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THE INDUSTRIAL TRANSITION

IN JAPAN,

BY

YEIJIRO ONO, Ph. D.

AMERICAN ECONOMIC ASSOCIATION.

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YEIJIRO ONO, Ph. D.

UNIVERSITY OF MICHIGAN,
Ann Arbor, Mich., October, 1889.

INTRODUCTION.

Industrial society is an integral part of the social organism, and its evolution is necessarily determined by those conditions which determine the evolution of society as a whole. In the course of European history many diverse phases of industry present themselves, but these always appear in strict harmony with the period of history to which they belong. In the development of industrial life from village-communism to that which showed itself in the Medieval guilds, from the guilds to the age of national competition, and from thence to the present *régime* of individual competition, each change has been accompanied by corresponding changes in law, in politics, and in the arts. And however strange these old industrial systems appear to modern eyes, they find a true defense in the conditions from which they sprang.

But it is not sufficient to conceive of an industrial system as the product of the age in which it exists. It is not alone a resultant factor; it is a causal factor as well. Whatever affects the methods of production and distribution tends, not only to revolutionize politics, but also to change existing social arrangements and to modify ethical ideas. Nothing illustrates this better than the social effects of machinery. In England, the development of machinery was followed by changes that were truly revolutionary in character. The yeoman who played

such an important part in the Puritan Revolution, and whose presence gave a peculiar charm to the rural economy of England, was forced out of society. Large factories arose and population began to crowd the towns. The seat of industry was shifted from the South to the North, and the industrial processes became diversified as well as localized. The commercial spirit which had first shown itself in the sixteenth century came to dominate the nation. Side by side with accumulated wealth, the working class, as it is now known, sprung up and became an important social factor. All these changes were accomplished within the short space of half a century. So striking were these changes that Gaskell, writing in 1833, says "A complete revolution has been effected in the distribution of property, the very face of a great country has been remodelled, various classes of its inhabitants utterly swept away, the habits of all have undergone such vast alterations, that they resemble a people of a different age and generation."¹

This industrial revolution may properly be described, to borrow the terms of a socialist, as the transition from the *Labour-régime* to that of *Capitalism*. It left society in a chaotic condition, and brought forth the new ideal of life which Carlyle indignantly denounced as the age of "working mammonism," in which "cash payment" is the sole "union-bond of man to man."² But the new era is itself transitional. Labor and capital, whose harmonious working is essential to material progress,

¹*The Manufacturing Population of England*, p. 33.

²*Past and Present*, p. 126.

can not retain their present strained relations for any considerable period of time. There must emerge sooner or later from the agitations now engaging the attention of the Western world an adjustment which will again bring harmony and peace to Western society.

But we are not at present concerned with speculations suggested by European history. The object of the present paper is to trace the industrial transition now in progress in Japan, to suggest some measures by which the process of transition may be facilitated, and to speculate upon the consequences which are likely to follow in a society so long accustomed to primitive methods of industry. Those who are acquainted with the recent history of Japan will not doubt the pertinency of such inquiry. Until thirty years ago, Japan was under the rigid rule of Feudalism. The country was divided into sixty-four provinces, each having its own government, its own finance, its own money. Whether small or large, each of these provinces constituted an organism, independent industrially as well as politically. Each produced and consumed, increased and decreased, flourished and declined, independently of the others. Each was dominated by a feudal lord, with his body of retainers, who were supported with feudal grants. Below these there were traders, artizans, and farmers, who worked primarily for the welfare of the ruling classes, by whom they were held in contempt. The land was burdened with heavy taxes, and industry was held subservient to military purposes. However beneficent the Feudal system may have been in its historical functions, its social organization and current ethics were such that "no large and varied economic activity was possible."

How that Feudalism was overthrown ; how the local independence was destroyed ; how the whole country was united under the authority of a strong central government, it is no part of my present paper to relate. From these changes in political relations, many admirable results have followed. Communication has been opened, class-distinction has been abolished, intellectual activity has been stimulated. In fact a new ideal of life has been introduced, which is steadily yet unconsciously asserting itself in the very heart of the nation. But it is important to recognize that the present industrial organization is still the relic of Feudalism. As we shall see later, the distribution of population is mainly determined by feudal boundaries, the movement of working classes from one province to another being little, or none at all. The land-tax is still the basis of national revenue ; agriculture is left to the hands of poor and ignorant tenants ; and manufacture is pursued by the same methods and with the same tools as of old.

It is apparent that Japan is at present but half-transformed. Modern political institutions have been imposed upon a people whose industrial organization is essentially feudal. But the best results cannot be hoped from such a step, if the changes are to be arrested with the adoption of democratic forms of government. Industrial methods must likewise be transformed. For it is only modern industry that can support modern institutions. Aside from religion, science, and philosophy, whose influence cannot be ignored, it is industry that has developed the principle of individualism, which, however pernicious it may be in some directions, is an essential phase of social progress. Hence only among indus-

trial people are free institutions realized. Again, it is modern industry alone that is capable of maintaining the enlarged functions of modern government. The growth of nationality, the complexity of governmental machinery, the rise of public industries, all are tending to increase the pecuniary demands of the state. It is obvious that the recent acts of Local Self-government, or the establishment of Legislative bodies in 1890, will increase the expenditure of the government, and if industry remain in its present condition, further advance of political liberty in Japan will be impossible.

Yet we have reason to believe that the present situation is purely transitory. The growing intercourse with European nations, the promulgation of new laws and of a constitution, by which the rights and liberties of all are equally secured, and, above all, the provisions for universal education through the establishment of more than thirty thousand schools, cannot fail to quicken the energy of the people and to impart to them a new ideal of life. Machinery, also, which plays so prominent a part in Western civilization, may be introduced into Japan, provided only the conditions of labor and capital are adjusted to admit it. These combined influences will in all probability shorten for us the transitional period, which occupied in Europe the space of more than a century.

Indeed the course of recent events fully warrants us in expecting sudden and violent changes in the industrial system. Between December, 1886, and September, 1887, thirteen railroad corporations were chartered with capital of over forty million dollars. Over one thousand miles of line were projected, a mile-

age far in excess of that previously constructed and projected by both the government and public corporations. Again, there have been built within a few years thirty-three spinning factories, with spindles varying from 2,000 to 60,000 each. In almost all branches of industry, corporations are being formed, and an intense interest is manifested by a class of intellectual men who once held themselves above the vulgarity of industrial pursuits. Such facts put it beyond question that the industrial energy of the people is fully awakened, and if strong measures be taken either in revenue reforms or in the revision of commercial treaties, labor will begin to move, machinery will be introduced, and Japan will certainly adjust herself to the requirements of modern industrial life.

If then it be proper to characterize the present as a period of industrial transition, it is necessary to give some attention to the solution of such questions as arise from this fact, for such transition carries with it possibilities of evil as well as of blessing. The sudden introduction of labor-saving machinery on a large scale into a country whose industry has grown independently of such potential factors, must cause serious disturbances, and when these disturbances are exaggerated by misgovernment, they are liable to engender social evils which may make civilization a curse to the multitude of the people. But modern industry has grown so far that by analyzing its history we may hope to ascertain how much of present social evils is traceable to human injustice, and how much to natural tendencies. In the light of such analysis we may perhaps discover the order in which the required changes can be accomplished,

attended by the least danger ; or, by comparing the Japan of to-day with the Japan of former times, we may discover the peculiar dangers to which the country is exposed, and the measures necessary to prevent them.

In order to discuss these questions to any advantage, it will be necessary to examine carefully the present industrial status of Japan, and to inquire into the distribution of population, and the conditions of agriculture, manufacture, and transportation. In doing this, we shall depend mainly upon statistics and upon various official reports.¹ These will furnish the data upon which to build our speculations. Our subject, therefore, will be treated in the following three divisions :

The present industrial status of Japan.

Steps necessary to complete the Industrial Transition.

The probable social consequences of the industrial transition.

¹ Annual Reports published by the Department of Interior, 1882, 1883, 1886, 1888.

Annual Reports of the Bureau of Statistics, 1887.

Report of the Department of Agriculture and Commerce, 1887.

One accessible to French readers is *Rèsumè Statistique de L'Empire du Japon*, No. iii, Tokio, 1889.

The Industrial Transition in Japan.

I.

THE PRESENT INDUSTRIAL STATUS OF JAPAN.

1.—*Population.*

A glance at the map of Japan¹ will suggest to a thoughtful student what would be the natural distribution of her population. From the north-east to the south-west a chain of mountain ranges divides the main island into nearly equal parts. From these mountains many rivers, large and small, flow into the Japan Sea on the one side, and into the Pacific Ocean on the other, leaving a deposit of black, humid, vegetable soil in the valleys through which they flow. On the East the country is laid bare to the genial influence of the Tropical currents, while on the West it is exposed to the Arctic current, and subject to occasional storms and tempests. All through the South a deeply indented coast and inland seas afford a peaceful shelter for fishermen, and a broad highway for commerce. Thus the early settlers, led by unerring instincts, found comfortable homes in the southern and eastern coasts.

Scientific men have always shown great interest in the search for the origin of the Japanese people. From tradition, language, archæology, and historic geology, many arguments have been drawn in sup-

¹See map on pages 24-25.

port of theories which, though instructive, will probably be modified in the light of further investigations. It is, however, generally admitted that the present people of Japan is the composite of several ethnic races. Most probably Japan was once inhabited by the Aino, who descended from the Northern parts of the Asiatic Continent through the Saghalian islands; and most of the stone caves, pots, and bone instruments found throughout the islands are identified as the handy-work of these aborigines. The conquerors, or the present ruling race in Japan, were undoubtedly of Southern origin. When they landed in Kiushiu they found the country peopled by savage tribes. These they subjugated one by one, and making their way to the central part of the country, founded in 660 B. C., the capital of the Empire at Yamato. With this date begins the authentic history of the Japanese people.

For the first 1600 years all history seems to center about the coasts of the Inland Sea. There cities arose, trade was carried on, and battles were fought. Kioto was afterward made the seat of the Imperial Court, in which literature and art gradually sprung up. Osaka was the chief centre of commerce, by both land and sea. But of events outside of this narrow compass little is known. Both in the Northern and Southern islands there were many localities ruled by *quasi*-independent chieftains. The Aino occupied the country for several centuries as far south as the present site of Tokyo, and they were conquered and driven to Yezo only after many royal expeditions. It was at the opening of the twelfth century that the Eastern Coast, known since then as *Kuwanto*, began to assume political importance. The establishment

of the First Duarchy in 1185 transferred to the East the chief centre of both civil and military authority. And from then until the end of the sixteenth century, when Feudalism was formally established, *Kuwanto* was the chief scene of military operations. During these centuries many large provinces were formed, and flourishing cities arose along the Eastern coast.

But the present distribution of the people depends mainly upon the influence of Feudalism as it was developed and maintained by the Tokugawa family. Up to this time Tokyo was but a country hamlet adorned with a small castle. It stood in the midst of swampy ground, and its inhabitants were known among the polished society of Kioto as Eastern boors. There it was that the far-sighted Iyeyasu, the founder of the Tokugawa family, after a successful struggle, built a magnificent castle and called his fellow-generals and soldiers to settle under its walls. To supply the wants and luxuries of the military class, a city soon sprung up, which at the close of the seventeenth century numbered 500,000 inhabitants.¹

With this as the centre, all the feudal provinces were united under a rigorous and unrelenting rule. The lords of these provinces numbered two hundred and sixty-eight, some of whom were attached to their suzerain by friendship and kinship, while others yielded obedience through force. Yet so well did the founder arrange friends and foes on the political chess-board, that no two neighbors were left friendly, and, one power checking the ambition of another, continual peace was maintained for two centuries and a half.

¹Griffis, *The Mikado's Empire*.

Feudal lords were obliged to leave their families as hostages at the Metropolis, and with their trains to pay a visit of homage to His Highness every other year. But as far as internal administration was concerned, each province was left in entire independence. Each had its own system of revenue and each maintained an independent military system. Each had its department of the Treasury, of Justice, of the Census, and of Public Works. The lord usually resided in his castle, which, with its high stone ramparts and strong towers surrounded with deep moats, overlooked the whole of the feudal city. Close by the castle dwelt his retainers, who in time of peace served him as civil officers. The parts of the city in which they lived were guarded with massive gates, at which sentries were posted to exclude all but the holders of special permits. Outside the gates were found markets, frequented by all sorts of merchants and artisans. The city as a whole was surrounded with fortifications, and every stranger who entered it was carefully watched.

In such a military organization of society, no economic force was free to work its natural results. Communication between neighboring provinces was slight. Roads were in a wretched condition. Although some little trade sprung up, it was of the nature of foreign rather than of domestic trade, being embarrassed by tolls and other political hindrances. Migration, so marked a feature of modern western society, was next to impossible. The unit of society being the family rather than the individual, property was owned in common, and controlled by him who was the head of the family. There was no way except that of adoption into a family, by which a man

could establish himself in a strange community. If by accident, or impelled by an adventurous spirit, one found himself beyond the boundaries of his own province, he was regarded with suspicion and hatred, and was without security either for life or for property. The nobility, whose right of possessing their estates depended on allegiance to their feudal superior, were content to serve as the defenders of society, while the trading and farming classes had no ambition beyond that of sharing in the simple round of duties which formed the essence of their quiet life. Under such conditions society continued to live on generation after generation. Dialects, provincialism, peculiar customs, indeed all the marks of a localized society, made their appearance in Japan.

Among the causes that determined the distribution of population throughout the country were the following:—the geographical situation of the various provinces, their territorial extension, and their financial administration.

(1.) For many obvious reasons, population grew faster in the sea coast provinces than in those situated in the interior. In the former we find two industries not to be found in the latter, fishing and shipping, by which many thousands of people were supported. The indirect influence also of these industries was of great importance. Their existence not only carried the division of labor one step further than would otherwise have been possible, but also furnished good and cheap manures for agriculture, and established a regular line of commerce with many large sea-ports. In the sea-coast provinces, therefore, manufactures were conducted on a greater scale, and there was more

enlightenment and activity among the people. This will explain largely why population is denser on both sides of the Inland sea and in the northwestern part of Kiushiu than in other parts of the island.

Again, those provinces which lie along high roads leading to Yedo (Tokyo) were especially prosperous, and in consequence supported a large population. These roads were frequented by the trains of feudal lords on their way to the court of Shogun, who travelled with five or six hundred men in their suite, and with all the pomp and dignity of their rank; and if one can imagine what vast amounts of money must have been dispersed by them, he can gain some idea of a very important factor in the distribution of wealth and population in feudal Japan.¹

(2.) The lord of a large province maintained a

¹ Engelbertus Kempfer, who was a physician to the Dutch Embassy in Japan, and who travelled to Yedo along the Eastern coast twice, in 1691 and 1692, gives us the following observations: "It is scarce credible, what numbers of people daily travel on the roads in this country, and I can assure the reader from my own experience, having passed it four times, that *Tokaido*, which is one of the chief, and indeed the most frequented of the seven great roads in *Japan*, is upon some days more crowded, than the public streets in any of the most populous towns in Europe." He further observes that "the train of some of the most eminent among the Princes of the Empire fills up the road for some days. Accordingly, though we travelled pretty fast ourselves, yet we often met the baggage and fore-troops, consisting of the servants and inferior officers, for two days together, dispersed in several troops, and the Prince himself followed but the third day attended with his numerous court, all marching in admirable order. The retinue of one of the chief *Daimios*, as they are called, is computed to amount to about 20,000 men, more or less, that of a *Sjomio* to about 10,000; that of a Governor of the Imperial Cities and Crown-lands, to one, or several hundreds, according to his quality or revenues." *The History of Japan*. London 1727. Vol. II, page 429.

gigantic castle, under whose walls a city arose wherein manufactures were established to supply the wants of his many thousand retainers. This gave rise to an extensive commerce. With the notable exception of commercial sea-ports (most of which were suddenly enlarged after the dissolution of Feudalism) all of the great cities in Japan originated after this fashion. There, large wealth was accumulated and farmers found a good market for their product, and, other things being equal, population increased there faster than in small provinces.

(3.) Feudal provinces showed great diversity in their financial strength. In the first place, they differed in the systems of levying taxes. In some provinces, the land-tax, the main source of revenue, was as high as seventy per cent of the annual production, while in others it was but thirty per cent, which was considered then as the lowest tax. The methods of estimating the harvest, which was accepted as the basis of the tax, were also different. Again, in some provinces, there were established store-houses for grain, to provide against famines and other accidents; in some, taxes were remitted in the time of bad harvests, thus giving encouragement directly to agriculture and indirectly to commerce and manufacture. On the other hand, no regard was taken of the condition of the peasantry; cruel oppression and ruthless extortion were but too prevalent in the matter of taxation. Furthermore, most provinces issued paper money of different denominations. This being strictly local currency, all the evils of its inflation fell entirely upon the subjects of the province by which it was issued.

Later, in defiance of the laws of the Shogunate government, debased coins of silver and gold also were issued. At the dissolution of Feudalism there were twenty-three kinds of paper notes and forty-nine kinds of coins in circulation.¹ It is easy to see that these and other economic causes must have deeply influenced the prosperity of different provinces, and, therefore, must have modified the rates of the increase of population.

