not be defiled since that would cause an imbalance. This is unlike the Western philosophy that everything was created by God and therefore, like an invention, things could be taken apart and observed.

Although the Kaitai Shinsho's translation was not superior in quality and its wood engravings lacked

¹⁹Keene, Op.Cit., p. 25

²⁰French, Op.Cit., p. 120



the detail and clarity of copperplate engravings, it did enlist the interest of many Japanese physicians and another trend became discernible, namely, experimental work in medicine. The publication of the Kaitai Shinsho led to an increasing number of autopsies and interest in the work of the Rangakusha. Experiments that were performed began to disprove centuries of Chinese teachings. (Figs. 15-17)

The view on the normal fetal position which had been passed down from generation to generation was that the fetus stood upright until the ninth month and then turned around. In opposition, Kagawa Genetsu (1700-1777) in his two volume book Sanron (On Obstetrics) explained that the fetus rotates in the uterus after the fifth month. He also added some scathing remarks about the prevailing erroneous explanation.²¹

In 1802, Fuseya Soteki (n.d.) wrote in his book Oranda Iwa (Talks on Dutch Medicine) the conclusion that urine was produced in the kidneys contradicting the Chinese explanation that the kidneys were part of the reproductive system and that urine was produced in the intestines.²² The rangakusha, committed to dissecting the nature that the Neo-Confucianists held sacred, studied Western science because the results of the explorations were practical and useful.

Shiba Kokan

Paralleling the study of Dutch medicine was the study

²¹Pittau, Monumenta Nipponica, (Sophia Univ., Tokyo 1964) v.XIX, nos. 3-4, p. 35

²²Ibid.





Figure 15. Note that the Chinese text contained mostly literature and illustrations were very few. The illustration shown is one of two in the entire two volumes. The Chinese illustrations were always black and white.

