

THE MIKADO'S EMPIRE.

I.

THE BACKGROUND.

It is manifest that to understand a people and their national life, the physical conditions under which they live must be known. To enjoy the picture, we must study the background.

Dai Nippon, as the natives call their beautiful land, occupies a significant position on the globe. Lying in the Pacific Ocean, in the temperate zone, it bends like a crescent off the continent of Asia. In the extreme north, at the island of Saghalin, the distance from the main-land of Asia is so slight that the straits may be crossed easily in a canoe. From Kiushiu, with the island of Tsushima lying between, the distance from Corea is but one day's sail in a junk. For 4000 miles eastward from the main island stretches the Pacific, shored in by the continent of America. From Yezo to Kamtchatka, the Kuriles stretch like the ruins of a causeway, prolonged by the Aleutian Islands, to Alaska. The configuration of the land is that resulting from the combined effects of volcanic action and the incessant motion of the corroding waves. The area of the empire is nearly equal to that of our Middle and New England States. Of the 150,000 square miles of surface, two-thirds consist of mountain land. The island of Saghalin (ceded to Russia in May, 1875) is one mountain chain; that of Yezo one mountain mass. On the main island,* a solid backbone of mountainous elevations runs continuously from

* Dai Nippon, or Nihon, means Great Japan, and is the name of the entire empire, not of the main island. The foreign writers on Japan have almost unanimously blundered in calling the largest island "Nippon." Hondo is the name given to the main island in the Military Geography of Japan (Heiyo Nippon Chiri Yoshi, Tôkiô, 1872) published by the War Department, and which is used in this work throughout.

Rikuoku to Shinano, whence it branches off into subordinate chains that are prolonged irregularly to Nagato and into Kiushiu and Shikokū. Speaking generally, the heights of the mountains gradually increase from the extremities to the centre. In Saghalin, they are low; in Yezo, they are higher: increasing gradually on the north of the main island, they culminate in the centre in the lofty ranges of Shinano, and the peaks of Nantaizan, Yatsugadaké, Hakuzan (nine thousand feet high), and Fuji, whose summit is over twelve thousand feet above the sea. Thence toward the south they gradually decrease in height. There are few high mountains along the sea-coast. The land slopes up gradually into hills, thence into lesser peaks, and finally into lofty ranges.

As Fuji, with his tall satellites, sweeps up from the land, so Japan itself rises up, peak-like, from the sea. From the shores the land plunges abruptly down into deep water. Japan is but an emerged crest of a submarine mountain—perhaps the edge of hard rock left by the submergence of the earth-crust which now floors the Sea of Japan and the Gulf of Tartary. There seems little reason to doubt that Saghalin, Yezo, Hondo, and Kiushiu were in geologic ages united together, forming one island. Surrounded on all sides by swift and variable currents, the islands everywhere on the sea-borders exhibit the effect of their action. At most points the continual detritus is such as to seriously encroach on the land area, and the belief holds among certain native sea-coast dwellers, strengthened by the traditional tales of past ravages, that in process of time the entire country, devoured by successive gnawings of the ocean, will finally sink into its insatiable maw.

The geological formations of the country—the natural foundations—are not as yet accurately determined. Enough, however, is known to give us a fair outline of fact, which future research and a thorough survey must fill up.* Of the soil, more is known.

* Baron Richthofen, in a paper read before the Geological Society of Berlin, June 4th, 1873, thus generalizes the geology of Japan: The west and east portion of the aggregate body of the Japanese islands is in every way the direct continuation of the mountain system which occupies the south-eastern portion of China, the axial chain of which extends from the frontier of Annam to the island of Chusan, in the direction of W. 30° S., E. 30° N. It is accompanied on either side by a number of parallel chains. The prolongation of this group of linear chains passes through the island of Kiushiu to the great bend of Japan (Suruga and Shinano). Through Kiushiu and the southern part of the main island, the structure of the hills and the rocks of which they are made up (chiefly Silurian

Even in a natural state, without artificial fertilization, most of the tillable land produces good crops of grain or vegetables. On myriads

and Devonian strata, accompanied by granite) and the lines of strike are the same as those observed in South-eastern China. This system is intersected at either end by another, which runs S.S.W., N.N.E. On the west it commences in Kiushiu, and extends southward in the direction of the Liu Kiu Islands, while on the east it constitutes the northern branch of the main island, and, with a slight deviation in its course, continues through the islands of Yezo and Saghalin. A third system, which properly does not belong to Japan, is indicated by the S.W. and N.E. line of the Kuriles.

