
At this period the shogunate of the Ashikaga family was tottering toward its fall. The Shôgun, or Sei-I-Tai-Shô-Gun (which was the full title, meaning "Generalissimo for the Subjugation of Barbarians"), was the head of the military class and de facto ruler of the country; for the Emperor and the civil lords who formed his court had very little or no real power, although they were reverenced by the people and outwardly treated with honor and deference by the shôgun and his followers. The office of shôgun had at the time of the first coming of the Portuguese been hereditary in the Ashikaga family for over two hundred years, but in the feeble hands of its latest representatives its authority had gradually been weakened until the great military chiefs throughout the country paid but little attention to their orders and were continually fighting against one another in

1 A lecture presented at the inauguration of the Rice Institute, by the Right Honorable Baron Dairoku Kikuchi, Rigakuhakushi, M.A., LL.D., Privy Councillor, President of the Imperial Academy, Honorary Professor of the Imperial University of Tokyo.
a struggle for self-aggrandisement. Among them appeared three great men: the first was Nobunaga (of the Ota family), who deposed the last of the Ashikaga shōguns (1573) and brought the whole of central Japan under his authority. After Nobunaga was killed by one of his own generals (1582), Hideyoshi, another of his generals, better known by his subsequent title of Taikō, extended his power over the whole country. After the death of the Taikō in 1598, Iyeyasu, the head of the Tokugawa family, who had been gradually strengthening himself, patiently biding his time under Nobunaga and Hideyoshi, became shōgun in 1603 and established his government in Yedo. Iyeyasu and his descendants held the shogunate for fifteen generations, and were the real rulers of the land for over two centuries and a half, during which period Japan enjoyed a most profound peace, and learning and the arts flourished under the patronage of shōguns and daimyōs (or feudal lords).

The above brief outline is necessary for a clear understanding of the environment in which the first introduction of Western learning took place. The Portuguese were welcomed by the military chiefs principally for the sake of firearms, which were first introduced by them, and which of course gave to those possessed of them an immense advantage over their enemies. Their use and making were eagerly acquired, and already in 1553 the shōgun Yoshiteru had guns made for him at Anato, in the province of Omi, not far from Kyoto. The introduction of firearms necessarily brought about a change in tactics and fortification, but it is uncertain how much the military chiefs learned in these things from the Portuguese.

Not very long after the first coming of the Portuguese, the Jesuit missionaries arrived. They also were well received by the military lords of Kyūshū, several of the most
powerful of whom became converts; so that Christianity at first made rapid progress, spreading not only in Kyūshū and adjoining provinces, but also in the neighborhood of Kyoto, and later even in northwestern Japan. The shōgun Yoshi-teru, mentioned above, is himself said to have been among the converts. Nobunaga also was at first favorable and built for them a church in Kyoto called the Nanbanji, or "Temple of the Southern Foreigners"; but he afterward repented of this, and his successor Hideyoshi issued orders for the suppression of Christianity. It may be mentioned that the motives which influenced both Nobunaga and Hideyoshi were entirely political and not at all religious.

Iyeyasu, his successor in power, was friendly to foreigners, and among others treated a Dutchman named Jan Joost and an English pilot, Will Adams, who arrived in a Dutch ship in 1600, with great consideration; he was eager to learn from them about the world outside of Japan. He and his successors, however, looked with no favorable eyes upon missionaries or their converts, for they were a source of trouble everywhere on account of their intolerance and quarrelsome attitude toward those of other faiths. They were, moreover, suspected of political intrigue against the shōgunate and against the country; so orders were issued expelling not only the missionaries but all Portuguese and Spaniards, and forbidding people to profess Christianity on pain of death or exile. This state of affairs culminated in the breaking out in 1637 of rebellion in Shimabara, near Nagasaki, whither had flocked not only Christians driven by persecution from other parts of the country, but also a large number of malcontent and turbulent spirits, followers of lords who had fought unsuccessfully against the Tokugawas. The rebellion was put down early in the next year, and most stringent measures were taken to stamp out Christianity al-
Introduction of Western Learning into Japan together. Already in 1630 an order had been issued by which all foreign books, without exception, were interdicted; for although it was primarily aimed at religious books, it was impossible to make such a distinction without a knowledge of European languages. In 1635 another order was issued prohibiting all traveling abroad under the penalty of death. Thus, about ninety years after the first arrival of the Portuguese ships, all foreign intercourse was forbidden except such as was permitted with the Dutch and the Chinese under severe restrictions.¹

It is hard to say exactly how much learning had been transmitted by the Portuguese and Spaniards during this period. Among the missionaries were some skilled in medicine and surgery, and their method of treating wounds seems to have been especially appreciated; thus an elementary knowledge of “Nanban” surgery, as it was called, as well as of the warlike art of gunnery, seems to have been acquired by the Japanese from them. A man named Hayashi, who was put to death (1646) for professing Christianity, had acquired some knowledge of Western mathematics and astronomy, which he transmitted to his pupil Kobayashi; he had translated and published a work on astronomy (1635), which stands second in the list of the translations of Western books into Japanese, the first being Æsop’s “Fables,” translated and published early in the seventeenth century, although perhaps neither of these was a translation in the strict sense of the term, but rather a compilation. It is also interesting to note that some of the great military lords used seals bearing their names in Latin letters. There are several Japanese words of Portuguese and Spanish origin, which bear testimony to the introduction in those days of

¹ The English had previously abandoned the field, and their request to resume intercourse in 1673 was not entertained.
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various manufactures; such, for example, as *biidoro* (glass, Portuguese *vidro*), *botan* (button, P. *botao*), *birôdo* (velvet, P. *veludo*), *kappa* (rain-cloak, Spanish *capa*), *meriyasu* (knit-work, S. *medias*), etc. On the whole, the amount of Western knowledge introduced during this period cannot have been very great.

**THE SECOND PERIOD**

Our intercourse with the western world after the exclusion of the Portuguese and Spaniards was through the Dutch, who were permitted to come to trade in the single port of Nagasaki; even here they were confined to a small quarter of the town known as Dejima, and the trade was subjected to rigorous restrictions and placed under the strict surveillance of officials of the shogunate. A corps of interpreters was maintained in Nagasaki, the office being hereditary in certain families, as was the case in those days with almost all professions; but even they were not permitted to read or possess any foreign books, so that their knowledge of the Dutch language was entirely oral; it was not till 1745 that this prohibition was removed. Once a year (afterward once every four years) the Dutch “capitan,” or chief factor, was required to come to Yedo to pay his respects to the shôgun; and these visits played an important part in the introduction of Western knowledge into Japan, for scholars in Yedo took advantage of these occasions to “interview,” usually with official sanction, the “capitan” and those who accompanied him, asking all sorts of questions on all sorts of subjects. It is pathetic in some cases to read of distinguished scholars, in their simplicity and zeal for knowledge, reverently asking questions such as the factors could scarcely have understood; yet as in those days communication between Nagasaki and
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Yedo was not easy, and as the "capitans" were accompanied by physicians (rarely by such men as Kaempfer, Thünberg, and Von Siebold, who took advantage of their visits to see the interior of Japan), those interviews were really a great opportunity for those who were eager to learn about the West.

Although the first three shōguns of the Tokugawa family took such strong measures to suppress Christianity, even going so far as to cut off almost all foreign intercourse and to interdict all foreign books, yet both they and their successors were patrons of learning and the arts, and were by no means averse to the introduction of useful knowledge from the West. Several of the interpreters and others who had picked up some medical, or rather surgical, knowledge from the Dutch physicians in Nagasaki were appointed physicians to the shōgun, an example which was followed by the daimyōs. Arai Hakuseki¹ (1657-1725), a great Chinese scholar and a trusted adviser of the shōgun Iyeyasu, sixth shōgun of the Tokugawa family (1709-1711), interviewed at the command of the shōgun a Franciscan priest who had arrived in 1709 at Osumi in Kyūshū and had been summoned to Yedo, where he was kept in confinement. This priest seems to have been a man of some attainments, and an account of the interviews and their results, supplemented by subsequent interviews with Dutch "capitans," was embodied in two books entitled Sairan Igen (1713) and Seiyō Kibun (1715). These books, written by a man of Arai's standing and scholarship, gave certain importance and prestige to their contents—i.e., to matters Western—which they had not hitherto possessed, and thus opened the way for the introduction of Western learning. For this reason Arai Hakuseki is regarded as its pioneer.