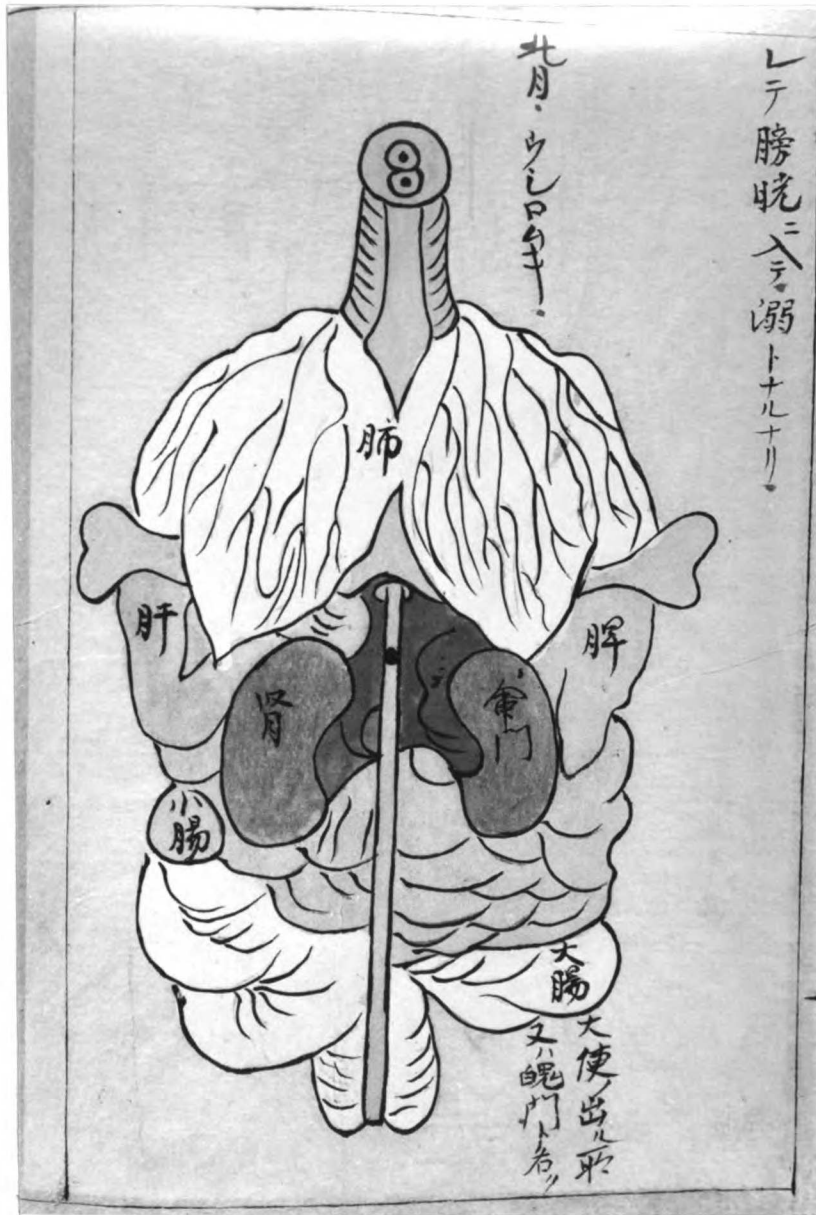


Figure 16. Compared to Figure 15, this Japanese text exemplifies the fact that the Japanese took the Chinese text one step further by painting the illustrations.

of Western art. The person who represents this era of "ranga" art is Shiba Kokan (1747-1818). Shiba Kokan was born in Edo where his father was an artisan -- the third level of the Japanese social structure. Shiba's birth name was Ando Kichijiro. In Shiba's early years he wanted to become a sword maker like his father:

The government had put down all opposition, however, and the country was at peace. Swords had become mere fashionable ornaments, and those worn by the military class were all antiques; there was no demand at all for new swords. Moreover, I did not like the idea of making what, in intention, were instruments of carnage and slaughter, so I changed my mind and gave up that profession.²³

In 1761 at age 14, Shiba's father enrolled him in the Kano school but Shiba soon tired of the uninspired traditional mannered work and became a student of So Shiseki, a master of the Chinese bird-and-flower style. Besides his training in traditional art, Shiba received instruction in the Chinese classics and poetry which had been reserved for the samurai class and it was at this point he changed his name:

It seemed to me that it would be more refined to have Chinese sounding names under my poems... My ancestors came from Kishu on the Kii Peninsula, where the great Hidaka and Kino rivers are located; I therefore chose the name Kokan, meaning 'broad river'.²⁴

Shiba Kokan's teacher, So Shiseki, told Shiba that

²³French, Op. Cit., p. 120

²⁴Ibid.

Ko and Kan were two rivers in China and Shiba was amused. From that point on he was known as Shiba Kokan. Because of his training, Shiba gained skill, talent and popularity and was able to afford a comfortable living. Shiba performed for the wealthy and influential people; thus, according to the wealth and status of these people, Shiba received "monetary gifts" for his services.

In 1773, Shiba met Hiraga Gennai in Edo and apparently was influenced by him. Gennai at this time was established as an essayist and an herbalist. Shiba was invited by Hiraga to a mining expedition but the fact that Shiba was introduced to Dutch studies at this time can't be assumed. What was apparent was that Shiba had seen Hiraga's collection of copperplate etchings and engravings.

Hiraga Gennai told me that many years ago a Hollander arrived in Japan bringing with him several hundred Dutch copperplate pictures. He offered them for sale, but the Japanese, too frivolous and superficial to realize what rare and wonderful opportunity this was, declined the offer! They knew nothing of the technique involved, and this, in fact, was their first indication of the existence of copper engravings.²⁵

Shiba, about this time, had met Hiraga's student, Odano Naotake, who had more practical experience than Hiraga. Naotake and Shiba undoubtedly had a few occasions to meet in Edo and it was likely that Naotake explained a few principles of Western painting to Shiba. Shiba was established

²⁵Nishimura, Op. Cit., pp. 394-398

as a painter of the Chinese style and during this time, was mainly involved in creating UKIYO-E woodblock prints. Ukiyo-e was a form of Japanese art that utilized Western mathematical perspective. It's earlier form was called UKI-E (floating painting). Ukiyo-e (floating world painting) illustrated common scenes, typically, prints depicting courtesans. This form of art was utilized quite efficiently in later years to transmit information to the masses of Japan. (Figs. 18,19) Naotake evidently had an effect on Shiba since Shiba later experimented with both linear perspective and chiaroscuro in his prints.