The above outline throws light on the distribution of volcanoes. The first system, where it occupies the breadth of the country for itself alone, is as free from volcanoes, or any accumulation of volcanic rocks, as it is in South-eastern China. The second system is accompanied by volcanoes. But the greatest accumulation of volcanic rocks, as well as of the extinct volcanoes, is found in the places of interference, or those regions where the lines of the two systems cross each other, and, besides, in that region where the third system branches off from the second. To the same three regions the volcanoes which have been active in historic times have been confined.

In the geological structure of Kiushiu, the longer axis is from N. to S., but intersected by several solid bars made up of very ancient rocks, and following the strike of W. 30° S., E. 30° N. They form high mountain barriers, the most central of which, south of the provinces of Higo and Bungo, rises to over seven thousand feet, and is extremely wild and rugged. In Satsuma, the various families of volcanic rocks have arrived at the surface in exactly the same order of succession as in the case of Hungary, Mexico, and many other volcanic regions, viz., first, propylite, or trachytic greenstone; second, andesite; third, trachyte and rhyolite; fourth, the basaltic rocks. The third group was not visited by him. Thomas Antisell, M.D., and Professor Benjamin J. Lyman, M.E., and Henry S. Munroe, M.E., American geologists in Yezo, have also elucidated this interesting problem. From the first I quote. The mountain systems of Yezo and farther north are similar to those in the northern part of the main island. There are in Yezo two distinct systems of mountains. One, coming down directly from the north, is a continuation of the chain in Karafto (Saghalin), which, after passing down south along the west shore of Yezo, is found in Rihuoku, Ugo, Uzen, and farther south. The second enters Yezo from the Kuriles Islands and Kamtchatka, running N. 20-25° E. and S. 20-25° W., and crossing in places the first system. It is from the existence and crossing of these chains that Yezo derives its triangular form. The two systems possess very different mineral contents for their axes. The first has an essentially granitic and feldspathic axis, produced, perhaps, by shrinkage, and is slow of decomposition of its minerals forming the soils. The second has an axis, plutonic or volcanic, yielding basalts, traps, and diorites, decomposing readily, producing deep and rich soils. Hence the different kinds of vegetation on the two chains. Where the two chains cross, also, there is found a form of country closed up in the north and east by hills, the valleys opening to the south and west. This volcanic chain is secondary in the main island of Japan; but in Yezo and in Kiushiu it attains great prominence.

Professor Benjamin S. Lyman, an American geologist, has also made valuable surveys and explorations in Yezo, the results of which are given in the "Reports of Horace Capron and his Foreign Assistants," Tōkiō, 1875.

of rice-fields, which have yielded richly for ages, the fertility is easily maintained by irrigation and the ordinary application of manure, the natives being proficient in both these branches of practical husbandry.

The rivers on such narrow islands, where steep mountains and sharply excavated valleys predominate, are of necessity mainly useless for navigation. Ordinarily they are little more than brooks that flow lazily in narrow and shallow channels to the sea. After a storm, in rainy weather, or in winter, they become swollen torrents, often miles wide, sweeping resistlessly over large tracts of land which they keep perpetually desolate—wildernesses of stones and gravel, where fruitful fields ought to be. The area of land kept permanently waste in Japan on this account is enormous. The traveler, who to-day crosses a clear brook on a plank, may to-morrow be terrified at a roaring flood of muddy water in which neither man, beast, nor boat can live a moment. There are, however, some large plains, and in those we must look to find the navigable rivers. In the mountains of Shinano and Kōdzüké are found the sources of most of the streams useful for navigation on the main island. On the plains of the Kuantō (from Suruga to Iwaki), Ōshiu (Rikuchiu and Rikuzen), Mino, and Echigo, are a few rivers on which one may travel in boats hundreds of miles. One may go by water from Tōkiō to Niigata by making a few portages, and from Ōzaka to the end of Lake Biwa by natural water. In the northern part of Hondo are several long rivers, notably the Kitagami and Sakata. In Yezo is the Ishikari. In Shikokū are several fine streams, which are large for the size of the islands. Kiushiu has but one or two of any importance. Almost every one of these rivers abounds in fish, affording, with the surrounding ocean, an inexhaustible and easily attainable supply of food of the best quality. Before their history began, the aboriginal islanders made this brain-nourishing food their chief diet, and through the recorded centuries to the quick-witted Japanese proper it has been the daily meat.