What the consequences of the foregoing physical, historical, and institutional causes were, may be studied from the accompanying map. In general, the dense population is found along the coasts of the Inland sea, on the eastern and northwestern coast of Hondo and on the western half of the Island of Kiushiu. While in the most thickly settled portion, namely, the province of Sétzu, over fifteen hundred persons are found in a square mile, all through the island of Yezo there are not more than five to a square mile. But when we examine the feudal provinces by themselves, we find no two, under the same physical circumstances, alike in density of population. Two neighboring provinces show the discrepancy of almost nine hundred persons to a square mile in an extreme case,² while a difference of one hundred is quite common. I have taken two localities for the sake of illustration,—the first includes the eight provinces east of Tokyo, along the Pacific coast, and the second set includes the nine provinces along the northern coast of the Inland sea.

¹Twenty-three coins in gold, nineteen in silver, five in copper and two in iron.

²The province of Owari has 1,331 against 433 in Mikawa.

I.		II.	
Province.	Population to a square mile.	Province.	Population to a square mile.
Musashi.....	1,010	Idzumi.....	1,186
Sagami.....	541	Sétzu.....	1,512
Idzu.....	321	Harima.....	495
Suruga.....	313	Bizen.....	641
Totomi.....	371	Bitchiu.....	478
Mikawa.....	433	Bingo.....	373
Owari.....	1,331	Aki.....	471
Isé.....	471	Suwo.....	517
		Nagato.....	300

If you take two provinces, one on the coast and the other in the interior, the difference is still greater. Compare the province of Bizen with Mimasaka, or the province of Suruga with Kai, where the difference amounts to over three hundred persons to a square mile. This fact is chiefly due to the rugged state of the interior, to the poor means of transportation, and to the consequent lack of good agriculture and of internal trade.

In general, the distribution of population does not seem to have undergone much change since the downfall of Feudalism. Although political and legal obstacles have been removed, there still remains a feeling of local attachment which deters men from abandoning the place of their birth. It is true that since 1880 quite a tide of emigration has been flowing to the northern province of Hokkaido, which by the year 1886 had reached a total population of eighty-six thousand. It is true also that certain publicists argue strongly the desirability of foreign emigration, and that some four or five thousand Japanese laborers have found their way to the sugar plantation of Hawaii, under the conditions of a treaty between Japan and that country. But on the whole it remains true that the Japanese show nothing of

that restless disposition which makes migration so prominent a feature in the life of the western world.

This fact, however, should not be taken as indicating that the industrial opportunities of the several provinces are equally developed. There is, for example, as marked a divergence in the rate of wages paid in the various provinces as in the density of population. In Osaka, a first-class farm laborer commands five yens per month; in Tokyo, two yens and a half; while in Kiushiu his pay ranges all the way from three yens in Saga to seventy sens in Kagoshima. The differences are equally remarkable in the wages of skilled laborers. Weavers of the interior, Kai, Shinano, and Kotsuké, earn seven yens and a half per month, but in other provinces they get from one yen eighty sens to five yens, the same grade of labor being taken as the basis of comparison. A still more significant fact is the diversity of the rates of wages in neighboring provinces. In both manual and skilled labor, the difference of the rates of wages in two localities, not fifty miles apart, often amounts to more than two hundred and fifty per cent. To cite an extreme case, Osaka and Kioto have been connected since 1877 by a railroad of twenty-seven miles length, yet the rate of farm wages in the former is five yens per month, against one yen and seventy-two sens in the latter. A member of the privy council gives us in a recent work (privately published in July, 1886) the following somewhat astonishing figures, which, though prepared for another purpose, bear directly on the matter in hand.

Table showing certain facts pertaining to public expenditure and the per capita products, income, and taxation, for certain localities.

Names of <i>Fu</i> and <i>Ken</i> .	Annual am't of national taxes redi- tributed per capita.		Annual am't of production per capita.		Sum total of annual in- come per capita.		The rate of national taxes per capita.	
	Yen.	Sen.	Yen.	Sen.	Yen.	Sen.	Yen.	Sen.
Tokyo— <i>Fu</i>	18	30	2	90	21	20	1	40
Ishikawa— <i>Ken</i>	90		8	20	9	10	1	60
Yamanashi— <i>Ken</i>	30		23	40	23	70	1	57
Miyagi— <i>Ken</i>	1	30	13	50	14	80	1	47
Kagoshima— <i>Ken</i>	60		3	90	4	50	1	47

If these figures are correct, they will afford some indication of the immobility of labor, and will furnish us an additional evidence of the fact that the dominating force in society is still feudal and anti-commercial.

If now we turn our attention to the proportion of urban and rural population, we shall see that many marked changes have taken place in the last twenty years. The war of the Restoration meant the destruction of local independence and the centralization of power. In 1872, the feudal lords were summoned to Tokyo and obliged to become permanent residents of that city as a class of nobles. The feudal grants of their retainers were commuted to terminable bonds issued by the new government. The destiny of the majority of these retainers is one of the most melancholy spectacles in the recent history of Japan. Placed in the position of a ruling class, they formed a race of men, most accomplished and highly sensitive to their duty and honor. It was the sentiments and actions of this class that played the most prominent part in the late political movements.

But on the other hand, they were careless, wasteful, and extravagant; and having received other feudal grants capitalized as interest-bearing bonds, some of them squandered their newly acquired property in pleasure, while others were cheated out of it by crafty merchants, and only within a few years, the most of them have been obliged to sell their home-steads, thus sinking into the listlessness of poverty from which they have no energy to awaken. Their mansions and neatly trimmed houses, which once adorned the out-skirts of a feudal castle, have now fallen into ruin; the place where they once stood being covered with tea and mulberry trees.

The immediate consequence of such sudden disappearance of the feudal classes was to strike a death-blow to the prosperity of castle towns. It was the chief function of these towns, as we have seen, to supply the wants and minister to the luxuries of the feudal classes. But with the decay, ruin, and dispersion of these classes, the source of life for these cities was taken away. Some of them, however, were created the seat of new local governments and adjusted themselves to the new *régime* without experiencing sudden and violent shocks. A few, favored with good natural locations, acquired new importance by the expansion of their internal trade. Yet there are to-day many castle-towns, perhaps more than one half the original number, that have no reason for their existence, except such as is found in the history of Feudalism and in the social conditions which Feudalism created. It is not strange that these should show signs of decay.

A careful comparison of the statistics of 1879 with those of 1886 reveals to us many interesting facts.

It is only large cities and commercial sea-ports, with the notable exceptions of Kioto and Kanazawa, that show any remarkable advance in population. Tokyo increased from 799,237 to 1,121,883; Osaka from 287,984 to 361,694. Kobe, one of the new commercial ports, leaped from 13,295 to 80,446. While Kioto, the ancient metropolis of the Mikado, declined from 331,308 to the humiliating number of 245,676 in the course of seven years. But changes still more significant present themselves, if we consider cities and towns below 50,000 inhabitants. All of them, if we except a few cities exceptionally favoured by situation, show a decided falling off in population. Out of 34 cities which have between 20,000 and 40,000 inhabitants, 17 show a positive decrease, amounting in some extreme cases to ¹20,000. It thus appears that at present there is a decided tendency for population to move from the cities into the country; a tendency just the reverse of what is observed in England and in the United States. This is a most significant fact, and must be regarded as indicating an essential stage in the transition of the Japanese people from Feudalism to national economy. It may be expected that this adjustment will be accelerated by the introduction of machinery.

Let us observe one point further which is important in showing the present industrial status of the country. In December, 1886, the total number of people living in cities of over 20,000 inhabitants was 3,524,983. This, compared with the entire population, which is over 38,000,000, constitutes but eleven per cent. of the whole. When we remember that over

¹Hagi in the province of Nagato.

twenty-five per cent. of the American and over sixty per cent. of the English people are found in cities, this eleven per cent. may be taken as indicating a low stage of industrial development. It shows that the people are scattered in small towns or in the country, that little exchange is carried on, that small farms are prevalent, and that manufactures are not yet concentrated in large establishments.

The class-distinction of the old feudal days is pretty nearly effaced. Except a small class of nobles, there is no set of the people who carry with them any political privilege. The class of feudal retainers is still recognized before the law, and in 1886 they numbered 424,326 households. But the law does not entitle them to any special honors or immunities, and, save for the culture and refinement in a part of their order, they play no important rôle in society.

It is important for our purpose to know how the people are classified according to occupations. This may be learned from the census of 1876, which gives the following classification of the country's producers.¹

Farmers.....	14,870,426
Artizans.....	701,416
Merchants.....	1,309,191
Miscellaneous Occupations.....	2,129,522
	19,010,555

In the same year, the total population was given as 33,300,675, of whom 9,056,309 were children under fourteen years of age; thus the productive classes constitute over seventy per cent. of the whole adult population. Compared with the returns of the tenth

¹As quoted in *Consular Reports*, Vol. 1, No. 2.

census of the United States, this speaks very favorably for Japanese industry. The only point worthy of special notice is the small number of so-called artizans and the relatively large number in the last two classes. This, however, is explained when we consider that the scattered condition of the people requires a large number of petty shops in the villages and towns; that the poor means for inland transportation demand the personal service of a large number of laborers in the conveying trade; and that high taxes upon real estate draw many to those kinds of business, upon which comparatively less onerous taxes are imposed.

The agricultural population, as reported in 1884, was 15,616,211, and a similar increase in other classes might be expected. But what we are chiefly concerned with here is the proportion in which these various industrial classes exist, which we may trust is fairly represented by the foregoing figures. How the relative magnitude of these classes will be likely to change by the introduction of machinery we will see later.

Under the *régime* of Feudalism, as also before it was established, there was no regular system of census. There are, however, seven or eight fragmental reports bearing various dates, that are generally accepted as trustworthy. In the last of these, that of 1815, the population was counted by collecting the registers of different feudal provinces, from which it appeared that the Japanese nation numbered 25,621,957. A regular census was first taken in 1872, and since then one has been taken every year, except in 1878 and 1879. The latest results show that the total population is 39,063,007, the average size of a family

4.93, and the birth-rate 2.57 per cent., giving an annual increase of about 360,000 persons in the last four years.

2.—*Agriculture.*

In Japan, as in Europe, land was once the property of a feudal lord who held it by a sort of legal fiction, and whose main source of revenue was the tax paid by the occupiers of the soil. And, as we have already observed, the rates of taxation and the modes of its administration were in no two provinces identical. When the new government was fully established, one of the first questions that demanded its attention was how to create private property in land and establish a uniform system of taxation. Many schemes were suggested and carefully examined, the one finally adopted following, in all important particulars, the plans offered by Mr. Munemitsu Mutsu, now minister to the United States.

The "Land-tax Reform Acts" were enacted July, 1873, and the work was accomplished in 1880 after meeting much popular prejudice and opposition. The characteristics of these reforms were mainly as follows :

(1.) The government granted to the people full liberty to buy and to sell their land, except to aliens, giving legal proprietorship to farmers who occupied the land, or to those owners who could give evidence of their prior possession.

(2.) The tax in kind was commuted to a money payment, assessed on the basis of the "legal value" of the land. For the national tax, the rate of payment was three per cent. of such valuation, while the maximum limit of the local tax was placed at one-third of the national tax.

(3.) The "legal value" of land was determined by taking the average of the actual yield of each piece of land during five years, and estimating it at the average price of grain prevalent in a given locality during the same period. The sum thus obtained was capitalized and accepted as the basis of taxation. It was further enacted that a re-valuation should take place every six years, but this provision has never been carried out.

These reforms mark an important stage in the progress of Japanese agriculture. It was then for the first time that farmers ploughed their own fields, freed from all feudal restraints; and although the rate of payment was still high, the farmers were secured by the law against irregular and arbitrary taxation. In this way there was inaugurated the system of small proprietorship, the beneficial results of which, both to farmers and to the country at large, can not be over-estimated. At the same time, it is important to recognize that the rates of taxes, the distribution of land, the system of land-tenure, as they are left by these reforms, are only temporary arrangements. They constitute but a single step in the transition from Feudalism to modern conditions. It is essential that still further changes be introduced, if the system of agriculture is to be permanently improved. But of these changes it is my purpose to speak in the latter part of this paper.

Land in Japan is divided into public and private properties. The reports of the Department of the Interior for 1888 give the following figures as representing their relative extents:

Public land.....	46,669,835 acres.
Private land.....	32,914,845 "

Public land includes crown lands, parks and grounds for public buildings, and most of the waste lands that are not brought under cultivation. Private land comprises many different kinds of lands whose relative extents and current prices may be learned from the following table:

Table showing acreage and price per acre of various lands specified.¹

	Acres.	Average price per acre.	
		Yen.	Sen.
Rice-fields.....	6,714,165	180	00
Other tilled lands.....	4,812,145	55	20
Forest and waste land.....	20,442,270	1	20
Building ground (village)..	837,925	125	60
Building-ground (city).....	49,052½	654	80
Salt-yards.....	18,907½	71	20
Hot Springs.....	5	10,660	00
Miscellaneous.....	1,157,750	31	20

These figures will show that, in spite of the common impression that every foot of land in Japan is utilized, a comparatively small portion is as yet brought under cultivation.

Owing to the diversity of climate and to the varying density of population, Japanese agriculture is not uniform throughout the country. In general, the distribution of cultivated land follows the distribution of the people. In the thickly settled portion of the South, and on the eastern coast, it is not seldom that we find one-third of the whole area under cultivation, while in the North, and along the northwestern coast there are only between fifty and eighty acres of cultivated land to a square mile, and in the Island of Yezo the soil remains in its primitive and wild

¹This table is based upon the Annual Report of the Department of the Interior, 1888.

condition. But here again the influence of Feudalism is very remarkable. Neighboring provinces present a striking contrast, not alone in the actual amount of land under cultivation, but also in the relative amount held per capita by the agricultural population. For the sake of illustration, let us examine the proportion in which all kinds of tilled lands stand to the agricultural population in the nine provinces of the Island of Kiushiu—

Names of Provinces.	Acres of cultivated lands per capita of agricultural population.
Chikuzen87
Chikugo62
Buzen52
Bungo42
Hizen60
Higo42
Hiuga	1.12
Osumi	2.15
Satsuma60

Thus we see that though the per capita size of farms is only a fractional part of an acre, the inequality of distribution is nevertheless great. Nor does it follow that the average farm is small where there is a dense population, or large where population is sparse. In the province of Kaga, one of the most densely settled regions, the per capita holding is over one acre and a half, while in sparsely settled provinces, like Kotsuké and Shimotsuké, it is not more than one half an acre. It thus appears that in studying Japanese agriculture, we must bear in mind that Feudalism, although abolished in form, still exerts an important influence, on the present methods of agriculture. There still exists some difference in the modes of cultivation, in the size of farms, and in the system of land-tenure, between one province and

another. Fortunately, however, this diversity of condition is fast passing away.

The same crops are raised all through the country. By far the most important staple product is rice; next come barley, wheat, and beans. According to the agricultural statistics of 1886, the actual production of these various grains is as follows :

	Bushels.
Rice (<i>Swamp and Mountain</i>).....	185,957,120
Barley.....	37,693,760
Wheat.....	16,069,860
Naked Barley.....	26,406,180
Beans.....	12,117,150

Two crops a year are quite common, indeed, almost universal in the Island of Kiushiu, Shikoku, and through the eastern and western part of Hondo. Wherever this is the case, rice is planted between May and June and after its harvest in the fall, the land is permitted to rest until the beginning of the winter, when either wheat, barley, or mustard is sown, and before the spring months are gone, these crops are ready for harvest. In a few exceptional cases, certain vegetables are planted between these two seasons and a third crop is realized. No attempt has as yet been made by the Statistical Bureau, to show the extent of these two-crop lands, but carefully comparing the area under cultivation and the annual amount of total production, it will be safe to assume that over one-third of tilled lands belong to this favored class.

The productive power of land is very different in different localities. In some provinces, the average yield of an acre reaches as high as forty-one bushels of rice, while in others it ranges from thirty-four bushels down to eighteen bushels an acre. In the

case of wheat and barley, not only does there exist a marked difference in production, but the average return itself is very meagre. It is believed that the productive power of land has been decreasing since the tenth century, and that, while "the entire area devoted to crops has doubled during that time, the crop itself has increased only about one-half."¹

It may be stated as a principle of universal application that no large and extensive agriculture is possible under the ascendancy of feudalism, and Japan forms no exception to the principle. Her agriculture is an extreme type of the small farming. There are many fields cultivated by independent farmers which are not more than two acres and a half, and those which exceed ten acres are considered to be exceptionally large. Moreover, these farms do not form one continuous piece, but are divided by a network of earthen balks, or by ditches dug for the purpose of irrigation. Thus the land cultivated by a farmer lies scattered here and there in small pieces, which are frequently not more than half an acre in size. But we must not infer from these remarks that there are no large land-owners in Japan. Occasionally we meet favored persons who possess over two or three hundred acres, and men who own forty or fifty acres are quite common among the well-to-do people. But these owners let their lands to tenants by small parcels, so to speak, and from each of them they collect rent either in kind or in money.

