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**THE BASIC INDUSTRIES AND SOCIAL
HISTORY OF JAPAN
1914-1918**

**ECONOMIC AND SOCIAL HISTORY
OF THE WORLD WAR**

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JAPANESE SERIES

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**THE BASIC INDUSTRIES AND
SOCIAL HISTORY OF JAPAN
1914-1918**

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EDITOR'S PREFACE

IN the autumn of 1914, when the scientific study of the effects of war upon modern life passed suddenly from theory to history, the Division of Economics and History of the Carnegie Endowment for International Peace proposed to adjust the program of its researches to the new and altered problems which the War presented. The existing program, which had been prepared as the result of a conference of economists held at Berne in 1911, and which dealt with the facts then at hand, had just begun to show the quality of its contributions; but for many reasons it could no longer be followed out. A plan was therefore drawn up at the request of the Director of the Division, in which it was proposed, by means of an historical survey, to attempt to measure the economic cost of the War and the displacement which it was causing in the processes of civilization. Such an "Economic and Social History of the World War," it was felt, if undertaken by men of judicial temper and adequate training, might ultimately, by reason of its scientific obligations to truth, furnish data for the forming of sound public opinion, and thus contribute fundamentally toward the aims of an institution dedicated to the cause of international peace.

The need for such an analysis, conceived and executed in the spirit of historical research, was increasingly obvious as the War developed, releasing complex forces of national life not only for the vast process of destruction, but also for the stimulation of new capacities for production. This new economic activity, which under normal conditions of peace might have been a gain to society, and the surprising capacity exhibited by the belligerent nations for enduring long and increasing loss—often while presenting the outward semblance of new prosperity—made necessary a reconsideration of the whole field of war economics. A double obligation was therefore placed upon the Division of Economics and History. It was obliged to concentrate its work upon the problem thus presented, and to study it as a whole; in other words, to apply to it the tests and disciplines of history. Just as the War itself was a single event, though penetrating by seemingly unconnected ways to the remotest parts of the world, so the analysis of it must be developed according to a plan at once all embracing and yet adjustable to the practical limits of the available data.

During the actual progress of the War, however, the execution of this plan for a scientific and objective study of war economics proved impossible in any large and authoritative way. Incidental studies and surveys of portions of the field could be made and were made under the direction of the Division, but it was impossible to undertake a general history for obvious reasons. In the first place, an authoritative statement of the resources of belligerents bore directly on the conduct of armies in the field. The result was to remove as far as possible from scrutiny those data of the economic life of the countries at war which would ordinarily, in time of peace, be readily available for investigation. In addition to this difficulty of consulting documents, collaborators competent to deal with them were for the most part called into national service in the belligerent countries and so were unavailable for research. The plan for a war history was therefore postponed until conditions should arise which would make possible not only access to essential documents, but also the coöperation of economists, historians, and men of affairs in the nations chiefly concerned, whose joint work would not be misunderstood either in purpose or in content.

Upon the termination of the War, the Endowment once more took up the original plan, and it was found with but slight modification to be applicable to the situation. Work was begun in the summer and autumn of 1918. In the first place a final conference of the Advisory Board of Economists of the Division of Economics and History was held in Paris, which limited itself to planning a series of short preliminary surveys of special fields. Since, however, the purely preliminary character of such studies was further emphasized by the fact that they were directed more especially toward those problems which were then fronting Europe as questions of urgency, it was considered best not to treat them as part of the general survey, but rather as of contemporary value in the period of war settlement. It was clear that not only could no general program be laid down *a priori* by this conference as a whole, but that a new and more highly specialized research organization than that already existing would be needed to undertake the Economic and Social History of the World War, one based more upon national grounds in the first instance, and less upon purely international coöperation. Until the facts of national history could be ascertained, it would be impossible to proceed with comparative analysis; and the different national histories were

themselves of almost baffling intricacy and variety. Consequently the former European Committee of Research was dissolved, and in its place it was decided to erect an Editorial Board in each of the larger countries and to nominate special editors in the smaller ones, who should concentrate, for the present at least, upon their own economic and social war history.

The nomination of these boards by the General Editor was the first step taken in every country where the work has begun. And if any justification were needed for the plan of the Endowment, it at once may be found in the lists of those, distinguished in scholarship or in public affairs, who have accepted the responsibility of editorship. This responsibility is by no means light, involving as it does the adaptation of the general editorial plan to the varying demands of national circumstances or methods of work; and the measure of success attained is due to the generous and earnest coöperation of those in charge in each country.

Once the editorial organization was established, there could be little doubt as to the first step which should be taken in each instance toward the actual preparation of the history. Without documents there can be no history. The essential records of the War, local as well as central, have therefore to be preserved and to be made available for research in so far as is compatible with public interest. But this archival task is a very great one, belonging of right to the Governments and other owners of historical sources and not to the historian or economist who proposes to use them. It is an obligation of ownership; for all such documents are public trust. The collaborators on this section of the War History, therefore, working within their own field as researchers, could only survey the situation as they found it and report their findings in the forms of guides or manuals; and perhaps, by stimulating a comparison of methods, help to further the adoption of those found to be most practical. In every country, therefore, this was the point of departure for actual work; although special monographs have not been written in every instance.

The first stage of the work upon the War History, dealing with little more than the externals of archives, seemed for a while to exhaust the possibilities of research, and had the plan of the history been limited to research based upon official documents, little more could have been done, for once documents have been labeled "secret" few government officials can be found with sufficient courage or ini-

tiative to break open the seal. Thus vast masses of source material essential for the historian were effectively placed beyond his reach, although much of it was quite harmless from any point of view. While war conditions thus continued to hamper research, and were likely to do so for many years to come, some alternative had to be found.

Fortunately such an alternative was at hand in the narrative, amply supported by documentary evidence, of those who had played some part in the conduct of affairs during the War, or who, as close observers in privileged positions, were able to record from first- or at least secondhand knowledge the economic history of different phases of the Great War, and of its effect upon society. Thus a series of monographs was planned consisting for the most part of unofficial yet authoritative statements, descriptive or historical, which may best be described as about halfway between memoirs and bluebooks. These monographs make up the main body of the work assigned so far. They are not limited to contemporary war-time studies; for the economic history of the War must deal with a longer period than that of the actual fighting. It must cover the years of "deflation" as well, at least sufficiently to secure some fairer measure of the economic displacement than is possible in purely contemporary judgments.

With this phase of the work, the editorial problems assumed a new aspect. The series of monographs had to be planned primarily with regard to the availability of contributors, rather than of source material as in the case of most histories; for the contributors themselves controlled the sources. This in turn involved a new attitude toward those two ideals which historians have sought to emphasize, consistency and objectivity. In order to bring out the chief contribution of each writer it was impossible to keep within narrowly logical outlines; facts would have to be repeated in different settings and seen from different angles, and sections included which do not lie within the strict limits of history; and absolute objectivity could not be obtained in every part. Under the stress of controversy or apology, partial views would here and there find their expression. But these views are in some instances an intrinsic part of the history itself, contemporary measurements of facts as significant as the facts with which they deal. Moreover, the work as a whole is planned to furnish its own corrective; and where it does not, others will.