¹ All the names of men are given in the usual Japanese way—i.e., with the family name first.
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The accession of the eighth shōgun, Yoshimune (1716–1745), gave a great impetus to the introduction of Western learning. He was specially interested in astronomy, and had a celestial globe and a sundial made for himself; he also sent to Nagasaki (1719) for Nishigawa Joken, who had obtained some knowledge of astronomy from Kobayashi (see above), and finally established an astronomical observatory in Yedo in 1744. Up to this time, foreign books being prohibited, the little Western knowledge that had been acquired had been either through oral communications or through Chinese translations, which had filtered through to Japan, Chinese books not coming within the category of prohibited books, for Chinese was the language of scholars in Japan to within very recent times, just as Latin was the language of the learned in Europe of the Middle Ages. But now Yoshimune removed this interdiction on foreign books, excepting those on religion (1720). In 1738 a book on astronomy presented to the shōgun by the Dutch challenged his admiration by the excellence of its illustrations, and seeking for some one to read the explanations of the plates, he ordered a man named Aoki Bunzô (1698–1769) to begin the study of the Dutch language. Aoki learned some Dutch words from the interpreters who came to Yedo with the factor, but not making much headway he went to Nagasaki, where incidentally he was instrumental in getting an order from the government allowing interpreters to read books. He returned to Yedo, having succeeded in learning only some five hundred words, which is very good evidence of the extreme difficulty of the task in those days. I regret that the space at my command does not allow me to enter into an explanation of the various obstacles that lay in the way of such study.

The death of Yoshimune in 1751—he had retired from
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active life in 1745—was a blow to the advancement of Western learning; but the impetus given could not be checked. Thus the Observatory, although abolished in 1757, was re-established in 1765. Objects brought by the Dutch began to be sought for as curios and articles of virtu, books among the rest. About this time there also flourished an eccentric and versatile genius called Hiraga Gennai; among other evidences of his originality, he in 1770 constructed an electric machine like one which he had seen in Nagasaki.

THE THIRD PERIOD

But now comes an event of the first importance in the introduction of Western knowledge, namely, the translation and publication of the first work on anatomy in 1774, through the joint efforts of Maeno, Sugita, and others. Up to this time the only attempt made to read Dutch books had been made by Aoki, who, as already mentioned, succeeded with enormous difficulty in learning several hundred words; some knowledge of astronomy had been acquired through Chinese translations, and the Dutch medicine, so called, had been represented by an empirical practice of surgery.

Maeno Ryôtaku (1723–1803), a physician to the Lord of Nakatsu, was a man of great originality and perseverance, and Sugita Genpaku (1733–1817), a surgeon of the so-called Dutch school, was a man of kindred spirit. Indeed, most of those who were pioneers in the introduction of Western knowledge into Japan were men of original ideas and advanced views, eager and indefatigable in their pursuit of knowledge, often at the risk of personal inconvenience or danger. Maeno, impelled by a desire to read Dutch, but unable to get much assistance from the interpreters who came with the Dutch to Yedo, became a pupil of
Aoki, who taught him all he knew. Both he and Sugita derived much profit from a Dutch physician who came one year to Yedo. Not content with this, Maeno went to Nagasaki for several months in 1770, and returned with his vocabulary extended to some seven hundred words, and with a Dutch dictionary and a book on anatomy ("Tafel Anatomia"). The next year he and Sugita were present at the dissection of an executed criminal in Senju, a suburb of Yedo, where the executions generally took place. Such dissections began about this time to be occasionally made on the bodies of executed criminals, at the request of influential physicians, the knife being usually wielded by the executioner, a member of the low Eta caste (the only caste that existed in old Japan, and now entirely done away with), who pointed out to those present such organs as he happened to know. The fact that such dissections took place is an evidence of the universal spirit of intellectual unrest which distinguished this age, and of which indeed the desire for Western knowledge was one of the manifestations. Up to this time, however, doctors had not dared to question, openly at least, the truth of the old Chinese teaching about the constitution of the human body, but had been enveloped in doubt and perplexity. On that memorable day Maeno, Sugita, and a few others, comparing what they saw with the figures in the "Tafel Anatomia" that Maeno had brought from Nagasaki, and of which Sugita by a most happy coincidence had also secured a copy, were greatly impressed by their faithfulness to nature, and then and there they determined to devote their lives to exploring the new domain of knowledge thus opened to their view. The very next day they met at Maeno's house and began the work of deciphering the book—for it was deciphering, and nothing less. To this task Maeno brought his knowledge of some seven hundred words
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and the dictionary, while some of them did not even know
the alphabet; but, nothing daunted, they set to work and
toiled for three whole years, until 1774, during which time
the band was joined by some new members and deserted by
some old ones. The names of the eight who were constant
in their devotion to the self-appointed task deserve to be
mentioned here, viz., Maeno Ryôtaku, Sugita Genpaku, Kat-
suragawa Hoshû (1751–1809), Nakagawa Junnan, Ishi-
kawa Genjô, Toriyama Shôen, Mine Shuntai, and Kiriyama
Seitetsu. Sugita always wrote out at night what had been
deciphered during the day, making corrections and revisions
as the work progressed, so that at the end of three years the
translation was completed simultaneously with the decipher-
ing. The publication of this work, entitled Kaitai Shinsho,
or “New Anatomy,” marks an epoch in the history of the
introduction of Occidental civilization into Japan; for not
only was it a great training and education to those who took
part in it, giving them confidence and power, and making
them, as it were, the center of the new movement, but it
made known to a much wider circle than before the existence
of an entirely new system of learning and roused a spirit of
inquiry in bolder minds, many of whom joined the pioneers
as associates and pupils and became their successors in carry-
ing on the work.

Maeno was interested in the Dutch language, and wrote
several books in order to make its study and translation
easier, while Sugita devoted himself more especially to the
advancement of the knowledge and practice of the new
medicine. From this time on, the introduction of Western
knowledge was placed on a firmer basis; for original books
became accessible to those who took pains enough—great
pains, no doubt, but not to be compared with those of Maeno
and his fellows. To this result Otsuki Gentaku (1757–
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1827), a pupil of Maeno and of Sugita, contributed very greatly, both by his personal teaching and by his books, among which may be specially mentioned one entitled *Rangaku Kaieti*, or “Introduction to the Study of Dutch” (1788). Many now came to him to get help in reading Dutch; one of his pupils, Inamura Sanpaku, compiled a Dutch-Japanese dictionary containing eighty thousand words, after a Dutch-French dictionary of François Halma, and type-printed thirty copies of it by subscription in 1796. An abridged edition containing thirty thousand words was afterward made by his pupil Fujibayashi, of which one hundred copies were printed in 1810. Another dictionary based on the same Dutch-French dictionary was compiled at Nagasaki by a Dutchman, Hendrik Doeff, a resident in Nagasaki for seventeen years, with the assistance of Yoshiwo Gonnosuke and other interpreters. This was completed in 1816, but was not printed until much later (1855-1858). It was afterward known as “Doeff Halma” to distinguish it from the “Yedo Halma” of Inamura. Various abridged dictionaries were compiled, and some of them printed, all tending to make the acquiring of the Dutch language easier; but those of Inamura and Doeff continued to be standard works, and as they were both out of print, they used to be copied by poor students, who thereby earned money and at the same time increased their knowledge of the Dutch vocabulary.

The so-called Dutch medicine had up to this period been confined, as already mentioned, to the practice of surgery, but Udagawa Genzui (1755-1797), a physician to the Lord of Tsuyama, seeing the errors of the old Chinese school of medicine, became a pupil and afterward an eminent member of the band of Dutch scholars, and at the suggestion of Katsuragawa (one of Maeno’s co-workers) took up the study of a Dutch work on medicine by one Johannes Gorter. Al-
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though he had the invaluable assistance not only of Katsuragawa, but also of Maeno, Sugita, Otsuki, and others, who all earnestly desired his success for the sake of the advancement of their cause, he had to contend not only with the difficulty of the subject-matter itself, but also with that of the language, as yet scarcely mastered. It took him nine years to complete the translation of the work, which was published in the tenth year (1793) under the name of *Naika Sen-yō*, or "Elements of Internal Medicine." This was the first time that the Western system of (internal) medicine was made known to the Japanese. Udagawa afterward wrote several other books on medicine. His adopted son, Udagawa Genshin (1769–1834), a pupil of Otsuki, was a very good Chinese scholar, and is said to have been a great help to Inamura in compiling his dictionary. He afterward revised and enlarged his father's work on medicine, and also published in 1806 a book called *I Han Teikō*, or "Manual of Medicine," which was of great service in diffusing Western medical knowledge. His mastery of Chinese made him a ready writer and translator—although, indeed, this might be said of almost all of those early pioneers of the new school.