About 1780, Shiba obtained a book on the Western methods of painting called Groot Schilderboek (Great Painter's Book) by Gerard de Lairese published at Amsterdam in 1707. Though unable to read the text, Shiba studied the techniques by closely examining the plates that provided visual explanations. He supposedly obtained the book from Isaac Titsingh who was the Capitan in Deshima during the time Shiba visited Nagasaki looking for someone who could teach him the Western art techniques. Isaac Titsingh was a scholar who was very interested in the Japanese culture and conversely, the rangakusha in Edo were interested in obtaining any information Titsingh could provide. Foreigners were forbidden by law to purchase any material describing the customs, manners, or scenery of Japan. Titsingh could only gather paintings, prints and other scholarly evidence in the form of gifts; therefore, Shiba being a better artist than any of the ran-

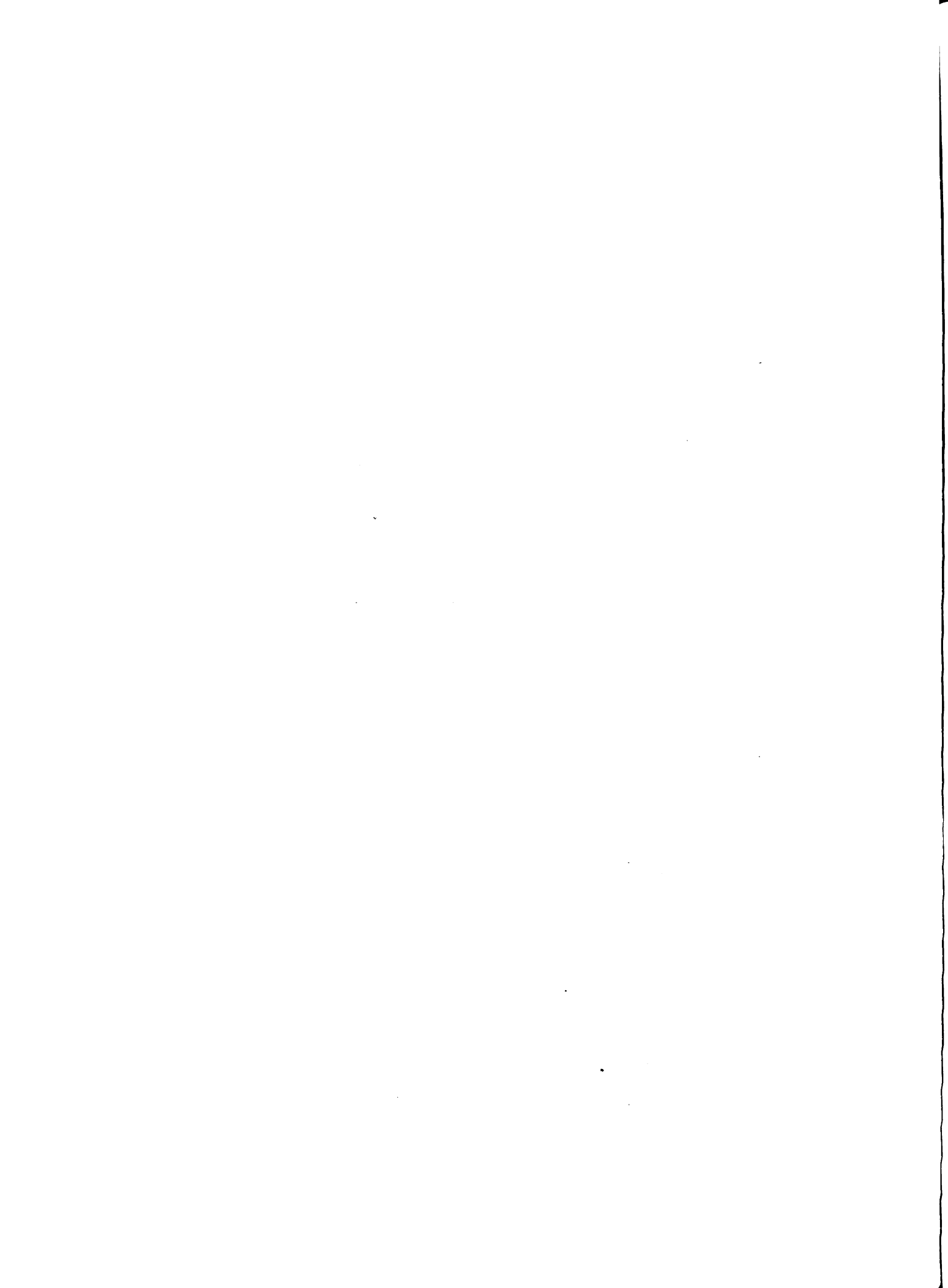




Figure 18. Ukiyo-e print showing the Dutch in Japan.



Figure 19. Ukiyo-e print of a Dutchman

gakusha, was equipped to provide Titsingh with local scenes. Shiba may have received the book in return for his illustrations.