In addition to the monographic treatment of source material, a number of studies by specialists are already in preparation, dealing

with technical or limited subjects, historical or statistical. These monographs also partake to some extent of the nature of first-hand material, registering as they do the data of history close enough to the source to permit verification in ways impossible later. But they also belong to that constructive process by which history passes from analysis to synthesis. The process is a long and difficult one, however, and work upon it has only just begun. To quote an apt characterization; in the first stages of a history like this, one is only "picking cotton." The tangled threads of events have still to be woven into the pattern of history; and for this creative and constructive work different plans and organizations may be needed.

In a work which is the product of so complex and varied coöperation as this, it is impossible to indicate in any but a most general way the apportionment of responsibility of editors and authors for the contents of the different monographs. For the plan of the History as a whole and its effective execution the General Editor is responsible; but the arrangement of the detailed programs of study has been largely the work of the different Editorial Boards and divisional Editors, who have also read the manuscripts prepared under their direction. The acceptance of a monograph in this series, however, does not commit the editors to the opinions or conclusions of the authors. Like other editors, they are asked to vouch for the scientific merit, the appropriateness and usefulness of the volumes admitted to the series; but the authors are naturally free to make their individual contributions in their own way. In like manner the publication of the monographs does not commit the Endowment to agreement with any specific conclusions which may be expressed therein. The responsibility of the Endowment is to History itself—an obligation not to avoid but to secure and preserve variant narratives and points of view, in so far as they are essential for the understanding of the War as a whole.

* * * * *

The Japanese Series in this War History constitutes one of the most important sections of the entire survey, for it contains the only record that has been attempted of the entire effect of the War upon the social and economic life of Japan. Years of careful study and of research have gone into the making of these volumes to which scholars of Japan of the highest competence have devoted their best energies.

x INDUSTRIES AND SOCIAL HISTORY OF JAPAN

From its inception the Division of Economics and History of the Carnegie Endowment has had as the head of its Japanese Research Committee, His Excellency, Baron Sakatani, who has gathered around him a group of experts for the study of the causes and effects of war in modern society. When the Economic and Social History of the World War was planned, this Research Committee became a part of the directing organization of the History and had already its material for the Japanese volumes well in hand when the Japanese earthquake occurred in 1923 and not only destroyed much of the documentation but so dislocated the economic life of Japan as to make more difficult than ever the measurement of economic forces concerning the World War. The material had largely to be written anew or rewritten, and then the difficulties of translation and adaptation to the Western reader added new delays, so that the Japanese Series, although begun early in the post-war years, appears only after the passage of a decade.

For the student of world economy there is a wealth of suggestion in the data of these volumes showing how far-reaching is the disturbance of modern war in industrialized countries with their interdependent interests and how temporary are the advantages of the speculative industries dependent upon the forced markets of war. But while the effects of the War upon Japan furnish another chapter to the universal argument for peace which lies in this whole history, the Japanese authors have enriched the survey by including much more than the direct effects of war itself. It is an era in the general economic history of Japan which is here depicted, and so the material should prove a mine of reference data to American or British readers not only for the problem of war history but for its setting in history as a whole. Thus in conception these volumes are part of a lasting national record, as they are in execution a notable scientific achievement.

J. T. S.

AUTHOR'S PREFACE

It is the purpose of this volume to deal with the economic and other changes which the War brought about in Japan, and the policies which, in consequence, were adopted by its Government. Parts I, II, and III treat of such changes as were most largely economic and the effects they had. Part IV treats, first, of the measures taken to meet them and of the results of such measures; and, second, of changes in the world of Japanese thought.

It was a war which, for Japan, had results far more important than those that followed upon any other event in her history, either past or present. The extent and complexity of the measures, both political and economic, which, under its tremendous pressure she resorted to, and the significance of the social movements and social changes which also followed upon the War, are such that to deal adequately with any of them would alone call for an entire volume. The present monograph is meant to serve only as a summary. Care has been taken alike to avoid the use of material covered by other volumes in this series, to omit matters of minor importance, and to handle all topics plainly and simply.

In preparing my work I have had recourse to a very large number of books and periodicals. But, in the matter of one sort of source material, there is something which, in justice to those who engage in economic and historical research in Japan, must be said at once. They are all but baffled by the lack of the original texts of European diplomatic documents, *communiqués*, official correspondence, and the like. When such things do reach this country they are translated into Japanese, given out to the public, and that is an end of the matter. If a text is needed by the people, it is needed in translation; so the original is forgotten forever. All my efforts, for example, to obtain the original texts of some of the documents required in this monograph were of no avail, though painstaking search was made at the Imperial Library, and the assistance of the Foreign Office was enlisted. All I could do was to retranslate the Japanese translation of the text. That was the next best thing, though retranlations are never accurate and, at times, may be misleading.

U. K.

TABLE OF WEIGHTS AND MEASURES

1 <i>cho</i>	= 2.45 acres
1 <i>tan</i>	= .245 acres
1 <i>se</i>	= 176.45 square feet
1 <i>tsubo</i>	= <i>c</i> 6 square feet
1 <i>picul</i>	= 133.3 pounds
1 <i>kwan</i>	= 8.27 pounds
1 <i>ryo</i>	= 9 <i>kwan</i>
1 <i>kin</i>	= 1.32 pounds
1 <i>momme</i>	= 1/1000 of a <i>kwan</i>
1 <i>koku</i>	= 4.96 bushels
1 <i>to</i>	= 3.99 gallons
1 <i>sho</i>	= .0496 bushels
1 <i>yen</i>	= 49.8 cents
1 <i>sen</i>	= 1-100 of a <i>yen</i>
1 <i>rin</i>	= 1/1000 of a <i>yen</i>

CONTENTS

PART I. AGRICULTURE

Introduction	1
I. Rice and Other Grains	11
II. The Regulation of Rice Prices	37
III. Other Crops	54
IV. Silk	56
V. The Regulation of Silk Prices	72
VI. Fertilizers	83
VII. The Farmer and the Agricultural Laborer	101
VIII. Agricultural Credits and Relief	111
IX. The Trend after the War	128

PART II. MINING AND METALLURGY

X. General Survey	135
Conditions before the War	
Conditions during the War	
XI. Copper	143
XII. Iron	154
XIII. Zinc	168
XIV. Coal	175
XV. Petroleum	183
XVI. Other Minerals	189
XVII. The Miners, and Measures for Mining Relief	196
XVIII. Tendencies after the War	201

PART III

XIX. Forestry	211
XX. The Fisheries	218

PART IV

XXI. Economic Measures	227
XXII. Social Effects	261

THE BASIC INDUSTRIES AND SOCIAL HISTORY OF JAPAN, 1914-1918

INTRODUCTION

THERE are many surprises when we study the nature and scope of the effects, material and immaterial, of the World War. In the realms of economics, politics, and thought, and in the mode of life of the people, the changes which occurred were profound and varied; but it is certain that no other human activity was so extensively influenced by the hostilities as those industries which produce the basic materials of a nation's economic life. War is a stupendous agent of destruction. When war breaks out, workshops which have been supplying civil needs are forthwith turned into munition factories, with the result that a tremendous change is bound to take place in the supply of commodities for the everyday needs of the people. Furthermore, every branch of industry must be altered as regards its methods of work, its management, and organization, to adapt it to the requirements of war-time economy. Since the sole aim of war-time economy is to increase, in the shortest possible time, supplies of materials needed for warfare, it is inevitable that when war comes the various industries of a nation should be governed and regulated in conformity to this single end. Naturally the industries that most keenly and quickly feel the effect of war are those which are closely bound up with the carrying on of war. Manufacturing is naturally conspicuous among them. But the effects of modern war reach far beyond the factory and the highly organized machinery of industrial life to transform, or at least to modify, the conditions of the basic industries as well, which supply the raw materials and fuel for manufactures, and foodstuffs for the population. Indeed, there is nothing more sensitive to war than agriculture. Mining is also directly affected, but forestry and fisheries are relatively freer from war-time disturbances.