Yoshida Chōshuku (1779–1824), a pupil of Katsuragawa, being led to the study of original Dutch books by reading Udagawa's *Naika Sen-yō*, was the first to begin the open practice of Dutch medicine. This gave great offense to the doctors of the old or Chinese school, who insisted that the Dutch system should be confined to surgery, as heretofore, and denounced the new medicine as outlandish and vicious; so that Katsuragawa was obliged to scratch Yoshida's name off the list of his pupils. Yoshida, however, was very successful, and afterward, on the recommendation of Udagawa, became a physician to the Lord of Kaga. He
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published in 1814 a book on the treatment of fever, entitled *Taisei Netsubyô Ron*, with a later supplement, and also a work on Dutch *matera medica*. He had many pupils—among others, Takano Chôei and Koseki San-ei.

Yoshiwo Jôan was the first to call attention to the importance of the study of physics, and as an introduction wrote a book on celestial phenomena called *Kwanshô Zusetsu* (1823). Aochi Rinsô (1775–1853) was the first to publish a book on physics, *Kikai Kwanran* (1827), which was afterward amplified by Kawamoto Kômin (1810–1871) in his *Kikai Kwanran Kwôgi* (1851). Kawamoto was interested in applied science, and made various experiments; he was successful in taking daguerreotypes and photographs. Aochi's *Bankoku Yochi Shiryaku* may also be regarded as the first systematic book on geography, although unfortunately it was not printed. In 1833 was published *Shokugaku Keigen* by Udagawa Yôan (1798–1846), adopted son of Udagawa Genshin, containing an exposition of systematic botany after Linnaeus; and in 1839, *Seimi Kaisô*, by the same author, which was the first book on chemistry.

We have already seen that the shôgun Yoshimune was interested in astronomy and founded an observatory. Astronomy, however, did not flourish; the knowledge of Western astronomy and mathematics, transmitted by Hayashi through Kobayashi to Nishigawa, died out with the last-named scholar. There were attempts at the translation of books on astronomy, such as that by Motoki Nidayû, a Nagasaki interpreter, who was ordered to translate a book on the use of globes, and notwithstanding his ignorance of the subject did accomplish the task (1793) after toiling at it for two years. The truth is that while in medical and allied sciences the translators were doctors who had some knowledge of the subject, or at all events were animated by
a zeal for it, astronomy suffered from an utter lack of mathematical knowledge on the part of those who understood Dutch. It may here be stated that a system of mathematics was being developed in Japan quite independently of Western mathematics, which was not introduced till later on, and even then it was cultivated side by side with, but quite distinct from, the latter. Under these circumstances the Observatory had fallen upon evil days, and the almanac for 1795 failed to predict the total solar eclipse which took place on New Year's day (old calendar). A reform was now imperative, and Asada Gôryû (1734-1799) was summoned from Osaka to take charge of the task. He was a man of great originality; a physician by profession, he had devoted himself to astronomy and had made observations with instruments made by himself, and arrived independently at several important results, which he afterward found to agree with those of Western astronomers as stated in Chinese books (translations or compilations mostly Catholic missionaries in China). Asada was too old to come to Yedo himself, but sent his two pupils, Takahashi Sakuzaemon (1764-1804) and Hazama Gorobei (1756-1816), in his place. They were both men of great ability, and under their direction a revised almanac was issued for 1798. Hazama then went back to Osaka. He was a man of some means, always had artisans working for him, and among other instruments made a barometer and a thermometer, with which he began meteorological observations which were kept up for some time after his death; he also devised an ellipsograph which is described by his son. The instruments used by Inô in his survey were made under the direction of Hazama after European models. Takahashi, Asada's other pupil, was placed permanently on the staff of the Observatory. It was at his suggestion and under his superintend-
ence that the geodetic survey of Japan was undertaken by Inô Kageyu (1744–1818). Inô was well over fifty when he began the survey in 1800, and spent the rest of his life on the survey, so that the maps were almost complete at the time of his death. The wonderful accuracy of these maps, which are still preserved and parts of which have continued to be the standard map down to the present day, bears ample testimony to the skill, patience, endurance, and scientific conscientiousness of Inô. Takahashi did not live to see the completion of Inô’s survey; he died in 1804, and was succeeded by his son Takahashi Sakuzaemon, junior (1785–1830), also an able and enterprising man.

At the suggestion of Takahashi, junior, a bureau of translation was established in 1811 in the Observatory, Otsuki Gentaku, Baba Sajûrô (1787–1839), a Dutch interpreter of Nagasaki, and Udagawa Genshin being the earliest members of the staff, which included at one time or another most of the eminent Dutch scholars, such as Otsuki Genkan (1785–1837), son of Gentaku; Udagawa Yôan; Sugita Rikkei (1786–1845), son of Genpaku; Sugita Seikei (1817–1859), son of Rikkei; Aochi Rinsô; Koseki San-ei (1787–1839); Mitsukuri Genpo (1799–1863), grandfather of the present writer; Kawamoto Kômin; etc. This bureau of translation was the germ which has developed through several stages of transformation into the present Imperial University of Tokyo. Such a bureau was decidedly a desideratum at that time; for the Russians in the north and the English in the south were beginning to make their presence felt, sometimes in a very unpleasant manner, and the government was desirous of obtaining a fuller and more accurate knowledge of the outside world. Already Dutch scholars had written many books and pamphlets, giving information concerning the nations of the world, of which some were printed and
Introduction of Western Learning into Japan published, some circulated privately in manuscripts, and some kept secret for official or individual reasons. Such were the Bankoku Zusetsu (“Map of the World, with Explanations,” 1786) by Katsuragawa, the Bankoku Shinwa (“New Talk about Different Countries,” 1789) by Morishima (a brother of Katsuragawa), a revision and enlargement of Arai’s Sairan Igen by Yamamura Saisuke (a pupil of Otsuki, 1802), Ho Ei Mondō (a warning about the movements of the English, 1807 and 1808) by Otsuki Gentaku, etc., besides many books on Russia and the Russians by almost every one of the above writers and several others. (I mention these to show that those pioneers of the new learning were alive to the dangers of foreign attack, and were the first to warn their countrymen of it.) In 1808 several of the interpreters at Nagasaki were ordered to learn Russian and English. One of them, Motoki Shōzaemon, wrote an English grammar (1811) and compiled an English-Japanese dictionary (1814), neither of which was, however, printed. It was not till 1847 that the study of English began to be taken up seriously in Yedo. About this time Rin Shihei (1738–1793) traveled all over Japan from Yezo to Nagasaki, and became convinced of the pressing necessity of coast defense, and of the danger arising from its total neglect. He tried to impress upon his countrymen the magnitude and imminence of this danger, and with this object he wrote several books, among others Kaikoku Heidan, or “Talk on the Arms of an Island Country” (1787, published 1791). This book led to his being kept in confinement (1792) for trying “to excite the people to unnecessary unrest by publishing preposterous opinions based on ridiculous rumors.”

The arrival of Philipp Franz von Siebold as physician to the Dutch factory was a great event in the history of the
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introduction of Western knowledge; for, besides his exceptional skill in medicine, he was also well equipped scientifically for carrying on the investigations in natural history for which he had come to Japan. He resided for six years, from 1823 to 1829, in Nagasaki, where he gave clinical lectures, and many Japanese doctors and scientists visited him and greatly profited by his instruction and guidance, while he himself also derived immense advantages from their assistance. In 1826 he came to Yedo, where, among others, Takahashi of the Observatory became acquainted with him, and gave him a map of Japan in exchange for some books which Takahashi was most anxious to acquire as likely to give a very good idea of the state of Europe, but which Siebold would not give him on any other condition. Now it was against the law to give a map of Japan to a foreigner, and this act of Takahashi being afterwards discovered, he was thrown into prison, where he died soon after. At the same time an ophthalmologist, Habu Genseki, was severely punished for having given Siebold, in exchange for some ophthalmological books and instruments, a kimono with the shōgun's crest which had been given him as a reward for some special service. Many others suffered in connection with this, and Siebold himself was expelled from the country. This was a very unfortunate occurrence, for Siebold had been a great help to the students of Western learning, and his expulsion was a real blow to its cause, and this act of disloyalty, even though it had been done with good intention, brought reproach on the votaries of the new learning.

