NOTES AND APPENDICES.

THE JAPANESE ORIGIN OF THE NORTH AMERICAN INDIANS.

An examination of a good globe or map of the Pacific Ocean, with the currents well marked, will show that the Kuro Shiwo, or Black Stream of Japan, arising from the equatorial-belt, flows up past Formosa, Japan, the Kurile, and Aleutian Islands, Alaska, Oregon, California, and thence bends westward to the Sandwich Islands. A junk or tree left in the Kuro Shiwo off Kiushiu would, if not stopped or stranded, drift round the circuit from Japan to Hawaii.

For twenty centuries past, Japanese fishing-boats and junks caught in the easterly gales and typhoons have been swept into the Kuro Shiwo, and carried to America. Their number, large before the full development of marine architecture in the Ashikaga centuries, must have been greatly increased after the early Tokugawa period, when ship-building was purposely confined to junks and fishing-boats. Traditions and absolute facts of this kind are known to fishermen and junk-sailors all along the eastern coasts of Japan. It is to them an ever-threatening danger. Had we the records of all the Japanese and Ainō boats wrecked on American shores, the number would probably be thousands, and the Japanese origin of many, at least, of the aboriginal tribes of America be demonstrated.

From 1782 to 1876, we have certified instances, with dates, of forty-nine purely Japanese junks wrecked, met, or seen on American and Hawaiian shores. I had already made a list of these; but as that of Mr. Charles Wolcott Brooks, H. I. J. M. Consul at San Francisco, is much larger, I summarize his data, first read in a paper before the San Francisco Academy of Sciences, and given in the *Daily Evening Bulletin* of March 2d, 1875. Of the forty-nine junks, nineteen stranded, or their crews landed, on the Aleutian Islands; ten in Alaska or British America; three on the coast of the United States; and two on the Sandwich Islands. Nearly every one of the others was picked up within the currents along the American coast, or in the westerly current toward Hawaii. Of the junks, some had been eighteen months adrift, a few were water-logged, full of live fish, or black with age.

An average crew for a trading-junk consists of ten men: passengers would increase the number. Of junks picked up on the Pacific by foreign captains, the known crews were respectively 17, 9, 9, 17, 13, 15, 12, 20, 12, and 16 souls; the known number of corpses seen were 14, 5, 14, 9, 4, 4, 11, "many," "several," "a number," etc.; the known number saved was 112 at least. Instances of men landing from junks are also traditionally known, but numerical data are lacking. In the absence of exact numbers, "many," "several," describe the number.

All probabilities tend to demonstrate the Japanese origin of a large portion of the American native races. It is evident that the number of Japanese known to

have reached America in eighty-six years is but a fraction of those subject to the same dangers during two thousand years, and cast away. I do not know of any females being found among the waifs, but I know that women often live or go on the trading and fishing junks in Japan. The probabilities favor the idea of Japanese women reaching America also.

Arguments from language are not wanting, though this field of research awaits a competent tiller. The comparison both of languages and other data should be between those of *ancient* as well as modern Japan and those of America. In examining vocabularies of Indian languages, I have found unaltered Japanese words and shortened forms. A knowledge of the phonetic changes, and a view of vocabularies Romanized according to a uniform system, with a study of structural form, will undoubtedly yield rich results. Some of the very peculiar Japanese idioms, constructions, honorific, separative, and agglutinative particles are found identical, or nearly so, in the Indian languages. The superstitions, customs, and religions of ancient Japan and America bear an extraordinary resemblance. The sacred mask-dances, the worship of the sun and forces of nature, are instances. In the Aztec and Japanese zodiac, six of the elements agree in both. As the horse, sheep, bull, and boar were not found in ancient America, the absence of these animals as signs in the Mexican system is easily accounted for. The most characteristic superstitions in Japan are the fox-myths, in which the powers of metamorphosis and infliction of evil on man are ascribed to these animals. These identical ideas were found by the first European settlers among the Indians in New England and in Mexico. They are still universally current among the aborigines of the Pacific slope, the coyote being the object of them. The totems, crests, wampum-belts, calculating-machines of colored threads, picture-writing, etc., all bear striking resemblance to ancient methods in Japan. There is little in Aztec, Central American, or Peruvian antiquities that might not have been derived from *ancient* Japan.

Arguments from physiognomy are not wanting. I took a number of photographs of Colorado and Nebraska Indians with me to Japan. On showing them to the Japanese, they were invariably taken for their own countrymen. Some affirmed that they were acquainted with the persons represented, supposing them to be known friends. Scanty or no beard, color of skin, hair, and eyes were alike.

Siebold has discussed this subject. I have given in this note only my own data. See also in the "Mémoires du Congrès International des Orientalistes," Paris, 1874; "Rapports du Japon avec L'Amérique."

Few, if any, Chinese could have reached America, as the coast of China lies inside the Kuro Shiwo. Boats drifting northward would pass into the Gulf of Pechili and Sea of Japan, as they occasionally do now, and frequently have done in the past. The Buddhist mystical term "Fusan," and the phrases "10,000 ri," "20,000 ri," though striking in English, are of little value to determine geographical facts. The two latter are simply indefinite expressions for "many," "all," or "a great distance."

A large majority of the Japanese waifs were rescued by American captains in American ships. A few by Russian and English ships are noted. Among the returned survivors thus picked up were Mungéro Nakāhama, educated in the United States, now captain in the Imperial Navy, who translated "Bowditch's Navigator," and as sailing-master of the Imperial Japanese steam corvette *Kanda Maru* crossed the Pacific to San Francisco, arriving March 17th, 1860; Toro, Héko, Sentaro ("Sam Patch," see page 548), and Denkichi ("Dankirche," or "Dan Ketch," see pages 292–294, vol. i., and pages 45–50, vol. ii., Alcock's "Three Years in Japan," New York edition), with thirteen others, were picked

up after drifting fifty days at sea. Toro was for a time clerk to Wells, Fargo, & Co. Héko, educated in Baltimore, is now an American citizen, doing business in Yokohama. Denkichi became a British citizen, and was interpreter of Her British Majesty's Legation. Other waifs, whose names I do not have, were more or less well educated in the United States, or in Holland or England. They returned to Japan, and are now prominent in disseminating the ideas that dominate in the mikado's empire.

Mr. C. W. Brooks has also pointed out the bearing of data furnished by a study of the Japan current on the great similarity between the flora and fauna of the Pacific Coast and those of Japan. The necessity of supposing the floor of the Pacific to be a submerged continent, on which life existed, seems to be made unnecessary by proofs of the work done by this Gulf Stream of the Pacific in transporting the seeds, animals, and men of the Central Asiatic to the Western American continent.

ASSOCIATED IDEAS IN ART AND POETRY.

THERE are certain pairs of objects which form the main stock of the Japanese artist's designs. With many variations and combinations, they appear over and over again in pictures, on vases, lacquer-ware, trays, dishes, embroidery, bronze, and other articles of use and virtu, and objects of art, and form the set of symbols oftenest employed by the poet. The pine-tree and stork, emblems of longevity, are embroidered on robes, presented to newly born infants. The willow and swallow, and bamboo and sparrow, indicative of gentleness, are seen oftenest on screens, fans, and upright objects of household adornment. The young moon and cuckoo, the bird flying across the crescent, is a poetic reference to Yorimasa, a renowned archer, who shot a hideous beast, having the head of a monkey, body and claws of a tiger, and the tail of a dragon. This monster, who came at night to disturb the rest of the mikado Narihito, 1153, was hit in the eye by Yorimasa's arrow, three feet long, and finally dispatched by his trusty sword. The mikado rewarded him with a famous sword, *Shishi no ō* (king of wild boars), by the hands of a kugé who, when about to present it, heard a cuckoo, and, catching the bird's note, extemporized seventeen syllables, or the first strophe of the thirty-one syllable distich (*honka*). Yorimasa being as good a poet as he was a brave soldier, immediately replied with the second strophe of fourteen syllables. The "open secret" of the poem is thus roughly given in English:

	LITERAL.	OCCULT.
Kugé.....	The cuckoo.....	Like the cuckoo,
	Above the clouds.....	So high to soar,
	How does it mount (like the archer to honor).....	How is it so?
Yorimasa..	The waning moon (bent bow).....	Only my bow I bent,
	Sets not at will (a sped shaft).....	That only sent the shaft.

The neatness of the allusion, the skill of the improvisatore, and the liquid cadences (utterly lost in translation) make the poem a joy forever to the ear of the native, as the silver bow and the "Japanese nightingale" are things of beauty to his eye.

The phœnix bird (*howo*) and the *Paulownia imperialis* tree are often together as twin imperial emblems on the mikado's robes, rugs, curtains, and painted or

gilded on screens and hanging scrolls. This tree, so common in Japan, is an emblem of rectitude. Its leaves form the imperial *mon*, or crest.

The peony and Chinese lion—a beast which never trod this earth, but which may be seen rampant on temple screens, yashiki doors, panels—form a couplet, with which lovers of the huge and monstrous may regale their vision. Another pair of these Siamese twins of Japanese art are the sleeping wild boar and a cluster of *hagi* (Lespedeza). The mulberry and the goat are put together by the artist, since this animal has the appetite of a silk-worm, and feeds voraciously on mulberry leaves or the paper which is made from its bark.

The hare peeps out of the rushes on many a lacquered box or tray, or is wrought in gold-threaded embroidery. Instead of seeing a man in the moon carrying a bundle of sticks, Japanese fancy beholds this leaping rodent scouring the face of the silver luminary, with *equisetum*, or scouring rush. This is a favorite subject on the lacquered bodies of *jin-riki-sha*.

The red maple leaves and the stag are painted with fine effect on screens. "In autumn the maples crimson, and the stag calls the doe." The Japanese word *iro* means both color and love; and in this stanza, as in a thousand others, the play is on that word. For a lover to send his once loved a sprig of autumn maple is equivalent to giving the "mitten." The leaf and the heart have both changed their *iro* (color).

The cherry-blossom and pheasant are fitly wedded together in poetry and art. The most beautiful bird (*kiji*) is this many-tinted iridescent queen of the groves in the Sun-land, and the bloom of the sakura-tree (*Prunus pseudo-cerasus*), which is cultivated solely for its blossoms, is the national flower of the Land of Great Place. "There are snow-showers which do not descend from the skies," and the falling bloom-flakes spread many a white carpet on the stone paths leading to the temples. It is often as large as a rose, and as beautiful. The-plum tree, also admired for its blossoms, is joined with the *uguisu* (nightingale). The plum is, by excellence, the poet's tree, and the nightingale is the poet of birds, loving song more than they all. "Send forth your fragrance upon the eastern winds, O flowers of the plum-tree! and do not forget the spring, because of the absence of the sun," cries a native poet. Not unfrequently does one see the plum-tree stand all leafless in the snow, but adorned with white blossoms, like a bride before the altar. It bursts into clouds of fragrance and beauty in February, the leaves appearing later.

It is said that geese in flying on long journeys carry rushes in their bills, and drop them before alighting on the water, and then alight upon them. The rushes and geese are figured together. A comical couplet is the baboon and the moon's reflection in the water. The long-armed, stump-tailed fool sees the image of the moon in the water, and in vain attempts to grasp it.

The couplet of the chrysanthemum and fox refers to one of the hundreds of the current fox myths and stories. A fox, assuming the form of a lovely woman, bewitched a certain prince. One day, happening to fall asleep on a bed of chrysanthemums, she resumed her normal shape. The prince seeing the animal, shot at him, hitting the fox in the forehead. He afterward saw that his concubine had a wound in the corresponding part of the head, and thus discovered her true nature.

The bamboo and tiger are often seen together on large objects of use or ornament: the tigers, being afraid of elephants, hide in the bamboo jungle. The peach-trees and oxen, a less common design, had reference to a line in a Chinese poem. An emblem of success in life is that of the dragon crossing the summit of Fuji on the clouds. As the small snake becomes a dragon, so does a man of low estate often rise by triumph over obstacles to exaltation and honor.

For a number of the facts here given I am indebted to Captain E. Pfoundes, whose "Budget" of Japanese notes, entitled *Fu So Mūni Bukuro* (Trübner & Co., London), is a valuable thesaurus of condensed information.

THE TESTAMENT OF IYÉYASŬ.

"THE Legacy of Iyéyasŭ" is a document whose authenticity is yet to be proved. It purports to be the testament of the founder of the last shōgunate; but a thoroughly critical examination of its claims has not, I believe, been made. It is certain that it was not popularly or generally known in Japan, nor ever reckoned as within the body of standard legal literature. It was translated into English (thirty-seven pages print) by Mr. J. F. Lowder, some years before its publication by him in Yokohama, in 1874. The title of the pamphlet read thus: "The Legacy of Iyéyas (deified as Gongen-sama): a Posthumous Manuscript, in One Hundred Chapters, translated from three collated Copies of the Original," printed at *The Japan Herald* office.

Dr. Walter Dixon, also, in his work on Japan, gives (chapter vii.) another version, with notes and comments. W. E. Grigsby, Professor of Law in the Imperial College in Tōkiō, in a paper read before the Asiatic Society of Japan, has given a scholarly analysis of the document, showing especially its similarity to most ancient law codes, such as those of Solon and Lycurgus, the Twelve Tables, the Mosaic, and the early Teutonic codes. He terms it "the most original monument which Japan has produced in the way of legislation," with which compare Dixon, pp. 269, 270. Whether authentic or not, it embodies the policy of Iyéyasŭ, is a mirror of feudalism, and is of great historic value.

The work consists of one hundred sections, in no logical sequence, and difficult to determine in the original. Of these, sixteen consist of moral maxims and reflections, which are quotations, or intended to be such, from Confucius and Mencius; fifty-five are connected with politics and administrations; twenty-two refer to legal matters; and in seven Iyéyasŭ relates episodes in his own personal history. No sharp distinction is made in it between law and morality, between the duties of the citizen and the virtue of the man. The man who obeys the law is virtuous; he who disobeys it is vicious and low. It is the province of the legislator to inculcate virtue. All that we understand by law—all that embraces the main bulk of modern law, the law of contracts, of personal property, of will, commercial and maritime law—finds no place in this code. This arose from the fact that human life within the daimiōate was regulated by custom, not by agreement; and there was hardly any intercourse between the various daimiōates, because the only property of any importance was land, and no will was allowed. On the other hand, great stress was laid on criminal law, the law relating to landed property, the law relating to the status of persons and classes, to etiquette and ceremonial, to tables of rank and precedence, and to political administration and government. On these points, especially the latter, minute details are entered into with a peculiarity which is striking, when compared with the poverty of the code in respect to those matters which seem to us most important in a system of law. Another of the many points of similarity to ancient codes of law, notably the Mosaic, is the elaborate provisions with respect to the avenging of blood and personal satisfaction for injuries done. The individual does not, as in more advanced societies, give up his right of private vengeance. Great stress is laid on caste dis-

tinctions, which are made more sharp and distinct by reducing them to writing, and thus perpetuating the unequal stages into which early society is divided.