The part played by Japan in the World War was by no means insignificant. As a member of the Allied Powers she took the field at Tsingtao and in Oceania, where the Germans held insular possessions; she dispatched a fleet to the Mediterranean Sea for action, and caused her warships to act as convoys for Allied transports; she sent troops to Siberia to stay the eastward spread of the influence of the

2 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

enemy. In so doing, she suffered much loss in human lives, expended huge sums of money, and bore immense sacrifices in other forms. But her sufferings were not to be compared with those of England, France, and other European belligerents. On the other hand she derived many benefits from the War, as it furnished occasion for the building up of her productive industries. The difficulty experienced in importing goods forced her people to face the necessity of a self-sufficing economic existence; while order after order for munitions and other commodities found their way from other countries to Japan. Under the circumstances it is no wonder that her industry grew more and more active, culminating in the promotion of many extensive business projects; indeed her economic condition in general, during the War, might be said to be incomparably the most prosperous in her history. For the same reasons mining, which is so closely connected with manufacturing, likewise grew vigorously, and made remarkable progress. The development of agriculture, forestry, and fisheries was likewise phenomenal. Many enterprises which were to make Japan a self-supporting, and, for certain classes of goods, an exporting nation, were actively promoted.

The War produced, on the other hand, an alarming rise in the prices of commodities, particularly in those of rice and other grains, and of yarns and cloth, which are the vital necessities in the life of Japan's common people. In consequence, the government authorities were obliged to meet the very delicate problem of price regulation.

In the following pages the author will deal with the effects of the War upon the agricultural, forestry, mining, and fishing industries of Japan. He will have to ask for the kind indulgence of his readers because of the lack of necessary statistics and data, the consequences of which are lamentably felt at times. Agencies for gathering economic statistics are as yet inadequately established in Japan. And, in the case of these industries, the situation is particularly bad.

1. *Before the War.*

One must say at once that, before the War, the economic life of Japan had taken many steps in the direction of reconstruction. The Russo-Japanese War had exerted a great influence in drawing Japan from the self-contained stage of economy, and in forcing a transition from agriculture to commerce and industry. There was already every indication that capital would be attracted to a few

centers, and that the population of towns and cities would grow larger than ever. Village and agricultural organization was gradually undergoing a change.

The Development of International Trade.

In looking over the trade returns for Japan, it will be noted that in the year 1893, which immediately preceded the outbreak of the Sino-Japanese War, the foreign trade of Japan amounted to the rather insignificant sum of ¥176,000,000. But, in the years that followed, foreign trade grew so rapidly that in 1898 its volume was about 250 per cent greater, and in 1908, about 500 per cent. The total foreign trade of 1914 was ¥1,186,000,000.

In the infancy of foreign trade, when both the raw materials for the manufacture of finished goods and the market for them must be sought at home, the prosperity of commerce and industry is exclusively dependent on the prosperity of agriculture and the rural districts. Agricultural produce forms the basis for the rise and fall in price of all other commodities. When foreign trade has become active, the industrial organization of a nation undergoes a change, so that agriculture and the small agricultural centers, instead of dominating commerce and industry become dependent on them, and the price of industrial products often takes a course different from that of farm produce. A reciprocal relationship is naturally established between the rural district and the city, to their mutual advantage; but at times they come into conflict, due to the shifting of capital and labor, to the import of foreign substitute goods which compete with home manufactures, and to inequalities in the prices of various commodities.

The development of the foreign commerce of Japan has occasioned much change, both in the destination and in the class of the goods which she exports. First, Japan has shifted from the European and American trade to that with other Asiatic countries. Second, there has been a transition from the agricultural stage of trade, dominated by the import of wholly manufactured articles, and the export of raw materials, to the industrial stage, in which the export of wholly and partially manufactured goods, and the import of raw materials, are dominant. Thus, for the period between 1893 and 1914, the percentage of European trade dropped from 39 to 21 per cent of the total of foreign commerce; and on the other hand Japan's Asiatic trade

4 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

rose from 37 to 49 per cent. Imports of raw materials jumped from 29 to 64 per cent, and exports declined from 22 to 12 per cent. Imports of wholly and partially manufactured articles dropped from 20 per cent to 16, and exports increased from 41 to 50 per cent. Imports of wholly manufactured goods showed a noticeable fall, from 48 to 19 per cent, while exports showed a rise from 32 to 35 per cent.

The Development of Industrial Life.

In response to the development of international trade, Japan's economic organization evolved from the agricultural to the manufacturing stage of industry. This development proceeded more rapidly after the Russo-Japanese War, as is evinced by increases in the number of manufacturing companies promoted, of mills and factories employing motive power, and the amount of industrial products. Between 1893 and 1914 manufacturing companies increased 200 per cent and made a tenfold increase in capital. Simultaneously the number of manufacturing plants increased by 300 per cent. With the growth of mechanical industry, household industry gradually began to die out. This might lead one to conclude that the people of the villages were deprived of secondary occupations which had given them some extra income; but what they lost in this way was made up by gains from employment in industrial plants, work till then unknown to them, or by turning to other sorts of labor. Thus, the earnings of the village population were, in many cases, increased both directly and indirectly. As examples of increased opportunities for production, we may cite the increased production of cocoons, of tea, indigo, hemp, sugar cane, leaf tobacco, Japan lacquer, peppermint, etc., the demand for which had increased with manufacturing, even before the War.

The Centralization of Capital and the Growth of Cities.

Hand in hand with the development of foreign commerce and manufactures, capital showed a tendency toward concentration in a few given cities, and labor showed a similar tendency, which resulted in a constant increase in city populations. The centralization of capital in Tokyo, Osaka, Hyogo, Kyoto, Aichi, Kanagawa, and Nūgata is specially worthy of note, for the aggregate of capital of the companies registered in these prefectures amounted to as much as 75 per

cent of the total for the entire country. From 1893 to 1914 the whole population of Japan registered an increase of but 23 per cent, while the increase for the twelve leading cities amounted to 74 per cent.

The Rise in Prices.