Among those who received Siebold's instruction in Nagasaki were Itô Keisuke, Itô Genboku, Totsuka Seikai (a pupil of Udagawa Genshin), Takano Chôei (a pupil of Yoshida), and others. Itô Keisuke (1803–1901) became an eminent botanist, and in 1901 was raised to the peerage at the age of
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ninety-eight for his services to the state as scientist. Itô Genboku (1800-1871) and Totsuka (1799-1876) came to Yedo and practised, taught, and wrote books on the Dutch medicine. They were very successful, Itô afterwards being appointed physician to the Lord of Hizen (1844) and later to the shôgun (1858), and Totsuka to the Lord of Satsuma (1842). Takano Chôei (1804-1850) was a man of great talent, a very good Dutch scholar, and a facile writer and translator; he also came to Yedo (1830) and began to practise and teach medicine; he translated many books, among which his *Igen Sûyô*, a work on physiology, deserves to be specially mentioned here. But his active nature and independent spirit did not allow him to lead a quiet life. With his friends, among whom the most prominent were Watanabe Noboru (1794-1842), chief adviser to a small daimyô; a Chinese scholar and artist (well known by the *nom de plume* of “Kwazan”), who, although not himself a Dutch scholar, was convinced of the importance of Western learning; and Koseki Sanei (1787-1839), already mentioned as a pupil of Yoshida,—with these and others, Takano held periodical meetings, at which they discussed all sorts of topics, literary, scientific, social, industrial, and political, in the light of Western knowledge. One day, hearing that the government had decided to send away, by force if necessary, an English ship if it should appear in Yedo Bay in accordance with the information given by the Dutch, they earnestly discussed the subject and came to the conclusion that those who understood the condition of the outside world should not be silent on such an important occasion. Accordingly, Takano wrote a brochure called *Yume Monogatari* (“A Dream”), in which he urged, in the words of a man met in a dream, the unadvisability of such a policy. This brochure
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was presented to the officials of the shôgun and secretly circulated among Takano's friends. Watanabe also wrote some notes which he, however, with his natural modesty and prudence, kept to himself.

It was to be expected that the conservative element, among whom we may count the Chinese scholars in general, would look with no favorable eyes upon the instruction in what they regarded as barbarian and outlandish. One of the most persistent and implacable of them was Torii Yôzô, a narrow-minded man, who had special reasons to be unfriendly to the advocates of the new learning. He was a cadet of the Hayashi family, whose head was hereditary doyen of the Chinese literati, and on one occasion, as the head of a commission to make a survey of the coast of Izu and Sagami and to report on the best means for its defense, he had the mortification of seeing the report of Egawa Tarozaemon, his second on the commission, accepted in preference to his own. This Egawa was a friend of the new learning, and had the assistance of Uchida Yatarô and Tamura Kisaburô, pupils of Takano Chôei, who were acquainted with the modern method of surveying. The patriotic but somewhat too ardent and imprudent zeal of Takano and others gave Torii a good opportunity of taking a personal revenge and at the same time of arresting the advance of the new movement. Watanabe was ordered to be kept in confinement in the domain of his lord, where he afterwards committed hara-kiri, having reasons to fear that his living might be prejudicial to the interests of his lord. Takano was put into a common prison, whence he escaped at the time of a fire, and after being in hiding for some time, during which he was employed in making translations, was discovered and killed himself in order to avoid further
humiliation. Koseki Sanei also killed himself as soon as he heard of the arrest of Watanabe and Takano, and many others suffered in various degrees.

Another victim of Torii’s enmity was Takashima Shirodayuy of Nagasaki, who, having learned modern gunnery from a Dutchman, had been summoned in 1841 to Yedo to exhibit his method and skill. Egawa Tarozaemon was the first to enroll himself as his pupil and to receive instruction in the new method. After his return to Nagasaki, Takashima was accused of secret intercourse with the Dutch and thrown into prison, whence, however, he was released in 1853 to give instruction in gunnery.

The way of Dutch scholars, which had been by no means smooth before these events, was now made still rougher by various restrictions, which, however, could not stop the steady progress of Western knowledge. Among the pupils of Udagawa Genshin were Tsuboi Shindô (1795–1848), Mitsukuri Genpo (already mentioned), and Totsuka Seikai. Tsuboi began to systematize the teaching of the Dutch by prescribing a course in which the reading of grammar had an early and important place. One of his pupils, Ogata Kôan (1810–1863), began to practise the Dutch medicine and to teach the Dutch language and medicine in Osaka in 1838. Ogata’s school, which was in existence till 1862, and of which a most interesting and vivid account is given in the autobiography of his pupil, Fukuzawa Yukichi, the founder of the Keiô Gijuku, became the center of Western learning in western Japan, and counted over three thousand pupils, among whom were many leaders of new Japan, too numerous to mention. Another pupil of Tsuboi, Sugita Seikei, in Yedo also had many distinguished pupils, among whom may be mentioned Kanda Kôhei, who first taught Western mathematics in the Kaiseijo,¹ and Sugi Kôji, the father of

¹ See page 78.
statistics in Japan. Books on law and politics were now ordered to be translated in the Translation Bureau, though solely for official use. Mitsukuri Genpo wrote the *Taisei Shinjū*, the first systematic history of Europe; while his pupil and adopted son, Mitsukuri Seigo, published his *Konyo Zushiki* (1847), which gave the general public for the first time a tolerably up-to-date knowledge of the geography of the world. Mitsukuri also printed a Dutch grammar in script characters by means of wood blocks (the usual way in those days), which was a great help to the students of Dutch, for before this they had to copy the book for themselves before beginning to read it. This continued to be the case with most foreign books until well on in the sixties, for imported books were scarce and they could not be printed in Japan; the present writer did not have to do this copying, but he can remember his brother, elder by a few years, copying (somewhere about 1866) Markham's "History of England," which he was learning to read. Fujii Saburō was the first to attempt the reading of English books, and his *Ei Bun Pan* was the first book published on the subject (1847). About this time, also, Murakami Eishun (1811–1883) for the first time began to read French books with the help of a French-Dutch dictionary.

By the middle of the nineteenth century doctors practising Dutch medicine had become so many and so successful, especially in Yedo, as to cause serious uneasiness to doctors of the old Chinese school; and through the influence of the latter an injunction was issued in 1849, confining the practice of the Dutch school to surgery only, so that Itô Genboku and others had to enroll themselves pupils of Katsuragawa, the shōgun's surgeon, before they could practise publicly. Moreover, it was made necessary to obtain the permission of the authorities of the old Medical Academy before pub-
lishing any book on the new medicine: this of course was tantamount to a prohibition. It was not much better with books other than medical: permission to publish any work relating to Western learning was always granted very grudgingly; thus, for instance, my grandfather, although he was on the staff of the Translation Bureau, had to wait for two years (from 1849 to 1851) after the wood blocks had been completed before he could get permission to publish his *Hakkō Tsushiki*, a book on geography. But even such measures were not sufficient to stop the introduction of Western learning, and the coming of the American, Russian, and English ships demanding the opening of Japan to trade, and the subsequent change of policy on the part of the shōgun’s government, made the knowledge of foreign languages and foreign matters in general imperative.

In looking back over this period, the first thing that strikes us is the fact that the first introduction of Western knowledge was almost entirely due to doctors of medicine, who, however, as we have seen above, did not confine themselves to medicine alone. This was due to various circumstances. As I have remarked before, about the middle of the eighteenth century there arose in Japan a remarkable revolutionary movement in things intellectual, a general restlessness and reaction against old authorities, a search for new knowledge; and the doctors were almost the only persons possessing sufficient culture who were likely to turn their attention to foreign learning. Moreover, the superiority of the Dutch method in surgery had long been acknowledged, and their superiority in other branches of medicine could also be demonstrated by facts and appreciated by the public; and thus this was the door through which Western learning could enter with the least resistance.