Professor Grigsby further remarks that there is one great difference between this and all other early codes, viz., its secrecy. It was in express terms forbidden to be promulgated. The perusal of it was only allowed to the chief councilors of state (*rōjiu*). How can people obey laws if they do not know their nature? A parallel is found in the history of the Aryan race. In Greece and Rome, at the beginning of their history, the knowledge of the laws and their administration was confined to the aristocratic class, and the first struggle of the commons was to force this knowledge from them—a struggle which ended in these codes being reduced to writing and promulgated. The parallel is not complete in respect to writing. In the case of Greece and Rome, the laws were unknown because not written: in Japan, though written, they were yet to be unknown. In early communities, custom has absolute sway. The magistrates, as Iyéyasŭ says, are the reflectors of the mode of government; they interpret, not make, the law. Any additions to the old customs were to reach the multitudes by filtering down through the magistrates, who alone would be conscious that they were new. To the multitude they would only be slight modifications of the customs they had always observed. As a code of laws, this was the character of the testament of Iyéyasŭ, who claims merely to be a transmitter, not a framer, of the law. His work is a compilation, not a creation; a selection from old, not a series of new laws.

The "Legacy" is invaluable in representing to us the condition of society in feudal Japan. The basis of Japanese life, the unit of civilization, is the family, which is a corporation, the most characteristic mark of which was its perpetuity. The head of the family held a power similar, in nearly all respects, to that of the paterfamilias at Rome, having complete power over the persons and property of his children, and doing as he pleased with both, fettered only by that custom which is the great hinderance to despotism in all early communities. But his liabilities were equally great with his rights. He was responsible for all the ill-doings of any of his family. A Japanese family was not, however, what we understand by the word. It was often not natural, but artificial. Persons whom we should exclude from the family were admitted into it, and those who with us are constant members were sometimes excluded from it. Adoption (*yoshi ni naru*) on the one hand, and emancipation, or the sending-away (*kandō suru*) of a son from the family, on the other, were in constant practice. In Rome, adoption was employed merely to enlarge the family; in Japan, solely to perpetuate it. The son adopted by a man having no male heir filled exactly the place of a natural child; and, in early times at least, he must take the name of the adopting parent. If the adopting parent had a daughter, the adopted son married her, becoming heir himself, in which respect the Japanese custom differed from the Roman, which held that the natural tie of brother and sister was formed by adoption, and hence their marriage was illegal. Only an adult could adopt; but if the head of the family were an infant, he could adopt. This practice was often resorted to in Japan for two reasons—the religious and the feudal; to prevent the extinguishment of the ancestral sacrifices, with the consequent disgrace to the family; and because the land, being held only on condition of military service, if a vassal died leaving no male children, the lands escheated to the lord. The second method which rendered the family artificial were the expulsion and disinheritance of a son from the family, which, however, were only effected when he was of an irredeemably bad character.

Marriage in Japan, which was allowed—rather, enjoined—in the case of a man

at sixteen, of a woman at thirteen, was not a contract between the parties or a religious institution, but a handing-over of the bride to the family of her husband by her own family, she passing completely under the control of her husband, both as to person and property, subject to reference to a council of family relations.

So far the internal aspect of the family. Each family, however, was connected with other families, as in early Greece and Rome; and thus about fifty great clans were formed, of which the four principal were the Minamoto, Fujiwara, Taira, and Sugawara, all the families of which were, or claimed to be, descended from a common ancestor. Certain sacrifices were peculiar to each, and certain dignities confined to certain families. Thus the office of kuambaku was monopolized by the Fujiwara, and the shōgunate by the Minamoto clans (the families in succession being, the line of Yoritomo, the Ashikaga, and the Tokugawa). This condition of society was analogous to that in Italy and Greece from 1000 B.C. to 500 A.D. But what is peculiar to Japan is that, with this primitive form of society remaining unchanged, we find a system that did not arise in Europe till about the eleventh century A.D. Thus the superstructure of feudalism was reared on the basis of the family—an incongruous social edifice, as it seems to our minds.

In Japan, then, at the time of the formation of the code, the mikado and the imperial court were above, and not included in, the theory of feudalism, at the head of which was the shōgun, and beneath him the daimiōs, each with a territory of greater or lesser extent, which he farmed out to the samurai, or vassals, in return for military service. In the greater daimiōates these vassals underlet their lands on the same conditions; in other words, subfeudation was common. A vassal not able, by reason of age or sickness, to perform this service abdicated in favor of his son. If a man died without leaving any children, natural or adopted, his property was retained for him by a legal fiction, for his death was concealed till permission was given by his lord for him to adopt a son, and only after such permission was given was his death announced. The necessity of having an heir, that the vassal's land might not escheat to the lord, but be kept in the vassal's family, greatly extended the practice of adoption. If the vassal proved faithless to his lord, both escheat and forfeiture were incurred.

The leading principles of Iyéyasŭ's policy are thus summarized: The position of the shōgun to the mikado was to be one of reverential homage. The shōguns were in no way to interfere with the mikado's theoretical supremacy, but to strengthen it in every way, and show all respect to the emperor's relatives, and the old court aristocracy. Secondly, toward their inferiors the shōguns were to behave with courtesy and consideration. All insult and tyranny were to be avoided, and the weight of power was not to press too harshly. The neglect of this principle, as shown in insolence to inferiors, was the rock on which the governments in nearly all ancient communities struck. This caution proves the consummate knowledge of human nature and the profound mastery of state-craft possessed by Iyéyasŭ. Another recommendation of Iyéyasŭ was, that the government of the lesser daimiōs should be frequently changed. The motive alleged for this was the prevention of misgovernment; but the real reason was, that they might not acquire local influence, and so endanger the power of the shōguns. This was similar in its purpose to the policy adopted by William the Conqueror, in portioning out the territories of his barons among several counties. In England the plan was completely successful; in Japan it failed, as we have seen, because the shōguns never dared to enforce the measure in the case of the greater daimiōs, who were the only ones to be dreaded. The best feature of the policy

of the shōgunate was to be the endeavor to maintain peace in the empire as far as possible, or, in the words of Iyéyasŭ, "to assist the people to give peace to the empire."

THE TOKUGAWA FEUDAL SYSTEM.

THE most remarkable fact in the events leading to the Restoration was the alienation from the bakufu of the four great families, relatives of Tokugawa, Owari, Kii, Mito, and Echizen, all of kokushiu rank. Their status in the system was as follows:

Owari, with one cadet at Takasu, in Mino, 640,500 koku.

Kii, with one cadet, at Yoda, in Kōdzuké, 565,000 koku.

Mito, in Hitachi at Mito (Ibaraki), with four cadets; one at Takamatsu, in Sanuki, with 120,000 koku; one at Moriyama, in Mutsu; two in Hitachi, with 30,000 koku. United revenues, 510,000 koku.

The Echizen family was large, consisting of thirteen branches, holding fiefs in every part of Hondo and one in Shikōku, and taking different sides during the war. All but one held the name Matsudaira. Two were kokushiu; one of Fukui Echizen, 320,000; and one of Aidzu (Wakamatsu) in Déwa (Iwashiro). The united revenues of the thirteen daimiōs of the house of Echizen were 1,479,000 koku.

The Maëda family, the head being Kaga, a kokushiu, had three cadets. United revenue, 1,237,000 koku. Kaga remained nearly neutral during the war.

The revenues of the clans of the combination which overthrew the bakufu, and restored the fiefs and registers to the mikado, were, Shimadzu, of Satsuma, 710,000; Mōri, of Nagato (Chōshiu), with five cadets, 579,000; Yamanouchi, of Tosa, with one cadet, 255,000; Nabéshima, of Hizén, with three cadets, 422,915.

Uwajima was of the Datté family, which ranked after Satsuma in the feudal peerage, and was divided into four branches, which took different sides during the war. Their united revenues were 785,600; Uwajima having 100,000, and Sendai 625,600.

In this note, and throughout this volume, the "revenue" of the daimiōs, given in koku, means the amount of rice, or its equivalent, produced, or supposed to be produced, in their territories. It was the official assessment made by the bakufu. The daimiō and clan received as their own income one-half, sometimes two-thirds, of the assessed amount, the peasants and farmers getting the remainder. See F. O. Adams's "History of Japan," vol. i., chapter xii., and *Japan Mail*, July 8th, 1873. For an entire table of names, titles, and fiefs of all the daimiōs, see Dr. Walter Dixon's "Japan," chapter x.

As a specimen of the manner in which nearly every province was cut up into fiefs, I give the feudal map of Echizen:

Name and Title.	City.	Revenue.	Rank.
Matsudaira, Echizen no Kami.....	Fukui.....	320,000	Kokushiu.
Manabé, Shimōsa no Kami.....	Sabaé	50,000	Fudai.
Arima, Hiuga no Kami	Marŭoka	50,000	Fudai.
Doi, Noto no Kami.....	Ōno.....	40,000	Fudai.
Ogasawara, Saëmon no Sūké.....	Katsuyama...	22,777	Fudai.
Sakai, Ukio no Sūké.....	Tsuruga.....	10,000	Fudai.

There was also a place called Hombo, belonging to the shōgun's government, and ruled by a salaried bunio (governor). Several hatamotos also lived in Echi-

zen, with holdings of land of 500 koku, and upward. Echizen contained a population of 461,032 souls, with 97,000 houses, 1500 Buddhist temples, and 350 Shintō shrines. The area was about 400 square miles. There were thus in it six princes, a bakufu governor, and several hatamatos. Echizen is a fair specimen of a Japanese province from 1600 to 1872, and well illustrates the wondrously complex mechanism of the Japanese feudal system. Pomp, pride, jealousy, poverty of the many, wealth of the few, and a most varied assortment of petty bigotries, prejudices, ridiculous shams of every sort, and grounds for courtesies or brawls, were all exhibited in this little theatre, as in the mediæval Europe. Each daimiōate, however petty, was a microcosmic government by itself. Fukui Han had its departments of the Treasury, Justice, Censorate, Census, Military Affairs, Coinage and Currency, and Public Works. The rice store-houses, taxes and pensions; prisons, power of trial, punishment, or execution; oversight of the theatre, books, weights and measures, and religion (inquiry into the evil sect, etc.); census work; arrow and spear arsenal, and, later, of powder-mill, rifle factory, and artillery-train; issue of paper money, and copper and iron cash; the erection and care of the castle, daimiō's mansion, mills, magazines, bridges, roads, breakwater, school, and chemical laboratory, were under the care of their respective departments. It is evident that with the daimiōs jealous and at variance with each other, Japan could not long stand the financial strain of competition in war or peace with foreigners, and that enterprises, to cope with outside pressure, must be on a national scale, and by a national government. The financial question was one of the most powerful levers in prying up the bakufu, and restoring the ancient national government.

PAPERS ON JAPANESE SUBJECTS.

THE following articles, by the author, may be of use to readers of this work who wish further information on the subjects treated of:

1. In the "American Cyclopædia," New York, D. Appleton & Co.: "Japan" (seventeen pages, with map), "Kanagawa," "Kiōto," "Matsumaë," "Mikado," "Nagasaki," "Niigata," "Nippon," "Nobunaga," "Ōshima," "Ōzaka," "Saga," "Saghalin," "Satsuma," "Shimonoséki," "Tōkiō," "Tomomi Iwakura," "Yokohama," etc., etc.

2. "The Tōkiō Guide" (thirty-five pages); "Map of Tōkiō, with Notes, Historical and Explanatory;" and "The Yokohama Guide" (thirty-nine pages), with map, for tourists and visitors, were published in Japan, 1874: Yokohama, F. R. Wetmore & Co.

3. "Education in Japan:" a series of thirteen articles, printed in *The Japan Weekly Mail*, Yokohama, 1873–'74. The greater bulk of matter in these papers was republished in *The College Courant* (New Haven), *American Educational Monthly* (New York), and in the Appendix to vol. ii. of F. O. Adams's "History of Japan," London, 1874, H. S. King & Co. The series treated of the "Tōkiō Normal School;" "The Imperial College of Tōkiō;" "The School of Foreign Languages;" "The Opening of the New Polytechnic School by the Mikado;" "Foreign Teachers;" "Native Officials;" "Native Teachers;" "Japanese Students;" "The Old Education;" "Physical Training;" "The Study of the English Language;" "Female Education;" "Moral Training."

4. In *Lippincott's Magazine:* "Inside Japan" (a trip in Kadzusa and Awa, April, 1873); "Japanese Fox Myths," January, 1874; "A Call on a Bonze," June,

1874; "A Japanese Marriage in High Life," February, 1875; "A Daimiō's Life," August, 1875.

5. In *The Overland Monthly:* "A Japanese Merchant at Home" (Paper-making, etc., in Echizen); "The Mythical Zoölogy of Japan," August, 1874; "New-year's-eve in Tōkiō," 1872—November, 1874; "In a Japanese Prison," September, 1875.

6. In *The Independent:* "New Japan;" "The Sea Empire;" "A Tramp through Japan;" "The Imperial College in Yedo;" "Does Japan Persecute?" "Shintōism;" "Japanese Proverbs" (two papers); "Japan's Record of Progress in 1872;" "Japanese Politeness;" "Buddhism in Japan" (two papers); "Baby Gojiro;" "Trampling on the Cross;" "Japanese Education at Home and Abroad;" Notes and Editorials on Japanese Subjects, 1870–1876.

7. In *Appletons' Journal:* "The Paper Money of Japan;" "Japanese Fireproofs;" "A Japanese City," August 1st, 1874; "Japanese Fans;" "A Modernized Japanese City," March 25th, 1875; "A Daimiō's Stable," June 26th, 1875; "Household Superstitions in Japan," January, 1876.

8. In *St. Nicholas:* "The Feast of Dolls," March, 1875; "The Feast of Flags," May, 1875; "The Golden Fish of Owari Castle," with illustrations, by Ōzawa.

9. In *The Christian Weekly:* "Education in Japan," with picture of the Imperial College in Tōkiō, October 30th, 1875.

10. *Journal of the Asiatic Society of Japan for* 1873: "The Streets and Street-names of Yedo."

11. In *The Christian at Work:* "The Land of the Rising Sun," January 28th, 1875; "Christian Missions in Japan;" "Christ in Japan;" "Woman's Position in Japan."

12. Map of Dai Nippon, the Empire of Japan, and chapter on the Geography of Japan, in Mitchell's "School Geography and Atlas," Philadelphia, J. H. Butler & Co. This map was drawn by Takahashi, instructor in drawing in the Imperial College, Tōkiō, from the War Department map of Japan: the letter-press and names were added by the author.

DR. J. C. HEPBURN'S METEOROLOGICAL TABLES, FROM OBSERVATIONS MADE FROM 1863 TO 1869 INCLUSIVE, READ BEFORE THE ASIATIC SOCIETY OF JAPAN, JUNE 17TH, 1874.

MONTHLY AND YEARLY AVERAGE (1863–1869) OF THE THERMOMETER (FAHR.).

Yearly Average.		Monthly Average.			
1863	59°	January	40°.28	July	75°.31
1864	58°.02	February	41°.22	August	78°.49
1865	59°.13	March	47°.03	September	70°.48
1866	57°.01	April	56°.15	October	61°.68
1867	59°.26	May	64°.07	November	52°
1868	58°.46	June	69°.44	December	43°.45
1869	58°.08				

Average of 1863–1869 ..... 58°.22
Highest monthly maximum (August, 1865) ..... 91°
Lowest monthly minimum (January, 1864) ..... 20°

RAIN-FALL IN INCHES (1863–1869).

Average Yearly Amount.		Monthly Average.			
1863	50.56	January	2.35	July	8.22
1864	71.44	February	3.29	August	6.71
1865	60.72	March	5.05	September	10.19
1866	65.16	April	6.59	October	6.92
1867	42.62	May	5.81	November	3.45
1868	122.67	June	7.90	December	3.82
1869	79.17				

Average of 1863–1869 ..... 70.33

NUMBER OF RAIN DAYS (1863–1869).