Copperplates attracted Shiba as much as Western painting and he readily gave up woodblocks to study the art of etching, a technique that permitted greater accuracy and detail. Although copperplates had been done in Nagasaki previously, with the banishment of Christianity this art was lost until Shiba rediscovered it and executed his first copperplate etching in 1783. Unlike previous copperplates which were copies of religious art themes, Shiba's first copperplate reflected a typical Japanese landscape giving new meaning by applying a new method to an original Japanese concept.

Shiba Kokan's method of learning Western techniques of printing and painting was basically to teach himself. The exception was procuring the formula for copperplate etching for which he consulted with a scholar, Otsuki Gentaku (1757-1827). Initially, Shiba copied the Western models provided in books and paintings using Japanese subjects in place of the original European scenes; thus, he began to understand the use of perspective and shading. Books and paintings from Europe were rare in Japan and highly prized. Those who possessed them usually passed them along to comrades in a cooperative effort to gather as much information as possible. Upon arrival of a new painting from Europe, the Japanese artists who wished to learn the Western technique would flock to see it and try to learn what they could from it.



The Japanese artists were not inept or inexperienced painters but, unfortunately, the materials available to them hindered their attaining the precise delineation and lustrous finish characteristic of Western prototypes. Each artist was obliged to mix his paint from materials at hand; these were vegetable or mineral pigments, chalk, glue, alum, pine resin, egg yolks and soybean oil. The ingredients were boiled, strained and blended according to the color and texture desired. Western canvas was unheard of and the Japanese paintings were executed on silk, hemp cloth, wood or paper. Shiba's paintings in the European style were done using chalk, wax and oil painted on silk. The paintings executed using these techniques (principally chalk) were called DORO-E (mud painting) which lacked the lustre and translucence of the Western paintings.

Kokan occupies a place of unique importance in the development of Japanese culture. He accomplished this by making sure that his work and, eventually, his books and essays, were not limited to any select group of scholars but were available to Japan as a whole. His objectives were similar to those of the rangaku scholars: demonstrating that the study of Dutch was of value; that the Chinese theories were in error; and, to dispute China's claim that China was the center of the world.

Kokan noted that prints of Mount Fuji were very popular with the members of the Dutch embassy and concluded that the mountain must be one of the most beautiful in the world. Previously, depictions of Mount Fuji were done in the Chinese

style which was incapable of portraying the mountain as it really looked. Thus, Mount Fuji looked more Chinese than Japanese.

People talk of Japanese painting, but it is entirely derived from China, and even its exponents are drawing Fuji, Japan's most celebrated mountain, and the methods they employ are Chinese. Nothing whatever has been invented in Japan.²⁶

Kokan was determined to depict the true beauty of the peak better than any previous Japanese artist. With knowledge of Western art, he was able to accomplish his task:

What is remarkable in painting is that it enables one to see clearly something that is not actually there. If a painting does not truly portray a thing, it is devoid of the wonderful power of art. Fuji-san is a mountain unique in the world, and foreigners who wish to look upon it can do so only in pictures. However, if one follows only the orthodox Chinese methods of painting, one's picture will not resemble Fuji, and there will be none of the magical quality in it that painting possesses. The way to depict Fuji accurately is by means of Dutch painting.²⁷

Shiba felt that Western painting was more useful and practical in its application to the service of the country than Chinese art which was an accomplishment of the dilettanti.

In Western countries, painting is positioned above the letters showing that painting and letters both are done in the service of the country. On the other hand, paintings in the Oriental countries are playthings. This idea, such as anything which is useful for the country, is most important. This is Hiraga Gennai's idea.²⁸

²⁶Keene, Op. Cit., p. 26 ²⁷Ibid.

²⁸Nishimura, Op. Cit., pp.394-398



The excellence of a painting lies in the fact that one can see immediately things that could not otherwise be seen; therefore, if pictures do not portray objects accurately, they are neither admirable nor useful.²⁹

This idea of the usefulness of Western art extended into the concept that art had educational value.

Western painting captures the very soul of creation. The Japanese and Chinese paintings are like toys and are not of much practical use. Western painters use light and shade to express contrasting effects - smoothness, roughness, distance and proximity, depth and shallowness. Western painting is used in place of words to express and explain things, there being some things which can not be expressed by words alone but must be explained through painting. This is one reason why there are so many illustrations in the Western books. Such works as we produce for amusement in our leisure hours can not compare to Western illustrations and practical functions. Western illustrations are, in fact, a skillfully used tool. In painting according to Japanese and Chinese styles, it is impossible to depict the objective truth.³⁰

Shiba Kokan knew Sugita Gempaku and agreed with his ideas about Western studies:

Chinese studies are mostly philosophical in nature. They contain flowery images rarely describing actual objects realistically since they deal with the essence of things. Dutch studies, on the other hand, deal only with reality.³¹

Shiba, seeking the "objective truth" through Western art, traveled to Nagasaki in 1788 making stops along the way and showing his new style of painting and engraving/etching to everyone with whom he came in contact. Shiba became

²⁹French, Op. Cit., p. 7

³⁰Yamada, Dialogue in Art: Japan and the West, (Kodonsha International, Tokyo, n.d.) p. 24

³¹Nishimura, Op. Cit., pp. 394-398

famous in this manner and by his art, impressed many with the value of Dutch learning.