I have perhaps not stated explicitly enough the difficulties
and dangers confronting those who were bold enough to break through the hard crust of custom and prejudice and to attempt to learn a strange language and so to open an avenue to a new and alien learning; to do so would require too long a digression into the organization of the society and the character of the civil administration of the time; suffice it to say that they were very great, indeed, and sometimes insuperable.¹

Special mention should, however, be made of the assistance that many of the daimyōs, actuated some by true and intelligent perception of the importance of the new movement, others by mere curiosity or vanity, rendered to its pioneers by their patronage and by giving them leisure to pursue their study, as well as by supplying them with books and other materials.

**The Fourth Period**

INTERESTING as it would be, this is not the place to describe the stirring events which followed the coming of Commodore Perry in 1853 and the opening of the country again to foreign intercourse, and led to the “Restoration of Meiji” in

¹ I cannot refrain from mentioning one example of these difficulties. Even toward the end of this period, when it had become comparatively easy to get Dutch books, it was only through the shōgun’s officials, and with their permission, that a private individual could obtain a foreign book, and then not more than one a year. Often interpreters who accompanied the Dutch chief factor from Nagasaki on his visit to Yedo brought some books with them which they sold secretly to the Dutch scholars at a great profit. In one of my grandfather’s (Mitsukuri Genpo) letters to my father (Mitsukuri Shūhei), he complains that the Dutch, having met with a theft on the way, were so strictly guarded that it was impossible to get an interview with them as usual, and that the interpreters were afraid of selling the books that they had brought, or else demanded such prices for them that a poor scholar like himself could not afford to buy. Yet this very difficulty was often an incentive to a new line of study; as an instance, I may mention the case of Mura-kami, who, failing to get the Dutch book on chemistry that he wanted, but being supplied with a French book in its place, set to work to learn to read French instead of waiting for the Dutch book, which would be at least eighteen months in coming.
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1868; we must confine ourselves to those relating more particularly to the subject in hand.

In 1855 the Translation Bureau was made independent of the Observatory, and under the name of *Bansho Shira-bejo* ("An Institution for the Study of Foreign Books"), which was finally changed to *Kaiseijo*, besides translation, instruction was given in foreign languages, not only to the shōgun's immediate retainers but also to those of daimyōs, Mitsukuri Genpo and Sugita Seikei being among the earliest professors. The foreign languages taught were Dutch, English, Russian, French, and German. A department of natural products (or natural history) was added in 1861, with Itō Keisuke as professor; a department of mathematics (although naturally of an elementary character) in 1863, with Kanda Kōhei as professor; and a department of physics and chemistry in 1865, under a Dutch professor named Gratama. In 1867 the modern method of class teaching was introduced.

In 1863 a foreign language school was opened in Nagasaki by the shogunate, at which Chinese, Dutch, English, French, and Russian were taught. Thus the instruction in foreign languages hitherto given only by private persons was now given at those schools or academies by professors appointed by the government of the shōgun. Some of the greater daimyōs followed the example and established schools for the teaching of one or more foreign languages, usually English, which now came to be studied more than any other language—more even than Dutch. At the same time private tuition went on as before, and some regular private schools were established, of which that of Ogata, already mentioned, and that of Fukuzawa, afterward called "the *Keio Gijuku,*" were the most notable examples.

The march of events was such that the injunction against
the practice of Dutch medicine lost its effect. In 1857 Itô Genboku, Totsuka Seikai, and others opened a “vaccination institute,” where doctors of the new school held meetings, there being more than eighty of them in Yedo at the time. Next year Itô and Totsuka were called in to attend upon the shōgun in his illness. The Vaccination Institute was made a government institution, with three departments for instruction, for discussion, and for vaccination. In 1861 the name was changed to Seiyô Igakujo (“The Academy of Western Medicine”). In 1860 Matsumoto Ryôjun opened a hospital in Nagasaki, where he had been studying under a Dutch naval medical officer named Pompe. The next year this hospital was turned into a government school of medicine, with a Dutch doctor named Bowdoin as professor; this doctor was the first foreign professor employed by the Japanese government. In 1865 physics and chemistry were added to the subjects taught in this institution.

Missionaries now began to come to the open ports and gave lessons in languages; some were engaged by daimyôs to teach in the interior. Among the missionaries the names of the Americans Hepburn, Brown, and Verbeck must specially be mentioned, all men of sterling character and attainments. Dr. Hepburn practised medicine in Yokohama; his Japanese-English dictionary, the first of its kind, is still in use, and the system of transliteration of Japanese characters into the Latin alphabet employed in it has remained the standard down to the present day.

Books, translations, and original works on various topics now become too numerous to enumerate; I shall mention only two besides Hepburn’s dictionary: one is the English-Japanese dictionary compiled by Hori Tatsunosuke, assisted by teachers in the Kaiseijo, and the other the work entitled Seiyô Jijô, or “Things Western,” of Fukuzawa Yukichi, in
which he describes what he had observed of the western world during his travels in America and Europe, whither he went as a translator to the embassies sent by the shogunate to America in 1860 and to Europe in 1861. This book did more to make the West known to the general public than almost any other book; indeed, it was unique at the time both in the nature of its contents and in the number of copies sold.

In 1862 the shōgun's government sent a number of students to Holland, among whom were Enomoto (afterward Viscount, Minister of the Navy, of Education, etc.) and Akamatsu (Admiral, Baron), to learn navigation; Itō Gen-paku and Hayashi Kenkai to study medicine; Nishi Amane and Tsuda Mamichi, who studied law (both afterward barons). The next year four students were sent to Russia. In 1866 a party of fourteen students was sent to England, among whom were Nakamura Masanao, already known as a Chinese scholar, and afterward a great educationalist; Toyama Masakazu (afterward professor and president of Tokyo University, and Minister of Education); Hayashi Tadasu (Count, the present Minister of Communications); and the present writer, the youngest of the party (being eleven years old at the time), with his elder brother, Mitsukuri Keigo. Finally, in 1867, the shōgun's brother, Tokugawa Minbutayū, was sent to France with another party of students: in his suite were such men as Shibusawa Eiichi (now Baron) and Mitsukuri Rinshō (afterward Baron, grandson of Genpo). A few of these students came home before the Restoration, but all were recalled in 1868. Most of them afterward did good service in the introduction of Western learning into Japan. The Satsuma clan also sent a number of students abroad, and a few went on their own initiative, among whom were the late Prince Itō and Mar-
The Fifth Period

quis Inouye: these had to go secretly, as the order forbidding all traveling abroad was still in force.

Although the shōgun's government saw the necessity of opening the country to foreign intercourse, the conservatives all over the country were bitterly opposed to such a step. This opposition to the foreign policy of the shogunate, inseparably combined with the more fundamental one based on our national constitution, namely, that the shōguns were usurpers and were wielding authority which properly belonged to the Emperor alone, was the force that ultimately brought about the downfall of the shogunate and the "Restoration of Meiji." Conservative feeling ran very high, and masters of the new learning were now often in danger of their lives from conservative samurais, who regarded their action as a desecration of the land of the Kami (ancient gods of Japan). Sakuma Shuri was assassinated in Kyoto for his open advocacy of the opening of the country. It was under the cry of "Reverence for the Sovereign!" and "Exclusion of Barbarians!" that the overthrow of the shogunate was effected.

THE FIFTH PERIOD

We now come to the era of Meiji, or "The Enlightened Government," which began in 1868 and ended with the death of Emperor Meiji in July of the present year (1912). The accession of the Emperor took place in the beginning, and the resignation of Keiki, the last of the shōguns, toward the end, of the preceding year. A few disaffected followers of the shōgun took up arms against the imperial banner, but were put down without very great difficulty, and thenceforth the Emperor reigned in fact as well as in name. Although the cry for the overthrow of the shogunate had been "Reverence for the Sovereign!" and "Exclusion of Barba-
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rians!”, yet the leaders of the movement knew well that the last was neither practicable nor desirable; and on the fourteenth day of the third month of the first year of Meiji (April 6, 1868), the Emperor summoned the imperial princes and high officials of his court, and in the Shishinden, or throne-room, of the old palace in Kyoto swore the memorable oath known as “The Imperial Oath of Five Articles,” setting forth the policy which was to be followed by him thereafter. The five articles were as follows:¹

I. Deliberative assemblies shall be established, and all measures of government shall be decided by public opinion.

II. All classes, high and low, shall unite in vigorously carrying out the plan of government.

III. Officials, civil and military, and all common people shall, as far as possible, be allowed to fulfil their just desires, so that there may not be any discontent among them.