A farmer who owns five acres may be regarded as a typical Japanese farmer, and it is worth our while to notice his condition a little in detail. He

¹W. E. Griffis, *The Mikado's Empire*.

lives in a comfortable house of three or four small rooms, with a commodious barn adjoining. He has one hired man through the year and perhaps one horse in his stable. His farming is of the most thorough order. In the sunny days of May, he begins to turn over the ground with his one-horse plough which, small as it is, cuts the soil eight or nine inches deep, and then the whole field is carefully pulverized and raked over until not a lump is left. When the soil is thus prepared, water is let in and the field is flooded seven or eight inches deep. Then tiny stems of rice are transplanted from their seed-bed in rows about five inches apart. This is mostly done by women. During the whole season, weeds are carefully removed and liquid manures, lime, and compost of straw, are used three or four times. The growth of rice is luxuriant and presents a beautiful appearance. When it matures, the field is left to dry and the crop is ready to harvest some time between the middle of September and the last part of October. By this method of gardening, some of the industrious and intelligent farmers often reap an enormous amount of products. The yield of fifty or sixty bushels to an acre is not unknown in some parts of the country.

The variety of rice whose growth is above described is called "low-land" rice, (swamp rice,) and the cultivation is considered to be the best and most productive. All the alluvial lands of the sea-shores, river valleys, and creek bottoms are devoted to this form of agriculture. There is another sort, however, which is called "the upland variety" (mountain rice). It is grown on high, dry ground, requiring but a small amount of labor and no expensive system of

irrigation. But the yield of this kind is comparatively small, amounting to scarcely more than fifteen bushels per acre. More or less of the soil upon which this is planted is found in all the provinces, but the total acreage is not more than two per cent. of the whole extent of rice fields.¹

The Japanese farmer enjoys a short rest in the fall. But soon the ground is again ploughed and pulverized, and divided off into small plats, each of which is then furrowed into rows. In these furrows either wheat, barley, or mustard is sown, some time between November and December. The same care is taken of the winter crop as of the summer. Closet and fish manures, ashes, grass, sea-weeds, and the like, are used for fertilizing purposes, and plants grow and mature in the genial air of the spring. But in this the farmer is hardly so successful as in the summer crop. In the cultivation of hardier grains than rice the Japanese farmer needs much instruction. One of the difficulties in the way of cultivation is thus pointed out by Consul Stahel, whom I quote here at length.

“In the first place,” says he, “the fields are laid down in ridges of a little more than one foot in width, on which are sown two rows of wheat so thickly that the plants have not room to develop themselves. This causes very uneven growth, the outer plants coming to maturity long before those which have a bare struggle for life in the middle of the rows. The result is that the crop ripens irregularly, the ears on the inner plants being quite green, while those on the plants more favorably situated are ready for the sickle. As this system has been going on for generations, it is not to be wondered at that the quality of grain has very much deteriorated, and the Japanese wheat instead of being, as it ought to be, equal to any in the world, is about the worst.”²

¹ *U. S. Consular Reports*, Vol. 5, No. 16.

² *U. S. Consular Report*. Vol. I, No. 1. Rein and Maron hold the same view. See Rein, *The Industries of Japan*, page 50.

In addition to such defect, the want of good and cheap manures and the limited consumption of these cereals at home may be mentioned. The result of all these is that in exceptionally good cases the wheat crop hardly ever exceeds twenty-two bushels per acre, while there are many fields which do not yield over seven or eight bushels, the average in 1886 standing at twelve bushels.

The harvest of this winter crop brings us back to the rice-planting. Let us stop here to examine what are the net earnings of our five-acre farmer after his year's labor. Supposing his crops no better than the average, say thirty-five bushels of rice and twelve bushels of wheat per acre, his total products would be worth some one hundred and ninety-four yens, estimated at the current prices. Add to this ten yens, which will be the capitalized sum of all the advantages, such as fuel and small green crops, incidental to farming, and his gross income will be two hundred and four yens. From this sum taxes, wages of workmen, and the cost of manures are to be deducted. Assuming "the legal value" of his land at two hundred yens, which is a moderate estimate, being at present considerably above the market price, his taxes, both national and local, will amount to over thirty yens per year.¹ The wages of farm-labor, as we have observed, varies in different provinces and in different seasons. On an average, 18.6 sens are paid to the best men and 12.1 sens to the best women. In the middle and southern por-

¹In 1876, by an Imperial ordinance, the rate of land-taxes was reduced from three per cent. to two and a-half per cent. for the national tax, and the maximum limit of local taxes was brought down to one-fifth of the national tax, instead of one-third.

tions of the country the highest average prices paid for a day's labor are twenty-five sens for a man and eighteen sens for a woman. The compensation for a workman hired for a year is about thirty yens, the actual wages ranging from thirteen yens seventy sens up to seventy-four yens. In all cases, however, board is included, and usually lodging, and compared with other classes the real wages of the farm-laborer is decidedly high. In the present condition of the art of agriculture, our typical farmer has to keep one hired man all through the year, and in the harvest seasons he has to hire at least two or three extra laborers. The sum then that goes to pay wages will, perhaps, at a moderate estimate, amount to forty yens a year. Now in regard to the third item, namely manures, it is difficult to give any general statement. Their variety and cost, as well as the amount employed, are so different in different localities. Owing to the high cost of transportation, "portable manures" are used to a very limited extent, and in the interior farmers depend altogether upon the fertilizers from closets and stables, ashes, grass, and compost of straw. Thus it is safe to assume that no large outlay is made for this important requisite, and it seldom exceeds over four or five yens per acre. Summing up these different items, a year's account of our five-acre farmer will stand as follows :

Summary of account of a five-acre farm in Japan.

Production per acre.		Current price per bushel.	Total product of five acres in money.	The cost of production.
		Yen. Sen.	Yen. Sen.	
Rice.....	35 bushels.	80	140 00	
Wheat.....	12 bushels.	90	54 00	
Incidental advantage.....			10 00	
			204 00	
Taxes.....				Yen. Sen. 30 00
Wages.....				40 00
Manures.....				20 00
				90 00
		Net gain..	114 00	

This apparently small sum of net earning is enough to support the farmer in his frugal, yet peaceful and contented life. He sends his boys to school. His wife and daughters spin with their hand-wheel, or weave cloth from imported yarns spun, perhaps, in Bengal or in Manchester factories.

A farmer of the above description is regarded by his order as a man of fortune. There are many whose farms are much smaller and who cultivate as mere tenants, or who supplement their earnings by engaging in other business during a large part of the year. In 1884, this last class numbered above three million, almost one-fourth of the whole agricultural population. The lease systems under which some of the tenants hold their lands are by no means moderate. Nor are they identical in all provinces. In some, the average rate of rent per acre for rice fields is about twenty-four bushels of rice a year, but in this case, all the burdens of land-taxes are born by the land-owner. In the dryer lands, money rent is usually paid, varying in amounts for the dif-

ferent crops raised. It is stated by an authority that in some provinces "four-fifths of the crop go to the owner of the land; and from the one-fifth remaining, all the cost of fertilizing and harvesting must be obtained."¹ Such excessive payments are the occasion of much hardship. The cause of the evil lies in the fact that rent is still regulated by feudal customs, and the necessity of some kind of legal interference for such cases is quite evident.

Beside grains, the most important agricultural products are mulberry, tea, cotton, and sugar. From the point of view of national economy, the first two products stand in the foremost rank. It is due to the cultivation of these plants that foreign commerce in Japan has assumed its present magnitude and it is from them that its future expansion is to be expected.² In 1887, the exportation of silk amounted to 21,920,902 yens, and that of tea 7,603,341 yens, the two items constituting over 58 per cent. of the total export trade of that year.

Mulberry trees are planted more or less in all provinces with a few exceptions. But the most favorable latitude lies between the 35th and 40th north parallels, and for this purpose, the table land of the middle and northern portions of the main island has been subdued and tilled during the last two decades. The trees are planted there in dry and light soil. They are in rows from ten to twelve feet apart and

¹The rent of the estates owned by the immediate retainers of the Shogun has been especially enormous.

²A sudden impulse given to silk industry in Japan, when the country was first opened, was due to the high prices paid at the time for raw silk and silk-worm eggs, in consequence of the silk-worm disease raging in Europe between 1856 and 1870. See J. J. Rein, *The Industries of Japan*, p. 188, and also pp. 200-203.

about the same distance from each other. Until the third year, the young trees give but a small yield of leaves, and, gradually increasing, they are fully matured, if on good soil, at the eighth or ninth year. The crop from leaves alone is variously estimated from 100 yens to 150 yens per acre, but, both summer and winter, some green crops are always raised between the rows of the trees and additional products are thus realized. Farmers who plant these trees, generally raise silk-worms in their own houses and sell cocoons or even reel them into fine yarns. Thus farmers in those silk regions are somewhat different in character from rice cultivators, and it is in those portions of the country that we occasionally find large farms and something like organization of manual labor. In the silk-worm season, from May to July, there are many families in which forty or fifty men, women, and girls are employed, who pick the mulberry leaves from the branches, cut them, and feed the worms, and when the cocoons are ready, boil them, and spin them into threads. All this is done by unskilled laborers, and the tools used are of a simple and crude order. When we come to consider manufacturers, I shall have occasion to mention many large establishments where modern machines are used. But generally speaking, silk raising under present conditions, must be regarded as a by-industry of farmers.

The cultivation of tea, it is needless to say, is a profitable and lucrative industry. By the wholesome stimulus of foreign market, its total production has grown from 23,012,682 pounds in 1878 to 57,352,641 pounds in 1886, having more than doubled in the course of eight years. The soils that are most sought

after for its cultivation are on the sheltered hillsides, although it flourishes on the plains along the sea-shore. There the shrubs, four or five feet high, are grown in rows, carefully pruned and trimmed, and the soil between them is thoroughly fertilized with oil-cakes or fish-guano. The plants require constant care in all seasons. The tender leaves, which are sent forth toward the end of spring, are picked by women and girls. They are then taken into houses, steamed, and rolled between mats, and finally fired in ovens. The processes are simple or complicated, according to the kinds of tea prepared, and they all require the careful work of skilled hands. About 2,500 pounds of tea leaves to an acre is considered a fair return, and occasionally over 3,000 pounds are produced.¹ The net earnings of tea planters are therefore much greater than those of ordinary farmers. They live in comfortable homes and keep laborers and pack-horses to do most of the work. Tea is cultivated to some extent in almost all of the provinces. Its chief centre lies in the island of Hondo, between 34° and 36° north latitude. Suruga, Mino, Ise, and other provinces along the eastern coast stand in advance of all the others in the area devoted to tea culture.²

Cotton and sugar are other agricultural products worthy of attention. But the limit of our space admits of no more than a passing notice. Cotton is

¹In general four pounds of fresh tea leaves yield one pound of the finished article.

²There are still large areas where both the soil and climate are well adapted to the growth of tea, and, as we shall see later, it is in this direction that the Japanese agriculture is to be extended in the immediate future.

raised mostly in the middle and western parts of the main island. The cotton ball is usually small and about 360 pounds of ginned cotton are obtained from an acre. The total amount raised in 1884 was 134,556,108 pounds, but this does not meet more than one-third of the whole domestic consumption.

Sugar is made from the sorghum plant, which grows luxuriantly in all the southern portions of the empire south of 35°. Dry upland soils are required for the successful growth of the cane, and the expenditure of labor and fertilizers equals, if it does not exceed, that employed in raising any other crop. The total production in 1886 amounted to 111,515,866 pounds against 148,943,716 pounds imported in the same year.

Thus we have surveyed the principal features of Japanese agriculture. It is almost unnecessary to observe that in many important respects it is yet in a primitive condition. Although by patient and hard work a comparatively large crop is obtained (at least of rice), scarcely any scientific knowledge is possessed by farmers. Grass-culture is entirely neglected, stock-raising is almost an unknown art, and fertilizing materials are scarce, expensive, and, therefore, little used. There is almost no specialization of agriculture, and no division of labor. The implements are simple, and manual labor is used in the most wasteful manner.

Hitherto on the part of the government many energetic efforts have been made for agricultural improvement. Model farms and experimental gardens have been started in nearly all districts, and foreign seeds have been tried and acclimated; agricultural exhibitions, both national and local, have been held,

and prizes awarded. In different places agricultural schools and colleges have been established, and many experienced foreigners have been engaged both as theoretical and practical farmers. Foreign seeds, models, cuttings, and the like have been distributed *gratis*. Important works on farming and stock-raising have been written or translated into the Japanese language. For the development of the island of Yezo a distinct department has been established, and in connection with this many American engineers and scientists have been hired and its resources have been carefully examined.¹ In Tokyo a model farm of about two hundred and fifteen acres was established. And on one occasion, under the superintendence of General Capron, many fruit-trees from American grafts were planted, excellent breeds of horses, sheep, cattle, and pigs were thriving and multiplying. The interest shown by some of the enterprising citizens is not less intense. Periodicals devoted to agriculture and commerce now number over one hundred.

But in spite of all these efforts, little has yet been accomplished. In such a vast undertaking, which affects many millions of the people, these public and private encouragements are hardly sufficient. Thorough and progressive reform in rural economy requires some vital changes in the whole economic body. The reform of the system of taxation, the change in agricultural prices, and the expansion of external and internal commerce are all necessary prerequisites. Why these changes are necessary, and

¹For a critical account of the undertakings of this Department see Rein, *The Industries of Japan*, pp. 18-20.

how they can be introduced under the present circumstances, I shall discuss in the next chapter.

3.—*Manufacture and Transportation.*

Industrially as well as politically, Japan has developed independently of foreign influences. And nowhere is her insular character so strongly marked as in her arts and manufactures. Whether good or bad, both in design and workmanship, Japanese art carries with it the taste and the aspiration of the race. Up to the time of the London Exhibition in 1862, the civilized people of the West were as ignorant of Japanese art as were the artists of the eighteenth century of the Elgin marbles. But since then it has been thoroughly advertised by means of the expositions of Paris, Vienna, and Philadelphia. "The Japanese court" in these exhibitions, in which carefully selected specimens were displayed, attracted the attention of all true lovers of art and a great variety of artistic products have since found their way to the cities of both Europe and America.¹ The eyes of intelligent critics have been caught by them, and however true it may be it certainly incites our insular pride when Sir Rutherford Alcock says in a recent article,² that "the rich treasures of art-work came upon Europe as a new revelation in decorative and industrial art, and have continued since to exercise a strong and abiding influence on all industrial art-work."

¹As to the remarkable extent in which Japanese models of ceramic and bronze work have been imitated in England and France within the last fifteen years, see the detailed account of Rein, pp. 331-334.

²*Britannica*, "Japan," ninth edition.

Here I shall delineate briefly where and in what manner these artistic works are produced, showing the conditions under which they are made, and the industrial organization of those who make them. This will be no less interesting from the economic point of view than from the point of view of art itself, for there still remain in Japan many phases of industrial organization which belong to the by-gone days of western Europe.

But here let me call your attention briefly to that branch of extractive industry which always stands as the connecting link between manufacture and agriculture, *i. e.*, mining.

Japan was once known to ancient mariners as the land full of precious and useful metals. Marco Polo, the Venetian traveler, in the thirteenth century, relates of "Zipangu" as follows: "They have gold in greatest abundance, its sources being inexhaustible. The king does not allow of its being exported. To this circumstance we are to attribute the extraordinary richness of the sovereign's palace. The entire roof is covered with a plating of gold. . . . The ceilings of the halls are of the same precious metal; many of the apartments have tables of pure gold of considerable thickness, and the windows also have golden ornaments."¹ Evidence of the truth of such a report was furnished by the immense amount of precious metals imported into Europe by the Portuguese and later by the Dutch.

Between 1550 and 1639, the Portuguese merchants brought home from Japan nearly three hundred million dollars worth of bullion, most of which was gold.

¹As quoted by Henry S. Munroe, late of the Tokyo University. *The Engineering and Mining Journal*, Vol. 22.

As the relative value of silver and gold was then six to one in Japan, while in Europe it was nearly twelve to one, the exportation of gold formed one of the most profitable parts of their trade. "Between 1649 and 1671 the Dutch traders sent home over two hundred million dollars in bullion of which, however, nearly two-thirds were silver."¹

But careful geological survey and reconnoissance made in recent years hardly warrant this ancient belief in the unlimited resources of gold and silver. The history of the last three hundred years shows the constant decline in the yield of precious metals. The extraction on a large scale probably dates from the year 1590, when the Japanese first learned from a foreigner to separate silver from copper and lead. From this time until 1671, when an edict of the Shogun put a stop to the exportation of bullion, excessive foreign demands taxed both gold and silver mines to their utmost, and it is estimated that not less than two million dollars of gold and four million of silver have been extracted per year, and at one time the output of gold reached twelve million dollars for a single year. If we compare with this, the estimated yield of only 6,109 $\frac{2}{7}$ ounces of gold and 24,584 $\frac{1}{4}$ ounces of silver in 1875, it is evident that there has been a great falling off in the production of the precious metals. The chief causes of this, as claimed by H. S. Munroe, are the rise of wages and "the practical exhaustion, as far as the Japanese methods of mining are concerned, of the more accessible and easily worked deposits."

The northern part of the main island and Yezo are rich in precious metals, although they may be found

¹Henry S. Munroe, *Ibid.* See also Rein, p. 516.

more or less abundant in thirty provinces out of sixty-four. There are about a dozen gold and silver mines which are profitable. Some of them are under the management of the government, and are worked, under the supervision of competent engineers, with a large outlay of capital. Since 1874, a steady and constant progress has been made in mining, and the report of 1885 places the total production of gold at $9,616\frac{17}{38}$ ounces, and of silver at $83,634\frac{35}{8}$ ounces, showing an increase of 170 per cent. in gold and of 340 per cent. in silver. Most of the old mines are flooded and abandoned; but if they are reopened by energetic hands, with improved methods and large capital, it is hoped that the annual yield of silver will certainly equal, if not exceed, that of former times. The deposits of gold, however, are not so promising.