Unfortunately, there were the traditionalists who could not understand Shiba's or any of the rangakusha's views. This skepticism brings to mind a quote on the subject of traditional Japanese esthetics that may show why the Japanese were so reluctant to accept the study of the West. Chikamatsu Monzaemon (1653-1724) was a literary dramatist, considered the 'Shakespeare of Japan' and he was talking on 'realism in Art' to a friend:

In this connection, there is the story of a certain court lady who had a lover. The two loved each other very passionately, but the lady lived far deep in the women's place, and the man could not visit her quarters. She could see him therefore only rarely, from between the cracks of her screen of state at the court. She longed for him so desperately that she had a wooden image carved of the man. Its appearance was not like that of any ordinary doll, but did not differ in any particle from the man. It goes without saying that the color of his complexion was perfectly rendered; even the pores of his skin were delineated. The openings in his ears and nostrils were fashioned, and there was no discrepancy even in the number of teeth in the mouth. Since it was made with the man posing beside it, the only difference between the man and this doll was the presence in one, and the absence in the other, of a soul. However, when the lady drew the doll close to her and looked at it, the exactness of the reproduction of the living man chilled her, and she felt unpleasant and rather frightened. Court lady that she was, her love was also chilled, and as she found it distressing to have the doll by her side, she soon threw it away.

In view of this we can see that if one makes an exact copy of a living being... one will become disgusted with it.³²

³²Tsunoda, Sources of Japanese Tradition, (Columbia Univ. Press, New York, 1958) p. 449

Eventually, this traditional idea disappeared as the ranks of the rangaku grew and the teachings of Confucianism and Buddhism were disproved. Daimyo Satake Yoshiatsu, who was Hiraga's student in art, argued that the traditional view of art was not practical:

For painting to be of any use whatever, it must resemble the object it portrays. If one paints a tiger in such a way that it looks like a dog, the lack of resemblance becomes comical. Those lofty spirits who claim that one should paint conceptions and not mere forms lose sight of the practical uses of painting.³³

This view of Western art came with the realization that through the didactic art seen and understood within the Dutch texts, the Japanese would be able to further their understanding of the Universe -- the beginnings, after all, lay in the teachings of Neo-Confucianism - investigation of things.

Otsuki Gentaku in his book Rangaku Kaite (1788) wrote about the trends and the attitudes at the time:

There are people who admire Dutch art and inventions. For the most part, these people are curious about foreign things and being rich, they rarely question the price required for purchase. They use Dutch imports to beautify their homes. For the past hundred years, wealthy Japanese have done this.

However, very few have actually learned from these Dutch imports. Scholars involved in medicine, astronomy and herbal medicine were the ones who took the time to study Dutch illustrations.

Western painting was utilized politically to further knowledge and, thus, maintain Japan's independence and power. This was the reason for the interest in Western painting techniques.³⁴

³³Keene, Op. Cit., p. 62

³⁴Nishimura, Op. Cit., pp. 77-92

Shiba Kokan in pursuing the Western technique of art came to understand other things that had held his interests. Shiba had interest in the fields of geology (possibly through contact with Hiraga Gennai), geography and astronomy. Shiba's popularization of Western knowledge was accomplished not only through personal contact but through his books as well. Shiba Kokan's books were published, unadorned by literary flourishes, for the general public and written in a direct, agreeable style. He persisted in his endeavors until his views were accepted by the most progressive men of his age.

In 1792, Shiba Kokan published his first copperplate map Yochi Zenzu (Complete Map of the Earth) and Yochi Ryakusetsu (Brief Explanation of the Earth). It was Kokan's hope in executing these pieces that his fellow countrymen would be inspired to learn about the world in which they existed.

Some time ago, I learned the Dutch method of copperplate engraving and have already exhibited many pictures that I produced by the new method. Then I conceived the idea of making a copperplate map of the world, using as a model a map made in the West, and recently I completed the task.