Yearly.		Monthly.			
1863	102	January	4.42	July	10.00
1864	100	February	6.28	August	9.28
1865	110	March	8.42	September	11.85
1866	97	April	9.72	October	7.00
1867	78	May	8.42	November	6.57
1868	114	June	11.28	December	4.28
1869	81				

Average of 1863–1869 ..... 97.71

"Yokohama is situated in lat. 35° 26' N., and long. 139° 39' E. from Greenwich. It is about thirty-seven miles from Cape King, the nearest point on the Pacific. The Bay of Yedo at Yokohama is about twelve miles wide. The city is, for the most part, built on a plain, about from two to ten feet above high-water mark, at the mouth of a valley opening on the bay. The valley is about a mile wide, and extends back in a westerly direction some three miles, gradually narrowing to a quarter of a mile. It is bounded on each side by a row of hills, about one hundred and twenty feet wide. It is cultivated in paddy fields, is consequently wet and marshy, and is exposed to the sweep of north-east and easterly winds from across the bay, and to south-west and westerly winds through the valley.

"The winds of Japan are at all seasons exceedingly irregular, frequently violent, and subject to sudden changes. The north-east and easterly winds are generally accompanied by rain, with a high and falling barometer, and are usually not violent. The south-west and westerly winds are generally high, often violent, and accompanied with a low barometer. It is from the south-west that the cyclones or typhoons almost invariably come. On clear and pleasant days, which are in excess of all others, there is a regular land and sea breeze at all seasons.

"The rain-fall is above the average of most countries, varying greatly, however, in different years. About two-thirds of the rain falls during the six months from April to October.

"The steady hot weather, when it is considered safe to change to light summer clothing, does not generally set in till the latter decade of June or 1st of July, and ends, often very abruptly, about the middle of September.

"The snow-fall is for the most part light, not often exceeding two or three inches. In 1861, on one occasion, it fell to the depth of twenty inches. The ice seldom exceeds one inch or one and a half inches in thickness. Fogs are rarely noticed, so also is hail. Thunder-storms are neither frequent nor severe. Earthquake shocks are frequent, averaging more than one a month; but hitherto, since the residence of foreigners in Yokohama, no very severe or dangerous shocks have occurred."

RESULT OF METEOROLOGICAL OBSERVATIONS AT HAKODATÉ (1859–1874), LATITUDE 41° 46′ 0″ N., LONGITUDE 140° 46′ 30″ E.

	Yearly Averages.
Temperature of the air (Fahrenheit's thermometer)	48°.33
Extreme maximum	88°.00
Extreme minimum	2°.00
Barometer (at freezing-point and sea-level, English inches)	29.8995
Hygrometer, dry-bulb thermometer	50.26
Hygrometer, wet-bulb thermometer	47.88
Hygrometer, force of vapor, in inches	0.32
Hygrometer, relative humidity, in hundredths	82.20
Rain, average number of days	98.20
Snow, average number of days	48.84
Rain-fall and melted snow	51.907
Cloudy and overcast days (of 12 hours)	221.98
Amount of clouds per day (of 12 hours)	.57
Fog and hazy days (of 12 hours)	15.39
Winds: North	43.39
Winds: East	86.54
Winds: South	60.84
Winds: West	119.27
Gales, average number	16.79
Velocity of wind, miles traveled	952.81

The observations of rain and snow were made during twelve years; of the hygrometer, two and a half years; cloudy and overcast weather, for four years; of velocity of wind, one year; of fog and wind, eleven years.

See detailed tables in reports of General Capron and his foreign assistants, Tōkiō, 1875. Printed by the Kai Takū Shi.

POSTAL STATISTICS.

From the Postmaster-general's Report for the Seventh Year of Meiji (1874–'75).

Number of newspapers transmitted in the mails, 1873	514,610
" " " 1874	2,629,648

—showing an increase of 411 per cent., "a fact which speaks volumes for the progress of civilization."

STATISTICS OF 1875.

Letters, ordinary	16,728,025	Letters containing currency	95,235
" registered	268,577	Dead letters	3,227
Newspapers	2,629,648	Dead letters returned to writers	778
Books and patterns	33,824		
Free mails	178,109	Total	19,937,423

STATISTICS OF THE SIX MONTHS FROM JANUARY 1ST TO JUNE 30TH, 1875.

Letters, ordinary	8,077,333	Ordinary letters stolen	283
" registered	165,752	" " lost	11
Postal cards	1,849,190	Money letters stolen	9
Newspapers	1,839,846	Letters dispatched to foreign countries	44,185
Books, patterns, etc	44,860		
Official letters	183,318	Newspapers, etc., dispatched to foreign countries	34,639
Letters containing money	47,480		
Dead letters	2,156		
Dead letters returned to writers	816	Total	12,289,878

The mail routes in operation throughout the empire, during this half-year, aggregated 10,650 ri (26,625 English miles) in length. The increase over those in

operation in the preceding year was 563 ri (1408 miles), and 5273 ri (13,183 miles), or 98.1 per cent. over those of the sixth year of Meiji (1873).

The total annual transportation for the half-year was 2,423,737 ri (6,059,343 miles), an increase of 135,530 ri (338,825 miles) over that of half of the preceding year.

During this half-year there have been established 205 post-offices, 86 stamp agencies, and 37 street letter-boxes; and there are, therefore, now in operation 3449 post-offices, 703 stamp agencies, and 513 street letter-boxes.

The postal money-order system was established on the 2d of January of the eighth year of Meiji (1875). During that month the number of money orders issued was only 4120, amounting to yen 72,243.10. During the month of March 6384 orders were issued, amounting to yen 111,913.69; and the number of orders issued in June was 8393, amounting to yen 147,056.43, thus showing an increase, in the number issued in the latter month, over those issued in January, of 103.6 per cent. One yen is equal to a dollar.

The total number of orders issued during the half-year was 39,398, amounting to yen 690,617.48. The total number of money-orders paid was 37,768, amounting in value to yen 671,624.98; and 1630 orders, amounting to yen 18,992.50, have not yet been presented for payment. The fees from money-orders were yen 3722.49.

The number of letters sent to the section for detaining those insufficiently addressed, and finding the means for delivering them, was 39,185, or a little more than 3-10ths per cent. of the whole number transmitted through the mails during the half-year.

The number of letters stolen during the half-year was 6305. Of these, 5633 were regained and have been delivered intact; 380 were broken and defaced so that they could not be returned; and 292 were actually lost. Of the latter number, 9 contained currency to the amount of yen 39.37, of which yen 36.50 were restored, the person who stole them having confessed and returned the money. The balance, yen 2.87, was lost. Eighty-two letters were lost in the course of delivery or transmission. Of these, 71 were regained and delivered, and 11 were actually lost. One hundred and sixty-nine letters were carelessly detained by letter-carriers, but were, after some delay, delivered to their addresses.

The department manufactures its own postal cards, stamps, and envelopes. The post-offices are well equipped with New England clocks, Fairbanks' scales, American leather bags with iron tops and locks, fire-arms, and furniture. The postmaster is H. Mayéshima. The Superintendent of Foreign Mails is Samuel W. Bryan, formerly of the United States Postal Service, "to whose energy and experience the present prosperous condition of the [Japanese mail] service is due."

The United States Government was the first to recognize the right of Japan to control the transport of her own foreign mails; and on the 6th day of August, 1873, a postal convention was concluded between the two countries. It is hoped that, from the general satisfaction given by the Japanese Postal Service, the European nations will likewise grant to Japan the right to control her own postal affairs. During the first half of the year 1875, 242,862 articles, weighing 9,314,149 grammes of mail matter, were sent or received, the postage amounting to $21,732.63. Postal savings-banks have also been established in several cities, as experiment. The educational power of this national postal enterprise, in teaching book-keeping, punctuality, the Arabic numerals, Roman letters, political economy, the triumphs of civilization, and the diffusion of information, can not be overestimated.

THE BOMBARDMENT OF KAGOSHIMA.

ONE of the agents most prominent in bringing about the restoration, under the plea of "the renovation of the institutions created by the founder of the Tokugawa line," was Shimadzū Saburo (now Sa Dai Jin), brother of the next to the last, and father of the last daimiō of Satsuma. On his way from Yedo, while his train was passing along the Tōkaidō, the "Richardson affair," which led to the bombardment of Kagoshima, the chief city of Satsuma, took place. "Some English people came riding through the head of the train at a place called Namamugi" (Kinsé Shiriakū—Satow's translation, p. 33). A native who would attempt to cross, walk, or ride into a daimiō's procession would, according to invariable custom, meet with instant death. The Yedo authorities had previously requested foreigners not to go on the Tōkaidō that day; but they contemptuously, and with no waste of courteous language or sympathy for national troubles, refused. Two American gentlemen, Messrs. E. Van Reed and F. Schoyer, while out riding on the same afternoon (September 14th, 1862), met Shimadzū's train, and, by filing aside, passed on without hinderance. Soon after, three English gentlemen and a lady, one of the former being Mr. Richardson, who had lived several years in China, and "knew how to deal with these people," disregarded the warnings of the discreet members of the party, and impatiently urged their horses into the procession. Some Satsuma retainers, taking this as a direct and intentional insult, drew their swords, and fell like butchers on the unarmed men. The lady was untouched. The three men were all wounded, Richardson to death. There is no proof that either Shimadzū Saburo or the train-leader gave the order to kill, as is alleged. Such heated fictions are at par with the statement that the captain of the *Bombay*, after sinking the *Oneida*, willingly allowed her crew to perish.

In the "Richardson affair" were, on the one hand, arrogant people, who despised all Asiatics as an inferior order of beings, disregarded their rights, and were utterly ignorant of the misery their coming had wrought on Japan. On the other hand were proud men, who considered the foreigners as sordid and cruel invaders, and the men before them as having purposely insulted them and their master. This affair led to the extortion, in presence of cannon-muzzles, of one hundred thousand pounds sterling from the bakufu, twenty-five thousand pounds from the Satsuma clan, the capture of three Satsuma steamers, and the bombardment of Kagoshima.

The English fleet of seven men-of-war arrived off Kagoshima, August 11th, 1863, and, while deliberations were pending, began hostilities by seizing the three steamers belonging to the clan. In the British official report this hostile act is called "a reprisal;" and the sentence following declares that "suddenly and unexpectedly" hostilities were begun [assumed] by the Japanese!! The squadron then, forming in line of battle, bombarded the forts and city. The net result of two days' bombardment were the explosion of magazines, partial destruction of the batteries, a conflagration which reduced factories, foundries, mills—the beginnings of a new civilization—to ashes, the sinking of five Liu Kiu junks, the firing of the palace of the prince, besides the slaughter of human beings, whose number Japanese pride has never divulged. "Having accomplished every act of retribution and punishment within the scope" of their force, and believing "that the entire town of Kagoshima" was "a mass of ruins," the fleet, after severe loss, having fully vindicated the Asiatic policy of England, left the bay. The twenty-five thousand pounds indemnity was shortly afterward paid. Both parties fought with equal bravery.

The effect of this act of savage vengeance was salutary, in opening the eyes of the yet unconvinced Satsuma men to the power of the foreigners, their rifled cannon and steamers. In England, by press and Parliament, the wanton act was bitterly denounced, and by French and German writers stigmatized as a horrible act of vengeance, justified neither by international law nor even by the laws of war. It is a pity that such a storm of righteous indignation could not prevent an act of almost equal barbarity in the year following at Shimonoséki.

For a thorough study of the case, see Adams's "History of Japan," vol. i., London, 1874; *Kinsé Shiriaki*, translated by E. Satow, Esq., Yokohama, 1873; "Kagoshima," E. H. House, Tōkiō, 1875. I have also had the advantage of hearing the story from the Japanese samurai, in Shimadzū's train, from others who were in Kagoshima during the bombardment, from Mr. E. Van Reed, and from English friends.

THE SHIMONOSÉKI AFFAIR.

On the 25th of June, 1863, the American steamer *Pembroke*, on her way from Yokohama to Shanghae, anchored near the town of Shimonoséki, and was warned off by a blank discharge. The next day two Chōshiu steamers attacked her, but she escaped without injury. On hearing of this (July 11th), the American minister directed Captain McDougall of the U. S. S. *Wyoming*, of four twelve-pounders and two pivot-guns, to proceed to Shimonoséki. Arriving there on the 16th, Captain McDougall ran his ship between the two Chōshiu men-of-war, receiving their fire and that of six batteries. An eleven-inch shell from the *Wyoming*, exploding in her boiler, blew up the steamer. The brig was sunk, and the batteries shelled. After an hour and ten minutes, having been hulled eleven times, and receiving about thirty shots in masts, rigging, and smoke-stack, and having five men killed and six wounded, the brave captain withdrew from such overwhelming odds, and returned to Yokohama.

The French ship *Kien Chang*, and the Dutch corvette *Medusa* (July 11th), were also fired on after blank warnings. The French men-of-war *Semiramis* and *Tancrede* (July 19th), and the *Medusa* (July 11th), also shelled the Shimonoséki batteries. The Dutch ship was struck thirty-four and hulled seventeen times. Three eight-inch shells bursting on board, four men were killed and five wounded. The French landed a force and destroyed a battery, with a loss of only three men wounded. Ample vengeance was thus taken by Dutch, French, and Americans. No British vessel was injured. After the failure of negotiations, the allied squadron made rendezvous at Himéshima, in the Inland Sea, and on the 5th of September, 1864, at 2 P.M., began the bombardment of the batteries. The combined squadron consisted of nine British ships of war, and a battalion of marines, three French, and four Dutch ships of war. It being the time of our civil war, and our vessels being all engaged in blockade service, or on looking for the *Alabama* and other Confederate privateers, the United States was represented by the *Takiang*, a small chartered steamship, commanded by Lieutenant Pearson, with a party of marines and one Parrot gun, from the U. S. corvette *Jamestown*. There were engaged in the action:

	Ships.	Men.	Guns.
English	9	5156	100
French	3	1225	49
Dutch	4	951	58
American	1	258	1

After a battle (September 5th and 6th) bravely contested on both sides, the batteries were silenced by the ships, and captured and destroyed by landing, and the guns removed.

The total expenses incurred by the United States in this expedition were less than twenty-five thousand dollars. The *Pembroke* is still doing service in one of the rivers in China. In a memorandum drawn up at a convention held in Yokohama, October 22d, 1864, the representatives of the four treaty powers, Sir Rutherford Alcock (England), Léon Roches (France), Hon. Robert H. Pruyn (United States), D. D. von Polsbroek (Holland), demanded three million dollars "indemnities and expenses for hostile acts of the Prince of Nagato." Four hundred and twenty thousand dollars were claimed as compensation for injuries to the vessels, American, French, and Dutch, first fired on, or one hundred and forty thousand dollars apiece. "Such a sum, or a much larger one, may be justly claimed," is the official language. Hence Great Britain would receive somewhat less of the partition of the indemnity than any of the other Powers. The share of each nation, not including interest, was:

United States	$785,000
France	785,000
Holland	785,000
Great Britain	645,000

All the installments have been paid over to the respective powers, in part by the bakufu, and the remainder by the mikado's Government, the last being in 1875.

In dividing the money, the French principle was to apportion it according to the numerical forces of each power engaged; the American principle was that the general co-operation of the four powers had equal weight, and contributed in equal degree to effect the result.