The great wealth of Japan lies, contrary to what was once supposed, in the rich deposits of iron, copper, and coal. "Of the metallic minerals," says Munroe, "the ores of iron are the most abundant." They occur especially in the northern and south-western provinces of Hondo, in the form of magnetite and of magnetic iron sands. Their qualities are said to be excellent, requiring no elaborate processes of extraction. But they are not extensively worked in many localities. In a few cases, mines have been opened with improved methods under the superintendence of foreign engineers, and in 1884, 4,775 tons were obtained from the government's mine of Hiroshima, in the province of Aki. In all, some four hundred iron mines were worked, and the total product for the year named was 11,766 tons.

Copper is found almost everywhere in Japan, and in some cases, silver is associated in the same vein.

Since 1642, when the exportation of silver was practically abandoned, copper formed one of the most important commodities for the Dutch trade, and of late the extended foreign demand for this metal has stimulated industry, and is vastly increasing in production. Copper mines number over five hundred, the four principal ones yielding over one-half of the total product. In these mines, many modern improvements have lately been adopted. In 1885, the yield was 10,457 tons.

The supply of coal is much more extended than that of either iron or copper. Although at present its real extent is imperfectly estimated, it is known that coal can be found in almost every part of the country. These deposits are of all varieties,—peat, lignite, bituminous, anthracite, and graphite. In the Island of Yezo, four principal fields are surveyed, the largest of which, viz., the Ishikari field, extends over an area of 2,400 square miles, with workable seams ten feet thick. In the main island, eighteen fields are already being worked, and in the Island of Shikoku, there is at least one large field, the one in the province of Awa. The north-western part of Kiushiu, the Pennsylvania of Japan, is almost entirely covered with coal fields. According to the estimate of Henry S. Munroe, in 1876, the total coal-bearing area in Japan is about 5,000 square miles, while the average thickness of the veins is fifteen feet. On account of the proximity to an excellent market, the port of Nagasaki, by far the largest amount is at present dug from the Kiushiu mines. In 1884, the total output of the country reached 870,382 tons, of which some 807,000 tons were from Kiushiu. The production of coal is growing very rapidly, and it is

now being exported to China, India and Russia. In July, 1888, the export duty on coal was removed and its production will doubtless be stimulated thereby.

Most of these profitable mines are owned by private parties and corporations. The recent policy of the government being to place profitable mines as far as possible under private control, there is offered in this field great inducement for the investment of capital. For the full development of these baser mines, however, not only is more mechanical skill and more business energy needed, but there must also spring up such industrial conditions as necessitate the development of the mining industry. Better means of transportation must be opened, and more manufactures be established, before iron and copper ores will be extensively smelted, or the coal fields be worked on an immense scale. Yet it is highly promising for the country to possess such immense quantities of raw material, without which it is futile to expect solid progress of national industries. It has been estimated that the coal product of Great Britain is equivalent to the labor of one hundred and thirty-three millions of operatives working without wages for her enrichment. Japan, says H. S. Munroe, has, in the Ishikari coal field alone, stored up and available for at least two centuries' use, the labor of an equal body of men.

Japanese art, unlike the Grecian, never displayed a high degree of perfection in architecture. Her industrial work chiefly centres in the production of small articles. Artizans, animated by the love of nature, find their pleasure in decorating their works by faithfully imitating her beauties. The most prominent among her artistic works are silk, lacquer, ceramic, and bronze industries. One who has studied

the recent work of J. J. Rein, on "The Industries of Japan," will not fail to see what an important part is played by the dexterity and technical knowledge of artizans. Their appliances are simple and primitive. Yet with patience and with pleasure in the work, and with technical skill acquired by long apprenticeship, some of the artizans in Japan produce works which are worthy of universal admiration.

Most of these industries were developed during the time when artizans enjoyed the patronage of feudal barons, and when they vied with each other in supplying the never-ceasing demands of the privileged classes. The manufacture of porcelain and pottery has acquired its importance since the Corean expedition in 1598, when many generals brought home Corean artists to establish manufactures in their own provinces. The lacquer industry seems to have attained its greatest artistic perfection at the end of the seventeenth century, when the Shogunate government was at the height of its splendor. When the old order of things was broken up in Japan, some of these industries received a sudden check, and by the revolution in the manners of society, certain processes of Japanese art will be lost forever. Yet in some other branches, such as ceramic, metal, and silk industries, the Japanese artist has been profited by the stimulus of a broad foreign market, and has received instruction from the International Exhibitions held in both Europe and America.

Common branches of industry are widely distributed throughout the country. Of the work in the fine arts, however, the production is limited to certain localities. ✓ Kioto leads all other cities in silk and metal industries. ✓ Tokyo stands most prominent in

localities in Japan.

lacquer and cabinet manufactures. Industries such as porcelain and paper, are located in various districts, where raw materials are accessible, and production is favored with climatic and water facilities. In all such manufacturing districts, producers are usually found in groups. In Kioto, a group of pottery and porcelain manufacturers is situated in the eastern part of the city, while in the western part, known as Nishi-Jin, are located the weaving and dyeing establishments, with no less than eighteen hundred silk weavers and six thousand looms. In Seto and Arita, two of the most famous centres of porcelain, potters cluster round the deposit of clay and make a village by themselves. In the latter, there are about a dozen large furnaces and twelve hundred families employed in the flourishing industry.

With a few exceptions which will be mentioned hereafter, Japanese manufacture is carried on in the house of a master workman. Establishments are usually small, having at most not more than twenty or thirty employés, some of them being hired by the day and others being taken as apprentices during a certain number of years. Since in all branches of industry appliances are very meagre, it requires a long term of apprenticeship to develop necessary skill. In gold-lacquer painting, for instance, a young artizan needs from eight to nine years of training, aided by unmistakable natural talent, before he can succeed in working as a master in his department. Even in the common trade of a carpenter, in some of the southern provinces it requires from five to seven years of apprenticeship. But as no law exists touching the subject of industrial organization, as was once the case in Europe, while Europe was

passing through the period of handicraft industry, industrial matters are wholly regulated by customs, which in many cases are peculiar to each house and to each community. In such a state of affairs, it is not at all strange that art products reflect the individual characteristics of the artists. What are known as trade-secrets are jealously guarded and are passed down from father to son. It is said that crackled wares of Satsuma, so often admired abroad, are produced by one family only, and that the bronze-works of Kioto are monopolized in the hands of few artizans. Such a fact is not at all strange, if we consider that so long as art products are made by hand, and the demand for them confined to a few privileged classes, the technical skill required for their production will come to be regarded by the artizans as sort of private property. Under such circumstances there is no motive for industrial expansion.

A notable exception to this mode of production is found in the brewing of Saké. This beverage in Japan is fermented chiefly from rice and wheat, and its production has been conducted on an immense scale. In large store-houses, with high roofs and thick plaster walls, two or three hundred men are often employed. Here are clerks, foremen, and laborers, the master simply furnishing the capital and providing superintendence. Thus in the business of brewing, Japan has for centuries had an industry typical of the modern industrial organization of the western world. Here are found the two classes, laborers and capitalists. A brewer, even in a small castle-town, during the time of Feudalism, was seen dressed in a shining suit and housed in a fine mansion. He often made large contributions to

public expenditure, and thus bought the privilege of wearing a sword, which was then considered a great social distinction.

Other handicrafts, as has been said, belong strictly to the class of domestic industries. In many important respects the organization of an industry showed a striking resemblance to that of the middle age in western Europe. In many trades, they had guilds with their regulations, by which they aimed to secure the good quality of their work. This was true of the artisans of large cities, especially of weavers, dyers, and manufacturers of tea. In the three principal cities,—Tokyo, Kioto, and Osaka,—the preparation of raw lac for lacquerers has been made “by a particular guild of lacquer dealers, which ten years ago numbered sixteen members.”¹ One who has traveled in Japan to any extent cannot have failed to observe the existence of many traveling guilds, by which innkeepers of leading routes are united in distinct groups. These trade-guilds and associations are still existing, and in some trades they are gradually changing their character, adjusting themselves to the changes of industrial environments. The silk manufacturers recently adopted certain general regulations by which they attempted to insure the good quality of products, and for the general observance of their rules they invoked the intervention of the

¹ Rein, p. 350.

Again in Kioto the silk weavers form free corporations, according to their special employments, for the improvement of their common concerns. There are, for example, a picture-weaving guild, a silk-brocade guild, a crape-guild, a velvet-weavers guild, a guild for the manufacture of summer goods, and several others.

State. In some organizations, such as tea and salt associations, it is pertinent to observe that there is an attempt to regulate the total amount of production in the country, thus assuming the monstrous form of modern "trusts." A thorough study of the origin and growth of these trade-guilds will afford a very interesting field for the student of economic history, but I cannot now pursue this line of thought.

It lies outside of my purpose to describe further in detail the various branches of Japanese manufactures. But owing to the importance of the subjects, let me call your attention to the silk and to the porcelain industries.

We have already considered silk as a by-industry of agriculture, but the extension of foreign demand for fine and uniform silk yarns, called into existence many reeling-factories—*filanda*. In the province of Kai the factories number some one hundred and ninety, and in Mino and Hida there are over two hundred and fifty. These factories are usually small, owned by private individuals, and, as most of them are in mountain regions, they are run largely by water-power. Capital invested in such a factory ranges from seventy-five thousand yens in the maximum to one hundred yens in the minimum, the average being about fifteen hundred yens. Our present interest in the multitude of these small establishments arises from the fact that they form the first departure from pure household manufacture, developing on the one hand a distinct class of modern undertakers, and on the other hand a class of mere laborers. For the first time, women and children are employed in factories side by side with men, and the price of their labor is calcu-

lated according to the number of hours worked. In these factories, by far the largest portion of laborers are women and girls, adult men forming only five per cent. of the whole. The number of working hours varies from nine to fourteen hours a day, twelve hours being the most common. From the nature of the work, most of these factories are suspended a part of each year, the small ones being opened only sixty or one hundred days. These circumstances are decidedly disadvantageous to the laborers, and both for their benefit and for that of the country at large, it is highly desirable that these infant factories shall be superseded by factories of more complete organization. In 1885 the total amount of raw silk produced in these factories reached 1,185,212 yens. Most of this was exported to foreign markets. That this new factory system as yet manufactures but a small part of the silk, is shown by the fact that, in 1885, of an export of raw silk amounting to 14,460,780 yens, only a portion was produced by the factories.

Silk is mainly manufactured in the form of satin, striped cloth, crape, and sashes, both for men and for women, the latter being the most expensive part of the Japanese costume. Kioto takes now, as for many centuries past, the first place in the Japanese silk industry. Kiriu and many other towns in the province of Kotsuké, which are mainly distinguished for the manufacture of satin and mixed goods, are next in importance. There are many cities in the northern and central provinces of Hondo, such as Sendai in Rikusen, Akita in Ugo, Kofu in Kai, that are renowned for their silk manufactures; and, in 1885, the aggregate production was estimated

at 3,742,935 yens in pure goods, and 1,491,437 yens in mixed goods. Like many other industries, the silk manufacture suffered a sudden depression when the country was thrown open to the world's commerce.

“ While the silk culture of Japan received a great impulse at the opening of the new commerce, . . . silk manufacture has been much and variously damaged thereby. The cheap cotton and wool stuffs thrown upon the market from foreign countries for several decades, compete constantly more strongly with silk materials. Most of the velvet looms were obliged fifteen years ago to suspend competition with the extraordinarily cheap cotton velvets of Manchester. And it has come about that the export of raw silk, beginning in 1859 and rapidly increasing in succeeding years, to which that of silk-worm eggs was soon added, has had a great influence on the price of raw silk, which has risen within a few years to ten or sixteen fold. Many of the Japanese, under such circumstances, found themselves obliged to give up their custom of wearing silk clothing, and to use the much cheaper woollen and cotton material.”¹

Notice from the above statement that mixed goods are a trifle over one-third of pure goods, which means that the clothing of medium quality which has been hitherto manufactured at home, is largely supplanted by imported fabrics. Considering the peculiarities of the customs and tastes of the people, and also the immense amount of cheap and skilled labor, which they have at their disposal, it is possible for Japanese manufacturers, not only to regain the home market, but also to enter into successful competition in European silk markets. But this is impossible unless hand-looms are replaced with power-looms and the system of domestic manufacture is changed into the factory system. The powerloom having revolutionized the silk industry of Europe, there can be no market of any consequence for Japanese silk. Gradually, but surely,

¹ Rein, page 381.

old methods of production in Japan are giving way to new methods, by which is manufactured a smooth fabric according to the requirements of the European market. Thus here, as elsewhere, we see the working of external influences upon the old industrial organization of Japan.

Pottery and porcelain manufacture in Japan is an important, as it is an old, industry. Here, I may cite at length a valuable report of Consul-General Van Buren: "Porcelain clays are found in nearly all portions of the country, and what is of great economic advantage, the different kinds of the purest and best quality, are usually found in close proximity, and in many places near water transportation. I believe in all cases, every variety of clay used in the manufacture of pottery is found in a natural state. There is no necessity to manufacture the quartzose or fusible clay as is done in other parts of the world, which adds much to the cost of the ware. It is still more remarkable to find one clay that contains both the fusible and infusible materials in such proportions as to make a light, beautiful, translucent, and durable porcelain. I am not aware that such clays are found in any other country." Taking the country as a whole, there are over two hundred and eighty deposits of clay, adapted for the various kinds of pottery, and so vast are these deposits that there can be no possible danger of exhaustion. Wares, much admired both at home and abroad, are produced at Hizen, Owari, Kyoto, Kaga, and Satsuma, and are known by the names of these provinces. The foreign demand is rapidly developing the industry, and in many places the old household manufacture is being abandoned, and corporations and factories are gradu-

ally taking its place. In 1886, the export of pottery amounted to over one million yens, which shows an advance of almost one hundred per cent. since 1884. It is stated by one of the best authorities that Japan, with the inexhaustible resources of the best porcelain clay, with cheap and skillful labor, will eventually become the foremost competitor in this important industry in the world's market.

Yet there are many serious impediments under which the industry is laboring, that time alone can remove. In many places moulding machines and baking furnaces used are still of primitive type. "In order to form an idea of the extremely simple and primitive working apparatus," says Rein, "we must throw ourselves back a hundred years or more, into the time when in our own country porcelain was burned in low kilns, and the entire preparation of the material was effected without machines, or with only the help of the simplest possible water-power works."¹ In such a stage of production, wares produced lack exactness and uniformity, and artizans, being accustomed to see only a few patterns, are slow to adjust themselves to the never-ceasing changes of European markets. And if to this we add that the artizans are prejudiced against change, that they are suspicious of foreign influence, and that they guard jealously the "secrets" of this trade, we shall be able to appreciate the obstacles to be overcome. All of these influences combine to check the expansion of the pottery industry. The steps necessary to be taken at present are to unite the small establishments into large factories, to place them under intelligent managers, and to introduce

¹Rein p. 464.

among them the better methods of moulding and baking machinery.

Free communication with other nations, not only tends to change the methods and characters of old industries, but at the same time, it opens up new channels in which labor and capital are employed. Not more than fifteen years ago, a large part of the cotton yarns used in Japan was spun by hand. In the evening hours, the passer-by would hear the sweet, rhythmical hum of the spinning wheel issuing from almost every home of the low and middle classes. But by the introduction of English yarns and the establishment of some spinning factories at home, this time-honored hand-wheel met the same destiny as did in England the spinning-wheel of the time of Queen Anne. Such changes in the modes of life and in the methods of production are almost innumerable. They are increasing month by month and year by year, and he who observes them with his own eyes will learn to appreciate the deep significance there is in the phrase adopted as the title of this essay,—*The Industrial Transition in Japan.*

Let us take here a brief survey of “new industries” which are gradually springing up on the ruin of the old. It has been the policy of the Japanese government for many years to encourage private enterprises. Loans were made at liberal terms and land was granted with or without nominal rent. The government has itself started many establishments and undertaken many industrial experiments. At present it owns four factories,—one in silk-reeling, another in paper manufacture, and two in cotton-spinning. Saying nothing of the wisdom of such measures, it must be granted on all hands that the

number of factories and corporations is rapidly increasing in Japan, and that society is growing in activity as well as in complexity. Gas factories, electric-light plants, water-works, and street cars, as well as other modern improvements are taking a firm start. According to the report of the Department of Agriculture and Commerce, June, 1886, the number of steam engines used for industrial purposes is three hundred and eleven, with an aggregate horse-power of 4,094½. The principal industries in which they are employed may be learned from the following table :

Class of Factory.	No. of Engines.
Silk factories.....	82
Coal-mining.....	47
Rice-hulling.....	44
Ship-building.....	16
Cotton-spinning.....	13
Printing.....	6

Other industries in which steam-power is more or less used, are dyeing, iron-smelting, sugar-refining, and the manufacture of paper, drugs and the like. The steam-factories in the whole country number at present some two hundred and seventeen. The extent to which water-power is used is much greater. Inclusive of those silk factories of which I have spoken somewhat at length, and which constitute the largest number, there were three hundred and sixty-five factories in 1886 in which water is utilized in the most enlightened manner. Besides, there are about two hundred and fifty factories where various manufactures are carried on without the help of steam or water power. Hence the total number of what we may call "new industries" is represented by eight hundred and thirty-two factories with a capital of some 3,661,000 yens.