The Sino-Japanese and Russo-Japanese Wars were responsible for huge inflations of the currency. The amount of money in circulation in 1893 stood at ¥200,000,000; and the total rose to ¥638,000,000 in 1912, and to ¥582,000,000 in 1914. What with the three-fold increase in the currency and the remarkable development of foreign trade there inevitably followed a tremendous rise in the prices of commodities. Putting the general average price for 1893 at one, that for 1912 had risen to 110, and that for 1914 to 97. It is, of course, not to be assumed that the prices of agricultural produce and manufactures rose at the same rate. As might be expected, the advance in the prices of manufactures was the greater, and the rate of appreciation for agricultural products varied for the several kinds of produce. Raw silk, hemp, and tea, which are consumed by industry as raw materials, made a more conspicuous advance than rice and other grains which are distinctly food products. The production of foodstuffs had to be content with an unfavorable position as compared with other lines of agriculture.

In the years between 1906 and 1914 the total area of paddy fields rose from 2,849,289 cho¹ to 2,953,260, an increase of only 3.8 per cent; but other crop areas increased from 2,551,169 to 2,862,434 cho.

Village and Agricultural Unrest.

Outwardly, the villages and country districts of Japan would appear to have suffered very little from the War and would seem to be as quiet as ever; but as a matter of fact the changes produced in them by the War were so far-reaching that the consequences may be said to be almost revolutionary. Japanese agriculture was carried on on a very small scale, due to the essential nature of the crops that were grown, the implements used, the predominance of paddy fields, and the general practice of intensive cultivation. It was the kind of agriculture most natural where life was still largely primitive; and the

¹ 1 cho = 2.45 acres.

6 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

inertia of things allowed of its going on unchanged. But Japan had now entered upon another stage of development, both in international trade and in economics, and a change was bound to take place. The advancement of industry, which has enormously increased imports of partially manufactured commodities, is a potent force for attracting the capital and labor of the country to the big cities, and devitalizing the village and the work of agriculture. With public recognition of the changes affecting rural life, the nation has made serious efforts to encourage the reclamation of uncultivated lands, to improve lands already opened up, to perfect a system of agricultural credits, and to spread among the farmers the habit of carrying on some sort of secondary industry. Nevertheless, the average area of land held by a farm household is little more than 1 cho and 6 se² (a little more than two acres and a half); and the scale on which farming is done is as restricted as ever. The exodus of labor from country to city has not been arrested, and both agriculture and the village communities were showing a tendency to decay even before the War.

2. During the War.

In August, 1914, when war was declared, the stock exchanges and commodity markets in London, Berlin, Paris, and Vienna experienced extraordinary collapses, which ended in the closing of their doors for varying periods. The Bank of England raised its interest rate by 10 per cent at once; every nation involved proclaimed a moratorium; the carrying trade was endangered, cargo space became insufficient, and international intercourse and transport seemed almost to have ceased. In the United States the immediate result was that the outflow of American gold to Europe at once increased in volume. On the other hand, shipments of merchandise were temporarily halted; the raw cotton and coffee markets fell precipitately. And this was followed by utter demoralization on the stock market.

The repercussions of the crisis both in Europe and America inevitably made themselves felt in Japan. Her national loans, held abroad, dropped violently, and this produced a collapse on the Tokyo Exchange. The shipping industry was badly crippled. With more bad news from America there came tremendous rises in the cost of

² 1 se = 176.45 sq. ft.

war insurance, a disruption of foreign exchange rates, and a slump in the price of silver. The climax was a breakdown of both the Japanese stock and the commodity exchanges. For a time they had to suspend business. The excitement in banking circles was indescribable; and the tightness of money, which had existed for several years, was rendered more serious. In short, a panic reigned in Japan's whole commercial world. While farming areas were not directly affected, the depression in rice and raw silk, which prevailed for some time after the outbreak of the War, aggravated the condition of rural economics, which had been bad enough in *ante-bellum* days. But soon afterward there were signs of recovery, as in America, and later there came times of unprecedented prosperity. The slump in rice which occurred about the time of the outbreak of the War was not a consequence of the War, but of the circumstances then prevailing in the country; and low prices continued to rule the market well on into 1916. The raw silk market, which had been demoralized by the effects of the War on America, began to grow better. And in January, 1915, when America had grown more prosperous, it showed a stronger tone.

As the theater of war grew wider, the shortage of bottoms, that is, of cargo space, was felt more keenly than ever, and this placed a serious obstacle in the way of importations. Prices of all imported commodities rose uniformly and extraordinarily. In consequence, the promotion of new business enterprises became active, and plans were laid for extending existing enterprises. As regards exports, America, which was rising to a great height of prosperity, furnished a better market for raw silk than before. Moreover, the belligerent nations turned to Japan for supplies of war materials and foodstuffs. Among neutrals, Japan came to be regarded as a supplier of substitutes for those goods which the warring peoples had formerly been supplying. Thus the business outlook of Japan had, in brief, undergone a complete change by about January, 1916. In 1914, the first year of the War, her foreign trade totaled ¥1,186,837,186, the exports amounting to ¥591,101,461, while the figures for 1918 were ¥3,630,838,393, comprising ¥2,012,461,258 in exports. The excess of exports over imports, which in 1914 was only ¥4,634,274, rose to ¥175,857,059 in 1915, to ¥371,040,208 in 1916, to ¥567,193,939 in 1917, and to ¥294,562,123 in 1918. As a consequence, the gold reserves registered a tremendous increase, rising in the years under

8 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

review from ¥341,119,000 to ¥1,588,000,000. Inflation of currency was equally phenomenal—from ¥546,458,645 to ¥1,385,327,226. Putting the index number for July, 1914, at 100, it will be found that the index number for December, 1918, was 221.

With the increase in the earnings of the working people, their spending power expanded proportionately. There was a widespread industrial boom, which tended to draw the country people to the large cities, and to intensify the demand for rice. In consequence, its price, which had been low enough, rose rapidly. With it the price of other cereals, of timber, and silk cocoons also rose. The profits of farming and the lumber business increased. The value of land went up. And, in general, economic conditions in the country districts changed almost completely. At the same time the higher cost of commodities made the cost of living much greater for the farmer. His fertilizers became vastly dearer; and a shortage of labor resulted in an enormous rise in the wages of farm hands. The small farmer was seriously affected. His numbers became noticeably less. And today there is every evidence that in the agricultural districts of Japan the interests of a few large landowners are in conflict with those of a vast army of tenant farmers, with all the endless class disputes which result therefrom.

PART I
AGRICULTURE

CHAPTER I

RICE AND OTHER GRAINS

For the Japanese people rice is the cereal of first importance. It is one of their leading crops. And naturally, therefore, its price movements and conditions of demand and supply very greatly influence both the business life of Japan and the position of agriculture. Owing to the ever growing population and the constant betterment of the standard of living, the amount of rice consumed has steadily increased. So far, indeed, the home supply has not been enough, and the country has been forced to look to other rice-producing countries to make good the deficit. Although the general tendency of prices has been to continue to rise, there have been ups and downs, according to the size of the crop and the amount imported. When the War broke out, it was impossible to do any more importing. On the contrary, it was necessary to reëxport some of the stock which had been brought in, which caused the market to rise to ¥16 per koku. Later on, in 1915, owing to the anticipation of large harvests and to tightness of money, the price fell swiftly till it was down to ¥12. While this fall cannot be linked to the War, it did have much to do with the great rise in the market that occurred after 1916. And we can deal with the changes that the War made in conditions of demand and supply of the cereal, only by constantly referring to the state of things before the War.