There are very few persons in Japan today who know anything about the other countries of the world, and I sincerely hope that by looking at

my map people will learn something of the world's great size. The details may require revision by someone better informed than I, but my humble ambition is simply to inform the people of Japan about the world. For the same reason I have written an explanation that I hope will prove useful in affording a more comprehensive understanding of the map.³⁵

In order to avoid incorrect readings of the names on his map, Shiba used KANA, the Japanese syllabary, rather than the traditional Chinese characters. Unfortunately, although Shiba's map was intended for the general public, the government reserved the rights to it as it held vital information. Any work dealing with foreign knowledge was subject to government censorship as in the case of the Kaitai Shinsho. Although the map and the subsequent revision of the same map were censored, Shiba's explanations were allowed to be disseminated to the general public.

Although there were other world maps made in Japan before Shiba, Shiba's maps were printed with copperplate engravings rather than woodblocks. This copperplate method set a precedent for all subsequent detailed charts as the artists/scholars after Shiba adopted the new medium. This also verified the superiority of copperplate engraving for depicting scientific details.

Between 1792 and 1793, Shiba devoted his time to gathering more data to add to his map and his text (Yochi Zenzu and Yochi Ryakusetsu, respectively) and in 1793, he published

³⁵French, Op. Cit., pp. 121-122

the Chikyu Zenzu and the Chikyu Zenzu Ryakusetsu. Within these two texts, the description of a geocentric universe, a discussion of the seasons, the length of day and night according to the earth's Torrid, Temperate and Frigid zones; the difference between solar and lunar eclipses; and the earth's five continents, were given. But, more important, in the second book, the Chikyu Zenzu Ryakusetsu, Shiba introduced the concept of a heliocentric system (Copernicus' Theory).

Although Shiba had been recognized as the person who introduced Copernican astronomy to Japan, in 1773 Motoki Ryoei (1735-1794) in his translation for the government mentions the Copernican theory. Ryoei was carrying out his official duties as an interpreter-translator for the government and unlike the rangakusha, he had no desire to enlighten his countrymen. The shogunate at that time were not interested in a speculative matter such as the heliocentric theory and Ryoei himself was not an astronomer. Thus, Ryoei's translations remained within the court, to be read only by those who commissioned them and by a few scholars. In contrast, Shiba's books were widely published and freely circulated and Shiba Kokan was recognized as "the father of the heliocentric theory in Japan".³⁶ Because of his popular book, Shiba enlightened a wide circle of people, among them the astronomers and, eventually, the scholars of navigation. The Copernican theory made popular by Shiba led to studies

³⁶Ibid., p. 120

of Western geometry and other astronomical solutions in determining a new calendar, Shogun Yoshimune's earlier dream.

Shiba's studies also included geology. His observations recorded in Shumparo Hikki (1811) and Tenchi Ridan (an unpublished manuscript completed in 1816) led the other Japanese scholars to praise Shiba, comparing him to Abraham Gottlob Werner (Europe's "Father of Geology"). Shiba, possibly influenced by Hiraga Gennai, made observations of hydrogeous and igneous theories with surprising accuracy. In Shumparo Hikki, he states:

When I thought about it, I realized that the many creases in the mountain ranges actually have the appearance of having been formed by eroding water. Only Mt. Fuji is a self-formed mountain that in prehistoric times burned for thousands of years and shot forth sand that congealed, formed into masses, and finally became rock. Earth became crags, which after many centuries became harder rock. Water turned to quartz and crystal. All of these phenomena occurred before the creation of our present world.³⁷

At times, Shiba's explanation's weren't scientifically valid; his motivation was to expand the intellectual horizons of his countrymen. Shiba, however, used his newly acquired knowledge to challenge antiquated beliefs such as the Buddhist explanation of the cosmos.

Other studies were being made at the time Shiba was making his new discoveries. Of greatest importance was the publication of the first Dutch-Japanese dictionary in 1785. A first attempt had been made by Nishi Zenzaburo (d. 1768)

³⁷Ibid., p. 141

who tried to make a dictionary from P. Marin's Dutch-French dictionary but Nishi died the year after he started. Maeno Ryotaku took up Nishi's work but he, too, was unable to complete the project. Finally, Inamura Sampaku (1759-1811), a follower of Otsuki Gentaku who was a follower of Sugita Gempaku, completed the project with the encouragement of his master. This dictionary was made from the Dutch-French dictionary Woordenboek der Nederduitsche en Fansche Taalen, Dictionnaire Flammand et Francais (Amsterdam) published by Francois Halma (1652-1722). With the publication of this dictionary and subsequent dictionaries, great progress was made in the study of Dutch sciences.