Perhaps, the questions will occur to protectionists, how, under practically free trade, Japan is struggling against foreign competition; what are the rates of wages and profit enjoyed by the pioneers of these infant industries? The answer to such questions will be obtained, if we examine carefully those manufactures that come into the sharpest competition with imported goods. The report of the Department of Agriculture and Commerce for 1886 furnishes us a sufficient amount of data, and I have taken pains to carefully examine these reports, so far as cotton-spinning, sugar-refining, and glass-manufacturing are concerned. The results obtained are by no means favorable. In the case of cotton-spinning, all but three factories are either paying no dividends or working at actual loss. In two government factories the loss amounted to over 20,000 yens in 1884. Perhaps the nature of the difficulties will be better understood if we compare side by side the accounts of exceptionally good and exceptionally bad cases.

	<i>Osaka Spinning Factory.</i>		<i>Okayama Spinning Factory.</i>	
	Expendi- ture.	Gross Earning. Yen.	Expendi- ture.	Gross Earning. Yen.
Total amount of production (per year)	311,100			50,037
Salaries.....	Yen. 5,425		Yen. 819	
Wages. { Men.....	5,272		1,958	
{ Women.....	4,877		1,481	
Materials.....	223,080		42,713	
Incidental expenses.....	1,920		7,117	
Coal.....	4,631		2,743	
	245,205		56,831	
Net gain.....		65,895		
Net loss.....				6,794

In one case the capital invested is 84,000 yens, and there is a net profit of over seventy-eight per cent., while in the other case the capital is 65,000 yens and the loss amounts to fourteen per cent. The chief differences of the two lie in the amounts of annual production and of salaries and incidental expenses. It seems to be evident from these discrepancies that the latter is equipped with imperfect machinery and conducted by poor managers.

The profit of glass-factories, though my data were hardly sufficient, is very fair. Further examination of these other undertakings, which are comparatively free from foreign competition, reveals fair rates of profit. In coal-mining, for example, more than fifty per cent. of net profit is often realized. One lamentable fact disclosed by our study, is the low rate of wages prevalent in these new undertakings. In the spinning factories of which I have spoken, only between nine and twelve sens is paid to a man and six sens and a half to a woman, working twelve hours per day. This is much lower than the agricultural wages prevailing in the same locality, which is, in this case, twenty-two sens to a man and fifteen sens to a woman. To the more skilled laborers, of course, higher wages is paid, but if this be compared with the wages of the same grade of labor in the old domestic manufactures, it must be admitted that the new system has not yet greatly benefitted the workmen. The economic bearings of such tendencies will be referred to later on in my discussion.

We have thus far regarded the industrial status of Japan from different points of view. What remains for us now to examine are commerce, banking, and

transportation. These are rightly considered as "subsidiary industries," and their magnitude is necessarily limited by those industrial conditions we have already pointed out. Having surveyed at length the distribution of the people throughout the country, and the characteristics of agriculture and manufactures, it is easy to forecast the probable status of commerce, of banking, and of the facilities for transportation. In a brief sketch like the present one, therefore, a consideration of these businesses need not detain us long. In the time of Feudalism there were but three roads worthy of the name. The most important of these connected Tokyo and Kioto, running along the eastern coast a distance of some three hundred and seven miles. This road is about thirty-six feet wide, smoothed with fine gravel and shaded here and there with double rows of Japanese pines. Another road between Tokyo and Kioto runs through the mountainous part of the interior, and though famous for its grand scenery, was less frequently used owing to its rugged condition. The third road extends from Tokyo to Aomori, a city on the strait that divides the main Island from the Island of Yezo. This is the longest of the three, being estimated at four hundred and forty-four miles. Beside these, a net-work of highways was found in densely settled portions, which, though fairly level, were so narrow that most of them did not admit the passage of large wagons. The navigation of the coast by junks and flat-bottomed boats was slow and uncertain, to say nothing of frequent accidents which occurred. Men past 40 years of age, in Japan, well remember the time when took between thirty and forty days to

travel from Yedo (now Tokyo) to Kiushiu, a distance of some six hundred miles.

The importance of better means of communication for the development of the country was early realized by the new government. At a general assembly of the local prefects held in 1875, a bill was introduced to classify the different roads throughout the empire, and to determine the several sources from which the sums necessary for their maintenance and repair should be drawn. After several days discussion, the following classification of roads was adopted: State roads, "Ken" (prefecture) roads, and village roads. It was determined that State roads shall be maintained at the national expense, though the regulations and repair of the roads should be entrusted to the prefectures through which they pass; that "Ken" roads are to be kept up by a joint contribution from the government and from the particular prefecture, each paying one-half of the sum needed; and that village roads, being for the convenience of the local districts, are to be maintained at the expense of such districts under the supervision of the corresponding prefecture. Each of these classes was subdivided into three heads, and the width of the State road was determined at from thirty to forty-one feet, the "Ken" road from twenty-four to thirty feet, and the village road was optional, according to the necessity of the case. In accordance with these important provisions, many improvements have already been accomplished in different provinces; old roads are being widened or entirely abandoned, and new roads are being opened. Bridges, not less important than roads, are being reconstructed and newly spanned.

The coast navigation was not neglected. As early as 1870 a regular line of steam vessels was put upon the route between Yokohama and Kobé, and from thence to the port of Nagasaki. A native company was soon organized and received a charter in 1874, in which special concessions were made covering a number of years. This company has established regular connection, not only with all the important ports of the country, but also with Shanghai, Fusan, and other continental cities. And the immense fortunes amassed by its founders show how quickly this important industry has been expanded and what a vast service has been rendered to the country. By the strange concurrence of events, this company was nominally dissolved in 1885, and the business was transferred to a new corporation called "The Japanese Mail Steamers Co., which is now under the general supervision of the government. Between Osaka and the Island of Shikoku and Kiushiu, and along the northern coast of the Inland Sea, many steamboats are operated by small companies. In 1886, the whole tonnage of the country included 117,303 tons of steamers and sailboats, and the number of Japanese junks was over 727,000. To crown these improvements the expansion of telegraph lines, which in 1887 were over 16,000 miles in extent, and above all the establishment and continual development of the postal service deserve special mention. With regard to the latter, Japan is indebted in no small degree to the United States.

The railroad movement in Japan is quite recent. Although the first line was constructed as early as 1872, between Tokyo and Yokohama, and afterward between Kobé and Otsu, the total length of lines

was not more than eighty miles. No great industrial influences could be expected from so short a length of line, and, until within a few years, although the government continued its surveys, the industrial and social importance of railroads was not appreciated by the general public. In 1881 "The Japanese Railroad Co." was chartered with a capital of 20,000,000 yens for the purpose of building a road between Tokyo and Aomori, a distance of five hundred and twenty-nine miles. This was the first instance in which such an enterprise had been undertaken in Japan by a corporation. About the same time the government built a short line of eighty-five miles into the heart of Yezo, and was projecting a line from Kobé and Otsu to Tsuruga, a sea-port on the northern coast, the additional road being about forty miles. But it was really in 1885 that the true importance of railroads was realized by the people, and that a railroad mania began to spread throughout the country. Corporations were formed one after another, and between 1886-87, as we have seen, thirteen new companies were created. Meanwhile the government found it necessary to issue a decree entitled "Private Railroad Regulations," by which private roads could be chartered, and by which, when chartered, they were to be brought under the general supervision of the government.¹ About this time the government, desiring to build a road connecting Tokyo and Kioto, concluded to construct it along the eastern coast, instead of through the mountainous part of the interior as at first planned. The principal lines now under construction by

¹For the main features of "Private Railroad Regulations," see *The United States Consular Report*, No. 83, pp. 458-461.

private companies are in the northwestern part of Kiushiu, along the northern coast of the Inland Sea, in Shikoku, and in the provinces of Kai and Shinano, together with many lines that may be regarded as feeders to the government roads.²

That these improvements in transportation will finally destroy old feudal boundaries and unify the whole country into one industrial organism, no one will hesitate to conclude. But to reach such a goal, not only must there be further changes along this line, but also there must be introduced other industrial and social changes, some of which are nothing short of mental and ethical innovations. At present, Japan has within herself many localized communities, each apparently independent of the other. Not only the local dialects, the provincialism, and the sectional feeling of the feudal days still remain, but even the internal commerce seems to run in its old accustomed channels. In addition to what I have advanced thus far, in support of such statement, I may perhaps be allowed to strengthen my position by drawing certain inferences from the diversity of local prices.

For inland transportation, the chief reliance is still placed upon pack-horses and upon vehicles drawn by men. And upon the best road the burden of three hundred and thirty pounds costs on the pack-horse ten sens per "ri," (1.9 ri = 1 geographical mile,) while upon bad roads the cost may be quadrupled. This high cost of transportation influences materially the sale of agricultural produce, and within certain

²Since writing the above the news has arrived that the line between Tokyo and Kioto was completed in June, 1889. A jubilee meeting was held to celebrate the first 1,000 miles of railroad in Japan.

territorial limits, which are of course very indefinite, the prices rise and fall independent of surrounding localities. The statistics of 1887 give a very admirable table of price-quotations for the previous year in more than a hundred important trade centres. A careful examination of this table discloses many interesting facts. In the first place, it may be stated with confidence that the range through which local prices fluctuate at any place measures the degrees of the difficulty of transportation. From the nature of the case this is especially true of agricultural prices. Of course, such a general principle will be subject to many secondary influences. But taking everything into consideration, we may satisfy ourselves that this is a rule which admits of general application.

The difficulties of transportation will be more clearly shown if we compare the prices of one locality with those of another. The average price of five bushels of rice varies all the way from 3.76 yens to 7.21 yens, and within the distance of fifty miles the difference of one yen is not uncommon. Variations in the price of barley are still greater, the discrepancy being from 1.55 yens to 5.06 yens. Looking over the statistics with considerable care, I have come to the conclusion that the average prices of necessary articles is more uniform than those of articles of less urgency. The price of tea, for example, in some of the northern provinces is something enormous, the average being about fifty-five yens; while in the middle and southern portions of the country, the price fluctuates between fifteen and twenty-five yens. The same is also true of salt, sugar, and ginned cotton. The probable explanation

of such a fact, (assuming the fact to be sufficiently established,) is, that for articles of absolute necessity there is greater competition among dealers, and therefore more uniformity in prices, while for the articles of less importance, or for comforts, a high price in one locality is passed unnoticed by the dealers in another.

II.

STEPS NECESSARY FOR INDUSTRIAL TRANSITION.

1.—*The Laws of Industrial progress.*

The foregoing study of the industrial status of Japan will confirm our statement that the present industrial organization is still the relic of Feudalism. We have seen that the distribution of the people still depends upon the feudal boundaries; that the dominant motive of the society is yet anti-commercial; and that, contrary to the modern tendency, the movement of the people has been from the city to the country during the last decade. We have observed that agriculture, though much encouraged, is still suffering under the burden of heavy taxes, and on account of the prevalent system of small farming, both of which are characteristics of a feudal society. In manufactures also, we have learned that the old domestic system still prevails, and that, although the modern factory system shows strength and vigor, it is as yet insignificant when compared with society as a whole. At this juncture of transition nothing is more pertinent than to inquire what are the natural steps to unify these localized communities into one industrial organism; what are the measures to awaken the industrial energy of

the people, and to establish among them diversified industries; in short, what are the laws of industrial development applicable to the present condition of Japan?

The nature of the laws of industrial development presents a question that has been much discussed. It is the question to which statesmen like Walpole, Quesnay, Turgot, and Stein endeavored to give a definite solution. In general, we shall not hesitate to identify the present industrial stage of Japan with that of the eighteenth century in England, France, and Germany, and we shall find many fertile suggestions in the economic doctrines of these statesmen. The colonial policy of Walpole, the physiocratic doctrine of Quesnay, and the internal unification of Stein, each presents to us an essential phase of industrial transition. But modern students are certainly in better position to take a comprehensive view of the subject than were these great statesmen in the last century. The wonderful development of industry, and the various economic doctrines which have been set forth since then enable us to appreciate the meaning of so-called industrial movements. And by the aid of such historical criticism, we may hope to solve many special problems pertaining to the present and future of the Japanese industry.

First, let us formulate, if possible, the laws of industrial progress, for it is assumed that such laws exist. Industrial development may be broadly defined as the evolution of human wants. Man has but a limited capacity of appreciating want at any certain stage of his development, and his wants

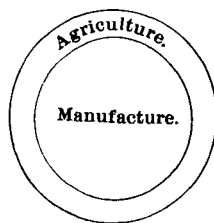
grow in quantity and quality only with the further development of his potential capacity.

But here it is important to recognize that the wants of an individual are necessarily limited by his social environment. Society is divided into a number of industrial groups. The wants of one group are satisfied by exchanging its products with those of all others. The ratio in which this exchange is made is the *quantitative* proportion of what one group produces with that of the others. Certain groups may produce much, while the rest may produce little. In this case the exchange is to the relative disadvantage of the former. The more productive groups must give their surplus for what little they can get from those less productive. On this account the wants of which they are conscious can be but partially satisfied, while certain of their potential desires must remain undeveloped. The less productive groups are not more favorably situated. Their share, when considered collectively, is small, their wants but partially supplied, and the further development of their potential wants fatally hindered.

This properly represents the relation between the two main groups of the national economy, agriculture and manufacture, before the era of invention; and the series of economic revolutions that have taken place since then, may be described tersely as changes in the relations which existed between these two branches of industry. The cheapened methods of production necessarily extended the market for manufactured products. New wants were created where they did not before exist, and this enlargement of wants expanded the productive group. This in turn

revolutionized agriculture. The cheapness of manufactured products meant the enhancement of the price of agricultural products. The extension of manufacture meant the extension of agriculture and an increase in the value of landed-property.

This law of interdependence may be illustrated by the accompanying diagram. Let the larger circle stand for agriculture and the smaller one for manufacture. Theoretically speaking, the expansion of these two circles must be simultaneous, and, assuming the arts of a community to remain the



same, any permanent change in their relation to each other is impossible. But when we examine the course of history we shall find that manufacture always leads in industrial progress. The reason for this is evident. It is mainly manufacturing arts that limit the want of a community, and as soon as any important changes in the methods of their production take place, new wants will be created and old wants be diffused, and agriculture will be stimulated thereby. On the other hand, as long as a country is purely agricultural, it is self-sufficing, and there can be no large demand for its surplus production, and even where the soil is rich and the methods of cultivation are fruitful, there is no powerful motive for the expansion of industry.

Again, it is very essential for our purpose to recognize that the expansion of the wants of a community may be either intensive or extensive. Thus certain classes in society may develop various kinds of wants and create an increasing demand for new forms of manufacture. Such a development is termed

intensive. It exercises a most healthful influence upon both agriculture and manufacture. It is in this way that industrial progress takes place in an advanced community. But in the stage of transition which we are considering, it is certainly the extensive expansion of wants that should be the more carefully fostered, that is to say, the awakening of the nation as a whole, to the consciousness of wants now confined to a few. This will lead to greater production, which will be followed by a decrease of prices, and by reaction will work in the most powerful manner for general industrial progress.

Before the era of invention, as is well known, it was the policy of governments to encourage the planting of colonies and the increase of population. The chief support of such a policy may be found in the fact that in those days of commercial restriction, the necessity of an extensive expansion of the market was keenly felt, and it is undoubtedly true that the artificial means adapted to this end, did tend to the development of national strength. These ideas were not peculiar to the mercantilists. They are found, although disguised, in the statecraft of most early commercial peoples. It was not till after the introduction of machinery that over-population became an object of apprehension, or the intensive development of wants an object of solicitude.

The history of English industry in the eighteenth century will afford us striking evidence of the principles under consideration. It is well known that agrarian improvements in England were begun in many districts early in the century. Large numbers of country gentlemen became interested in the advance of agriculture. Books were written on the

subject ; new methods of cultivation were discovered and put into practice ; and above all, by placing premiums upon the exportation of grain, the productive power of land was much enhanced. It is stated by Prof. Thorold Rogers that the real wages of workmen in England was greater in the middle of the century than in any succeeding years. This prosperity largely increased the effective wants of the people, and even before the progress of invention, the importation of cotton goods from India was suddenly expanded. But it was not until 1760, when new factories were established and machinery began to be used, that English agriculture entered upon the most rapid stage of its development. Arthur Young, writing in 1770, ascribed to the preceding ten years "more experiments, more discoveries and more general good sense displayed in the walk of agriculture than in an hundred preceding ones." In spite of the fact that a large portion of the rural population was drawn to manufacturing towns, the enclosure of common fields proceeded twice as rapidly as before. Grass and root culture was extended ; improvements were made in the breeding of sheep and cattle ; small farms were consolidated ; and agriculture, in a large measure, fell into the hands of intelligent farmers. At the same time, the means of inland transportation were improved by building canals, and by constructing roads. The concurrence of all these circumstances created new and vigorous wants among the rural population, and it is safe to affirm that this extension of domestic wants permitted that sudden expansion of the cotton and lately of the woolen manufactures. Had the condition of the country remained as it was in the seventeenth cent-

ury, it is not probable that the inventions of Arkwright and Hargreaves would have quickly come to be of such practical importance; nor is it possible that, without their inventions and the consequent rise of factories, agriculture could have made such brilliant progress as that of which we read in the pages of Arthur Young. Herein lies the secret of that unparalleled success which attended the efforts of England during the latter part of the last century; the two great industries, agriculture and manufacture were developed side by side.