In the geologic ages volcanic action must have been extremely violent, as in historic time it has been almost continual. Hundreds, at least, of mountains, now quiet, were once blazing furnaces. The evergreenery that decks them to-day reminds one of the ivy that mantles the ruins, or the flowers that overgrow the neglected cannon on the battle-field. Even within the memory of men now living have the most awful and deadly exhibitions of volcanic desolation been witnessed. The annals of Japan are replete with the records of these flame-and-lava-vomiting mountains, and the most harrowing tales of human life

destroyed and human industry overwhelmed are truthfully portrayed by the pencil of the artist and the pen of the historian in the native literature. Even now the Japanese count over twenty active and hundreds of dormant volcanoes. As late as 1874, the volcano of Taromai, in Yezo, whose crater had long since congealed, leaving only a few puffing solfataras, exploded, blowing its rocky cap far up into the air, and scattering a rain of ashes as far as the sea-shore, many miles distant. Even the nearly perfect cone of Shiribéshi, in Yezo, is but one of many of nature's colossal ruins. Asama yama, never quiet, puffs off continual jets of steam, and at this moment of writing is groaning and quaking, to the terror of the people around it. Even the superb Fuji, that sits in lordly repose and looks down over the lesser peaks in thirteen provinces, owes its matchless form to volcanic action, being clothed by a garment of lava on a throne of granite. Hakuzan, on the west coast, which uprears its form above the clouds, nine thousand feet from the sea-level, and holds a lakelet of purest water in its bosom, once in fire and smoke belched out rocks and ulcered its crater jaws with floods of white and black lava. Not a few of these smoking furnaces by day are burning lamps by night to the mariner. Besides the masses and fields of scoria one everywhere meets, other evidences of the fierce unrest of the past are noticed. Beds of sulphur abound. Satsuma, Liu Kiu, and Yezo are noted for the large amount they easily produce. From the sides of Hakuzan huge crystals of sulphur are dug. Solfataras exist in active operation in many places. Sulphur-springs may be found in almost every province. Hot-springs abound, many of them highly impregnated with mineral salts, and famous for their geyser-like rhythm of ebb and flow. In Shinano and Echigo the people cook their food, and the farmer may work in his fields by night, lighted by the inflammable gas which issues from the ground, and is led through bamboo tubes.

Connected with volcanic are the seismic phenomena. The records of Japan from the earliest time make frequent mention of these devastating and terrifying visitations of subterranean disorder. Not only have villages, towns, and cities been shaken down or engulfed, but in many neighborhoods tradition tells of mountains that have disappeared utterly, or been leveled to earth. The local histories, so numerous in Japan, relate many such instances, and numerous gullies and depressions produced by the opening and partial closure of the earth-lips are pointed out. One, in the province of Echizen, is over a mile long, and resembles a great trench.

In addition to a good soil, Japan has been generously endowed by the Creator with mineral riches. Most of the useful varieties of stone are found throughout the empire. Granite and the harder rocks, through various degrees of softness, down to the easily carved or chipped sandstones and secondary formations useful for fortifications, buildings, tombs, walks, or walls, exist in almost every province.

Almost all the useful metals long known to man are found in this island empire. Gold and silver in workable quantities are found in many places. The island of Sado is a mass of gold-bearing quartz. Copper is very abundant, and of the purest kind. Lead, tin, antimony, and manganese abound. Of zinc and mercury there is but little. Iron is chiefly in the form of magnetic oxide. It occurs in the diluvium of rivers and along the sea-coast, lying in beds, often of great thickness. The first quality of iron may be extracted from it. Ironstone and many other varieties of ore are also found. Petroleum issues from the ground in Echigo, Suruga, Echizen, Yezo, and in Saghalin; the ocean at some portions on the coast of the latter is said to be smeared with a floating scum of oil for miles.