So far, the bare facts. Let us look into the justice of the case. As matter of international law, the Japanese had perfect right to close the Straits of Shimonoséki, since the right to use it was not stipulated by treaty, and each nation has the right to a league of marine territory along its shores, and to the straits and water passages commanded by cannon-shot. Further, no British ship was in any way injured or fired upon. Ample vengeance was taken in each case by American, French, and Dutch men of-war; but the British minister, Alcock, ever ready to shed blood, collected all the available British naval force, and was the leading spirit in organizing this bombarding expedition. Orders from Her Majesty's Government, *forbidding* British participation in the needless and wicked act of war, arrived *after* the squadron had sailed. Sir R. Alcock was then recalled to explain the situation.

The part taken by the United States is the least enviable. In the first place, the *Pembroke* had no right to be where she was. She disregarded the warning of blank cartridge. It might be supposed that the American envoy, on hearing of the matter, recognized the Japanese right to close the strait, gave the Japanese officials the benefit of his legal knowledge, and helped to mitigate some of the impending horrors of civil war. On the contrary, he sent the *Wyoming* down to take all possible retribution, and then presented the bill of damages ($10,000!!!) of the owners of the *Takiang*. The items of this document were, "Five days' loss of time, at $300 per diem;" "loss of freight and passengers, at not being able to visit Nagasaki, whither she was bound, estimated at $6500;" "consideration for deadly peril for officers and crew, $2000." Five minutes' study of a good map of Japan will show the first two items to be pure fabrications. The Shimonoséki route is *not* the shortest to Nagasaki. Into the "deadly peril" they knowingly went, and remained till driven away. Strange to say, the successor

of Perry and Harris, instead of disowning this outrageous claim, compelled the bakufu to pay $12,000, by which the United States gained $2000 clear profit. Further, after excessive vengeance taken by the *Wyoming*, the American minister actually put in a claim for "a sum to provide annuities for the dead and wounded" of the *Wyoming*—when the American captain started on an avowed warlike expedition! The amazed ministers of the bakufu replied that the loss of life on the *Wyoming* was fairly offset by the punishment inflicted. It seems incredible that such a claim should ever have been suggested.

The only government of Japan recognized by foreigners had made profound apologies, the absurd *Pembroke* claims had been paid, and the United States had gained $2000. The "insult" to our flag had been wiped out in two sunken steamers, and in the blood of perhaps fifty Japanese. Could the force of vengeance further go?

Unfortunately for Christian civilization, it did. In this triple act of savage revenge, instigated by Sir Rutherford Alcock (the apostle of murder and blind force, who ill conceals his anger at the policy of peace, fair play, patience, and steady courage of Townsend Harris), the American minister joined; and the United States was again disgraced by a needless act of war, and an outrageously unjust extortion of money from a weak nation, as ignorant as a hermit, and already impoverished by excessive drains, called, by a euphemism, "indemnities."

The money paid both by the bakufu and the mikado's ministers now remains in Washington, amounting, principal and interest, to over $1,300,000. The shōgunate and feudalism are no more. Japan is entering on a new national life, in which every dollar is needed for mighty enterprises of civilization and education. The very men who once fired at a usurpation, through our ships, are now our best friends. They are leaders in the new civilization. What shall be done with the money thus unjustly taken, after a triple vengeance wreaked in punishment for what, by the laws of nations, was in itself no crime?

For authorities, read, *in the light of the history of Japan* given in "The Mikado's Empire," Minister R. L. Pruyn's "Dispatches in the Diplomatic Correspondence of 1863–1865," F. O. Adams's "History of Japan," and "Shimonoséki" (E. H. House), Tōkiō, 1875.

THE MILITARY ESTABLISHMENT.

In the imperial proclamation dated December 28th, 1872, the plan and details of the new national military system, elaborated with great care after a study of foreign war establishments, were published. The preamble states that "it becomes imperative to construct our army and navy upon the best possible system in accordance with the spirit of the age. We have therefore enacted a law for enrolling soldiers from the whole population, founded on the system which anciently existed in this country, modified by comparison with the practice of foreign countries." The document further explains that anciently the whole population were soldiers, all the able-bodied men serving as occasion required, the mikado leading them. After the war they returned to their ordinary pursuits. Later, the military and agricultural classes were severed, the authority of the court dwindled away, and the feudal system became fixed, and innumerable abuses followed the division of the people into soldiers and peasants.

In 1871, the Government was restored to the original form, and the soldiery

and peasantry were again amalgamated, and now *all* Japanese subjects become conscripts at the age of twenty, and will be placed either in the army or navy. The army is divided into the "standing army," "reserve," and "militia," and the troops into five classes, according to their bodily powers. The standing army is formed by enrolling those conscripts of each year on whom the lot falls, who shall serve three years. The first reserve is composed of men who have completed three years of military service, and live at home, pursuing their regular callings. They are called together once a year to live in camp and drill. The second reserve is composed of men who have completed two years of service in the first reserve. They are called out only when the levy *en masse* is made. The militia is composed of all males between the ages of seventeen and forty, not already included in the regular army or reserve. They are formed into bodies of troops when the levy *en masse* is made, for the protection of the district to which they belong.

The minimum standard of height for the regular army is 5.1 feet. (A long list of exemptions is given in the original document.) The empire is divided into six military divisions, having head-quarters at Tōkiō, Sendai, Nagoya, Ōzaka, Hirōshima, and Kumamoto. Camps are established in thirty-seven places. The army comprises:

		Number in each Regiment or Company.		Total in each Branch.	
		Peace.	War.	Peace.	War.
Infantry	{14 brigades, or 42 regiments...}	640	900	26,880	40,320
Cavalry	3 regiments...	120	150	360	450
Artillery	18 companies...	120	150	2,160	2,700
Engineers	10 companies...	120	150	1,200	1,500
Military train (commissariat)	6 companies...	60	80	360	480
Marine artillery	9 companies...	80	100	720	900
Total				31,680	46,350

To the above must be added the household troops, or Imperial Guards. This corps is the flower of the army. Only picked men are promoted to it:

Infantry	2 brigades, or 4 regiments	3200
Cavalry	1 regiment	150
Artillery	2 companies	300
Engineers	1 company	150
Military train		80
		3880

Total strength of the regular army in peace, 35,560; in war, 50,320.

In comparison with the armies of other countries, the proportion of engineers in the Japanese army is large, and that of the cavalry is small. This arises from the geographical features of the country, which is deficient in plains, and abounds in mountains, broken surfaces, and strategic points.

The details of the military law have been well carried out, and the scheme more than realized. The army has been ably instructed by French officers. The troops are drilled, clothed, and equipped after the new improved French system, and armed with the most approved weapons of war from the United States and Europe. They are fed on rations of pork, beef, and bread, in addition to native diet. On an emergency Japan could now (1876) put seventy-five thousand disciplined troops (regulars and reserves) in the field.

These regulations, which greatly offended some of the samurai and some officers who wished the caste system kept in vogue, have been rigidly carried out, and are now popular. They were promulgated afresh in the autumn of 1874–'75, as a radical exponent of the will of the mikado and cabinet against the old conservative opposers of the modern spirit of progress, and worshipers of Yamato damashi, that feudalism and all its abuses were forever dead and buried in Japan.

NAVY AND MERCANTILE MARINE.

THE following statistics of the Japanese navy are merely approximate, and below the maximum. There are 10 war-vessels, 5 dispatch-vessels, and 5 training-ships, all steamers:

Rio-Jō-Kan: Class, corvette, 10 guns, 280 horse-power, 1300 tons, 3½ inch iron belt round water-line; armament, two 100-pounder Armstrongs (rifled), eight 64-pounders (muzzle-loaders); complement, 300 men.

Adzuma Kan (Stonewall): iron-clad ram, 3 guns, 500 horse-power; armament, one 300-pounder Armstrong (rifled), two 70-pounder ditto (rifled); complement, 135 men.

Nisshin Kan, sloop (wood), 7 guns, 250 horse-power, 1000 tons; armament, one 7-inch Armstrong (pivot), 6½ tons; six 60-pounder rifled Dutch guns; complement, 145 men.

Kasuga Kan (formerly English man-of-war): paddle-wheel steamer (wood), 6 guns, 300 horse-power; armament, one 100-pounder Blakeley, four 50-pounder Japanese guns, one 20-pounder Armstrong (breach-loader); complement, 130 men.

Unyō Kan (wood): 6 guns, 90 horse-power; armament, one 110-pounder Vavasseur (pivot); one 40-pounder Armstrong, (breach-loader), two 20-pounder Armstrongs (breach-loaders); complement, 65 men.

Mōshiu Kan (wood): 4 guns, 90 horse-power; armament, one 70-pounder (pivot), one 40-pounder (pivot), two 20-pounders (pivot); complement, 60 to 65 men.

Hōshō Kan (wood): 4 guns, 90 horse-power; armament, one 70-pounder (pivot), one 40-pounder (pivot), two 20-pounders (pivot); complement, 60 to 65 men.

Dai Ichi Tē-bo (wood): 4 guns, 90 horse-power; armament, one 70-pounder (pivot), one 40-pounder (pivot), two 20-pounders (pivot); complement, 60 to 65 men.

Tsukuba Kan (sea-going training-ship): 300 horse-power, 1400 tons; armament, one 70-pounder (pivot), one 40-pounder (pivot), two 20-pounders (pivot); complement, 60 to 65 men.

Fuji Yama Kan (made in America): harbor training-ship.

In the mercantile marine are now about one hundred steamers, of various rates and tonnage. A considerable number of these are small steamers, plying in the rivers, on Lake Biwa, and along the coast. The coast-trade of Japan and a steamline to Shanghae, China, are now controlled by Japanese capital, bottoms, and crews, with foreign sailing-masters in many, but not all, cases.

The navy is organized on the English model, and a commission of English officers and seamen have been engaged for several years as assistants and instructors. There is also a marine corps, and a naval college, in which several hundred young men receive a thorough scientific and technical education, besides a schooling on training-ships. The Navy Department, also on the British model, has a hydrographical office, which has made surveys of the coast of Japan, and executed very fine charts and hydrographic maps. The largest navy-yard, dry-docks, foundries, and ship-yards are at Yokosūka, about twelve miles below Yokohama, and are under French superintendence. Admiral Akamatsū and several of the higher naval officers were educated in Holland, others at Annapolis, or in England. The musicians of the imperial navy and marine corps play the music and tunes of Europe and America.

THE NATIONAL FINANCES.

[NOTIFICATION NO. 216.]

"To *In*, *Shō*, *Shi*, *Chō*, *Fu*, and *Ken:*

"The inclosed estimates of Income and Expenditure for the year beginning July, 1875, and ending June, 1876, having been furnished by Ōkuma Shigénobu, Minister of Finance, they are hereby notified for your information.

"SANJŌ SANÉYOSHI, *Dai Jō Dai Jin.*

"DECEMBER 22d, 1875."

CONDENSED COMPARATIVE TABLE OF THE YEARS 1874 AND 1875-'76.

REVENUE.

	1874.	1875-'76.	Increase.	Decrease.
	Yen.	Yen.	Yen.	Yen.
Land-tax	44,603,332	51,505,967	6,902,635	.....
Spirits and tobacco	911,809	1,713,083	801,274	.....
Postage	329,606	1,104,917	775,311	.....
Stamp duties	1,038,050	571,418	.....	466,632
Customs	1,716,915	1,700,982	.....	15,933
Mines	296,757	548,314	251,557	.....
Railways	722,096	691,019	.....	31,077
Telegraphs	39,269	152,143	112,874	.....
Yezo fisheries	.....	437,485	.....	.....
All other sources	.....	.....	.....	.....

EXPENDITURE.

	1874.	1875-'76.	Increase.	Decrease.
	Yen.	Yen.	Yen.	Yen.
Samurais' salaries and pensions	20,527,893	17,596,561	.....	2,931,332
Dai Jō Kuan	697,450	630,000	.....	67,450
Gai Mu Shō (Foreign Office)	170,000	170,000	.....	.....
Nai Mu Shō (Home Office)	.....	2,300,000	.....	.....
Ō Kura Shō (Treasury)	1,412,115	1,604,600	192,485	.....
Riku Gun Shō (Army)	8,000,000	6,950,000	.....	1,050,000
Kai Gun Shō (Navy)	2,500,972	2,700,000	200,028	.....
Mom Bu Shō (Education)	1,300,000	1,700,000	400,000	.....
Kiō Bu Shō (Religion)	77,400	70,000	.....	7,400
Kō Bu Shō (Public Works)	5,527,516	4,750,000	.....	777,516
Shi Hō Shō (Judicial)	900,000	1,250,000	350,000	.....
Ku Nai Shō (Imperial Household)	742,978	950,000	208,022	.....
Kai Taka Shi (Colonization)	1,682,899	1,799,716	116,817	.....
Fu and Ken	3,454,379	4,300,000	845,621	.....
Police	1,294,795	1,600,000	406,305	.....
Legations and consulates	363,235	515,000	151,765	.....
Grants in lieu of pensions	.....	5,096,200	.....	.....
Contingencies	4,795,352	5,000,000	304,648	.....
Toward reduction of paper money	5,000,000	.....	.....	.....
Total national debt	.....	142,289,580	.....	.....
Balance from 1873	29,509,864	.....	.....	5,193,607
Balance from June, 1875	.....	24,416,257	.....	.....

	1874.	1875-'76.	Increase.
	Yen.	Yen.	Yen.
Total income	59,357,772	68,588,266	9,230,494
Total expenditure	62,159,344	68,498,506	6,339,362

Of the national debt, $14,480,912 is foreign, and $127,808,668 is domestic. The paper money now in circulation amounts to $94,803,819. The foreign debt and paper money are being slowly redeemed. Government loans for industrial and charitable purposes amounted to $12,594,889. The appropriation to the United States Centennial Exposition is $251,385. See report printed in full, in *The Japan Mail*, January 27th, 1876. I have extracted the condensed table given above from *The Japan Herald* of January 10th, 1876.

OUTLINE OF JAPANESE CHRONOLOGY.

Japanese history begins	B.C. 660
Introduction of letters and writing	A.D. 552
Introduction of Buddhism	A.D. 552
Propagation of Buddhism	from 6th to 15th century
Military operations against the Ainōs, or aboriginal tribes	from B.C. 660–1200
Active and personal rule of the mikados	B.C. 660 to 8th century
Fujiwara family's greatest influence	8th century to 1167
Taira family's influence paramount	1167–1184
Minamoto family rules	1184–1219
The Hōjō hold the governing power	1219–1333
The temporary mikadoate	1333–1335
The Ashikaga line of shōguns	1335–1574
Nobunnaga holds the power	1574–1582
Hidéyoshi holds the power	1582–1598
The Tokugawa line of shōguns	1604–1868
Duration of the dual system	1192–1868
Domination of the "military classes"	1167–1868
Duration of ancient feudalism	B.C. 660 to 8th century A.D.
Duration of simple monarchy	A.D. 8th to 12th century
Duration of modern complex feudalism	12th to 19th century
Japan known to foreigners	A.D. 1542
Arrival of Commodore Perry in the Bay of Yedo	July 7th, 1853
Treaty with the United States signed	March 31st, 1854
Townsend Harris resides in Yedo	October, 1857
Concludes a treaty of foreign residence and commerce	August, 1858
Yokohama, Nagasaki, and Hakodaté open to trade	July 1st, 1859
First embassy sent to the United States	January, 1860
The mikado restored to full power; the ancient government re-established	Jan. 3d, 1868
Battle of Fushimi	January 27th–30th, 1868
Name of the city of Yedo changed to Tōkiō, which is made the capital	September, 1868
Hakodaté taken; surrender of the rebels; war ended	June, 1869
Abolition of the feudal system; ex-daimiōs called to private life in Tōkiō, and retired on pensions	October, 1871
Embassy representing the mikado and National Government make the circuit of the world	1871–1872
National celebration of the 2536th year of the Japanese empire	April 7th, 1876

TEA CROP OF 1875.