Negative evidence in support of the economic law thus disclosed, may be sought in the condition of Japanese industry. It has been tottering upon one leg without the support of the other. Since the wars of the Restoration, there is no doubt that the distinction of privileged classes, the changes of fashion, and the sharp competition of imported goods, have all combined to depress native manufactures. We have already seen how, since the opening of the new commerce, silk manufactures were crushed by the influx of cheap cotton and wollen goods. The same was true, even to a much greater degree, of the cotton manufactures, which were firmly established in various provinces under the Shogun government, and of the oil and brewing industries, which have to compete with American petroleum and French wine. Such a sudden and ever increasing check upon the Japanese manufacture occasioned a corresponding depression in agricultural industry. These influences, combined with the commutation of tax-in-kind into money-tax, have fallen so heavily upon the agricultural interests as to produce universal depression. Undoubtedly the Civil

Insurrection of 1877, whatever may have been its proximate causes, was inflamed by the malcontent thus engendered. But at this crisis, the course of events was diverted. By the issue of irredeemable paper money, consequent upon this war, the money price of agricultural products was suddenly raised, and farmers, thus encouraged, steadily increased production. For many years high prices were sustained and prosperity was enjoyed. But the resumption of specie payment in 1887, has been followed by a fall in prices. And, as is agreed on all hands, the farmer is sure to suffer, no matter whether the harvest be abundant or whether it be scarce. As we have already observed when discussing population, a large portion of the people is outside of agriculture, and under the present condition of national economy, there is not sufficient employment to enable this portion to secure good wages. Hence there can be no varied and efficient demand for agricultural products, and the presence of a surplus, small as it is, exercises the most precarious influence upon the price of the whole.

The industrial problems in Japan remain yet unsolved. Heretofore the government seems to have acted on no fixed principles, nor have the principles as yet assumed such definite shapes as to constitute dividing lines between political parties. Questions of a purely political nature are so engrossing that industrial problems are largely overshadowed. Moreover, under the present treaties with western powers, the control of the government over customs duties is so narrowly restricted that any scheme of commercial policy, however brilliant it may be, is destined to remain in the field of speculation. Yet

the time is not distant when the questions of land-taxes, of customs duties, of the regulation of labor, and of state-industry, will demand urgent attention, and on the floor of the future Diet, there will arise the accustomed struggle between protectionists and free-traders, between statesmen and theorists, between class-prejudices and business interests.

Whatever sentiments may for the time being be imposed upon the public, the general course of the future movement is not difficult to predict. If our analysis of industrial progress be correct, we may lay down two propositions which should be fulfilled in the course of the industrial transition.

First. The efficient want of the people should be extensively, rather than intensively developed. The principal feature of the feudal society has been the high development of wants among certain limited classes, while the majority of the people were left destitute, their wants being confined to the mere physical necessities. Important changes in this partial development of want must occur, before the ground is ready for the growth of a strong industry.

Second. Agriculture should be thoroughly reformed in the interest of manufactures, and manufactures be established in the interest of agriculture. Paradoxical as it may seem, it is nevertheless true that these two industries are so closely united and their mutual reactions are so essential that no permanent progress is possible without their simultaneous growth.

In view then of our special circumstances, let us proceed to inquire, somewhat in detail, what measures are necessary in order to reform agriculture and to establish manufacture, and how the attainment of one purpose is presupposed in that of the other.

2.—Criticism on the Japanese Agriculture.

The impression has been common among native publicists that land in Japan is already so crowded and pressed into the full productive capacity that there is little room for its further improvement. From what has already been said the reader will be able to judge how far such an assumption is based on fact. So far as rice cultivation is concerned, it was shown, that the present methods of farming give a fair return; but in the case of hardier grains, wheat, barley, and naked barley, the yield is so meagre that it scarcely deserves to be mentioned. We have observed that in the best localities only, the average yield is twenty-two bushels of wheat and thirty bushels of barley per acre; that there are many districts where the average stands as low as seven or eight bushels of wheat, and that in 1887 the average return for the whole country was twelve bushels of wheat and a little over seventeen bushels of barley per acre. Compare with these the productive power of the soil in some of the European countries. In England, as far back as the time of Arthur Young (1770), the average crop was twenty-five bushels of wheat, while in 1882 it reached thirty-four and two-tenths bushels in Cambridge county.¹ In Flanders, Jersey, and Guernsey, where the prevalence of small farming admits us to a more favorable contrast with Japan, the average wheat crop is ascertained by official authority to be from thirty-six to forty bushels per acre. "Of barley, a more congenial cereal, the average in Flanders is forty-one bushels, and in good ground sixty bushels."² When

¹*Journal of London Statistical Society*, 1863.

²*Britannica*, ninth edition, "Agriculture."

you examine some particular farms which are exceptionally good, a wheat crop of fifty-six bushels in England and eighty bushels in Flanders is not unknown.¹

There is another method by which the productivity of land in Japan may be compared with that in other countries. The amount of the surplus product which remains after the farmers are fed will measure the efficient demand of the farming community. Hence in a country where the proportion of land to the agricultural population is great (assuming the productive power of land to be the same), the industrial organism will be the more active and progressive. In England there are seventeen acres for every farm, while in Flanders, where population is most dense, there are still over four acres. But in Japan, as we have seen, there is only from half an acre to one acre per capita in most provinces, with only a few notable exceptions, where there are some two acres and a half.

If we calculate upon this double basis, namely, the productive power of land and the per capita quantity of farms, we shall obtain a comprehensive idea of the extent of the differences between the agricultural resources of these countries. In England, each person in agricultural pursuit will secure some five hundred and forty-four bushels of wheat a year, in Flanders about one hundred and sixty bushels, in Japan not more than twenty-six bushels of rice and twelve bushels of wheat, assuming that he is able to get two crops a year

Such comparisons as the above give tangible evidence as to the dependence of agriculture upon the

¹ *Ibid.*

co-existence of other industries. If now we inquire directly what are the principal causes that are hindering the growth of the Japanese agriculture, we shall find them to be the poor means of transportation, the high rate of land-taxes, the bad system of land-tenure, and the lack of scientific knowledge on the part of the farmer.

(a) *The poor means of transportation.* Since grain cannot be cheaply carried by the present means of inland communication, each locality is obliged to be almost self-supporting. Where population is dense, land is forced to yield the largest possible amount, but, in the sparsely settled portions of the country, only a small part of the land is brought under cultivation, and that in a very loose manner.¹ No strong inducements are presented to farmers to enlarge their production, for they have no distant markets, and a large surplus on their hands is sure to bring down the local prices. The only effective remedy for this is to open foreign markets for agricultural products. Hitherto rice has been exported to Europe,

¹Dr. Feca, a careful German observer, made the following remarks in 1884: "The cost of transporting rice, which is the highest-priced product,—fifty kilogrammes being worth about five marks,—amounts to the marketprice of the rice itself by the time it has been carried only twenty geographical miles, on the best highways, while in Germany, according to Settegast, wheat and other grain, at only twice that market price, say ten marks per fifty kilo., can be transported on ordinary roads 66.67 miles, on turnpikes 100 miles, and by rail 400 miles, before the cost of carriage reaches the market price. And on the poorer roads of Japan, rice does not bear a transportation of five miles. We find accordingly that at some distance from the coast, even good soil has not been brought under cultivation, where the margin of profit is too narrow for it, while near the coast even sandy dunes, certainly very poor soil, are successfully cultivated."—As quoted by J. J. Rein, pp. 17-18.

especially to England, and wheat to China and Russia. This export trade amounted to \$3,500,000 in 1887. Owing to the superior quality of Japanese rice over the products of India and Jamaica, its exportation would be largely increased, if encouraged by the establishment of trading companies and by abolishing export duties. Such exportation, if fully established, would tend to keep up the price at a higher level than under present conditions is possible, and the price so determined would be subject to fewer fluctuations. Encouraged by such measures, farmers would be induced to extend their fields and to adopt better methods of cultivation.¹

In this respect Japan has much to learn from the English statesmen of the eighteenth century, who put premiums upon the exportation of cereals, whose principles, though much perverted, still took their origin in the economic necessities of the transitional stage in which England was then placed.

The territorial distribution of cultivated lands, as we have seen, is very unequal, and specialization in the agricultural industry is very imperfect. Under the present means of transportation the people are obliged everywhere to raise food for their own consumption, paying no regard to the fitness of their products for sale. Were it not for this fact, the tea and mulberry plantations in the central part of the country, grazing industry in the north, and all cereal products in the luxuriant southwest, might be largely expanded. What is needed most at the pres-

¹The exportation of goods from Japan was hitherto possible only in five treaty ports. But in August, 1889, nine new ports were opened for the direct exportation of the five important articles: rice, wheat, flour, coal and sulphur.

ent stage is to diversify agriculture and to establish the mutual dependence of one part of the country upon the other. And the only effective measure for these ends is to extend railroads and to continue the improvement of high roads, which is already begun on such an admirable plan.

Another difficulty that arises from the poor means of communication is the want of cheap manures in the interior. All along the coast farmers have free access to sea-weeds, guano, fish, lime, and the like, but there is no way by which to carry fertilizers into the interior at small expense. Hence in the central and northern parts, where population is sparse, there may be found large tracts of land not brought under cultivation. In France the same difficulty was experienced for centuries, but since the introduction of railroads, various companies have made generous reduction in the freight charge of fertilizers, and have thus assisted in the distribution of chalk, marls, and guano all over the country. In 1856, M. Leonce de Lavergne, speaking of the large tract of the silicious soil which traverses France, from northwest to southeast, says: "In every part where it is possible to make use of lime as a fertilizer, the soil has been transformed visibly, . . . cattle have been improved and have multiplied, and wheat has been substituted for rye."¹ Undoubtedly in the northern part of Japan similar changes will take place if railroad facilities are extended.

(b.) *The high rate of land-taxes.* That the present rate of land-taxes is high, has been the complaint of all, but how high, is not often carefully computed. According to the law as it was amended in 1876, the

¹De Foville, *La Transformation*, p. 248.

national tax is two and a half per cent. of the "legal value" of land, and the maximum limit of the local tax is one-fifth of the national tax. Supposing the "legal value" of two-crop land to be two hundred yens per acre, the amount that goes to the payment of taxes will be about six yens per acre. Suppose again that the annual yield of this land is twenty-six and four-tenths bushels of rice and twelve bushels of wheat. At the current prices in 1886 this product would be worth thirty-six yens and forty sens. If now we compare these taxes with this productive capacity of the land, they will be found to be equivalent to an income tax of sixteen per cent. Placed under such a burden, it is no wonder that farming is still abandoned to the control of stupid farmers, who have neither motive nor capital to introduce any extensive reforms, and that in agriculture alone no general improvement has as yet been accomplished, notwithstanding the moral and political innovations that have taken place since the days of Feudalism. Any progress in rural economy is impossible, unless intelligence and capital are drawn to this channel of industry, but so long as land is taxed more heavily than other property, and farming is consequently less remunerative than other industries, it is futile to hope for intelligent enterprise in agricultural pursuits.

The present situation of Japanese agriculture indicates an essential phase of industrial transition. The ideas that land is the basis of national revenue, and that peasants are doomed to toil to support the state, are still lingering in the system of taxation; and before the appearance of that industrial organization, whose efficiency depends mainly upon the produc-

tive power of each free citizen, this revenue system must be thoroughly revised. In England, where Feudalism never had a firm hold, the problem worked itself out in the course of history. But on the Continent this transitional stage was signalized by momentous reforms in rural economy. In France, where land was burdened by taxes and minute feudal restrictions, agriculture was set free by the famous edicts of 1791, whose first article runs as follows: "Le territoire de la France, dans toute son étendue, est libre comme les personnes qui l'habitent."¹ In Prussia the medieval system held its ground until the beginning of the present century. The enfranchisement of the German *bauer*, who was oppressed, stupid, and thriftless, was forced upon public attention, and in 1807 statesmen like Stein, Niebuhr, and others were commissioned to draft a land law that should effect the transition from medieval to modern agriculture. In the next year a law was enacted which secured to peasants the complete control of their own labor and raised them from a state of villenage to the freedom of land-owners. In Russia, a similar change took place as late as 1861.

In Japan, "The Land-tax Reform Acts" of 1873 must be regarded in a similar light, but the changes thereby accomplished are far from being adequate. Perhaps, under the circumstances, they were all that could be done. But the development of foreign commerce and of the industrial activity of the people since then, makes it imperative to so reduce the present rate of land-taxes that farming will be profitable and attract both capital and enterprise to this

¹M. L. de Lavergne, *Economie Rurale de la France*, p. 10.

important branch of industry. How such reduction can be made under the existing circumstances will be suggested in a subsequent part of my essay; for the present it is sufficient to say that if the reduction be made with due caution, the credit of farmers will be much enhanced, and many agrarian reforms, whose urgency is recognized by all, may be entered upon with confidence. Nor need we fear that the total revenue will be decreased thereby; for not only will the extension of cultivated lands increase the amount of taxable real estate, but the values of other property also will be enhanced as a necessary consequence of the prosperity enjoyed by agricultural classes.¹

(c.) *The bad system of land-tenure.* Attention has already been called to the diversity of systems of land-tenure, prevalent in different provinces, and also to the importance of some legal adjustment of the relation of the tenant to the land-owner. Wherever land is entrusted to peasants who are poor and stupid, and in whose methods of cultivation the owners of the land take no interest, progress in the art of agriculture is next to impossible. In England, since the eighteenth century, country life has been a fashion of the nobility. Agriculture, either as a business or a pleasure, was the "reigning taste" of the age. "There was scarcely a nobleman or country-gentleman," says Prof. Rogers, "who did not betake himself to the cultivation of lands, not merely in the sense of keeping a home farm in his hands, which he managed by his steward, but as an overseer of his

¹When the national tax on land was reduced a half of one per cent. in 1876, it was expected that the reduction would amount to 8,000,000 yens. But to the surprise of all it was found that the total revenue of the government did not suffer much change after the second year.

I have thus endeavored to explain why protective measures do not meet the present needs of Japan, and to suggest the direction in which Japanese industry may develop with the least resistance. But I should be sadly misunderstood if, on account of the views thus expressed, my readers should think that I give countenance for a moment to the present treaties of Japan with western powers. Indeed, so far is this from true, that I believe, there is very little to be hoped for until these treaties, forced upon Japan by the cupidity of England, shall be changed. The key to the individual situation we have thus far been considering lies in the restoration to the Japanese government of free control over her tariff laws.

The evils that Japan has suffered on account of her contact with European people, does not so much consist in the overthrow of some of her old industries, by the free and sudden influx of foreign goods, as in her inability, on account of treaties, to derive a revenue from that importation. After the war of the restoration her treasury was depleted, and, deprived of this most important source of revenue, it became necessary to increase the burdens imposed upon the land, and this resulted in depressing the entire industry of the people and in checking the development of their effective demand. Perhaps no other nation with the annual expenditure of 79,000,000 yens, gets relatively or absolutely so small an amount from customs duties. In 1886, while exports amounted to 47,934,777 yens against the import of 31,226,558 yens, the aggregate duties upon exports and imports were estimated at only 2,621,774 yens. The yield from import duties alone was a trifle over 1,398,000 yens. Excepting some articles of luxury, such as

important branch of industry. How such reduction can be made under the existing circumstances will be suggested in a subsequent part of my essay; for the present it is sufficient to say that if the reduction be made with due caution, the credit of farmers will be much enhanced, and many agrarian reforms, whose urgency is recognized by all, may be entered upon with confidence. Nor need we fear that the total revenue will be decreased thereby; for not only will the extension of cultivated lands increase the amount of taxable real estate, but the values of other property also will be enhanced as a necessary consequence of the prosperity enjoyed by agricultural classes.¹

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stock-raising, and to the extension of tea and mulberry plantations. Yet an attempt to realize such reforms would fail if entrusted to the tenants. The necessities of the present demand that the line that now separates the agricultural classes from the other classes in society shall be erased, that greater attention shall be given to literature on practical farming, and that intelligent land-owners in every community shall organize for the purpose of experiment and study, and thus be able to teach the peasant farmer by example.

These reforms should be vigorously pursued as far as practicable, both by the State and by individuals. Yet I am perfectly aware that there are certain things in my proposals, the complete realization of which demands the coöperation of other industrial forces. If these reforms in agriculture could be accomplished by State interference, or by the efforts of a few private individuals, industrial progress would be quite simple. But great social or industrial reforms cannot be imposed from without. They spring rather from the awakening vigor of society itself, the result of conditions which are largely independent of artificial stimulus. Permit me to call attention to certain social conditions which, from one point of view, are to be regarded as essential to attain the end desired; and in presenting these conditions, I shall continue to hold before my mind the course of industrial development in England and in western Europe.