The botanical wealth of Japan is very great. A considerable number of vegetable species have doubtless been introduced by human agency into Japan from the Asiatic continent, but the indigenous plants and those imported by natural means are very numerous.

The timber of the main island, Kiushiu, and Shikokū is superb in appearance and growth, of great variety, beauty, and adaptability to the uses of man. Yezo is one vast boom and lumber yard. Thirty-six varieties of useful timber-trees, including true oak, are found there. The Kuriles also afford rich supplies, and are capable of becoming to the empire proper what forest-clad Norway is to England. Yamato, on the main-land, is also famous for its forests, ranging from tallest evergreen trees of great size, fineness of grain, and strength of fibre, to the soft and easily whittled pines; but the incessant demands for firing and carpentry make devastating inroads on the growing timber. Split wood for cooking, and charcoal for warmth, necessitate the system of forestry long in vogue in some parts of the empire requiring a tree to be planted for every one cut down; and nurseries of young forest trees are regularly set out, though the custom is not universal. Most of the trees and many of the plants are evergreen, thus keeping the islands clothed in perpetual verdure, and reducing the visual difference between winter and summer, in the southern half of Hondo, at least, to a nearly tropical minimum.

The various varieties of bamboo, graceful in appearance, and by its strength, symmetry, hollowness, and regularity of cleavage, adapted to an almost endless variety of uses, are almost omnipresent, from the scrub undergrowth in Yezo to that cultivated in luxuriant groves in Satsuma so as to be almost colossal in proportion. There is, however, as compared with our own country, a deficiency of fruit-trees and edible vegetables. The first use of most of the bread grains and plants is historic. In very ancient times it is nearly certain that the soil produced very little that could be used for food, except roots, nuts, and berries. This is shown both by tradition and history, and also by the fact that the names of vegetables in Japan are mostly foreign.

The geographical position of the Japanese chain would lead us to expect a flora American, Asiatic, and semi-tropical in its character. The rapid variations of temperature, heavy and continuous rains, succeeded by scorching heats and the glare of an almost tropical sun, are accompanied and tempered by strong and constant winds. Hence we find semi-tropical vegetable forms in close contact with Northern temperate types. In general the predominant nature of the Japan flora is shrubby rather than herbaceous.*

The geographical position of Japan hardly explains the marked resemblance of its flora to that of Atlantic America,† on the one hand, and that of the Himalaya region, on the other. Such, however, is the

* In the "Enumeratio Plantarum," which treats of all the known exogens and conifers in Japan, 1699 species are enumerated, distributed in 643 genera, which are collocated in 122 orders. In other words, an imperfect botanical survey of the Nippon chain of islands shows that in it are represented nearly half the natural orders, ten per cent. of the genera, and nearly three per cent. of the species of dicotyledons known to exist on the surface of the globe. Future research must largely increase the number of species.

† Very large and splendidly illustrated works on botany exist in the Japanese language. The native botanists classify according to the Linnæan system. In their "Enumeratio Plantarum" (Paris, 1874), Drs. A. Franchet and L. Savatier have given a *résumé* of all the known dicotyledonous plants in Japan. It is a work of great research and conscientious accuracy. I have seen excellent and voluminous native works, richly illustrated, on ichthyology, conchology, zoölogy, entomology, reptilology, and mineralogy. Some of these works are in ninety volumes each. Ten thousand dollars were spent by a wealthy scholar in Mino in the publication of one of them. They would not satisfy the requirements of the exact science of this decade, but they constitute an invaluable thesaurus to the botanical investigator. I am indebted for most of the information concerning the Japanese flora to a paper in the *Japan Mail* of September 25th, 1875, from the pen of a competent reviewer of Dr. Savatier's great work.

fact: the Japanese flora resembles that of Eastern North America more than that of Western North America or Europe.*

The fauna of the island is a very meagre one, and it is also quite probable that the larger domestic animals have been imported. Of wild beasts, the bear, deer, wolf, badger, fox, and monkey, and the smaller ground animals, are most probably indigenous. So far as studied, however, the types approach those of the remote American rather than those of the near Asiatic continent.