Demand and Supply.

Making allowance for occasional short harvests resulting from bad weather, there had been a gradual increase in the production of rice in Japan. From an average of 29,944,900 koku for the years 1878-1882 the figures had grown to 50,255,267 in 1913, and to 57,006,208 in 1914. If the index number for 1888-1892 be taken as a basis, there had been a 10 per cent increase every five years.

Taking the index number for 1888-1892 as the basis, the volume of production was growing at the rate of about 10 per cent every five years.

Not only was the total production increasing, but there was a marked increase in production per unit of land cultivated. This was

12 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

set down to the growing knowledge of scientific and intensive methods of farming, involving higher grades of seed grain, the adoption of better methods of irrigation and cultivation, and the use of more effective fertilizers.

While the production of rice was increasing, the demand for the cereal was growing still more rapidly, owing, as we have said, to the constant increase of population and to the betterment of the standard of living, which had extended the custom of eating rice daily to classes which had hitherto subsisted mainly or partly on cheaper cereals. There were, in addition, other circumstances which had operated to increase the demand for the commodity, and the balance between demand and supply had been seriously disturbed in recent years. While the deficiency in the supply had been met by shipments from Japan's colonial possessions, and from foreign rice-producing countries, such imports were also, as a whole, steadily growing.

TABLE 1
Imports of Rice, 1868-1914.

	<i>Quantity</i>	<i>Value</i>
1868-1872	610,094 koku	¥ 4,145,227
1873-1877	3,315	15,453
1878-1882	30,772	167,525
1883-1887	30,553	166,800
1888-1892	573,025	3,684,432
1893-1897	1,164,196	8,643,170
1898-1902	1,860,386	18,566,257
1903-1907	4,108,916	43,367,317
1908-1912	2,948,651	30,966,787
1913	3,637,269	48,472,304
1914	2,022,644	24,823,933
1912-1914	2,631,450	34,496,573

Imports of rice, which increased abruptly in 1897, due to a bad crop, totaled 2,500,000 koku for the year, and 4,600,000 koku for the following year. Though the import trade was small during the next four years, the outbreak of the Russo-Japanese War made its volume rise again, with the result that something like 2,000,000 koku were brought in yearly until 1914. Similarly, shipments from Formosa and Korea were on the increase. During the years 1898-1902 they averaged 92, 225. For 1908-1912 the figures were 1,126,552, and for 1912-1914, 1,444,647.

Exports of rice reached their height in 1899, and have since been on the wane, as shown below. It must be remembered, however, that since September, 1910, when the Hermit Kingdom was amalgamated with Japan, exports to that country have come to be included in the item, "Clearance-out," in the official reports, which fact might be in part responsible for decreases in the amount of exports in recent years.

TABLE 2
Exports of Rice, 1873-1914.
(in koku)

	<i>Quantity</i>	<i>Value</i>
1873-1877	152,986	¥ 788,989
1878-1882	247,977	1,437,038
1883-1887	350,393	1,898,785
1888-1892	855,987	5,310,662
1893-1897	671,847	6,378,792
1898-1902	540,427	6,673,460
1903-1907	267,013	4,034,525
1908-1912	300,644	4,797,275
1913	204,002	4,372,979
1914	260,738	4,974,108
1912-1914	224,888	4,571,637

Statistics covering shipments of rice from Japan proper to the colonies indicate that while Formosa had been taking slightly more every year, shipments to Korea were declining. Consequently, the total was almost stationary, and was less than 50,000 koku.

The table is based on the Annual Reports of the Foreign Trade of Japan. Average from September, 1910, to the end of 1912.

Table 3 deals with the relation between the demand and supply of rice before the War.

Even in *ante-bellum* days there was a serious deficiency in rice, and it was necessary to rely largely on imports. As will be observed from the *per-capita* index number it was not merely the rate of consumption that increased. The dependence on imports grew still more rapidly. Thus in 1905 imports reached 4,640,000 koku; and even when the exports were subtracted, 4,430,000 koku still remained. If we add to this the amount by which rice shipments *from* the Colonies surpassed shipments *to* the Colonies, we get a net total of more than

TABLE 8
Per-Capita Consumption of Rice, 1873-1914.

					<i>Per-capita consumption</i>			<i>Per-capita index numbers</i>	
	<i>Amount of production in Japan proper for preceding year koku</i>	<i>Excess of im- ports and ship- ments from the Colonies¹ koku</i>	<i>Consumption koku</i>	<i>Population</i>	<i>Amount of production in Japan proper for preceding year koku</i>	<i>Excess of imports and ship- ments from the Colonies¹ koku</i>	<i>Con- sumption koku</i>	<i>Production in Japan proper for preceding year</i>	<i>Con- sumption</i>
1878-1882	28,696,847	(—) 217,205	28,479,142	85,981,029	.796	(—) .006	.798	100	100
1888-1892	38,562,741	(—) 288,097	38,279,644	40,888,266	.807	(—) .007	.948	101.4	119.5
1898-1902	41,701,215	1,884,726	43,085,941	44,728,275	.982	.081	.968	117.1	121.4
1902-1907	43,862,175	4,405,927	48,268,102	47,829,600	.946	.092	1.009	118.8	127.2
1908	49,052,065	2,801,660	51,853,725	49,819,000	.995	.057	1.051	124.9	132.5
1909	51,988,898	1,962,718	53,896,611	50,011,700	1.088	.089	1.078	180.4	185.9
1910	52,437,662	1,441,284	53,878,896	50,716,000	1.084	.028	1.062	129.8	133.9
1911	46,682,876	2,249,975	48,883,851	51,435,400	.907	.044	.950	118.9	119.8
1912	51,712,438	2,906,056	54,618,489	52,167,000	.991	.056	1.040	124.5	132.
1908-1912	50,858,886	2,272,829	52,626,215	50,729,940	.993	1.087	.045	124.9	180.
1913	50,222,509	5,180,189	55,852,648	52,911,800	.949	1.047	.097	119.2	181.9
1914	50,255,267	3,870,692	53,625,959	53,675,700	.986	.999	.063	117.6	126.
1912-1914	50,780,090	3,802,296	54,532,865	52,918,167	.959	1.029	.072	80.4	180.

The figures for population are those for domiciled population till 1892, and then for the total population taken at the end of each year. Consumption totals are worked out by adding the figures for production to those giving the excess of imports and shipments from the Colonies over exports and shipments from the Colonies.

¹ An excess of exports and shipments to the Colonies is indicated by (—).

5,000,000 koku. In other words, Japan had to bring in imports amounting to 13 per cent of her home production. Even in 1910 (1909 was an exceptionally good year), 920,000 koku, of which 510,000 koku was net imports, had to be brought in from abroad, and the excess of imports plus shipments from the colonies, rose to 1,440,000 koku. In 1913 this figure had become 5,130,000 koku; and in 1914 it was 3,370,000 koku. Plainly, without extraordinarily good rice harvests, Japan's needs will always rise above the limit of her home production, and she will have to import an amount equal to some 5 or 10 per cent of what she produces at home. Such was the position of rice supply and consumption at the outbreak of the War.