First of these is what may be called the rise of a new code of industrial ethics. The principle that a man works for mere gain, or sells his muscles in the dearest market, is of comparatively recent origin. It

may be dated from the era of invention. The factory system, for the first time, created a class of men who sell their day's work in the open market, and who move from one place to another seeking the highest wages. In this manner the so-called "business relations" came to be separated from "personal relations," and society began to live a distinctly commercial life. This would have been impossible, except in the presence of free communication, large factories, and the accumulation of immense capital; and whatever may be alleged against it, it was the dominating influence of this code of ethics that is responsible for the industrial activity of the present.

In all ages, agricultural population is naturally anti-commercial. Had not machinery been invented and the ethics of the community been revolutionized, agriculture of the eighteenth century would never have experienced such radical changes, first in England and later in western Europe. Thence it was that the rich began to place their capital in land with a view to gaining a fair return upon the investment; and that the poor began to cultivate their farms not merely to earn a precarious subsistence, but to make commercial profit. It is to this spirit that the inclosure of common lands and the consolidation of small farms in England can be traced.

Second among the conditions necessary to industrial advancement is one that springs from the fact that society is active. I refer to the ability of one part of society to absorb surplus labor set free by industrial improvements in another. It is needless here to dwell upon the truth so often asserted, that the prosperity of agriculture depends upon the prosperity of those who are outside the agricultural classes.

But when we apply this truth to Japan, it asserts itself with peculiar force. One of the principal causes of low wages among farm-laborers is the presence of a large class of workmen who are outside the farming class, but whose low wages constantly exercise a depressing influence upon farm labor. Should these unemployed classes be absorbed in manufactures, the reaction upon agriculture would be immediate. The methods of cultivation would be modified. The rate of farm-wages would become the lowest standard from which to measure the cost of manual labor. The general movement of laborers would be from farming to other industries. All this would result in an increased demand for agricultural products, and in a general rise of farm wages.

Not less important, in the third place, are the influences which spring from the growth of cities and from the improvements in transportation, both of which are necessary consequences of active industry. We have already seen to what degree the defects of the Japanese agriculture are due to the poor means of transportation. But we have not seen how a normal development in transportation depends upon the reforms in manufacturing industry. The urban population of Japan is but eleven per cent. of the whole. For the most part, the people exist in self-supporting communities, and consequently no large traffic is possible between cities and towns. Hence it is safe to assume that except in certain densely settled portions of the country, Japanese railroads will not yield a paying rate of profit in the immediate future. The improved means of transportation being an important mechanism of manufactures, it is only when the latter are established in cities and towns,

that railroads, shipping, and public roads are highly developed, and that agriculture can be expanded as well as diversified.

Thus we are brought to see the mutual interdependence of agriculture and manufacture. On one hand, the establishment of manufacture is impossible without reforming existing agriculture in such a manner as to create a large and effective demand for manufactured products among the rural population. It thus appears that agrarian reforms should take the precedence of all others. But on the other hand, a thorough and progressive reform in rural economy can be secured only through the simultaneous growth of manufacturing industry.

Let us then consider how is it possible to establish diversified industries under the present circumstances in which Japan is placed.

3.—*How may Modern Manufacture be Established?*

If there be any single phrase which will express the ruling principle of recent economic legislation, it is national husbandry. Statesmen no longer look to the temporary gain of individual citizens, but, regarding a nation as a unit, a living organism, which is subject to growth and decay, they strive to increase its vigor and productive capacity. To this end they deduce from certain well known psycho-physical laws, the following practical rule of statesmanship, that the aim of good government should be, to develop the strength and skill of the people, and to encourage economy in the expenditure of nervous energy, by encouraging the use of machinery. To the first of these ends are addressed those laws making provision for sanitary conditions of living, for healthful condi-

tions of employment, and for universal education; while the second is attained by the advancement of the sciences and the arts. But by whatever means the productive capacity of the people is increased, the nation secures the only possible basis of permanent progress, compared to which the existing amount of wealth is of slight importance.

The pertinency of such considerations will be appreciated if we consider for a moment how the fruits of human labor are exchanged for each other in international trade. Suppose, for the sake of illustration, that ten pounds of Japanese tea of a medium quality are exchanged for fifty yards of English calico. The tea as it is produced in Japan will possibly cost the labor of a workman for ten days, while in a factory in Manchester these fifty yards of calico may not require more than two days labor.¹ Now according to a well known principle of political economy, the ratio of international exchanges is not determined by the cost of production, but by the utilities embodied in the products, and so great is the utility—the making power of machinery—that nations which employ it, have it in their power to reduce hand-working peoples to the position of practical slavery. To say that it is for the advantage of these people to continue such exchanges, is but to express in strongest possible manner the extent of their dependence. They give the sweat of their brows, the strength of their muscles, and the energy of their nerves, to obtain what is produced by a short operation of an automatic machine. Here is the secret of

¹The amount of capital needed is not taken into account, but as all capital can be reduced to the terms of labor, the illustration will serve its purpose.

England's wealth, that by her commerce she commands the labor of a large portion of the world. Here also is disclosed the chain which binds the eastern nations to the degraded post of manual labor, from which nothing can redeem them but gaining mastery over the power of machinery itself. Thus for the elevation and enlightenment of society, which ought to be the object of every human government, nothing will contribute more, in these days of international competition, than the extensive use of machinery.

I have alluded more than once to the importance of exporting the agricultural products of Japan to European markets. This, however, I regard merely as a temporary necessity. The final goal at which Japan ought to aim is to establish manufactures and to increase the efficiency of her national energy by the aid of science and of art.

What, then, are the steps necessary for the establishment of diversified industries?

This is a question which introduces us at once to the controversy of Protection *versus* Free-trade, which at the present stage of economic science is still dividing the opinions of thinkers. I know that the views which I have expressed, respecting the nature and growth of society, have been largely shared by protectionist writers; but that there is no essential connection between these views and the theory of protection will be evident after slight reflection. That a society is an organic body, which grows by the interaction of its different parts, is a truth which admits of universal application. On the other hand, the policy of foreign commerce is a question of practical statesmanship, whose right solution, like that of many other

questions, requires the consideration of diverse circumstances, in which no two nations, and no two ages, are exactly identical. Hence what is beneficent in one nation may prove extremely harmful in another. It is very probable, taking everything into consideration, that both the colonial policy of the eighteenth century, and the free-trade policy of the nineteenth century have concurred in building up the shipping and manufacturing industries of Great Britain.

If we study the matter wholly from an economic point of view, it will be found that the protective policy may be effectual under three conditions: (a) A nation must possess a large population and an extensive territory. (b) The raw materials necessary for the manufactures which are protected, must be produced at home in all varieties. (c) The intelligence and effective demand of the people must be developed equally with those of foreign nations.

The ultimate analysis of the theory of protection leads to reliance upon the home-market as the principal means of industrial expansion. Hence only in a country where there are unlimited agricultural resources, and where there is a large and constantly increasing population, whose demands are strong, can any national advantage be expected from protective measures. And if protection has contributed in any degree to the unprecedented growth of the United States, it is in the concurrence of these three circumstances that we have to look for its special efficacy.

But in Japan, these conditions, so necessary to the efficacy of the protective policy, are not found. It is true that Japan has a large population, but the

smallness of her territory, and the high price of land, render it futile to expect the development of a home-market by means of agricultural expansion. From what we have already said, it will be inferred that the improvement of Japanese agriculture does not consist in employing surplus labor in the farming industry, but in improving the quality of labor now applied to land, and in consolidating small farms, now cultivated by present occupants.

To use a technical phrase, the agrarian improvements in question are not *extensive* but *intensive* in character. Contrast the condition of Japan with that of the United States. In the United States the resources of nature are practically without limit. The effective demand of the agricultural classes is therefore strong and ever increasing. Upon such a basis Americans are able to build up a strong and vigorous industrial organization, even though they sever all connection with foreign markets. But the case under consideration is quite different. We have pointed out just now the difficulties experienced by the Japanese farmer on account of the presence of a large mass of surplus laborers standing outside of agriculture, and, although there is still a large tract of virgin soil in the North, which can give employment to a part of these laborers, it cannot provide work for all. Thus the question finally comes to this: How is it possible to absorb this surplus labor and increase the productive power of all classes? To this question there is, so it appears to me, but one answer. Manufactures relying upon foreign markets must be established. If an export trade to the United States, to Europe, and to Australia can be developed, an almost unlimited field will be opened for the pro-

duction of those articles for which both the climate and the genius of the people are best adapted.

Let us now consider the second condition for the success of protective measures above set forth, namely, the production of raw materials. Examine the list of articles which are chiefly imported into Japan. First upon the list are cotton yarns, white and brown sugar, cotton cloth, petroleum, woolens, and mixed goods. In the total of imports for 1886, amounting to 32,099,750 yens, these commodities stand as follows :

Cotton yarns.....	5,913,212	yens.
Sugar.....	5,640,434	“
Cotton cloth.....	2,294,714	“
Petroleum.....	2,682,205	“
Woolen goods.....	2,289,592	“
Manufactured iron.....	2,235,866	“
Mixed goods.....	1,137,756	“

We have already pointed out the fact that cotton produced in Japan does not meet more than one-third of her domestic consumption, and that domestic sugar, extracted from sorghum plants, the cultivation of which is quite extensive, supplies but one-half the demand. In regard to wool, it is safe to say that there is as yet no native production, and owing to the moist climate, the many attempts to introduce sheep-grazing have been without success.¹ Such being the amount of raw materials produced at home,

¹“Gaertner expressed the opinion that the soil and climate of Japan were ill-adapted to sheep-raising, because the fodder they produce is too long and juicy, and that all attempts hitherto made to domesticate sheep have failed for this reason.” Rein doubts the unfitness of the soil. “But in view of the fact that sheep-raising succeeds best in countries with a dry climate, the chief obstacle to it in Japan is more likely to be in the damp atmosphere and frequent summer rain.”—Rein, *The Industries of Japan*, p. 184.

how is it possible to establish the manufacture of cotton and woolen goods by imposing high protective duties upon their importation? Such measures will surely cut off the total amount of consumption without any immediate prospect of expanding industry.¹ And when we consider the geographical situation of Japan, the extension of her foreign trade with South America, Australia, and the islands of the Pacific seems to be a comparatively easy task. In this manner she can gather raw materials upon which to employ the skill of her workmen. The true policy of Japan, therefore, is to expand her foreign commerce, and to develop her shipping industry, and not to obstruct these developments by imposing prohibitory duties on the importation of goods.

We come now to the third and last criterion by which we test the utility of protective measures. Industrial progress consists of the development of human wants, and nothing is more important for a nation in the transitional stage than the creation among the people of new, active, and enlarged wants. It was by developing such wants that the practically free importation of the English yarns and cotton cloth into Japan during the last twenty years acted as a strong industrial stimulus. The further expansion of foreign commerce and the influx of cheap foreign goods will continue to develop and diffuse the higher wants among the middle and lower classes, and when such wants become the

¹It may be claimed that under the protective measure the production of cotton would be encouraged and extended. This as an agricultural improvement is highly desirable, but that it cannot be attained without the evils incident to the protective policy is evident, when we notice that the comparative costs of producing rice and cotton are about the same.

active forces of the community, it is safe to assume that domestic manufactures will spring up in one form or another. But if on the contrary, the price of imported goods be raised by high duties, domestic consumption will be curtailed, the volume of foreign commerce will be decreased, and the industrial development will be hindered thereby. When we recollect the partial development of wants among the Japanese people, to which allusion has already been made, such a consideration will present itself with peculiar force. In a young and growing country like Japan, where the intelligence and effective demand of the people is not equally developed with that of western nations, the presumption must always be against high protective duties.

Our conclusion then, after considering the protective policy from these three points of view is, that, in the present condition of Japanese industry, a protective measure would be highly injurious. Most of the protectionist's arguments have their root in over-confidence in the efficacy of legislative action and in the over-estimate of difficulties in which so-called young industries are supposed to struggle.

It is pertinent to inquire at this point, in what direction it is possible for Japan to develop her industries. Three principal lines of development may be suggested.

First, production for the foreign market. The demands of Europe and the United States for Japanese tea and silk, of China and India for copper, coal, and the products of the sea, have been steadily expanding, and, as there is no material limit in these branches of industry, there is here discovered a practically boundless field for the employment of Japanese

labor. And not only is this true of raw materials, but if machinery be applied and foreign tastes be carefully consulted, the exportation of porcelains, wood-work, woven silk and other works of art may be doubled or trebled without any difficulty.

Secondly, if the foreign trade thus be enlarged and surplus labor thus given employment, if agriculture be improved by the methods we have suggested, it is evident that the home-market will be much extended. Thus the spirit of enterprise will proceed from one industry to another. Radical changes may be expected, especially in the clothing industry, where, as it was observed, owing to the peculiarity of tastes and customs, native producers will be able to maintain their monopoly. Many will adopt new methods of production and enlarge their business. It is only by such processes that the transition can be made from domestic manufacture to the factory system.

Thirdly, not less important are those new industries which spring up from time to time according to the progress of civilization. Conspicuous among these are railroads, mining, shipping, and ship-building. These industries not only create large demand for manual labor, but by their reaction upon other industries, they extend this demand still further. Modern science has created such a vast amount of useful machinery which ministers to our comforts and luxuries, and which can be introduced into a new country at a moment's notice, that, with the increase of activity and the extension of demand, both capital and labor will be eager to embark on new enterprises. Hence in the progress of a nation itself, we find an ever extending field for industries which had no existence before.

I have thus endeavored to explain why protective measures do not meet the present needs of Japan, and to suggest the direction in which Japanese industry may develop with the least resistance. But I should be sadly misunderstood if, on account of the views thus expressed, my readers should think that I give countenance for a moment to the present treaties of Japan with western powers. Indeed, so far is this from true, that I believe, there is very little to be hoped for until these treaties, forced upon Japan by the cupidity of England, shall be changed. The key to the individual situation we have thus far been considering lies in the restoration to the Japanese government of free control over her tariff laws.

The evils that Japan has suffered on account of her contact with European people, does not so much consist in the overthrow of some of her old industries, by the free and sudden influx of foreign goods, as in her inability, on account of treaties, to derive a revenue from that importation. After the war of the restoration her treasury was depleted, and, deprived of this most important source of revenue, it became necessary to increase the burdens imposed upon the land, and this resulted in depressing the entire industry of the people and in checking the development of their effective demand. Perhaps no other nation with the annual expenditure of 79,000,000 yens, gets relatively or absolutely so small an amount from customs duties. In 1886, while exports amounted to 47,934,777 yens against the import of 31,226,558 yens, the aggregate duties upon exports and imports were estimated at only 2,621,774 yens. The yield from import duties alone was a trifle over 1,398,000 yens. Excepting some articles of luxury, such as

gold ornaments, pearl, watches, and wine, which are taxed *ad valorem*, most imported goods pay specific duties. On cotton yarns, white and brown sugar, the most important of all imported articles, the duties, one yen and fifty-six sens, twenty-three sens, and twelve and a half sens, respectively, are imposed per picul (133½ pounds). Reduced to *ad valorem* duties these are equal to an import tax of four and a half per cent. It was calculated some years ago that the duties imposed in England upon Japanese tobacco and tea alone were much greater than the aggregate sum secured in Japan, not only from imports, but from exports as well.¹

It is out of my plan to trace the peculiar circumstances under which these treaties originated or to speak of the many fruitless attempts on the part of Japan to secure their revision. The above figures, dry as they are, are sufficient to show that this extraordinary low rate of import duties not only cuts off revenue, but, by reducing the consumptive taxes to almost nothing, causes the burdens of the State to fall unevenly upon the shoulders of the nation. Nearly one-third of the Japanese people are without land and without sufficient property to pay an income tax, but they are notwithstanding fairly well off, living on salaries or good wages. With the exception of what they pay as excise duties on liquors, tobacco, and a few other articles, they are consequently free from taxation. Hence the heaviest pressure of taxation is upon the agricultural classes, most of whom are the least able to pay. By this unequal pressure, the economic organism is paralyzed and its natural growth is fatally hindered. Hence in the revenue

¹See E. H. House's article in *Atlantic Monthly*, vol. 47.

system we find the kernel of the industrial situation. In the reform of this system lies the means to encourage agricultural improvements, to expand the internal and external commerce, and at the same time to replenish the national treasury. Let us then consider briefly the principles that should guide in reconstructing the revenue system.

1. In the present state of the market there is no doubt that a vastly higher rate of import duties can be imposed without contracting the volume of commerce. Articles that minister to comforts and luxuries, such as woolen and mixed goods, flannels and silk stuff, will bear at least the *ad valorem* duty of thirty per cent. For those things which are strictly the badge of aristocracy a still higher duty should be imposed; while upon cotton yarns, calico, sugar, and petroleum, the articles of universal consumption, a specific duty that corresponds to not less than fifteen per cent. *ad valorem* may be imposed without any difficulty. The annual income that accrues from such changes would probably amount to 6,000,000 yens, and this would steadily increase as the volume of commerce expands.

2. The revenue thus gained should be devoted to reducing the taxes on land, especially on land devoted to the cultivation of rice. The total land-taxes are 42,559,441 yens, of which amount the tax imposed upon lands of the above description produces 30,835,601 yens. If now the rice lands could be relieved of this burden by an extension of indirect taxes, the stimulus thereby given to agriculture would be immeasurable. The process of thus shifting the burden from the farmers to the general public should be continued until the rate of land-taxes is reduced to

one per cent. The indirect effect of such a measure upon the effective demand of agricultural classes will not hinder, but encourage, the expansion of foreign commerce.¹

3. In regard to export duties, the increasing public expenditure demands their maintenance for some time to come. Yet they should be re-arranged in such manner that absolute freedom may be given to the exportation of agricultural products. So great is the necessity of exporting raw products for a thorough reform of rural economy, and so sharp is the international competition, that all obstacles should be removed from the path that leads to market.