The total export of tea amounted to 22,582,152 pounds, of which 16,546,289 pounds were shipped from Yokohama, 4,292,159 pounds from Kobé, and 643,159 pounds from Nagasaki. All Japanese tea is green, and the United States is the chief customer for this tea. About 400,000 pounds were sent to England from Nagasaki in 1875. Some consignments are also made to China for conversion into black tea. The tea is picked in the spring and fall. About nine per cent. weight is lost by refiring or redrying for export. The best tea-producing provinces are Isé, Suruga, Inaba, and Yamashiro, which produce for foreign export 28,000, 26,000, 23,500, and 22,000 pounds respectively. Kiushiu sent 22,000; Yamato, Kawachi, Iga, and Kii sent 12,000; Omi, 9000; Mino, 9000; Shimōsa and Kadzusa, 6000; Tamba, 5000; Echizen and Echigo, 3500; and sundry small districts, 5000 pounds for export in 1875. The area of plantations and crop of tea is increasing steadily every year.

CENSUS OF JAPAN FOR THE FIFTH YEAR OF MEIJI, THE 2532D YEAR FROM THE ACCESSION OF JIMMU TENNŌ (A.D. 1872).

Colonies (Hokkaidō—Yezo and Kurile Islands)	1	Kōri (departments)	717
Fu, or imperial cities (Tōkiō, Ōzaka, Kiōto)	3	Ku (city parishes)	6,862
Han, or tributary principality (Liu Kiu)	1	Mura (rural parishes)	70,443
Ken	72	Towns	12,535
Provinces (geographical divisions)	86	Shintō shrines	128,123
		Buddhist temples	98,914
		Houses	7,107,841

	Heads of Household.		Family.	Total.	Males.	Females.
	Males.	Females.				
Princes and princesses	7	4	18	29	14	15
Nobles (kuge and ex-daimiō)	459	.....	2,207	2,666	1,300	1,366
Shizoku (samurai of higher grade)	258,939	13	1,023,215	1,282,167	634,701	647,466
Sōtsu (samurai of lower grade)	166,873	2	492,199	659,074	334,407	324,667
Chishi (retired samurai)	646	.....	2,670	5,316	1,715	1,601
Priests (Buddhists)	75,925	9	Families, 93,585 Students, 37,327	211,846	151,677	60,159
Shintō officials	20,895	43	81,939	102,477	52,141	50,336
Nuns	.....	6,068	3,553	9,621	.....	9,621
Common people	6,326,571	170,572	24,339,948	30,857,271	15,619,048	15,218,223
Population of Saghalin	.....	.....	.....	2,358	1,155	1,203
Residents (from Summary of Foreign Trade of H. B. M. Legation, August, 1875):						
Americans and non-British Europeans	.....	.....	.....	1,238		
British	.....	.....	.....	1,170		
Chinese	.....	.....	.....	2,723		

AGES.

	Males.	Females.		Males.	Females.
14 and under	4,590,915	4,465,393	80 and above	75,830	113,248
15 to 21	2,030,051	6,638,063	Age unknown	1,844	1,890
21 to 40	5,005,747				
40 to 60	3,655,564	5,091,070	Total	16,796,158	16,314,687
60 to 80	1,435,507		Total population	33,110,825	

OCCUPATIONS, TRADES (ADULT POPULATION), ETC.

	Males.	Females.	Total.
Farmers	8,004,014	6,866,412	14,870,426
Artisans	521,295	180,121	701,416
Merchants	819,782	489,409	1,309,191
Miscellaneous occupations	1,218,266	911,256	2,129,522
Total	10,563,357	8,447,198	19,010,555

	Males.	Females.
Maimed, blind, deaf, dumb, etc.	63,759	37,828
Criminals in prison	2,311	179
Criminals in penal settlements	962	26
Criminals at hard labor	2,726	320

CENSUS ACCORDING TO PROVINCES.*

	Provinces.	Houses.	Population.
Tōkaidō. Kinai.	1. Yamashiro..	108,030	429,030
	2. Yamato..	95,866	418,326
	3. Kawachi..	53,168	237,678
	4. Idzumi..	50,853	209,174
	5. Settsu..	197,137	729,444
Tōkaidō.	1. Iga..	21,415	97,164
	2. Isé..	126,456	585,988
	3. Shima..	8,974	37,489
	4. Owari..	175,315	737,437
	5. Mikawa..	110,837	482,931
	6. Tōtōmi..	88,945	414,928
	7. Suruga..	71,735	368,505
	8. Kai..	75,793	360,068
	9. Idzu..	30,570	149,749
	10. Sagami..	69,377	356,638
	11. Musashi..	434,222	1,943,211
	12. Awa..	27,535	154,683
	13. Kadzusa ..	82,973	419,969
	14. Shimōsa..	121,776	645,029
	15. Hitachi..	124,762	648,674
Tōzandō.	1. Ōmi..	136,221	576,564
	2. Mino..	143,886	660,896
	3. Hida..	18,555	98,378
	4. Shinano..	200,968	919,115
	5. Kōdzuké..	121,010	507,226
	6. Shimotsuké.	96,068	498,520
	7. Iwaki..	60,251	348,608
	8. Iwashiro..	78,580	427,933
	9. Rikuzen..	88,129	534,609
	10. Rikuchiū..	92,658	570,521
	11. Mutsu..	83,868	473,244
	12. Uzen..	97,578	560,984
	13. Ugo..	115,939	630,036
Sanindō. Hokurikudō.	1. Wakasa..	16,994	85,487
	2. Echizen..	96,568	461,032
	3. Kaga..	95,027	403,357
	4. Noto..	51,539	262,486
	5. Etchiu..	138,839	615,663
	6. Echigo..	263,642	1,368,428
	7. Sado..	22,259	103,098
Sanindō.	1. Tamba..	68,581	295,359
	2. Tango..	57,071	160,932
	3. Tajima..	40,769	187,086
	4. Inaba..	37,367	162,842
Sanindō. Sanyodō.	5. Hōki..	45,121	174,158
	6. Idzumo..	77,493	340,042
	7. Iwami..	61,626	259,611
	8. Oki..	5,943	28,531
Sanyodō.	1. Harima..	156,931	635,791
	2. Mimasaka..	50,609	215,602
	3. Bizen..	83,902	331,878
	4. Bitchiu..	90,769	396,880
	5. Bingo..	99,168	456,461
	6. Aki..	152,645	667,717
	7. Suwo..	113,658	497,034
	8. Nagato..	75,554	330,502
Nankaidō.	1. Kii..	136,964	613,925
	2. Awaji..	34,460	164,939
	3. Awa..	125,704	586,046
	4. Sanuki..	125,663	559,712
	5. Iyo..	171,020	775,974
	6. Tosa..	112,447	524,511
Saikaidō.	1. Chikuzen..	87,139	411,175
	2. Chikugo..	77,254	391,535
	3. Buzen..	66,385	314,574
	4. Bungo..	120,250	562,318
	5. Hizen..	229,441	1,074,461
	6. Higo..	192,752	923,037
	7. Hiuga..	90,413	376,527
	8. Ōzumi..	37,235	173,817
	9. Satsuma..	136,467	633,379
Hokkaidō.	1. Ishikari..	1,896	6,063
	2. Shiribéshi..	4,793	19,098
	3. Iburi..	1,614	6,251
	4. Ōshima..	18,392	75,830
	5. Hitaka..	1,601	6,574
	6. Tokachi..	288	1,464
	7. Kushiro..	407	1,734
	8. Nemuro..	244	832
	9. Chishima..	103	437
	10. Kitami..	486	1,511
	11. Teshiwo..	569	1,567
	1. Iki..	8,757	33,010
	2. Tsushima..	6,302	29,684
	Liu Kiu..	27,167	166,789
	Saghalin..	Not known.	2,358
	Total..	7,107,841	33,110,825

	Total Population.
Kinai..	2,023,652
Tōkaidō..	7,392,411
Tōzandō..	6,816,563
Hokurikudō..	3,299,551
Sanindō..	1,608,561
Sanyodō..	3,431,865
Nankaidō..	3,225,107
Saikaidō..	4,889,383
Hokkaidō..	121,301

The Bureau of Official Statistics in the Nai Mu Shō has charge of the census, and the registers of births, marriages, and deaths. The result of the second enumeration of the population of Japan following that given above, which was completed after two years' labor, is as follows: Total population, 33,300,675 souls; of whom 16,891,729 are males, and 16,408,946 are females. This shows an increase over the former census of 189,850; of whom 95,571 are males, and 94,279 are females. During the year 1874, 290,836 males and 278,198 females were born; and 108,292 males and 197,312 females died. The number of kuazoku, or nobles, was 2829. The number of shintō officials was 76,119; of Buddhist *religious*, 207,669; and of nuns or priestesses, 9326.

* See pages 74 and 84. The numerals to the left of the province refer to their order on the map of Dai Nippon, which faces page 17.

MINES AND MINERAL RESOURCES.

By far the best statements of Japan's mineral wealth are presented in the Report of Mr. F. R. Plunkett, of the British Legation, to Sir Harry Parkes, and published in *The Japan Weekly Mail* of January 27th, 1876. Most of the matter given below is from official data. "In almost every portion of Japan are found ores of some kind, and there is scarcely a district in which there are not traces of mines having been worked. Most of these, however, are abandoned, or worked in a very slovenly manner." The methods still pursued are, with few exceptions, the same as those followed in ancient times. Mines are still attacked by adits. The Japanese hardly ever sink a shaft; and as the water gains upon the miners, the mine is abandoned. No mines can be worked without special license of the Government, and foreigners are excluded from any and all participation in the mining industry of the country. No foreigner can hold a share in a mine, nor lend money on the security of a mine. Foreigners may, however, be employed as engineers, and a number are already in such employment.

The mining laws of Japan are based on those of Prussia and Spain. Twenty-three foreigners, mostly Europeans, the superintendent being Mr. H. Godfrey, are in the service of the Mining Department; and a number of natives have begun to study the modern systems of engineering, both practically at home, in America and Europe, and in the Imperial College of Engineering in Tōkiō.

The right to work a mine does not belong to the owner of the soil; for in Japan possession of the surface does not carry with it the right to the mineral wealth below. That belongs by law to the Government, which exacts from the worker of the ores a varying royalty, and a surface rent of one yen per eighteen thousand square feet, for all mines except iron and coal, which pay half the sum. The ordinary land tax is also charged to the miner.

The Dutch and Portuguese in the sixteenth and seventeenth centuries exported from Japan precious metals as follows:

By the Portuguese, gold and silver	£59,500,000
By the Dutch—gold, £15,482,250; silver, £28,000,000	43,482,000
Nearly	£103,000,000, or $500,000,000.

From 1609 to 1858, 206,253 tons of copper were exported by the Dutch. The yearly average of Dutch trade at Déshima was £660,000.

Gold was first discovered in Japan A.D. 749. As Japan was closed to the world, the gold remained in the country, and augmented every year. Its abundance was thus no test of the relative wealth of the country. The relative value of gold to silver was, until 1860, as 6 to 1. Japan seems to be fairly well, but not richly, provided with mineral wealth. Below are tables from Mr. Plunkett's Report, which relates only to Hondo, Kiushiu, and Shikoku.

1. MINES WORKING BY LEASE UP TO 1874.

Gold mines	55	Copper and lead	7
Gold and silver mines	3	Copper and lead, antimony, and arsenic mines	2
Silver	13	Iron mines	9
Copper mines (containing silver)	2	Iron sand	416
Silver and copper mines	69	Tin mines	2
Silver, copper, and lead	4	Tin and lead	1
Silver and lead	6	Lead	11
Copper mines	126	Lead and copper	2
Copper, lead, and silver	1	Plumbago	1
Copper and tin	1		

Copperas	8
Antimony	2
Yellow realgar, arsenic, and lead mine	1
Arsenic mine	1
Cobalt	14
Agate	3
Quartz	9
Marble quarries (spotted)	6
Marble quarries (white)	3
Marble quarries (striped)	1
Steatite mines	5
Flint	7
Mica	2
Amber	1
Sulphur	21
Realgar (orpiment)	1
Manganese	1
Alum	18
Salt mines	2
Fire-clay	3
Kaolin	110
Mineral resin	1
Coal mines	708
Petroleum	197
Total number of leases granted	1856

2. LIST OF MINES WORKING FOR EXPLORATION.

Gold mines	28
Gold, silver, copper, and lead mine	1
Gold sand (alluvial gold)	2
Silver mines	31
Silver and copper	24
Silver, copper, and lead mines	2
Silver and lead	1
Lead mine (containing silver)	1
Quicksilver mine	1
Copper mines	187
Copper and lead	13
Copper, tin, and lead	2
Iron	15
Iron sand	12
Stream tin mines	2
Stream tin and lead	1
Lead	29
Ochre	1
Smoky quartz	1
Marble quarries (white)	5
Marble quarries (striped)	2
Agate mines	4
Steatite	9
Flint	3
Rock crystal	9
Amethyst	1
Quartz	1
Sulphur	3
Copperas (sulphate of iron)	1
Salt	1
Antimony	4
Coal	163
Petroleum	77
Total number of mines working for exploration	637

ESTIMATE OF MINERAL PRODUCTION OF JAPAN IN 1874.*

Mineral.	Total Produced.	Price Each.	Total Value.	Total Value.
Coal	390,000 tons	5 yen	$1,950,000	£398,125 0s. 0d.
Copper	3,000 "	300 "	900,000	183,750 0 0
Silver	2,600 kwamme	150 "	390,000	79,625 0 0
Gold	100 "	2,500 "	250,000	51,041 13 4
Iron	5,000 tons	30 "	150,000	30,625 0 0
Coal-oil	575,000 sho	4 sen	23,000	4,695 16 8
Lead	175 tons	115 yen	21,275	4,343 12 11
Tin	7½ "	400 "	3,000	612 10 0
			$3,687,275	£752,818 12 11

ACTUAL PRODUCTION OF COAL IN JAPAN IN 1847.

		Tons.
Kinshiu.	Takashima	72,450
	Miéké	66,324
	Imabuku district	32,667
	Taku	22,198
	Karatsū, in Hizen	58,288
	Hirado	63,160
	Rest of Japan, estimated at	74,933
	Total	390,000

* See in *The Engineering and Mining Journal*, New York, Dec. 2d-30th, 1876, an exhaustive article, with map, on "The Mineral Wealth of Japan," by Henry S. Munroe, E. M.

The total coal production of Japan is thus put down at 390,000 tons, of which no less than 315,067 tons come from the consular district of Nagasaki.

ESTIMATE OF THE PROBABLE EXTENT OF THE COAL-FIELDS IN KIUSHIU, NEAR NAGASAKI.

Takashima	133	acres.
Miéké	16 (?)	square miles.
Imabuku district	70	"
Taku	36	"
Karatsŭ district	40	"
Hirado "	120	"
Total	282	"

The total exportation of coal from Nagasaki has increased in a wonderful proportion of late years; for whereas in 1866 it was only 10,185 tons, and in 1867 36,170 tons, it amounted in 1870 to 56,200 tons; 1871, to 102,700 tons; 1872, to 137,499 tons.