Although Japan was a belligerent she did not directly experience the destructive effects of the War, but was principally affected by her position as a supplier of war materials. The resultant prosperity of her foreign trade went a long way toward increasing the income of individuals, who, in turn, raised their standard of living and increased their buying power. Among the lower classes, who consist for the most part of laboring people, the changes wrought were phenomenal. Those things which they had regarded as luxuries and beyond their reach became accessible to them. Those who had formerly eaten wheat and other cheaper cereals now became consumers of rice, the costliest of cereal foods.

In 1914 the rice crop was very large and was estimated at 57,000,000 koku. Nevertheless, the supply was insufficient, owing to the shortage of the preceding year and the panicky unrest in the commercial world following the outbreak of war; thus there was a short-lived advance on the market. The year 1915 was likewise good, and 1916 even better, registering a yield of 58,000,000 koku, with the result that the price fell markedly. This caused the Government to establish an organ for price regulation, the *Beika Chosetsu Cho-o-sa Kai*, the Commission for the Regulation of Rice Prices. Now that the supply appeared to exceed the demand, no necessity was felt for importation, and the total imports in 1915 stood at 450,000 koku, the smallest amount since 1893. But it was not long before prices began to turn in the other direction. When the stimulus of the War manifested itself in a general rise of prices, there was an expansion in purchasing power which disturbed the balance between demand and supply in the case of cereals. But what gave the real and immediate upward thrust to rice prices was the short crop of 1917. In the fol-

16 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

lowing year conditions became acute, especially after the month of August, when prices rose to heights that were a menace, and, in consequence, the importation of cheaper foreign rice became imperative. The Government promulgated laws for the regulation of prices and placed all imported supplies under its immediate control. Nevertheless, the upward movement of the market could not be checked, and "rice riots" broke out in many places. The situation was such that even in November, 1918, when the Armistice was signed, the importation of rice could not be brought to an end.

While the War consolidated the economic position of Japan and helped to promote many immense business enterprises, the consequent rise in the price of commodities spread a feeling of unrest among the people. The food situation was the source of many momentous problems, and finally culminated in public outbreaks of violence.

Table 4 gives the outstanding facts pertaining to the demand and supply of rice during the War (in koku).

It will be noted from the tables that the relation between demand and supply was thoroughly dislocated in 1918. Up to that time the production of rice had been large enough for home needs, in spite of the constant increase in consumption; imports and shipments from the Colonies were markedly lower than exports and shipments to the Colonies. As mentioned above, the large harvests of 1914 and 1915 caused the rice market to collapse, with the result that the Okuma Cabinet, then in power, was obliged to consider measures of relief. The crop of 1917 fell off from that of the preceding year by about 4,000,000 koku, and stood at about 54,560,000 koku; and the export trade, which had been active since 1915, tended to diminish stocks held at home. The greater buying power of the people increased the consumption of rice, and the demand was further increased by the dispatch of troops to Siberia. The production in Japan proper fell far short of the demand. In August, 1918, when the new crop began to come in, the equilibrium between demand and supply was seriously disturbed, and the price of the cereal rose to unprecedented heights. In the end the Terauchi Cabinet, then in power, was obliged to take action, which indicates that the rice rioters had a real grievance. The foreign trade in cereals responded immediately. While, up to 1917, the trend had shown increases in exports and decreases in imports, this order of things was completely reversed by a big gain of imports and shipments from the Colonies. By the end of 1918 imports reached

TABLE 4

I.							
	<i>Production for preceding year</i>	<i>Imports and ship- ments from the Colonies</i>	<i>Re-imports and re-ship- ments from the Colonies</i>	<i>Exports and ship- ments to the Colonies</i>	<i>Reexports and re-ship- ments to the Colonies</i>	<i>Excess of im- ports and ship- ments from the Colonies</i>	<i>Consumption</i>
1908-1912 (aver.)	50,853,886	2,640,593	171	348,170	25,688	2,272,266	52,626,152
1913	50,222,509	5,379,058	150	248,966	103	5,130,139	55,352,648
1914	50,255,267	3,684,901	851	308,953	6,107	3,370,692	53,625,959
1915	57,006,541	3,366,436	557	728,280	899	3,638,224	59,644,855
1916	55,924,590	2,164,258	4,614	781,344	1,408	1,836,120	57,310,710
1917	58,442,386	2,522,012	325	865,958	2,767	1,653,612	60,095,998
1913-1917	54,370,259	3,423,332	1,299	586,700	2,157	2,835,774	57,206,033
1918	54,568,067	7,653,034	1,135	338,821	12,711	7,302,637	61,870,704
II.							
	<i>Total consumption koku</i>	<i>Population</i>	<i>Per-capita consumption koku</i>	<i>Per-capita index number²</i>			
1908-1912 (aver.)	52,626,152	50,729,940	1.037	130.8			
1913	55,352,648	52,911,800	1.047	131.9			
1914	53,625,959	53,675,700	0.999	126.0			
1915	59,644,855	54,448,200	1.095	138.5			
1916	57,810,710	55,235,000	1.037	129.5			
1917	60,095,998	56,035,100	1.072	134.0			
1913-1917	57,206,033	54,461,160	1.050	131.9			
1918	61,870,740	56,851,300	1.088	137.2			

² The *per-capita* index numbers are calculated on the basis of the average consumption for the five years 1878-1882.

18 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

4,640,000 koku, and shipments from the Colonies 3,000,000, or 7,640,000 koku in all. It will be seen that this figure is three times larger than that for 1917, 2,520,000 koku. Considering imports alone, the increase would be found to be about eightfold. This condition of heavy imports remained unchanged until well on into 1919. The consumption of rice as a foodstuff was on the increase, but there was a large increase in the quantities required for seed and for making confectionery, syrup, paste, miso (bean paste), sake, distilled spirits, soy sauce, etc. In the brewing of sake it was estimated that a yearly average of 2,824,115 koku of cleaned rice was used during the years 1908-1912. In 1915 the figures fell to 2,518,896. But they had risen to 3,146,989 in 1917, and to 3,456,666 in 1918. Even in 1917 they represented about 7 per cent of the rice harvested in Japan proper; and there was a demand that the brewing of the liquor should be restricted.

It is evident that during the war years changes in the relation between demand and supply in the matter of rice were due in some cases to the War, but not always. The decline of imports and of shipments from the Colonies observed in 1915, 1916, and 1917, had nothing to do with the War; it was mainly a consequence of the very large crops in these years. Nevertheless, the great reason for the activity of imports and shipments from the Colonies after 1918 was the War, which had increased consumption.

It is also almost superfluous to say that the effects of war on the relations between demand and supply were likewise very closely inter-related with its effect on prices. In table 5 the details of price variations are given for the "spot" market, that is, on rice for immediate delivery.

Table 6, which was prepared from the foregoing statistics, gives the average prices of rice for each five-year period, for the years under review.

Before the outbreak of war, the tendency in all markets, whether for spots or futures, had been a slow but steady advance except for certain fluctuations, due to crop failures. The movements of the cereal markets in Japan are extremely sensitive to conditions in the world outside. Rumors of political or social changes will often demoralize the future market and the mere whims or hopes of speculators also go a long way in shaping the course of the market. In the following paragraphs, the author will trace the movements of prices

TABLE 5

Wholesale Prices of Spot Rice in Japan Proper before the War.