It is most probable, and nearly certain, that prehistoric Japan did not possess the cow, horse, sheep, or goat. Even in modern Japan, the poverty of the fauna strikes the traveler with surprise. The birds are mostly those of prey. Eagles and hawks are abundant. The crows, with none to molest their ancient multitudinous reign, are now, as always in the past, innumerable. The twittering of a noticeably small number of the smaller birds is occasionally heard; but bird-song seems to have been omitted from the catalogue of natural glories of this island empire. Two birds, the stork and heron, now, as anciently, tread the fields in stately beauty; or strike admiration in the beholder as they sail in perfect grace in mid-air. The wild ducks and geese in flocks have, from time immemorial, summered in Yezo and wintered in Hondo.

The domestic fowls consist almost entirely of ducks and chickens. The others have, doubtless, been imported. Of sea-birds there are legions on the uninhabited coasts, and from the rocks the fishermen gather harvests of eggs.

Surrounding their land is the great reservoir of food, the ocean. The seas of Japan are probably unexcelled in the world for the multitude and variety of the choicest species of edible fish. The many bays and gulfs indenting the islands have been for ages the happy hunting-grounds of the fisherman. The rivers are well stocked with

* The results of Dr. Asa Gray's investigations of the herbarium brought to the United States by the Perry expedition are summed up as follows:

48	per cent.	had corresponding	European representatives,
37	"	"	Western North American representatives,
61	"	"	Eastern North American representatives;

while

27	per cent.	were identical with	European species,
20	"	"	Western North American species,
23	"	"	Eastern North American species.

"Dr. Gray's report was drawn up in 1858, when Japanese botany was little known, and considerable alteration might be made in his figures; but there can be little doubt that the general result would be the same."

many varieties of fresh-water fish. In Yezo the finest salmon exist in inexhaustible supply, while almost every species of edible shell-fish, mollusca and crustacea, enlivens the shores of the islands, or fertilizes the soil with its catacombs. So abundant is fish that fish-manure is an article of standard manufacture, sale, and use. The variety and luxuriance of edible sea-weed are remarkable.

The aspects of nature in Japan, as in most volcanic countries, comprise a variety of savage hideousness, appalling destructiveness, and almost heavenly beauty. From the mountains burst volcanic eruptions; from the land come tremblings; from the ocean rises the tidal wave; over it blows the cyclone. Floods of rain in summer and autumn give rise to inundations and land-slides. During three months of the year the inevitable, dreaded typhoon may be expected, as the invisible agent of hideous ruin. Along the coast the winds and currents are very variable. Sunken and emerging rocks line the shore. All these make the dark side of nature to cloud the imagination of man, and to create the nightmare of superstition. But Nature's glory outshines her temporary gloom, and in presence of her cheering smiles the past terrors are soon forgotten. The pomp of vegetation, the splendor of the landscape, and the heavenly gentleness of air and climate come to soothe and make vivacious the spirits of man. The seasons come and go with well-nigh perfect regularity; the climate at times reaches the perfection of that in a temperate zone—not too sultry in summer, nor raw in winter. A majority of the inhabitants rarely see ice over an inch thick, or snow more than twenty-four hours old. The average lowest point in cold weather is probably 20° Fahrenheit.*

The surrounding ocean and the variable winds temper the climate in summer; the Kuro Shiwo, the Gulf Stream of the Pacific, modifies the cold of winter. A sky such as ever arches over the Mediterranean bends above Japan, the ocean walls her in, and ever green and fertile land is hers. With healthful air, fertile soil, temperate climate, a land of mountains and valleys, with a coast-line indented with bays and harbors, food in plenty, a country resplendent with natural beauty, but liable at any moment to awful desolation and hideous ruin, what influences had Nature in forming the physique and character of the people who inhabit Japan?

* For statistics relating to nearly all the subjects treated of in this chapter, see appendices at the end of this volume.