Near Tōkiō there is a coal field thirty miles long by seven and a half miles wide. In Kii and in Echigo are also large coal fields. For lack of good roads, these are nearly useless. A geological survey of Japan has not yet been made, and the Government does not yet possess a correct map of the empire. In 1874, 107,243 gallons of excellent petroleŭm were produced. With American methods of drilling, pumping, and refinery, the yield and area of trial are increasing.

Copper is of very good quality, and found in numberless places. Ordinary ores yield from two and a half to twelve per cent. pure metal, always free from antimony and arsenic. In 1874, two hundred mines turned out only three thousand tons. Foreign machinery and methods would in all probability greatly increase this yield. Ōzaka is the chief dépôt for copper. In the export of copper, old idols, bells, Buddhas, etc., etc., figure largely.

VALUE OF COPPER, ETC., EXPORTED FROM JAPAN FROM 1870 TO 1873.

Year.	Yokohama.	Hiogo and Ozaka.	Nagasaki.	Total in Mexican Dollars.	Total.
1870	$25,250	$117,280	$1,463	$143,993	£29,998 10s. 10d.
1871	107,471	288,504	20,655	416,630	86,797 18 4
1872	443,378	896,992	12,740	1,353,110	281,897 18 4
1873	206,945	490,025	68,845	765,815	159,545 2 6

The following is an estimate of the average cost of producing a ton of Japanese copper according to the present native methods, viz., 100 yen per ton, of which—

	Per Cent.
Cost of ore	23
Explorations	3
Subsequent treatment of ores, viz.:	
Labor	46
Material	18
Superintendence	10
	100

GOLD AND SILVER.

In 1874, 21,666 pounds of silver, 833 pounds of gold, were produced in Japan from 346 silver and 89 gold mines. At four places, foreign engineers work the mines. The Sado mines, it is said by a traveler to that island, cost $75,000 to work them in one year (1874), but produce only $60,000 worth of gold and silver.

Probably the expense of improved machinery and tram-ways was not taken into account. The cost of production of gold is $2 for every 58½ grains, and for silver $96 for 8½ pounds.

Next to coal, iron is most commonly found in many varieties of ore. In Hitachi, a bed of iron-stone, eighteen to eight feet in thickness, is worked by English engineers with blast furnaces. Magnetic iron ore is very abundant; heretofore the cost of production of this ore has been nine dollars per ton. The total output in Japan in 1873 was but three thousand tons. The future yield may be vastly increased. Lead is found in twenty provinces, but only one hundred and eighty-five tons were produced in 1874. In 1873, $84,693 worth of lead was imported from abroad. The tin mines in Satsuma, Bungo, and Suwō are not worked. Quicksilver in Hizen and Rikuchiu await miners. Sulphur is abundant, but most of that mined comes from Awomori.

THE HOKKAIDŌ.

The geological reconnoissances and surveys of Yezo have been under the supervision of American engineers. Professors Blake and R. Pumpelly, who were engaged for one year by the bakufu, visited Yezo in 1862. (See "Across America and Asia," by R. Pumpelly, New York: Leypoldt & Holt.) They made a report, and introduced blasting and some other improvements. In 1871, Thomas Antisell, M.D., and, in 1873, Professor Benjamin J. Lyman, and Henry S. Munroe, E.M., all on the staff of the Department of the Development of Yezo, made examinations. From their reports, coal and iron sand seem to be abundant, well distributed, and of fair quality; gold and silver occur in small quantities; copper, zinc, and lead are found, but not in rich deposits. Petroleum issues in a few places. The result of their labors seems to show that Yezo is poor in mineral wealth, except iron and coal, in which it is very rich. The outcome of the highly creditable labors of these gentlemen will be a vast saving to the Japanese of money for useless mining. From the nature of the case, the limited time, and small number of the staff, the greater part of the interior of Yezo and the Kurile Islands is as yet unexplored. For maps, reports, etc., see "Reports of General Capron and his Foreign Assistants," Tōkiō, 1875. The undoubted wealth of the Hokkaidō is in timber, fisheries, furs, and agricultural products.

LAND AND AGRICULTURE.

THE exact area of Japan is not known, though computed at from 140,000 to 150,000 square miles, with a population of from 200 to 210 persons to a square mile. The number of acres under cultivation is about 9,000,000, or one-tenth of the entire area, supporting a population of 3½ persons to the acre. Not one-fourth of the fertile area of Japan is yet under cultivation. Immense portions of good grass land and fertile valleys in Hondo, and almost the whole of Yezo, await the farmer's plow and seed, to return rich harvests. For centuries the agrarian art has been at a stand-still. Population and acreage have increased; but the crop, in bulk and quantity, remains the same. The state records of Iyéyasū's time give 29,000,000 koku as the yield of the empire. The present estimate of an average crop is still under 30,000,000 koku.

In spade-husbandry, the Japanese have little to learn. In stock-rearing, fruit-growing, and the raising of hardier grains than rice, they need much instruction. On the best soils they raise two crops of wheat, rice, other grains, or root vege-

tables. Fifty bushels to the acre is a good average, though much of the land never gives so large a return. The great need in Japanese farming is live stock. The people are slowly changing their diet of fish and vegetables, and becoming meat-eaters—a return to their ancient pre-Buddhistic habits. Material for the new food supply and for the raw material of shoes and clothing must be provided for. At present, Japan imports 55,000,000 pounds of woolens and mixed goods, which in time she may dispense with. Her pastures are capable, judging from known data, of keeping 28,000,000 sheep, yielding an average weight of five pounds per fleece. Sheep farms, by fertilizing the soil, will prepare it for mulberry and tea plantations, thus increasing the supply of silk, and bringing in a train of new industries. Hitherto, human manure has been almost exclusively used, costing twelve dollars per acre.

The system of land tenure and taxation has differed in ancient and modern times. Theoretically, all the soil belongs to the mikado. Anciently, the land was divided into squares, which were subdivided into nine smaller squares, eight of which were cultivated, each by one man, and the ninth—reserved for the mikado—was worked by the nine collectively. The *tan* is still the unit of measurement. Each man held two tan, or half an acre. In time, this system fell out of use. Farmers in debt would sell their land to a richer one, and thus gradually the land became, in actuality, the people's by an ownership approaching fee simple. The land-owners of the present day have either bought their holdings or have reclaimed their lands; and no one has now the power of taking these away from them. The peasants, holding their land as absolute property, are easily governed; but as soon as an attempt is made to touch their land, redistribute it, or shift ownership, the passive peasants, who submit like children to financial or political despotism, rise in rebellion to violence and blood.

The taxes, which were very light under the ancient mikado's rule, increased greatly under the dual system, and under feudalism were extremely onerous. In Hidéyoshi's time, the Government tax was two-fifths of the crop; in the Tokugawa period, often fifty per cent. The landlord took twenty-five per cent. for rent; so that the farmer got but one-fourth of the crop for his labor, seeds, and profits. In a very bad year, the whole crop went for taxes; and the farmers then, becoming paupers, were fed from the public store by the "benevolence" (!) of the rulers. The system of land-holding and taxation varied in almost every daimiō's territory, often in villages near each other. The first attempt of the mikado's Government, in 1872, to correct the abuses of ages of feudalism, and to place the system of land taxes and tenure on one uniform national basis, led to many local insurrections. Bands of peasants in certain sections, jealous of local rights, wedded to long custom, knowing little, and suspecting much, of the policy of the rulers in the distant capital, resisted what was an act of beneficence and justice to millions of people in the whole empire. They were easily subdued.

The tax on the soil is the chief source of Government revenue. Four classes of land—good, medium, inferior, and bad—are reckoned. Paddy, or rice-land, is worth five times as much as arable land, and an investment in rice-land pays about eight per cent. per annum. The peasant's houses are rarely built in the fields, but on *yashiki* land, paying a slightly higher tax, and the rural population is thus clustered entirely in hamlets or villages.

The true wealth of Japan consists in her agricultural, and not in her mineral or manufacturing, resources. The Government and intelligent classes seem to be alive to this fact. Many of the samurai and nobles have begun farming. The Nai Mu Shō has begun a survey of the empire, with special relation to the resources and capabilities of the soil. A number of American gentlemen of experi-

ence have been engaged as theoretical and practical farmers and stock-breeders. In Tōkiō, model and experimental farms, gardens of trial and acclimation, cattle-runs and plantations, and training schools and colleges have been established, in which the upper class of land-holders have taken much interest; nearly two hundred acres of many varieties of grass are being cultivated and tested; a large number of foreign works on stock-raising and agriculture have been translated into Japanese; two thousand cattle and ten thousand sheep have been introduced from the United States and Australia.

About eight hundred beeves are now slaughtered per week in Tōkiō to supply meat food, and six thousand cattle were sold to natives in Kobé in 1875. In the Kai Takū Shi, farms of two hundred and fifteen acres in Tōkiō, arranged under General Capron's superintendence, the excellent breeds of horses, sheep, cattle, and pigs, in spite of all drawbacks first felt from inexperienced keepers and disease, are thriving and multiplying. Over one hundred thousand young apple, pear, and other fruit trees, from American grafts, are set out, and yielding well. Improved implements are also made on the farm-smithy, from American models, by Japanese skilled hands. Besides making its own tools, the Nai Mu Shō distributes seeds, cuttings, models, etc., throughout the country, and the Kai Takū Shi, in the Hokkaidō. Model farms have also been established in Sapporo and Hakodaté.

It has been demonstrated that Yezo is capable of yielding good crops of hardy cereals and vegetables, that Japan is a country eminently adapted to support sheep and the finest breeds of cattle, and has a climate suited to develop to perfection cereals, leguminous plants, and artificial grasses, such as red and white clover, alfalas, and the rye family. Time and steady perseverance are, however, needed before national success is achieved. It is gratifying to know that, in the improvement of this mother of all arts, Americans have been the pioneers, and have done so much and so well. Next to the uprooting of superstition and gross paganism by pure religion and education, there is nothing more important for Japan than the development of her virgin land and the improvement of her ancient agricultural resources. For detailed information, see *The Japan Mail* of November 23d, and December 5th, 1874; F. O. Adams's "History of Japan," vol. ii., chap. xii.; and "Reports of General Capron and his Foreign Assistants," Tōkiō, 1875.

MINT AND PUBLIC WORKS.

The Ōzaka mint is a series of fine and substantial buildings, in the Roman style of architecture, equipped with twelve first-class English coining-presses, thirty-seven melting-furnaces, and a sulphuric and nitric acid manufactory. The mint makes its own tools, cuts its own dies, and performs the usual bullion, assaying, refining, and analyzing business of a mint in other countries. The establishment was organized by Major T. W. Kinder, who was the efficient superintendent from 1870 to 1875. To his energy and ability are due the success and reputation of the mint, which it devolves upon the Japanese to maintain. Three hundred and eighty natives and several Englishmen are employed in it. The coins minted are gold, silver, and copper, and of the same weight, fineness, denomination, and decimal division as the American coinage. They are round, with milled edges. They are stamped with the devices of the rising sun, coiled dragons, legend of date and denomination, in Chinese and Roman numerals,

chrysanthemum, and *Paulownia imperialis* leaves and flower. Japanese prejudices are against the idea of stamping the mikado's image on their coins. This dislike will probably pass away before many years. From 1871 to 1875, the number of pieces coined was 136,885,541, their value being $62,421,744. The denominations are fourteen: five being gold, five silver, and four copper. The average metal money now in circulation is nearly two dollars per head of the population, and of gold about seven-eighths of that sum per head.

The coasts of Japan, once the most dangerous, are now comparatively safe by night and day. The statistics of 1873 (below the maximum in 1876) show that there are thirty-one light-houses, two light-ships, five buoys, three beacons, and two steam tenders in operation. Over three million dollars have been expended by the Light-house Bureau (Tō Dai Riō). All the modern improvements dictated by advanced science and mechanical skill have been made use of. The coast of Japan now compares favorably with any in Europe. Mr. R. H. Brunton, the capable foreign superintendent, was in the Government service from 1868 to 1876.

The railway from Yokohama to Tōkiō, eighteen miles long, carried, in 1873, 1,435,656 passengers; and, in 1874, 1,592,314 passengers. The railway from Ōzaka to Kobé, twenty-two miles long, began operations in 1873. The railway from Ōzaka to Kiōto is nearly finished, and will probably open in autumn, 1876. From Kiōto the road is surveyed to Tsuruga. Steam-transit lines are also projected from Kiōto into Kii, from Kiōto to Tōkiō and thence to Awomori. The excellence and convenience of transit by sea, and the fact that the mass of the people follow the agricultural life and habits, more than the lack of capital, will delay the completion of these enterprises for years. The great need of Japan is good wagon roads: comparatively few of these exist.

Telegraphs are now completed from Nagasaki to Sapporo, in Yezo. The main line connects the extremities, through the centre of the empire. A number of branch lines are also in operation. All the kens will probably soon be in electric communication with the capital. Two submarine cables cross the Sea of Japan to Asia, and two wires the Straits of Shimonoséki and Tsugaru. The material used is English, and the Wheatstone system and katagana letters are used. All the above are Government enterprises and property. The Public Works Department also has charge of mines (see page 602), dock-yards, and foundries. A number of steam paper-making, weaving, spinning, sawing, planing, printing, type-casting, and other establishments, representing a great variety of new industries, are being established by natives with foreign assistance. Many of these are assisted or encouraged by the Government.

SILK CROP OF 1875.

The following notes of raw silk arriving in Yokohama for export in 1875 will show the principal localities in which this staple is produced: In Hitachi, 439,000 pounds; Shinano, 237,000; Iwaki and Rikuzen, 210,000; Musashi, 175,000; Kōdzuké, 70,000; Hida, 21,000; Echizen, 17,000; Echigo, 12,500; various places, 18,900; total, 1,190,000 pounds. Only a certain portion of silk raised in Japan is spared for export. The total export of silk from 1862 to 1874 was 12,567,000 pounds, or 1,048,000 pounds per annum. The percentage of silk production in the world is—Italy, 37; China, 36; France, 8; Bengal, 7; Japan, 6; Spain, 2; Persia and the Levant, 4.

WEIGHTS AND MEASURES.

LONG OR TIMBER MEASURE.

THE unit of timber measure is the shakŭ, which is equal to the English foot, and is divided into tenths (*sun*), hundredths (*bu*), and thousandths (*rin*). This foot is called the *kané-shakŭ* (metal foot).

1 rin	=	.012	English inch.
1 bu	=	.12	" " or one-tenth of a "Japanese foot."
1 sun	=	1.2	" inches, or one "Japanese inch."
1 shakŭ	=	12	" or Japanese, inches.
3 "	=	1 yard.	
6 "	=	1 ken, or fathom.	
60 ken	=	1 chō.	
36 chō	=	1 ri, or 2.45 English miles.	

Nice comparisons of Japanese metal measures in use in Tōkiō have shown the iron carpenter's measure, which is bent at a right angle (*kiyoku-shakŭ*, or bent-foot), to be equal to 0.305 metre, or 0. 11″ 11‴, or .994 of an English foot. (See "Tables of Comparisons of Japanese, English, and French Measures, and of Useful Properties of Materials, compiled for the Engineering Classes of Kaiseigakkō," by Prof. R. H. Smith, Tōkiō, 1876.)

CLOTH MEASURE.