	<i>Prices</i>					<i>Index number</i>			
	<i>Average price in leading markets</i>	<i>Average price in Tokyo</i>	<i>Base goods in Tokyo</i>	<i>Base goods in Osaka</i>	<i>Average for base goods in Tokyo and Osaka</i>	<i>Average price in leading markets</i>	<i>Base goods in Tokyo</i>	<i>Base goods in Osaka</i>	<i>Average for base goods in Tokyo and Osaka</i>
1897-1907	¥12.81	¥13.41	¥13.43	¥12.85	¥13.14	100	100	100	100
1898	13.11	14.79	14.96	14.12	14.54	102	111	110	111
1899	9.84	10.02	9.97	9.81	9.90	77	74	76	75
1900	11.82	11.96	11.93	11.52	11.73	88	89	90	89
1901	11.47	12.29	12.30	11.76	12.03	90	92	92	72
1902	12.07	12.65	12.65	12.26	12.46	90	94	95	95
1898-1902	11.56	12.34	11.36	12.90	12.13	90	92	93	92
1903	13.68	14.43	14.42	13.96	14.19	107	107	109	108
1904	12.89	13.20	13.22	13.32	13.27	101	98	104	101
1905	12.66	12.84	12.85	12.48	12.66	99	96	97	96
1906	14.44	14.69	14.71	14.08	14.40	103	110	110	110
1907	16.02	16.42	16.48	15.43	15.96	125	123	120	121
1903-1907	13.94	14.32	14.33	13.85	14.09	109	107	108	107
1908	15.24	15.74	15.93	15.25	13.11	119	119	119	119
1909	12.54	13.18	13.14	12.49	15.59	98	98	97	98
1910	12.93	13.26	13.27	12.68	12.81	101	99	99	99
1911	16.85	17.30	17.35	17.46	12.94	132	129	136	132
1912	20.37	20.96	20.96	20.56	17.40	159	156	160	158
1908-1912	15.59	16.05	16.13	15.69	15.91	122	120	122	121
1913	21.01	21.52	21.40	21.53	21.46	164	159	168	163
1914	15.46	16.16	16.13	15.33	15.98	121	120	123	122
1912-1914	18.94	19.49	19.49	19.31	19.40	148	145	150	148

All averages are one-year averages for one koku, or 4.96 bushels of rice. "Average prices in Tokyo" are for rice of the first and second grade. In all other cases prices are for rice of standard grade, or, as here described, "base goods." In the case of the Osaka market, this is Settsu rice.

during the War, with reference to the influence upon it of developments at the front.

In August, 1914, when hostilities broke out, the market was quoting ¥14, which was believed to be a very low price—the lowest since 1910,—the reason being that heavy crops were looked for. But the effects of the declaration of war were not slow in making themselves felt in this market. Growers anticipated a rise, and, therefore, were

TABLE 6

Average Prices of Rice, in Five-Year Periods, 1897-1914.

	<i>Average price in leading markets</i>	<i>Average price of base goods in Tokyo and Osaka.</i>
1898-1902	¥11.56	¥12.18
1899-1903	11.68	12.06
1900-1904	12.29	12.78
1901-1905	12.55	12.92
1902-1906	13.15	13.89
1903-1907	13.94	14.09
1904-1908	14.25	14.28
1905-1909	14.18	14.35
1906-1910	14.23	14.35
1907-1911	14.72	14.95
1908-1912	15.59	15.91
1909-1913	16.74	17.08
1910-1914	16.32	17.72

reluctant to part with their harvests. There were rumors of large purchases by the military authorities; of dangers to shipping which placed obstacles in the way of international trade; and of tremendous increases in the rates of marine insurance; so that the market started to rise at once. By the middle of September in consequence of the crop outlook quotations again dropped to the level of ¥14. As for rice imports they all but came to an end because of the presence of a German fleet on the high seas; though at the same time there were circumstances which made it appear that rice might be exported without much difficulty. Nevertheless, the market could not rise. In October futures fell to the level of ¥13. In November there was much discussion as to the need of remedying this, for instance, by a government loan at low interest, or by the exclusion of Korean rice from the market. Although these suggestions were quite practicable, they were not carried out, and the month of December passed without any improvement in the situation. Conditions, however, were hopeful in January, 1915, as a result of the liveliness of the spot market and the possibility of carrying on an active export trade. The tendency of futures to rise particularly attracted popular attention. In February, reports that the Government would purchase large stocks of rice on the market served to rush up prices. But, while the Government did this in April, there was no improvement in the situation.

For the time, the official measure for the adjustment of the difficulty had been an utter failure. In May and June the tone of the market displayed a certain amount of strength. But there was a sign of threatening weakness in July, and a gradual drop in August and September. Toward the end of the latter month, a condition almost panicky prevailed, in consequence of which spot dealers had to hold conferences to keep the market on a reasonable basis. In October, as a result of the above official adjustment, together with the announcement that the year would have a short crop, the market rose abruptly. In November, futures reached ¥14; the standard quotation for spot, which had stood at ¥12 at the beginning of the month, reached ¥13.40 by the end. December was equally buoyant. In 1916 the market became completely dull, and remained so during January and February. While there was an indication of recovery in April, this did not materialize to any noticeable extent. Till the end of September the market was fairly quiet, at about ¥15. In October money movements, and lessening supplies of rice, brought about higher prices, with the result that ¥15.85 was reached at the end of the month. In November money was dull. But the price of commodities rose considerably, in consequence of which, on November 6, the rice market climbed swiftly to ¥15.30 for ninety-day sales. This was a new record since 1915. In December the market rose almost daily, and once reached ¥19.22; but the possibility of the restoration of peace, the news of which threw the stock market into a state of panic, thrust rice back to the level of ¥16. In January, 1917, the market became remarkably active. But this was a temporary phenomenon, as dulness soon regained its hold. February and March were very quiet, and it was not till April that any indication of improvement could be seen. Toward the end of May the tone became very strong, with the result that futures stood at ¥20.53 and spot at ¥18.70—an entirely new record since February, 1914. This was due to a complication of causes; the prosperity of industry and the inflation of the currency, for which the War was solely accountable, the considerably enlarged spending power of the people, especially of the lower classes, whose earnings had shown much increase; and the unprofitableness of imports from foreign rice-producing centers, due to the cost of transportation and the high prices prevailing at the places of origin. Moreover, the business of exporting rice now became very active.