IV. Uncivilized customs of former times shall be broken through, and everything shall be based upon just and equitable principles of nature.

V. Knowledge shall be sought for throughout the world, so that the welfare of the Empire may be promoted.

In pursuance of the policy set forth in the above oath, the first ten years of the Meiji era were occupied mainly in breaking up the established order of things and substituting a new one; although, as for the latter, a much longer period elapsed before anything satisfactory could be arranged. Many great and radical changes were made, of which the

¹ The translation is that of Dr. Hozumi Nobushige, Emeritus Professor of Law in the Imperial University of Tokyo.
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greatest by far was the abolition of the feudal system, which was completed in 1871: the daimyôs, or great military lords, gave up, of their own free will, all their lands and the power of life and death over their retainers and people within their respective territories, receiving in compensation pensions which were afterward commuted into national bonds. A new system of civil administration was introduced, and laws were revised. The wearing of swords by samurais was forbidden, the army and navy were reorganized, and a system of universal conscription elaborated, so that the samurais, or military class, no longer were allowed to monopolize the civil and military services.

Schools established by the shogunate and closed at its overthrow were reopened as soon as order was restored, and many new schools were opened both by the central and the local government (those of the daimyôs before the abolition of feudal clans). Many private schools for the teaching of Western knowledge flourished, among which may be specially mentioned the Keiô Gijuku of Fukuzawa, the Sansa Gakusha of Mitsukuri Shûhei (father of the writer), and the Dôninsha of Nakamura Masanao. Of Fukuzawa it is related that in May, 1868, while fighting was going on in Ueno (now Ueno Park, Tokyo) between the imperial army and some retainers of the shôgun, Fukuzawa continued to hold his classes in another part of the city, and his school was not closed for a single day.

In 1872 the first Education Code was promulgated, by which a national educational system was introduced for the first time. According to this, the whole country was to be divided into 8 university districts, each with a university; each university district was to be subdivided into 32 middle school districts, each with a middle school; and each middle school district was again to be subdivided into 210 elemen-
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tary school districts, each with an elementary school, so that there would be 8 universities, 256 middle schools, and 53,760 elementary schools in the whole country: the elementary school education was to be compulsory for all classes and both sexes. At the same time as the promulgation of the new code, all existing schools supported by the government, central or local, were to be reorganized so as to be brought into conformity with its provisions or else be closed. The scheme of the code, however, proved too ambitious to be carried out in its entirety. In fact, in this, as in many other forms that followed the Restoration, we began with copying too closely the system or model of some one country, and that not always the one best suited to our circumstances, sometimes trying one model after another in our effort to find out what was the best; but gradually, as our knowledge has increased and our field of vision become widened, we have tried to adapt and make it more suitable to our own needs, by a careful consideration not only of systems and methods of different countries in theory and practice, but also of our own customs, usages, and traditions, and the peculiar circumstances of the times, which at first were often overlooked.

We cannot go afield into the whole question of the educational system, but must confine ourselves to the introduction of Western learning. Before the coming of Commodore Perry this was naturally most easily effected through the medium of the Dutch language, which, indeed, may be said to have been the only channel then available. But with the opening of the country to foreign intercourse, the English language began to be more generally studied, as it was the current language of the East. American missionaries helped to spread the knowledge of it among the Japanese people, many of them becoming teachers in schools after the Resto-
ration. The study of foreign languages in general, which had presented such great difficulties and even dangers in the earlier days, was now stripped of all extraneous difficulties and encouraged and made a part of the higher common education, so that from that time on mere study of foreign languages scarcely comes within the scope of our subject. In private schools for foreign languages, however, students were often of mature age and had had previous culture in Chinese literature; they read works on politics and economics, on Western philosophy and other abstruse subjects, as well as books on history, geography, and other common subjects, with a view to mastering the subject-matter, and consequently a knowledge of those subjects became more general. Gradually, as higher common education spread, and with it the study of English, these private schools lost in large part their raison d'être, and in the eighties most of them were either closed or transformed partly or wholly into middle schools for higher common education, or into colleges for the teaching of special subjects.

In the Kaiseijo (Academy for Foreign Languages) established by the shogunate and reopened by the new government, the same kind of tuition as in private schools was carried on by Japanese teachers for some time, side by side with the new and systematic instruction in foreign languages under Japanese and foreign teachers; but soon the former part was discontinued, and, on the other hand, provisions were made for instruction in law, some branches of science and engineering, and in history, philosophy, and literature, with a view to make it a nucleus for a university. In 1877 the Kaiseijo and the Igakujo (see pages 79, 89 and 91) were incorporated as the University of Tokyo, with four faculties of law, science, literature, and medicine, to be again reorganized in 1886 into the present Imperial University of
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Tokyo (by amalgamation with the Engineering College, formerly under the Department of Public Works), with five "colleges," or faculties, of law, medicine, engineering, literature, and science, to which was afterward (1890) added a College of Agriculture. Let us now briefly consider the development of these faculties or colleges.

Before the Meiji era scarcely any attention had been paid to Western laws and political science; the few books on these subjects that had been translated by order of the shōgun's officials had not been made public, it being the policy of the shogunate to suppress all political discussions as much as possible. With the Restoration all this was changed. The reorganization of civil administration and the revision of laws and legal procedure required a knowledge of Western facts and ideas on those subjects, and books bearing on them began to be eagerly studied in the original or in translations. Accordingly, those who had acquired some legal knowledge of the West, such as Tsuda Mamichi, Nishi Amane, Mitsukuri Rinshō, and others, were in great demand. A translation of the Code Napoléon made by the last named was an important work, and contributed greatly to the spreading of the knowledge of Western legal ideas. In 1873 a French legal expert, M. Boissonade, was engaged as adviser to the Department of Justice.

It is not the province of this paper to trace the history of the codification of Japanese laws, which occupied a period of some forty years, but it may be briefly stated that the first draft, a close copy of the French code, was considerably modified through a greater attention paid to the old and established customs and usages of the country, and by the taking into consideration of the laws of other lands, especially of Germany. In this we have another very good instance of what we have stated above in connection with the
educational system. The names of Professors Hozumi Nobushige, Tomii Masaakira, and Ume Kenjirô, of the Imperial University, Tokyo, must be mentioned even in this brief notice; for to them and to Mitsukuri Rinshô more than to any others is due the credit of the successful accomplishment of the work of codification.

A school was opened in 1872 under the Department of Justice to give instruction in French law, while in the Kai-seijo a course in English law was opened in 1874, as stated above. We find in the calendar of Tokyo University for 1878 three professors of English law, one Englishman, one American, and one Japanese, the American being Professor H. T. Terry (Yale, '69), who has just retired this summer (1912), and the Japanese, Inouye Ryôichi, one of the first two Japanese graduates of Harvard Law School. There were also some lecturers on old Japanese laws. In 1885 the school of French law was transferred to the university, and in 1887 a course of German law was added. As the work of legislation progressed, lectures on Japanese law were given at first as auxiliary subjects, but finally they came to be the main subjects, while lectures continue to this day to be given on English, French, and German law as auxiliary subjects. Public laws, political sciences, and economics also now form a part of the curriculum of the Law College, which at present consists of the four sections of law, politics, economics, and commerce. I cannot do better than sum up by quoting Professor Tomii's remarks: "Thus the two decades immediately subsequent to the Restoration were characterized by prevalence of the study of French, English, and American laws. . . . But times changed. The past twenty years have witnessed the rise and ascendancy of German law, and a tendency has grown up to take it as the model in studying jurisprudence and legislative work, whether in the domain
Introduction of Western Learning into Japan of public or of private law. . . . Recent developments have been remarkable, and the stage of imitation has already been left behind.” ("Fifty Years of New Japan," by Count Okuma.) These remarks will apply also to political and economic sciences, as indeed to almost all branches of learning introduced from the West.