The cloth shakŭ ("whale-foot," because made of whalebone, or bamboo) is three inches longer than the foot of timber measure. It is also decimally divided.

1 rin	=	.015	English inch.
1 bu	=	.15	" "
1 sun	=	1.5	" inches.
1 shakŭ	=	15	" "

A *tan*, or piece of cloth, varies in length from 25 to 30 or more feet. A *hiki* is 2 tan, or about 52 feet.

SQUARE OR SUPERFICIAL MEASURE.

The unit of this measure is the square ken of long measure, or 36 English square feet, or 3.2779 metres, called a *tsubo*.

1 tsubo	=	36	square feet, English.
1 sé	=	30	tsubo, or 1,080 square feet.
1 tan	=	300	" or 10,800 "
1 chō	=	3000	" or 108,000 "
1210 tsubo	=	1	acre.

A tan is the usual size of a rice-field, 20 tsubo in length, 15 in breadth. A sé is a rectangle of 6 tsubo in length, and 5 in breadth. A chō is 60 tsubo in length, and 50 in breadth. In Japanese houses, rooms are measured by, and their area spoken of, in mats (*tatami*), which are made of rice straw tightly bound together, and covered on the upper surface with matting; each piece being 6 feet long, 3 feet wide, and 2 inches thick, the edges being neatly bound with cloth. A mat is half a tsubo, and 2 mats make 1 tsubo. A tsubo is also called a *pu*, or *po*.

MEASURES OF CAPACITY.

The unit is the *masŭ* or *shō*, a wooden box, usually with a transverse bar of iron across the top for a handle. It is used for measuring both dry and liquid sub-

stances, such as rice, beans, salt, grain, and soy, oil, vinegar, saké, etc. It is decimally divided into *gō*, *shakŭ*, *sai*, *satsŭ*, and *ké*. "The *gō* bearing the Government stamp measures just 2.50 inches square by 1.75 inches deep, and, consequently, contains 10.9375 cubic inches. The *shō* would then be 109.375 cubic inches, the *tō* 1093.75 cubic inches, and the *koku* 10,937.50 cubic inches. According to this, the *koku* equals 39.447 imperial gallons, or 4.93 bushels, or a little less than 5 imperial bushels, and the *tō* a little less than half a bushel."—DR. J. C. HEPBURN, in *The Japan Mail*, November 25th, 1876, in answer to criticisms made upon the statement in his dictionary (and in many books) that a koku contains 5.13 bushels.

10 shakŭ = 1 gō.
10 gō = 1 shō.
10 shō = 1 tō.
10 tō = 1 koku.

Go-go is the name of a measure of 5 *gō*. A *tawara* is a sack or bag made of straw for holding rice, charcoal, or grain. A *hiyō* is a straw bale or bag, containing about 2½ bushels, or half a koku, for holding rice, which is always stored and handled in hiyō. In the Government granaries, as the salaries of officials, or in allegory, or the symbols of art, the full hiyō is the emblem of wealth.

MEASURES OF WEIGHT.

Weights are divided on the decimal scale, with the exception of the *kin* or "catty." The unit is the *mommé*, which, carefully weighed by Dr. J. C. Hepburn in November, 1876, is equal to 57 grains troy. The precious metals are also weighed by this scale.

10 mo = 1 rin, or .57 grain troy.
10 rin = 1 fun, or 5.7 "
10 fun = 1 mommé, or 57 grains troy.
100 mommé = 100 mommé, or "hiyaku-mé."

Weights of the precious metals are expressed in *mé* or "mace," up to 1,000,000. Ten mommé or "mace" of silver make the imaginary coin, the "tael." A *kin* is 160 mommé, equal to about 1⅓ pounds avoirdupois.

MONEY.

THE only officially recognized currency now in Japan is that founded on the values of the new coinage of the imperial mint at Ōzaka, of which the unit is the *yen*.

10 rin = 1 sen, or cent.
10 sen = 1 yen, or dollar.

The old money—paper, gold, silver, copper, brass, bronze, and iron—is still in circulation, though it is gradually being withdrawn. In popular language, the terms *hiyaku* (hundred), *fun*, *mommé*, and even *riō* (4 mommé, 5 fun), do not represent any coin, but are used to denote values. They are expressions belonging to the period when money was computed by weight only. I have in my possession several ancient stamped lumps of uncoined silver, which formerly circulated as money in Echizen. The names of the old coins and paper money, *satsŭ* or *kitté*, are *zeni*, *shiu*, *bu*, and *riō*.

Names.	Value in Mon.	Value in Cents.	Remarks.
Mon	1	0.01	Round cast-iron coins, rusty, often chipped and cracked. Of same size and bearing same Chinese characters as Chinese "cash" of the same denomination.
Shi-mon	4	0.04	
Jiu-mon	10	0.1	Of bronze. Size of an English farthing. Smooth back. Raised Chinese characters on front.
Jiu-go-mon	15	0.15	Round. Larger than the above. Waved lines on the back. Chinese characters.
Ni-jiu-mon	20	0.2	Round. Larger and thicker than the above. More brassy. Chinese characters.
Tempō	80	0.8	Oval brass or bronze coin.
Is-shiu	625	6.25	Oblong paper card. (See page 425.)
Ni-shiu	1,250	12.5	Card. Same symbols as above, but larger.
Bu, or Ichi-bu	2,500	25	" " " "
Ni-bu	5,000	50	" " " "
Riō	10,000	100	" " " "

The new copper coins have no holes in the centre. The old zéni, or cash, were strung on straw twine, in strings of one hundred each, or stuck on skewers or pins in shops or at the toll-gates. The inscription on the cash is usually that of the year-name, and "TSUBŌ" (current money). "Tempō" is the name of the year in which that coin was issued. Of the square silver coins, *ichi-bu* and *is-shiu*, the former was first cast in 1837, and the latter in 1854. The is-shiu, being largely used to pay the laborers employed to build forts (*dai-ba*) in Yedo Bay in front of Tōkiō, were called "dai-ba." The gold koban, with its divisions of halves, quarters, eighths, and sixteenths, the coins made of an alloy of gold and silver, and the issues of the ō-bans, or oval sheets of gold, from two and a half to six inches in length, and worth from ten to sixty dollars, have passed out of circulation, to be melted up and recoined, or be kept as curiosities.

On the subject of Japanese money, see pp. 88-97, "Memoires du Congrès International des Orientalistes," Paris, 1873; Dr. S. R. Brown's and J. J. Hoffman's "Japanese Grammar;" and the various Japanese works on numismatics, and the official pamphlets, with rich illustrations and full descriptive text. For weights and measures, see Smith, Brown, Hoffman, and Hepburn.

NOTATION OF TIME.

THE first systematic attempt at marking and recording time was in A.D. 602, when a Buddhist missionary from Corea, named Kuanroku, brought to Japan a Chinese almanac, and taught its use. From this time, the years, lunar months, and days are counted, and the years named after the characters in a cycle of sixty years, which is made up of one series of ten, and another series of twelve, characters. The cycle of ten series is called from "the five elements," Wood, Fire, Earth, Metal, and Water, each of which is taken double, or masculine and feminine.

The cycle of twelve series is formed, according to the division of the zodiac, into twelve equal parts, to each of which the name of some Japanese animal is assigned. These are the Rat, Ox, Tiger, Hare, Dragon, Serpent, Horse, Goat, Ape, Cock, Dog, Hog.

By making a square, in which twelve lines are drawn horizontally, and ten

perpendicularly, we have one-hundred and twenty squares, of which sixty are used. Place the ten-series at the top, and the twelve-series on the left side, and the numerals from 1 to 60 in diagonal lines in the spaces from left to right, and from top to bottom. Thus the cyclical name of the year 1711 (see page 288) is "water"-"dragon," or the ten-series name, "water," and the twelve-series name, "dragon." The first year of the current cycle is 1864, and the cyclical name of 1877 is "fire"-"bull," the first belonging to the ten-series, and the second to the twelve-series cycle. (See diagram in Hoffman's "Grammar," page 156.) This method of reckoning time is still in use among the Chinese, Coreans, and the Japanese Buddhist world and priesthood. All Japanese literature is full of it, and it will be printed in the native almanacs for some years to come. As it is the offspring of Chinese philosophy, so the doctrines of *in* (female principle) and *yo* (male principle), *feng-shuey* ("air and water"—a system of gross Chinese superstition) are involved in it, and from its very nature it is the mother of superstitions innumerable. No severer blow has been dealt at priestcraft, necromancy, and the thousand forms of delusion, than the abolition of the lunar calendar, and no greater evidence of the desire of the rulers of Japan to break from Asiatic trammels has been given than their adoption of the solar calendar. The measurement of apparent time in hours and minutes was, for centuries, by the clepsydra. The first is said to have been made by Tenchi Tennō when still a prince, and was re-mounted in 671 A.D. Time-keepers after the European fashion were introduced from China during the time of Taikō. In ordinary Japanese clocks the dial is perpendicular, and the hour and minute hand, being one, descends, while seconds are beaten by an escapement, and shown on a small round dial at the top. At present, many thousand New England clocks and foreign watches are in use, and even the common people are learning the meaning of a "second" of time.

ENUMERATION OF YEARS BY YEAR-PERIODS.

From 645 A.D., under the mikado Kōtoku, the system of reckoning the years by chronological periods called *nen-gō*, or year-names, has been in use. In historical works, and in Japanese literature generally, these year-periods are always referred to, and formerly many natives committed the entire list to memory. Others used little reference-tables, kept in their pocket-books or near at hand. No special rule or system was observed in changing the names, though the accession of a new sovereign, the advent of war or peace, a great national calamity or blessing, a profound social change or great national event, was made the pretext for adopting a new name. It thus results that from 645 to 1868 A.D. there have been 249 year-names, including those used by the "northern dynasty" during the period 1336–1392, treated of in Chapter XIX. The year-names are appointed by the mikado, and are chosen from sixty-eight Chinese words or characters specially reserved for that purpose. They are often very poetic and striking. (See in Dr. J. J. Hoffman's "Grammar," page 157.) In the following list, it will be noticed that the same syllables recur often. The dates can not exactly correspond to our years, since the Japanese New-year's-day was often as much as six weeks later than January 1st. A few years ago—1872—the Government fixed upon the year 660 B.C. as that in which Jimmu Tennō "ascended the throne," and Christmas, December 25th, as the day. Hence, in the newspapers, official documents, and books printed since 1872, the time is expressed in "years of the Japanese empire," or "from the foundation of the empire," or "from the accession of Jimmu Tennō." These phrases have a value at par with the Roman "Ab urbe condita," the date of Jimmu's "ascension" being purely arbitrary.

LIST OF YEAR-PERIODS.

	A.D.
Taikua	645
Hakuchi	650
Sujaku	672
Hakuho	673
Shucho	686
Taikua	695
Taicho	697
Taiho	701
Keiun	704
Wado	708
Hoki	715
Yoro	717
Jinki	724
Tempio	729
Tempio Shoho	749
Tempio Hoji	757
Tempio Jingo	765
Jingo Keiun	767
Hoki	770
Ten̄o	781
Enréki	782
Daido	806
Konin	810
Tencho	824
Jowa	834
Kasho	848
Ninjiu	851
Saiko	854
Tenan	857
Jokuan	859
Genkei	877
Ninna	885
Kuampei	889
Shotai	898
Engi	901
Encho	923
Shohei	931
Tengio	938
Tenréki	947
Tentoku	957
Owa	961
Koho	964
Anwa	968
Tenroku	970
Tenyen	973
Jogen	976
Tengen	978
Eikuan	983
Kuanwa	985
Eiyen	987
Eiso	989
Shoréki	990
Chotoku	995
Choho	999
Kuanko	1004
Chowa	1012
Kuannin	1017
Chian	1021
Manjiu	1024
Chogen	1028
Choréki	1037
Chokiu	1040
Kuantoku	1044
Eio	1046
Tenki	1053
Kohei	1058
Chiréki	1065
Eikiu	1069
Joho	1074
Joréki	1077
Eihō	1081
Otoku	1084
Kuanji	1087
Kaho	1094
Eicho	1096
Shotoku	1097
Kowa	1099
Choji	1104
Kajo	1106
Tennin	1108
Tenyei	1110
Eikiu	1113
Genyei	1118
Hoan	1120
Tenji	1124
Daiji	1126
Tensho	1131
Chosho	1132
Hoyen	1135
Eiji	1141
Koji	1142
Tenyo	1144
Kiuan	1145
Nimpei	1151
Kinjiu	1154
Hogen	1156
Heiji	1159
Eiréki	1160
Oyei	1161
Chokuan	1163
Eiman	1165
Ninan	1166
Kawo	1169
Shoan	1171
Angen	1175
Jijo	1177
Yowa	1181
Juyei	1182
Monji	1185
Kenkiu	1190
Shoji	1199
Kennin	1201
Genkin	1204
Kenyei	1206
Shogen	1207
Kenréki	1211
Kempo	1213
Jokiu	1219
Jowo	1222
Gennin	1224
Karoku	1225
Antei	1227
Kuanki	1229
Jōyei	1232
Tembuku	1233
Bunréki	1234
Katei	1235
Rékinin	1238
Enwo	1239
Ninji	1240
Kuangen	1243
Hoji	1247
Kencho	1249
Kogen	1256
Shoka	1257
Shogen	1259
Bunwo	1260
Kocho	1261
Bunyei	1264
Kenji	1275
Koan	1278
Showo	1288
Einin	1293
Shoan	1299
Kengen	1302
Kagen	1303
Tokuji	1306
Enkei	1308
Ocho	1311
Showa	1312
Bumpo	1317
Genwo	1319
Genko	1321
Shochiu	1324
Karéki	1326
Cantoku	1329
Genko	1331
Kemmu	1334

SOUTHERN DYNASTY.

Engen	1336
Kokoku	1340
Shohei	1346
Kentoku	1370
Bunchiu	1372
Tenjiu	1375
Kowa	1381
Genchiu	1384

NORTHERN DYNASTY.

Rékiwo	1338
Koyei	1342
Teiwa	1345
Kuanwo	1350
Bunwa	1352
Embun	1356
Owa	1361
Toji	1362
Oan	1368
Eiwa	1375
Koréki	1379
Eitoku	1381
Shitoku	1384
Kakei	1387
Kowo	1389
Meitoku	1390
Oyen	1394
Seicho	1428
Eikio	1429
Kakitsu	1441
Bunan	1444
Hotoku	1449
Kiotoku	1452
Kosho	1455
Chorokiu	1457
Kuansho	1460
Bunsho	1466
Onin	1467
Bummei	1469
Chokio	1487
Entoku	1489
Meiwo	1492
Bunki	1501
Eisei	1504
Taiyei	1521
Kioroku	1528
Tembun	1532
Koji	1555
Eiroku	1558
Genki	1570
Tensho	1573

	A.D.
Bunroku	1592
Keicho	1596
Genwa	1615
Kuanyei	1624
Shoho	1644
Keian	1648
Showo	1652
Meiréki	1655
Manji	1658
Kuambun	1661
Empo	1673
Tenwa	1681
Jokio	1684
Genroku	1688
Hoyei	1704
Shotoku	1711
Hokio	1716
Gembun	1736
Kuampo	1741
Enkio	1744
Kuanyen	1748
Horéki	1751
Meiwa	1764
Anyei	1772
Temmei	1781
Kuansei	1789
Kiowa	1801
Bunkua	1804
Bunsei	1818
Tempo	1830
Kokua	1844
Kayei	1848
Ansei	1854
Manyen	1860
Bunkiu	1861
Genji	1864
Keiwo	1865
Meiji	1868
Meiji (tenth year)	1877

FOREIGN TRADE OF JAPAN.