By 1788, Otsuki Gentaku made a list of useful objects imported by the Dutch but because of the censorship by the shogunate only things dealing with medicine and cloth were used. This was probably compiled from Nieuw en Volkomen Woordenboek von Konsten en Weetenschappen (New and Complete Dictionary of the Arts and Sciences by Egbert Buys published in Amsterdam, 1775) that was considered excellent by those who were trying to study Dutch medicine; Sugita Gempaku had recommended it and he tried to translate it but it was finished by Otsuki, called Yo-i Shinsho.

Otsuki Gentaku, also reflecting the rangakusha, stated in the Rangaku Kaite:

Of the various illustrations in the books brought by the Dutch, all of the illustrations copy exactly the living things. Illustrations and explanations go hand in hand and the positions and et cetera are very detailed. Light and dark,

black and white, all are suited like the actual thing; and color, shadow and shape are true to the actual thing.³⁸

In 1826, Otsuki Gentaku revised the Kaitai Shinsho now that his knowledge was greatly enhanced with the understanding of the Dutch language and he chose Aodo Tazen to be his illustrator. (Figs. 20, 21)

Aodo Tazen

Not much is known about Aodo Tazen in terms of age, although it is said that he was 31 years old when he studied art under a Buddhist priest named Gessen in 1785. Tazen, whose original name was Nagata Zenkichi, got his name from the last two letters of his last name Nagata and the first three letters of his first name Zenkichi. The name Aodo was given to him by his lord, Matsudaira Sadanobu (Prime Minister during 1786-1793 under the 11th Shogun); the name meant "Hall of Europe and Asia". Aodo was Matsudaira's protege and they were introduced to each other by Tani Buncho who was Matsudaira's samurai. Tani Buncho had met Shiba Kokan in 1788 and was involved in Western art. Tani had painted sceneries of the country for Matsudaira. In 1796, Aodo was invited to live in Matsudaira's castle and at what point Aodo came into contact with copperplate engraving is not known but, obviously, Aodo was influenced by Tani in terms of Western art. Aodo may have learned from the

³⁸Nishimura, Op. Cit.