Early in the eighties, owing to changes in civil administration and in laws and legal procedure, there was felt a great want of men having special knowledge of these subjects, and the single University of Tokyo not being able to turn out a sufficient number of such men, several colleges were started by private individuals, who disinterestedly gave some of their leisure hours to teaching in them; the first of these was the Senshū Gakkō, opened in 1880 by Tajiri Inajirō (a Yale graduate) and others to give instruction in law and economics. This was followed within a few years by many others, among which was the Waseda Senmon Gakkō of Count Okuma. The Keiō Gijuku also changed its organization so as to have college courses in law, political economy, and literature. In Tokyo University itself a special course was organized temporarily, in which instruction was given in Japanese for those who had not passed through the preparatory course, so as to enable them to follow the regular course of lectures. It may be mentioned here that in almost every subject lectures in the university were given at first in some foreign language (German in the case of medicine, English in others), not by foreign professors alone, but by Japanese professors as well; for it was very difficult to find proper translations not only of technical terms, but also for necessary technical expressions and phrases, these being even more troublesome than simple terms on account of the peculiar nature of the Japanese language. Indeed, one of the initial difficulties in the intro-
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duction of Western learning may be said to have lain in the
difficulty of translation, our language being so radically dif-
ferent in its structure from European languages. Thus the
lectures in Japanese to special classes served the double
purpose of turning out a large number of moderately well
trained men, and of giving professors a good exercise in lec-
turing in Japanese on technical subjects. The opening of
such special classes in the university for a time was not con-
fined to the law faculty, but was found necessary in other
faculties also. However, to return to private colleges, the
maintenance of such is somewhat difficult in Japan, as no
large fees can be charged owing to the poverty of most of
the students, and endowments such as are so common in
America cannot be expected, those even of Waseda and
Keiō being quite insignificant in comparison with the endow-
ments of even smaller colleges in America. In those earlier
days of the Meiji era, when the number of students was
small, most of the founders were themselves teachers who
gave their time and services free, besides in many cases con-
tributing to the expenses of maintenance. For this reason,
there are but very few private colleges of medicine, science,
or engineering, their establishment and maintenance being
too costly to be supported by fees. I may mention inci-
dentially that most of these private colleges have now as-
sumed the more ambitious title of universities.

As the introduction of Western learning previous to the
Meiji era had been due almost exclusively to doctors of
medicine, although happily they did not confine their atten-
tion to medicine alone, it was natural that at the outset more
progress should have been made in medicine than in other
subjects, and it was in medicine that systematic instruction
was first introduced after the Restoration. The Igakujo
was one of the schools reopened by the new government,
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and with it was incorporated a hospital newly opened by the government under the direction of an English surgeon, Dr. Willis. The government, however, having decided to Germanize medical education, Dr. Willis left the hospital and went to Kagoshima, where until 1877 he taught in a medical school with great success. Meanwhile two German doctors, Müller and Hoffmann, were engaged in the Igakujo in 1871, and organized a system of medical instruction consisting of a five-year preliminary or general course and a five-year special or medical course. Almost all the professors and teachers, including teachers in German, Latin, and elementary mathematics, had to be brought from Germany. As the number of those who could enter this regular course of ten years was limited, owing to the lack of accommodation and equipment, while on the other hand the demand for doctors of the Western school was great and insistent, a short special medical course was opened, in which instruction was given in Japanese by Japanese professors. In the calendar for 1877 we find the names of eleven German professors and teachers, besides seven Japanese professors engaged in teaching the students of the short course. This course was afterward discontinued, as several colleges of medicine came to be established in different parts of the country to carry on a similar work. The College of Medicine in the university itself has gradually grown to be a large body with twenty-seven professors, all Japanese, including four in pharmacy, and nineteen assistant professors and lecturers, and nearly eight hundred students.

With regard to science and its application, we have seen that translations of books on various scientific subjects had been made by Dutch scholars, some of the more important of which we have mentioned above. But there must have been many that were not printed or even privately circulated,
for there are in possession of the writer's family translations of works on astronomy, geology, mineralogy, etc., left in manuscript by Mitsukuri Genpo, and no doubt there were similar manuscripts left by others. In Western mathematics, physics, and chemistry, teaching of the elementary parts was begun in the Kaiseijo before the Restoration, as already stated, but it was not revived for some time after the school was reopened. In astronomy such practical knowledge had been introduced as was necessary for the compilation of almanacs. In natural history some advance had been made in systematic botany. As for applications of science to practical purposes, but little knowledge had been introduced.

On the promulgation of the first Education Code, the Kaiseijo was made a middle school, the instruction being given in a foreign language (English, French, or German), mostly by foreign instructors. Soon after courses were opened in special subjects, of which the one in English law has been already noticed. The other courses were those of physics, chemistry (pure and applied), mining and metallurgy, civil and mechanical engineering, and literature and philosophy. In the calendar for 1876 we find eighteen foreign professors and instructors, including two professors of English law. The incorporation of the Kaiseijo and the Igakujo into the University of Tokyo in 1877 gave a great impetus to the study of science. Mathematics was made one of the main subjects (previously it had been merely an auxiliary subject for engineering students), and the study of its higher branches was entered upon. The appointment of Dr. Fujisawa Rikitaro in 1888 as professor of mathematics in conjunction with the present writer gave a new impetus to the study of higher mathematics. The year 1877 saw the foundation of the Tokyo Mathematical Society, which is the first of many scientific societies now existing, and which has
Introduction of Western Learning into Japan since developed into the present Tokyo Mathematico-physical Society, holding monthly meetings for the reading of original papers on mathematics, astronomy, and physics, and publishing them (in Japanese, English, or German) in its proceedings and transactions.

In physics the coming of Professor Mendenhall (afterward superintendent of the United States Coast and Geodetic Survey) marks the beginning of the teaching of experimental physics and of original investigations. He was succeeded by Professor Ewing, whose work on hysteresis was begun in Japan; and their work has been ably carried on by their pupils and successors, Tanakadate Akitu, Nagaoka Hantaro, and others. Instruction in practical astronomy was started by Professor Paul, of the United States Naval Observatory, who was succeeded by Professor Terao; and although from its nature astronomy does not possess many votaries in Japan, and although the university observatory is at present but poorly equipped, Japanese astronomers have made some contributions to the science, as, for example, in the observations of variations of latitude, for which an international observatory has been established in Mizusawa and placed under the direction of Dr. Kimura, whose discovery of the z-term in the equation of the variation of latitude has recently been awarded a prize by the Imperial Academy of Tokyo. In chemistry, pure and applied, we had Professors Atkinson (English), Wagener (German), and Jowett (now of Oberlin College), whose places were not long after taken by the Japanese professors, Sakurai Jôji and Matsui Naokichi: the former still occupies the chair of chemistry in the Imperial University, and during his long career of over twenty-five years in the university has contributed both by his teaching and original researches not simply to the introduction of that science into Japan, but to
The advance of the science itself; while the latter, too, did great service not only in the introduction of chemistry, but also of scientific agriculture in his capacity as director of the College of Agriculture from its amalgamation with the university in 1890 to his death in 1910.

In natural sciences, Dr. E. S. Morse, of Salem, Massachusetts, came in 1877 as professor of zoology; he established the first zoological laboratory in the university, and was also the first to expound to the Japanese public, by a series of public lectures, the Darwinian theory of the origin of species and the descent of man. He was succeeded by Professor Whitman, late of Chicago University, after whom the chair was occupied by Dr. Mitsukuri Kakichi (brother of the writer), supported by his colleague, Professor Iijima Isao, who had been a pupil of Whitman, and afterward of Leuckart in Leipsic. The chair of botany was occupied from the first (1877) by a Japanese, Yatabe Ryōkichi, a graduate of Cornell, with Dr. Itō Keisuke, then over seventy years of age, as honorary professor. To these men is due the credit of having introduced into Japan modern methods in biology, the elements of which now form a part of the curriculum of common education.

Geology, mining, and metallurgy also began to be taught in the Kaiseijo. Professor Munroe, now of Columbia University, was the first professor of geology and mineralogy; after him we had a series of professors from Germany. On the organization of Tokyo University, geology, with the allied sciences of mineralogy and paleontology, was separated from mining and metallurgy. Civil and mechanical engineering was likewise begun in the Kaiseijo, and afterward formed a section in the faculty of science in Tokyo University.

Systematic meteorological observations were begun at
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the suggestion of a German, Dr. Knipping, a teacher in the Kaiseijo, and a central meteorological observatory was established and placed under his direction. At present it is under a Japanese superintendent and staff, and is in telegraphic communication with numerous stations all over the country, including Formosa, Korea, and Manchuria. It is not strictly proper to speak of seismology as introduced from the West, for it may be said to have originated in Japan with the investigations of Professors Wagener, Milne, Gray, Ewing, Knott, Sekiya, Omori, and others; but its first investigators came from Europe, and its methods are those of the Western science.