Thus we are brought to the conviction that only after a careful revision of her commercial treaties can Japan hope to find relief from the paralyzed condition into which her national economy has fallen. The infusion of new life into agriculture, the development of effective wants, the rise of domestic industry, the extension of inland traffic, the expansion of foreign trade, all these reforms, upon the necessity of which we have dwelt at length, demand that the burdens of the state should be equally distributed among the people, and this can be done only by terminating the present treaties.

¹By a law promulgated in August, 1889, the land-taxes were reduced by over 3,240,000 yens. This reduction was effected by cutting down the "legal value" of the various kinds of land in the country to the amount of 123,630,751 yens. The amount thus saved shall be apportioned to various prefectures in such a manner as will adjust the "legal values" of lands to the scale of agricultural prices now prevalent in each locality. The increased income from customs duties, which are this year advanced over four per cent., partly replaces the loss of revenue occasioned by this change in the land-tax.

Indeed, Japan has so completely outgrown these old treaties that foreign nations themselves would experience many disadvantages, were all their provisions to be strictly enforced. No foreigner is allowed to travel outside of the treaty-limits without special application to the government. Nor can he hold any real estate, nor participate with the Japanese in any industrial undertaking. It was but a few months ago that the following incident occurred. A German vessel from Corea, in order to purchase coal and provisions, cast her anchor in a port which is not open to foreign vessels. Instantly a dispatch was sent from Tokyo and she was obliged to resort to a treaty-port about two hundred miles distant. It is safe to say, without national prejudice, that in the presence of the new life into which Japan is about to enter, the interests of all nations will be served by a thorough revision of those old treaties framed by the ignorant officers of *Taikoon*.

The mutual benefits arising from such revision would be immense. Foreign capital, waiting so long to enter the country, would find rich investments in mines and in public industries. Availing themselves of the cheap labor of native workmen, factories might be started by foreign undertakers in tea, silk, and other industries. On the other hand, the presence of foreign competitors at their own doors would inspire the spirit of enterprise among native producers, would train them in business management, and would induce them to adopt new methods of production. In this way the process of industrial revolution would be greatly accelerated. When we remember that the English woolen industry was

founded by Flemish exiles, and that the first cotton factory in the United States was started by two Scotch immigrants, it is evident that the influx of foreigners into the interior of Japan with ample capital and perfect machinery, would work marvelous changes at the present social crisis. It is, of course, true that such changes bring with them the seeds of social evils, but a consideration of this part of the subject is reserved for the following chapter.

III.

THE PROBABLE SOCIAL CONSEQUENCES OF INDUSTRIAL TRANSITION.

That machinery contains within itself a potential force to bring about great industrial disturbances no one will deny; but as to the extent of such disturbances there are marked differences of opinion. One set of thinkers consider that the sudden changes which they introduce do more harm than good. They claim that machinery is responsible for the decay of skill among artisans, for the changed relation between masters and workmen, and for the antagonism of labor to capital. The favorite example they cite to support this position is the history of the Industrial Revolution in England since 1760. On the other hand, there are many authors of repute who claim that machinery cannot be suddenly forced into use, but that all changes must come gradually and give ample time for society to adjust itself to the new conditions. Upon this point Mr. J. S. Nicholson gives us two propositions as the laws or tendencies which he reads in History.

a. "That a radical change made in the method of invention will be gradually and continuously adopted, and

b. "That these radical changes, these discontinuous leaps, tend to give place to advance by small increments of invention."¹

Writers of this class ascribe those social calamities which occurred in England at the commencement of this century to the conjunction of many causes, such as the Napoleonic war, the high price of grain, the bad system of poor laws and the like.

Which of these views is the true interpretation of English history, it is not my purpose to discuss. Theoretically, both may be true. But neither view can be followed, as though it gave expression to a universal law. The stage of development attained by the society into which machinery is introduced must be taken into account. Nor is it possible to discuss intelligently the probable social effects of machinery without considering the extent to which it can be introduced into a particular society at a particular time. There are many differences between the England of 1800 and the Japan of the present day. Both internal and external conditions are so unlike that it is not safe to argue from the former to the latter.

England grew up, so to speak, with machinery. When inventions were first made, her population was not more than nine millions, and both her agriculture and manufactures were in a primitive condition. The progress of mechanical inventions was at the same time the cause and the source of her growth, and, notwithstanding some disturbances, she was

¹J. S. Nicholson, *The Effects of Machinery on Wages.*

able to adjust herself with comparative ease to the ever-changing industrial conditions. Again, the machinery with which she commenced her industrial revolution was very rude, replacing but a small part of labor-force. The perfection of mechanical methods only comes with passing years. Furthermore, England was free from all foreign competition. She was the leader and dictator of the world's commerce.

Compare with England the present condition of Japan. The territorial extent of the two nations is about the same, but at this point the similarity ends. Agriculture and manufacture in Japan are in the same primitive condition that they were in England a century ago ; her population is already more than the present number in England, and the inequality of its territorial distribution is far greater than that of England at the opening of this century.

Under such circumstances, if machinery, in its present state of perfection, be introduced into Japan on a large scale, we should naturally expect very different results from those that followed its introduction into England. It is not true that its introduction would be necessarily a gradual process. It might be sudden and occur in the most sweeping manner. The old handicraft system of industry might be recklessly attacked, and the present distribution of population might be completely overthrown. Thus social calamities, much more serious than those experienced by the English people, might be repeated.

If we observe closely, we shall see that Japan cannot rely upon the economic limitation to sudden change which did so much to save England from social disaster. For England, these limitations were

found in the gradual progress of inventions, and in the gradual extension of her market. Thus the introduction of a new machine was largely accidental, as much a matter of accident, indeed, as the invention itself. In the history of English industry, there is no economic order in the development of mechanical arts.

But the case is wholly different in Japan. Here the way is open for the free introduction of machinery to a hitherto hermit nation. On one hand, there exists machinery of all degrees of perfection; on the other, there is an industrial community almost independent of other nations. The order in which machinery can be introduced into such a community will not be wholly accidental. There is an economic order which it will naturally follow. And if we ascertain what this order will be, we shall have obtained a clue which will enable us to foresee the kind and extent of industrial disturbance likely to follow.

Such order or law can be established without much difficulty.

1. The law of industrial development requires that internal communication should be first opened. Hence, a large part of new machinery will assume the forms of railroads, steamships, and the like.

2. Machinery presupposes the high cost of labor. Highly developed machines are used only in communities where labor is expensive. Hence, in our case where labor is cheap, simple and inexpensive machines will be first introduced.

3. In introducing machinery into old established industries—for instance, the weaving of silk brocade—there are always certain mechanical difficulties to

be overcome, in order to adjust machinery to the technical requirements of production ; this requires both time and ingenuity. In some cases, indeed, it calls for practically new inventions.

4. Another point which is not often noticed is, that in a group of industries, where the division of labor is carried to an extreme, the expansion of one industry is possible only when dependent industries are also extended. Hence the expansion of a highly specialized industry by the use of machinery is necessarily a slow process, since its influence must be diffused through all related industries.

5. The limited amount of capital in a country also limits the introduction of machinery. This difficulty, in the case of Japan, may be overcome by the importation of foreign capital. Capital thus attained will naturally be applied where there are fertile resources inviting investment, such as the opening of new mines and the building of railroads. It is well to hold this fact in mind, for it will shortly be shown that it is along this line that Japan is liable to experience the most serious evils attending the introduction of modern machinery.

Besides these, there are many other points worthy of notice, such as the length of time required to get experience in handling delicate machinery or in managing large factories ; but all these point to the fact that in such a country as Japan, *the labor first replaced by machinery will be common labor, while skilled labor will for some time be unaffected by the use of machinery.*

Accepting the above consideration as correct, it follows that the social effect of a mechanical revolution in Japan will, in one particular, be the reverse

of what its effect was in England. In England those who suffered most by the introduction of machinery were skilled workmen, and those who were benefitted were common laborers. The latter took the place of the former; or, speaking more exactly, common labor was placed on the same footing with skilled labor by means of machinery. The explanation of this is found in the comparative sparseness of population; in the kinds of machines invented; and in the rapid expansion of the market. But under the circumstances in which Japan is placed, it is upon common labor that the burden of industrial revolution must chiefly fall. It is the poor and ignorant classes that will feel most severely the shock of industrial change.

Here is disclosed the peculiar danger to which Japan is exposed. The pressure of industrial transition will fall most heavily upon that portion of society the least able to bear it. If I have succeeded in showing how uneven is the present distribution of the people, how in the course of centuries towns and cities have clustered along high-roads, and what a large portion of the lower classes is still engaged in the carrying business, it is easy to foresee the serious disturbances that are likely to follow the extension of railroads and other facilities of transportation. Of course, such apprehension will find no sympathy from capitalists, and so long as these undertakings pay the ordinary rate of profit, they will continue to expand until they find some economic checks of their own making. Thus hundreds of thousands of coolies, petty shop-keepers, and inn-keepers, who have depended upon foot-travelers for their precarious livelihood, will at once be thrown out of employment,

and unless they adjust themselves to these changed circumstances, so-called industrial progress will for them mean starvation.

With regard to skilled industry, those branches will be the first replaced by large establishments which may be carried on by simple and comparatively cheap machines. In the lumber industry, for example, sawing is still almost exclusively done by hand. It is doubtful if there are more than a half-dozen saw-mills in the whole country. It takes, however, but a few thousand dollars to start a saw-mill capable of replacing the labor of many workmen of good training. The same is true of the nail industry, and of all others which give crude shapes to raw materials. The process of changes in the methods of production for industries of this grade will not be necessarily gradual; and an increasing number of skilled workmen will thus be thrown out of employment and relegated to the field of manual labor.

Another occult influence that comes with the introduction of machinery, springs from its effects on local prices. We have already seen how great is the diversity in the local prices of goods, and it is safe to assume, with possibly an exception for the large cities, that wages in the various localities are fairly adjusted to current prices. But as soon as the extension of railroads and of other facilities for communication equalizes and enhances the prices of goods throughout the country, difference in the rates of money-wages will become a real difference in the amount of compensation. Those portions of the country, therefore, which are densely settled, but which have the least opportunity for industrial expansion will suffer most; and in some cases, the

competition of the agriculture of one section with that of another will intensify such evil consequences. This is just what happened in the southern part of England during the middle of the present century. The establishment of manufactures in the North, the expansion of railroads, the increase of population, raised the price of food four or five times above what it was in 1790, while the wages of the agricultural laborer in the South remained almost the same; hence, the real wages of the latter decreased as much as the price of food increased.¹

Thus in the course of industrial transition, the number of workmen and artisans whose interests will be affected is so great that national industry is thereby exposed to considerable danger. Whether or not this danger can be overcome depends almost wholly upon the energy of the people and upon the sagacity of their rulers. If by the aid of machinery a single man can do what was previously done by ten men, the question whether or not this change is a curse or a blessing depends upon the ability of the nine men thus crowded out of work to find for themselves profitable employment. Hence in the transitional stage upon which Japan has entered every facility must be provided for the lower classes to move freely from one place to another, and from one employment to another; and steps must be taken to overcome their ignorance and superstition so as to render them free and active industrial beings.

There are some Eastern countries where the pressure of this industrial transition fell so heavily upon the lower stratum of the people, and where established methods of industry were subjected to such

¹Cliffe Leslie, *The Movement of Agricultural Wages in Europe.*

sudden changes as to result in lethargy and hopeless inaction. Egypt is a notorious example. It is well known that the cotton famine in Europe, consequent upon the Civil War in America, stimulated the plantation of cotton in the delta of the Nile. For the first time the traditional methods of agriculture which were as old as the reign of the Pharaohs, were abandoned, and Viceroy Ismail, actuated by motives of speculation, borrowed large sums from London and Paris for the purpose of building telegraphs and railroads, of constructing improved methods of immigration, and of purchasing improved agricultural machinery. For a while the enterprise seemed successful. But with the return of peace in the United States, and the consequent fall in the price of cotton, this success was shown to be delusive. Meantime the heavy loans had imposed unusual burdens upon the people; and the attempt of the viceroy to introduce modern methods of industry, so far from infusing new life into the laborers, plunged them yet deeper into the miseries of a hopeless existence. The traveler may to-day see large quantities of agricultural machinery rotting and rusting by the wayside. The evil consequences of this venture were undoubtedly intensified by the prodigality of the viceroy. But the ultimate explanation of this local tragedy in the history of the nineteenth century must be sought in the character of the Egyptians, who have not as yet developed the sagacity and energy necessary to handle modern machinery to advantage.¹

¹Mr. D. MacKenzie Wallace, gave the following as "the one-sentence explanation" of the economic difficulties in question. "Egypt has been for some time, and is still being, deluged with

But in the case of Japan I am not one to take a gloomy view. I fully believe that the general intelligence and versatility prevalent among the lower classes will cause the people to respond quickly to their new interests; that new industrial energy will be awakened among them by the expansion of railroads and by the rise of factories, and that they will use these instruments to improve their conditions. The shock which existing industry must feel will be but momentary, and men of all classes, impelled by their personal advantage, will quickly learn to adapt themselves to their new environment.

The rôle of governmental action though somewhat restricted, is nevertheless most important. It is imperative that the government establish a sound financial system and curtail current expenditures. But besides this there are two classes of measures by which the government may assist in this period of industrial transition, and which are perhaps necessary in order to establish peaceful relations in the industrial organization of the future.

It has already been observed that the pressure of industrial transition falls chiefly upon the lower classes; it is therefore necessary that every possible facility should be provided for ease of movement among those classes. Mobility is essential for quickly

European commercial enterprise, European capital, European cupidity, European domination, in a word, with European civilisation, falsely so-called; and this spirit of material progress, or whatever else the aggressive influence may be termed, acting suddenly on Oriental stagnation and traditional routine, has thrown out of gear the old economic organization of the country, and has produced a state of confusion and impoverishment, containing the germs of a life-and-death struggle between the stolid, stubborn native and the active, enterprising foreigner."—*Egypt and Egypt questions*, pp. 409-10.

equalizing burdens. To this end measures should be taken to **make** agriculture more productive. Free access should be given to new land in the North, and the burden of land-taxes should be considerably diminished.¹ Unless this is done, mobility of movement among agricultural workers will be obstructed and the adjustment of industry to the new conditions will in so far be checked.

The second class of measures referred to, pertains to the regulation of the relations of capital and labor. Statesmen can never afford to forget the truth that the economy of production is the economy of consumption. It is only where the majority of workmen are well fed and well clad that the productive power of a society can be maintained in a healthy condition. Japan has heretofore had no "industrial classes" in the modern sense of the word, but it is evident that in the course of her industrial transition, such classes will make their appearance. The localism and self sufficiency of the industrial units, which for so many years have secured comparative harmony, will give way to the sharp lines drawn between capitalists and laborers. We have already noticed the unusually low rate of wages and long hours of labor, prevailing in new factories, and if we remind ourselves that the competition of surplus-laborers will tend to keep the rate of wages down, the necessity of some regulations becomes evident. Such legislation need not be undertaken all at once, but the principles to

¹ Since this was written, it has been learned that on June 28th, 1889, a law was passed to the effect that all new lands in Hokkaido, which became amenable to taxes after 1869, shall be exempt both from national and local taxes from 1889 until 1898, and that all those lands which are now in the term of pre-emption, shall be free from taxes for ten years after the term has expired.

which it should conform having been adopted, it should develop according to industrial exigencies. There would thus be secured the basis on which a peaceful adjustment between labor and capital can be made and on which a sound industrial organization can be erected.

It is now recognized by the best authorities that most of the social evils which exist in England, as well as on the continent, are the results of human misgovernment. If the government did not conspire with landlords to oppress their tenants, if statutes were not framed to suppress the combination of operatives, or, to reverse the assumption, if the interests of the rich and poor were equally weighed in the scale of Justice, it is evident that the miseries and calamities of modern society would not be so aggravating as they are at present. It will be fortunate for Japan, if she profits by the experience of industrial Europe, and learns the lesson that full liberty should be allowed the laboring class to resist the selfish oppression of capitalists, and that every opportunity should be afforded them for educating both themselves and their children. In one respect Japan is fortunate. She has neither class nor race prejudices. There is thus presented on her territory the rare opportunity of establishing a harmonious social organization, where liberty will be secured side by side with industrial activity.

In conclusion, let it be observed that the industrial transition of which we are treating, will necessitate a revolution in social ethics. The extension of steam transportation and the use of large factories will necessarily destroy the Oriental communism. It is therefore essential, in order to avert anarchy and

decay, that society should be re-crystallized according to a new code of ethics, adapted to new conditions. We may then close our theme with the thought with which we began it. Industrial society, being an integral part of the social organism, any change in the methods of production and distribution, necessitates corresponding changes in the political and ethical ideas entertained by society. What we have termed the Industrial Transition in Japan, means the ultimate establishment there of individual rights and of political liberty. It means the transition from feudalism to democracy, from communism to individualism.

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