Year.	Imports.	Exports.	Total.
1871	$17,745,605	$19,184,805	$36,930,410
1872	26,188,441	24,294,532	50,482,973
1873	27,444,068	20,660,994	48,105,062
1874	24,223,629	18,014,890	44,225,266
1875	29,467,067	20,001,637	47,481,957

CHIEF ARTICLES OF EXPORTS AND IMPORTS IN 1875.

Imports.		Exports.	
Cotton goods	$8,974,037	Raw silk	$5,620,315
Woolen "	3,846,636	Silk-worms' eggs	731,275
Mixed cotton and woolen goods	2,026,532	Tea	7,792,244
Metals	1,164,963	Copper	559,397
Arms and ammunition	44,586	Tobacco	259,687
Miscellaneous*	8,546,535	Camphor	215,642
Eastern produce	4,863,488	Wax, vegetable	119,812
		Coal	551,360
Total	$29,467,067	Dried fish	901,583
		Rice	589,619
		Miscellaneous	2,573,651
		Total	$20,001,637

* In the above "miscellaneous," the chief American articles are clocks, petroleum, leather, medicines, flour, provisions, watches, nails, books, shoes, dyes, lead, machinery, and sundries.

FOREIGN SHIPPING ENTERED AT THE OPEN PORTS IN 1875.

	Yokohama.	Kobé.	Nagasaki.	Hakodaté.	Total.	
					Ships.	Tonnage.
American (general)	21	9	43	3	76	42,687
" (mail steamers)	79	89	87	..	255	574,644
British (general)	128	55	120	20	323	225,914
" (mail steamers)	27	..	..	..	27	26,232
Danish	2	..	9	..	11	4,255
Dutch	2	..	..	..	2	374
French (general)	2	2	5	..	9	2,705
" (mail steamers)	28	..	..	..	28	43,964
German	33	11	17	10	71	21,881
Russian	5	3	9	3	20	6,547
Swedish	3	..	3	..	6	1,163
Other flags	..	..	3	..	3	1,427
Total	330	169	296	36	831	951,523

FOREIGN RESIDENTS AND FIRMS AT THE OPEN PORTS.

R., residents; F., firms.

Nationality.	Yokohama.		Tōkiō.		Osaka and Kobé.		Nagasaki.		Hakodaté.	Total.	
	R.	F.	R.	F.	R.	F.	R.	F.	R.	R.	F.
American.....	185	20	41	83	7	38	3	6		353	30
Austrian.....	15	3	6	5	..	7	..	..		33	3
Belgian.....	17	1	..	..	..	..	..	..		17	1
British.....	620	65	285	235	32	129	9	13		1282	109
Danish.....	18	1	2	..	..	11	..	..		33	1
Dutch.....	61	3	17	58	8	6	1	..		142	12
French.....	127	..	83	24	3	18	2	..		254	42
German.....	150	..	49	61	12	15	4	..		279	43
Hawaiian.....											
Italian.....	19	6	6	2	..	..	..	..		27	6
Peruvian.....											
Portuguese....	27	..	3	..	..	5	..	..		35	..
Russian.....	16	..	14	..	..	2	..	3		35	..
Spanish.....	42	..	..	..	..	..	..	..		42	..
Swedish.....	15	..	..	..	..	3	..	..		18	..
Swiss.....	23	7	4	6	3	..	..	..		33	10
Total.....	1335	106	510	474	65	234	19	22		2583	258

In the above tables (from the British Consular Trade Report for 1876) all the nations with which Japan has treaty relations are represented, except China; and no return of Chinese commerce is made, except in the totals of imports and exports, in which the value of Chinese merchandise is included. In the table of foreign residents, the children are not reckoned. Of these, there must be about 400 in Japan. Probably 100 foreigners, in the employ of the Japanese, reside in the interior, beyond treaty limits.

LEGENDARY ART AT THE CENTENNIAL EXPOSITION.

On the rotunda of Main Hall, south side, were painted representative Asiatic scenes, objects, and persons. Verging on the centre of the group was a Japanese "poem-card," inscribed in *hiragana*, with the following stanza from a very ancient poet, by one of the Japanese commissioners:

"Waga kuni no Yamato* shima né ni idzuru hi wa, Morokoshi† hito mo, awoga zaraméya;"

or, in English,

"In the ancient Yamato island, my native land, the sun rises: must not even the Western foreigner reverence?"

or,

"When the foreigner comes to my country, the chief isle of Japan, must he not respect it?"

Of the two platforms in the Japanese section, one was devoted to porcelain of

* Yamato is the ancient name of Japan.

† Morokoshi is an archaic geographical term applied to China, India, or the Western world generally. The penman evidently meant, "Even when Christendom's sight-seers at the Centennial Exposition come into the Japanese section, will they not—nay, must they not—admire our art and country?"

Arita and Karatsŭ, in Hizen; the other, to the bronzes of Etchiu, Kaga, and Kiōto, and the cloisonnée enamel of Owari. Between these two platforms, in the aisle, were gold inlaid bronzes in glass cases. On the eastern side of the section were: 1. Tōkiō porcelain and Satsuma faience (white, cream, buff, and dead gold surfaces); 2. Kutani (Kaga) porcelain (red and bright gold); 3. Séto (Owari) porcelain (blue, white, and liver-colored). In the centre of the section were the gold lacquered work, Kiōto porcelain and faience, screens, wood and ivory carvings, weapons, armor, and ancient copper bronzes and jewels. It was in these articles chiefly that legendary art found its best illustration. Most of the mythical, legendary, poetical, and historical incidents noted in previous pages of this work were portrayed, some of them many times over. The same ideas or symbols were repeated, with slight variations, in bronze, porcelain, lacquer, ivory, wood, silk, or in plastic forms. I have space to notice but a very few of the subjects most frequently treated.

1. *The Sea-god rising out of the Deep.*—Riu Jin (Dragon-god), or Kai Riu Ō (Dragon-king of the Sea), page 498, is the personification of the dragon; and the monarch of the world under the sea appears in many fairy tales and very ancient legends, his palaces being located under the ocean, the Inland Sea, or Lake Biwa. He is a reality still to millions of Japanese people. He is represented in terrible majesty, and of awful mien, rising out of the deep. His helmet and mail is a living dragon—the symbol of irresistible might, motion, and ubiquity. His robes are gold and jewels. Around him the waves mount, part, roll, and churn into white foam-edges, their translucent green curves flecked with silvery foam-bells. He holds in his hands a casket, in which are the jewels that control the ebb and flow of the tides (the powers of the sun and moon[?]), significant of victory, longevity, valor, and invulnerability to Ōjin (page 79), the infant god of war, whom he offers to endow with them. "Quick; take this casket: the opportunity is brief. I deign not long to remain in this upper world," is the expression on his face. In pictures, Takénouchi is holding the infant god when the Dragon-king appears. In several bronzes and ivory carvings his queen (page 498) is represented in robes of shell and coral, with diadem of rare shells.

2. *Endo, the Penitent under the Water-fall.*—On three of the largest and finest bronzes was portrayed this story of mad love, murder, remorse, and penance. Endo, one of the captains of the Kiōto garrison during the Taira rule, a brave and gallant soldier, contracted an unlawful affection for the young and beautiful wife of a fellow-officer. The lady, made aware of his passion, steadily rejected his advances, when the foiled lover threatened to kill her aged mother if she did not yield to his wishes and consent to the death of her husband, or even if she informed on him. In the agony of conflict between wifely and filial love, she finally resolved on a plan whereby she should vindicate her own and her husband's honor, and save her mother's life. This was nothing less than to make herself the victim. Pretending to yield to Endo's suit, she fixed a certain night when she would have him secretly admitted into her sleeping-chamber. On that night she persuaded her husband to be absent; and dressing her hair after the male fashion, she donned her husband's dress, and lay down in his place. The assassin entered through the door left open, slid aside the partitions, and in the dimly lighted chamber saw, as he supposed, the unconscious form of his victim. With one blow he severed the head, but, on holding up the bleeding trophy, saw that it was a woman's, and the object of his passion. In horror and remorse, he rushed to the temple, confessed his sin, shaved his hair, and, though in the midst of winter, went out and stood during twenty-one days under the icy flood. After due suffering by remorse and emaciation, the messengers of the god Fudo appear

in the cloud, or in the foliage above the crags, and declare his penance complete, and grant him pardon. He became a learned and holy monk, and built the great temple of Todaiji at Nara, in Yamato, which Yoritomo endowed, and visited in 1195. His priestly name is Mongaku Shonin (His Exalted Reverence Mongaku). In the bronzes, the shorn monk, his body bound with straw rope, and bared to the waist, with rosary in hand, stands under the icy waters, while snow burdens the dense foliage, and caps the gloomy crags. Remorse, torture, and fear are depicted in his face; while peering through the boughs is Fudo's gentle messenger bearing the flowery wand of peace and pardon; while below, with his frightful scowl relaxed, and his iron-spiked club at rest, the demon avenger proclaims that justice is satisfied, and henceforth the sufferer is to be the holy bonze.

3. *Fish leaping the Water-fall.*—Once, when Kiyomori was on his way to view Kumano water-fall (near Kiōto), in his state barge, surrounded by his chamberlain, nobles, and sword-bearer, a white koi (carp) leaped up out of the river upon the deck of the boat. All rejoiced at this auspicious omen.

The koi leaping the water-fall is a symbol of aspiration and ambition, and an augury of renown. The origin of the symbol is Chinese. In an old book it is said that "the sturgeon of the Yellow River make an ascent of the stream in the third moon of each year, when those which succeed in passing above the rapids of the Lung Men become transformed into [white] dragons."

4. *Takamochi* (page 109), the founder of the Taira family, one night accompanied the mikado on a visit to one of his concubines, who lived at a distance from the palace. As the imperial night-walker was passing what is now Gihon Street, in Kiōto, he met what appeared, in the gloomy darkness and drizzling rain, to be a demon with horns, and rays of fire streaming from its head. The emperor was greatly frightened, but Takamochi boldly seized and threw down the apparition. It proved to be an old priest, going out to light the shrine. He had on a grass rain coat, and a straw cone-shaped hat over his head, under which he carried a lamp, holding his pitcher of oil in his hand. Both parties apologized, and a famous subject for artists was the result.

5. "*The Water-fall of Yoro*" is an ancient story. An aged wood-cutter, no longer able to work, was supported by his dutiful son, who daily set out with axe and cord to cut fagots. These he sold to buy rice and saké, the latter being a necessity to the old man. Finally, times were so hard in winter, and the snow so deep, that the son could not earn enough to buy even a gourdful. One day, while filially grieving over this, as he passed a water-fall near Takada in Mino, with his empty gourd in hand, he looked up, when some of the spray touched his tongue, and he beheld the water-fall turned to saké. His filial piety was rewarded. Joyfully filling his vessel, he returned home, and thenceforward kept the old man's veins warm, and supported him in comfort. Hearing of this wonderful reward of filial piety, the emperor and his train went out to see it; and in honor of the event the year-name (page 613) was changed to Yoro (nourishing old age).

6. *Nō* is a kind of pantomimic opera, or "lyrical drama," in which the chief actor performs a variety of dances, while a band of musicians, usually behind a looped curtain, plays, and a precentor recites the words and leads the chorus, both of which contain much ancient poetry. The *Nō* depicts, by word and dance, the ancient mythology and legendary and historic lore. The dancers wear magnificent brocade dreses with long trails, suits of feathers, burnished armor, huge red wigs, and a variety of masks, which represent mirth, sorrow, wrath, serene old age, wicked old age, blooming youth, beauty, deformity, benevolence, malignity, and the various passions. In February, 1872, in Tōkiō, I witnessed a *Nō* performance by four dancers, twenty musicians, and a singer. All of these belonged to

the mikado's palace bard, and wore their ancient gorgeous robes of crimson and gold brocade. The four sets of *No*, which were first composed in the sixth century, were: 1. "Great Peace," intended to propitiate the gods. 2. "The Joy-attracting Dance," representing the dance of Suzumé and the mirth of the gods before the cave in which the sun-goddess hid herself. These were by four masked performers. 3. "The Dance of the Dragon-god" was by one person in dragon mask and helmet, and robes of resplendent brocade, representing Riu Jin. 4. "The Mountain-god's Dance" was by a very handsome Japanese, in silver baldric and flowing opaline silk dress. In one of the cases at the Centennial Exposition, a collection of the *No* masks in miniature were shown. Most of those in actual use in Japan are many centuries old. The *No* dances and the subjects illustrated in them are repeatedly depicted on Japanese art-products.

7. *The Cock on the Drum* is often chosen by the artist in cloisonnée, lacquer, porcelain, and bronze. It refers to the ancient custom in China of stationing a drum on a stand in front of the magistrate's office. Any one oppressed or maltreated could come, and, by beating the drum, call attention to his plaint, and receive redress. In time of peace and good government, the drum was neglected and never sounded; hence the fowls would mount it fearlessly, and the rooster would use it as a favorite crowing-place. The hen would lead her brood around it. In one of Hokusai's sketches, a vine and leaves have entwined it, and doves are cooing and making love on it. Hence, an emblem of peace.

8. On many of the bronzes one or two horsemen are depicted riding through the waves. In the campaign against the Taira, Yoritomo gave to Takatsuna his fleetest and best charger from the stables of Kamakura, the same for which Kagésuyé, his rival, had vainly asked. At the battle of Fujikawa, the Taira being on the west and the Genji on the east bank, Yoshitsuné ordered the bridge to be cleared of the planks, and the soldiers to unclasp their armor, and swim over. Two horsemen whipped up their horses, and plunged into the stream. The foremost was Kagésuyé, the last was Takatsuna. Takatsuna, from behind, "lied to Kagésuyé," and cried out, "Your horse's girth is loose." Kagésuyé stopped his steed, and tightened the strap; upon which Takatsuna rode up, passed him, landed first, and shouted out his own name in defiance at the enemy and for cheer to his friends. In the report of the distinguished sent to Kamakura, Takatsuna was mentioned first, and Kagésuyé second. Both heroes rode through a shower of arrows, and their fame is as immortal as Japanese art can make it.

At the battle of Ujikawa, near Kiōto, Sasaki, a noted Genji knight, plunged into the river, and in the face of a hail of arrows rode to the opposite shore. He is usually represented brandishing his sword, the arrows being cut in two by his strokes. He may be easily recognized by his crest of four hollow squares, arranged so as to form a lozenge, with a space between each square.

Another famous equestrian feat is that of Yoshitsuné whipping his horse into a headlong gallop down the precipitous sides of the hills facing Ichinotani, in which the Taira were besieged (page 145, note). He was told that only deer and the wild boar could descend the path. Yoshitsuné thereupon clapped his stirrups against his horse's flanks, gave loose rein, dashed down, and the cavalry after him, and reached the lower ground in safety.

When Hidéyoshi marched to defeat Akéchi Mitsuhidé (page 238), the brother of the latter, named Samanosuké, could not in honor fight against his brother, nor could he disobey his lord, Hidéyoshi. Coming to the shore of Lake Biwa, he galloped into the water, rode across the arm of the lake, slew his family, set his house on fire, and then performed *hara-kiri*, to save his name and honor, as one who could fight neither against lord nor brother, yet was not afraid of death.