The Department of Public Works (not now existing), being in urgent need of a large number of trained engineers to carry out its various works, opened an engineering school as early as 1871; in 1873 it invited from Great Britain a band of professors, with Dr. H. Dyer as principal, and including, among others, such men as E. Divers, J. Milne, W. E. Ayrton, J. Perry, and T. Gray. They organized an engineering college, entirely British in its character; students were dressed in a uniform, of which a Scotch cap formed a part, and were lodged and boarded in British style under a purely British management. There were sections of civil engineering, mechanical engineering, architecture, telegraphy, chemistry, and metallurgy and mining. Many of the foremost engineers of the present day are graduates of this college. In 1886 the college was incorporated with Tokyo University to form the Imperial University of Tokyo, of which, together with the engineering sections of Tokyo University, it became the College (or Faculty) of Engineering.

The first introduction of scientific agriculture must be attributed to General Capron, chief of the Agricultural Bureau of the United States, who came to Japan in 1871 as
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adviser to the Hokkaido (Yezo) Colonization Bureau. At his suggestion an agricultural college was established in Sapporo with a staff of American instructors to train men to become leaders in the work of the colonization of Hokkaido; several students were also sent to America, and it is to be noted that among these students were several young girls, the first sent abroad by the government (Princess Oyama, Baroness Uriu, Miss Tsuda, among others). Hokkaido, and in particular the Agricultural College, was thus very much under American influence at the start, and retains to this day traces of that influence (the present director of the college was its former pupil and afterward a graduate of Johns Hopkins). The college, however, has lately come under German influence, which, as already remarked, has been predominant in the domain of higher learning during the last two decades or more; it now forms a part of the Northwestern Imperial University as its college of agriculture. In the meantime an agricultural school was opened in Tokyo as early as 1877, and a school of forestry in 1881; the two schools were amalgamated in 1886 to form a college, which again became a part of the Imperial University of Tokyo in 1890, and has at present five sections of agriculture, agricultural chemistry, forestry, veterinary science, and aquatic products. This college was from the first under German influence, several of its first professors having been Germans.

In literature we have always had an American or an English professor of English literature, from the days of the old Kaiseijo soon after the Restoration down to the present day, in the Imperial University of Tokyo, besides instructors in the English language. So also there have been a German professor of German literature and a French professor of French literature, although these chairs were not established
96 Introduction of Western Learning into Japan until a much later date. Of course, Japanese and Chinese literatures have always formed a part of the curriculum of the university, and I should not mention them here, for they do not come under the category of Western learning, but for the remarkable fact—which well illustrates the spirit that actuated the university authorities of those days—that about 1887 an Englishman, Professor B. H. Chamberlain, was for a time appointed to lecture on philology and Japanese literature. Professor Chamberlain was, indeed, a profound Japanese scholar, but there were many Japanese who were better scholars than he; they, however, did not know the modern methods and could not give such systematic exposition as Professor Chamberlain. Lectures are also now being given in Russian literature. In the Imperial University of Kyoto lectures on English and German literatures are given by Japanese professors, as also in the private universities of Waseda and Keio. There is a great deal of interest taken in recent works of modern European novelists and dramatists, especially of Russian and Scandinavian writers, among a section of young Japan, which no doubt will have some influence on the future intellectual life of Japan, but it seems rather doubtful whether they will seriously affect the mass of the people.

The culture of the pre-Meiji era had been founded on Chinese classics and Buddhist philosophy, and in the earlier days of the introduction of Western learning little or nothing was known of Western philosophy; but shortly before the Restoration, books on the subject began to be introduced, and for some time thereafter such works as the text-books on ethics and political economy by Dr. F. Wayland, of Brown University, were read in schools of the English language; in higher classes, Guizot and Buckle were read, while in French schools Montesquieu and Rousseau were used. In
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the Kaiseijo logic and psychology were taught with Mill, Fowler (deductive logic), Haven's "Mental Philosophy," etc., as text-books. On Professor Toyama's (see page 80) return from America in 1876, where he had graduated at Ann Arbor, works of Bain, Jevons, and Spencer were introduced, and Professor Toyama began to lecture on Spencerian philosophy, which became very popular in Japan. Professor Fenollosa, who afterward did so much to make Japanese art known to the Western public, came out to Japan when as professor of philosophy, and introduced students to German and especially to Hegelian philosophy. About 1890 Dr. Inouye Tetsujiro came back from Germany, and by his wide reading and retentive memory has been of eminent service in introducing students to various phases of Occidental and Oriental philosophy. Lotze, Nietzsche, Schopenhauer, etc., have not been without their exponents in Japan. Experimental psychology was introduced by Professor Motora Yujiro (a graduate of Johns Hopkins) in Tokyo and by Professor Matsumoto Matataro (a graduate of Yale) in Kyoto. Christian theology has not occupied a prominent position either in Tokyo or Kyoto Imperial Universities, although touched upon by Dr. Anesaki in Tokyo and Dr. Gulick (of Doshisha) in their lectures on the science of religion. There are, however, several Christian colleges supported by missions or by endowments, where it is the principal subject of instruction. The Doshisha in Kyoto, founded by Dr. Neeshima and maintained largely by endowments from America, must be specially mentioned in this connection; it has this year (1912) made a new departure in opening a college of law and economics.

Before closing this hasty and rough account of the introduction of various branches of Western learning, it is proper that I should say a few words about foreign professors.
They generally come out to Japan on a contract to serve for a term, usually of three years, which is renewed from time to time if satisfactory to both parties. Thus no small number of them have occupied their positions for fifteen, twenty, or even more than twenty-five years, so as to celebrate their silver jubilees, and have retired with a decoration from the Emperor, a pension from the government, and the title of honorary professor from the university. Very often we have had to part with a good professor because he had been offered a better and permanent position at home. On the whole, we have been fortunate in our foreign professors, the majority of them having been men of high character; and not only have they been good teachers, but many of them have made original researches while in Japan, which have won them distinction in their respective specialties. At the same time, we have sent our best graduates abroad to prosecute further studies under eminent professors in foreign universities. In earlier days more students were sent to America and England than to any other country; but for the last two decades or more most of the students from the universities have gone to Germany, that country offering the greatest facilities for the prosecution of higher postgraduate studies. They have on their return taken positions vacated by foreign professors going home or created by the development of education and learning.

We have thus traced the history of the introduction of Western learning from its beginning down to the present day. We Japanese have always been ready to take from others what we have considered to be good for us. When we came in contact with the Chinese civilization and Buddhism in ancient times, we at once introduced them and adopted Chinese literature and Chinese and Buddhist philosophy as our own, and they have formed the main subjects of culture of our scholars. Our administrative system and
laws were modeled after the Chinese, although they were afterward greatly modified so as to become better suited to our own needs. So when we first came into contact with Europeans in the sixteenth century, we welcomed them and were eager to receive instruction in what they had to teach us. Christianity, likewise, was at first well received not only by the people, but also by men of authority and influence, until they perceived that behind it there was a great danger to the country. Even then they were desirous of keeping the advantages of foreign intercourse, if only they could at the same time keep out the dangers of Christianity; and it was only when they found that this was impossible that they had recourse to the extreme step of prohibiting foreign intercourse almost entirely. But while stringent measures continued to be taken against Christianity, the desire for new knowledge gradually became too strong to be resisted; the spirit that animated Maeno and his fellows in their efforts to read the “Tafel Anatomia” in their earnest search for truth is the spirit that has always animated the best element of intellectual men of Japan. This spirit, kept up in the incessant and untiring struggles of the Dutch scholars to introduce new knowledge among their countrymen under the shogunate, has blossomed forth under the wise policy of the open door explicitly enunciated in the fifth article of the memorable oath of the great Emperor Meiji, and under the sunshine of encouragement given to education and learning during his long and glorious reign. We flatter ourselves that at last we have succeeded in assimilating Western knowledge, and have now entered the comity of intellectual brotherhood; so that while we shall continue to learn from the West what it has got to teach us, we shall also furnish our quota, small perhaps though it be, to the common stock of the knowledge of the world.

Dairoku Kikuchi.