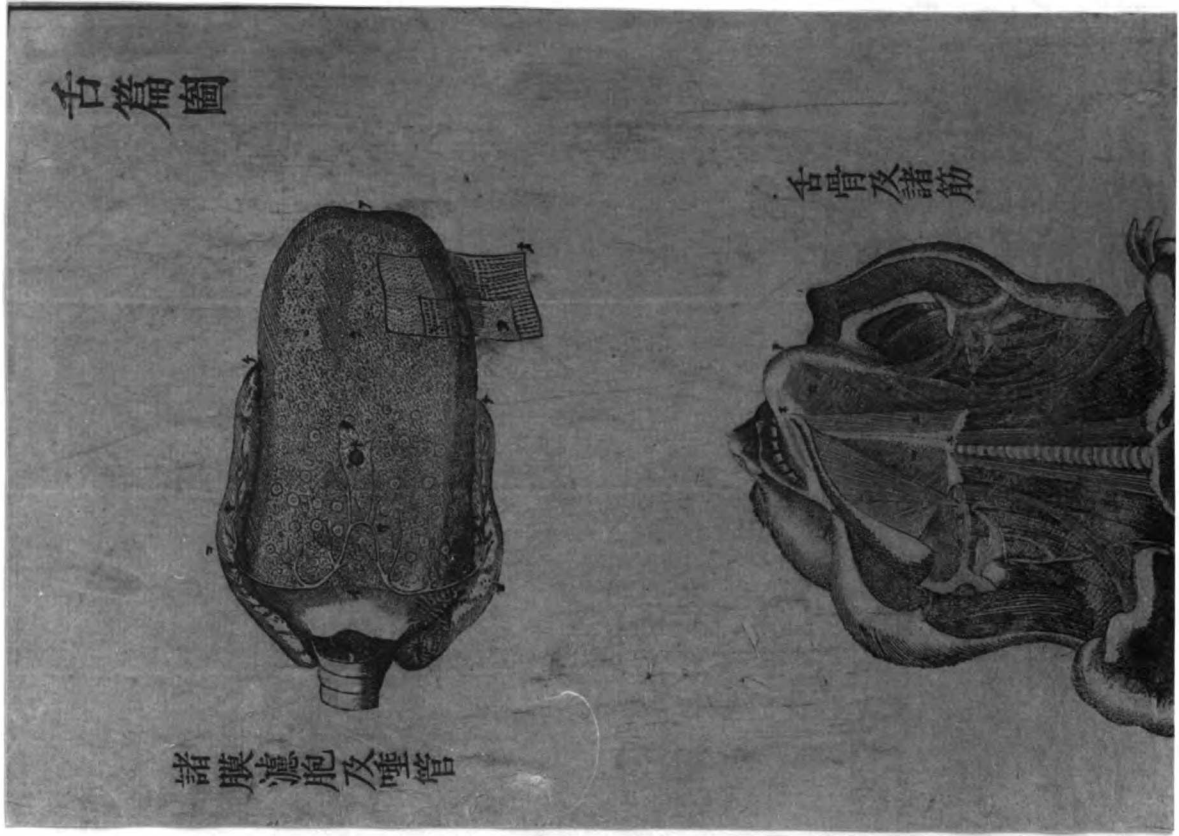


Figure 21



Figure 20

scholars under Matsudaira and may have seen the same book as Shiba Kokan, viz., Huishoudelijk Woordenboek, a Dutch translation of a dictionary of Arts and Science written by a Frenchman named Noel Chomel. Regardless of wherefrom he gained his knowledge, by 1810, Aodo was respected by the Japanese government for publishing a map of the world. His work was more accurate in detail than Shiba Kokan's. Aodo was outstanding in his execution of copperplate engraving and etching, strongly observant and a strict realist compared to Shiba who was better as a painter and treated his art on a more esthetic level. Aodo took didactic art a step further and was represented in the revised Kaitai Shinsho. Aodo Tazen, notably, was from the merchant class unlike his predecessors who were samurais.

Along with the new understanding in medicine and sciences, other areas of study of Western art were introduced. For example, because of its practicality, Western art was utilized in Japan to protect the country against invaders through the study of military books. (Fig. 22) The study of Dutch, the rangakusha movement, by now had affected all classes in Japan. A daimyo named Mito Leko stated to his samurais:

I don't say that everyone should study Arts and Crafts. However, if you want to study History, Politics, Military Arts and other subjects, then you should study Arts and Crafts and art techniques and use them for the nation; that way the nation benefits a great deal.³⁹

³⁹Ibid.



Figure 22. The inscription in the upper right hand corner describes the dimensions of the ship and how many men it will carry, et cetera.

By the mid-1800's, the Tokugawa government had begun to falter. The philosophies of Buddhism and Confucianism were being repudiated because of the discovery of new knowledge gained through Dutch learning. The Samurai who had power for centuries were losing power to the merchant class which gained economic status through trading with the Dutch. The peasant class were rising up against the decreasingly powerful samurais who for more than 250 years had overtaxed and oppressed them. The Americans and the British as well as the Russians were pressuring Japan to open its doors for trade.

In 1850, homage to Edo by the Dutch was abolished. Sakuma Shozan (1811-1864), a Confucianist of the Oyomei school, stated:

People talk of the activity of the learning of the West and the inevitable decline of Confucianism. I say since the learning of the West is flourishing, the nourishment of the teachings of Confucius gains these resources. Now the learning of the West is Science, while the teaching of Confucius is Morality. Morality may be compared to food and Science may be compared to vegetables and meat which help savor food. Who would say that with vegetables and meat, you can destroy the essence of food.⁴⁰

By the 1860's, the Americans and British had arrived and the Japanese people, who had for all these years studied Dutch, discovered that these new countries offered even more than the Dutch in technology and art. Fortunately, they were well prepared through all the trials and errors in

⁴⁰Smith, Op. Cit., p. 27

learning Dutch and the problems that lay ahead did not seem too arduous.

In 1868, the Tokugawa dictatorship ended and the power of the Emperor was restored; this new period was called the Meiji Restoration. A new Japan was born and although it was physically severed from continuing Chinese influences, the Chinese basis of morality remained. What was gained from the Dutch would initiate in depth studies of all Western technologies and sciences. This combination was to hold for modern Japan. "Chinese and Western learning together are to become the wings of the Imperial way."⁴¹

⁴¹Ibid., p. 40



CONCLUSION

I hope that through this thesis, readers will gain some insight into the Japanese culture and how Western Visual Art played a vital role in the modernization of Japan. The idea is basically a simple one -- that to communicate cross-culturally where language is a barrier, one may effectively resort to visual, images and/or symbols.

Many aspects of Japanese culture could not be presented in depth and much had to be omitted entirely. I am also convinced that much as the East has learned about the West, there is much that the West can learn about the East and hopefully, this thesis is a small beginning in reaching increased understanding.

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