Comparatively speaking, spot rice remained quiet, despite the ex-

citement in the futures market. But, toward the end of June, conditions were entirely different. On June 25 the price went beyond ¥23.61, a record since July, 1912. In July, as a result of the stimulation of the spot market, which had become active, the futures market rose to the unprecedented point of ¥24.72. This called forth much comment from the public, who were convinced of the necessity of putting a curb on such conditions, and for the time public feeling had its effect. August passed without any untoward developments. On September 1, the Government promulgated the Anti-Profiteering Law, which caused a sharp decline in prices. Toward the close of the month, the trend began to be in the other direction. But at this juncture a terrific typhoon resulted in a water loss of 250,000 bales of rice in Tokyo. In consequence, the market rose alarmingly and the Exchange had to be closed for several days. Its authorities had recourse to measures that were successful, and the level of prices dropped to ¥22.29 by the middle of the month. But in November the market rose almost as high as before because of the fast-diminishing stocks of the old crop, and the belief that the year 1918 would see a crop failure. In December, prices went up rapidly, the high point being ¥23.29. In January, 1918, as a result of the low yield of the new crop, and the high price of wheat, rice quotations rose several points almost daily, and at the end of the month, it became probable that the market would gain in impetus and cross the highest mark set in July, 1917; but the Government succeeded in preventing this. In February, the spot market, being very strong, rose to ¥25.50; and on February 21, futures reached a record-breaking price of ¥25.90. But soon, with a change in the world situation, there followed a proposal that the Government should regulate the price of rice, and a report that the Government would also lower the import duties on it. The market went dead again. And, while there were certain fluctuations, that was its prevailing condition till after the beginning of April.

In the middle of the month, the spot market grew active again, and was quoted at ¥27.80. On April 25, the announcement was made that imported rice was under official control. But, after a few slight declines, in the main, futures advanced, proving quite refractory. The Law for the Regulation of Rice Prices was promulgated on May 6. But in the same month futures reached ¥27. There were certain striking developments, but conditions were held to be satisfactory.

In June, the spot market was as favorable as ever. But futures, too strong at first, as we have seen, to be affected by the Government's assuming control of foreign rice, were now affected by other government measures, and temporarily collapsed. July was filled with events momentous in market history, and, with August, experienced a series of the severest fluctuations. Moreover, and especially in August, rice riots broke out in many places, and dealt the market some hard blows. In September, as a result of a great and rapid rise in futures, which almost overwhelmed the market, spot rice had a sharp rise, the margin between the maximum and minimum points being as wide as ¥9. Although futures had advanced from ¥31.50 to ¥34 in October, in their case the possibility of peace started a reaction. But spots rose to a new record of ¥45. In November, when the new crop was reached in the market, deliveries became heavy. Holders sold their stocks for whatever they could get under the circumstances. The consequence was that the market was very weak. On the eleventh, when hostilities ceased, the spot market dropped to ¥38. Two days later, a new forecast of the rice crop indicated that the yield would be much less than was at first believed; simultaneously the news of the conclusion of the armistice was received. This made the market reactionary. In December, conditions were characterized by a continued firmness in futures, and some stagnancy on the part of spots.

In summarizing the movement of rice prices during the War, it may be said that declines in the market, as noted in 1914 and 1915, had nothing to do with the War. For that matter, a symptom of weakness had been fully in evidence toward the close of 1913. This tendency became more pronounced in 1914; though the outbreak of war infused some activity into the market, this was but a temporary phenomenon, and in 1915 prices dropped to their lowest point. But in 1916 conditions began to improve, and in 1917 the upward tendency was plainer than ever. The market exhibited sharp rises in the summer of 1918. This was partly a consequence of the fact that there was much uneasiness as to the available supply, because of crop shortages in 1917 and 1918, which amounted to from one million to four million koku as compared with the harvests of the three preceding years. But the chief causes were the remarkable expansion of the buying power of the people, especially the lower classes, who found in the War a tremendous opportunity to enrich themselves; the embargoes proclaimed at places of origin; the scarcity of bottoms; the menace

TABLE 7
Prices of Rice for Spot and Future Delivery as Quoted in
the Tokyo and Osaka Markets during the War.

	<i>Standard^a quotations for spot rice in Tokyo</i>	<i>Official^a quotations for futures in Tokyo</i>	<i>Standard^a quotations for spot rice in Osaka</i>	<i>Official^a quotations for futures in Osaka</i>
1908-1912	¥16.100	¥15.882	¥15.636	¥15.558
1913	21.440	19.699	21.534	19.184
1914	16.170	16.078	15.827	15.821
1915	13.060	14.188	12.906	13.904
1916	13.690	14.893	13.909	14.987
1917 January	16.390	17.280	15.403	16.740
February	15.810	16.180	14.935	15.850
March	15.950	16.380	14.996	15.990
April	16.280	17.160	15.340	16.882
May	17.270	18.750	17.025	18.820
June	20.120	22.270	10.470	22.770
July	21.910	23.390	21.716	23.780
August	21.140	22.120	21.503	22.850
September	21.330	21.430	20.796	20.910
October	23.610	23.270	22.296	23.110
November	33.930	23.470	22.810	23.740
December	23.860	23.520	22.780	23.890
Average	19.800	20.458	19.177	20.861
1918-1917	16.832	17.053	16.670	16.751
1918 January	23.840	24.080	23.783	24.110
February	24.940	25.470	25.525	25.550
March	26.600	26.490	26.513	26.240
April	27.380	26.490	26.873	26.160
May	27.460	24.710	27.100	25.820
June	28.340	26.090	28.560	25.900
July	30.390	26.180	31.238	24.170
August	38.700	27.750	41.060	28.740
September	38.230	26.980		37.270
October	43.910	33.230		23.940
November	27.770	34.250		34.380
December	40.580	37.610		33.660
Average	32.510	28.278	28.838	28.412

^a By "Standard quotations for spot rice in Tokyo" is meant the average price, for the month, of first- and second-grade rice, per koku, for immediate delivery. By "Official quotations for futures in Tokyo" is meant the average price for rice of standard grade for future delivery on the Tokyo Cereal and Commodity Exchange, the accepted standard being Musashii rice.

^a By "Standard quotations for spot rice in Osaka" is meant the average price, for the month, of standard grade, or Settsu rice for immediate delivery. "Official quotations for futures in Osaka" are the average quotations for standard grade rice for future delivery in the Osaka Dojima Cereal Exchange, Settsu rice being, of course, also the standard for futures, in Osaka.

to shipping which crippled the import trade; and, on the other hand, the activity of exports since 1915. In addition, increases in the cost of production, for which heavier expenses for labor and fertilizer were responsible, reactions of the rice market against the depression that had formerly prevailed, higher freight rates and insurance, and the effects of the high price of rice at the producing centers of imported cereals also did their part in forcing up the market. No need to say, too, that the inflation of the currency, which resulted in a general increase of prices, affected rice along with all other commodities, and played its rôle, pro and con, like everything else.

Tables 7 and 8 deal with the movement of the price of rice in the war years.

TABLE 8

Rice Prices and Commodities and Wages in Tokyo during the War.

		Average price of com- modities ⁵	Price of rice	Wages (aver- age)			Average price of com- modities ⁵	Price of rice	Wages (aver- age)
1900	October	100.0	100	100	1918	January	227.3	202	168
	1908-1912	124.0	136	128		February	236.3	212	188
	1913	132.0	138	135		March	242.6	226	186
	1914	126.3	137	134		April	247.3	232	190
	1915	127.8	111	130		May	246.6	233	198
	1916	154.8	117	137		June	249.1	241	202
1917	January	169.3	139	147		July	256.3	258	207
	February	167.2	134	147		August	272.0	329	214
	March	168.0	135	151		September	279.6	325	221
	April	173.9	138	153		October	285.5	373	241
	May	183.4	146	154		November	238.4	338	246
	June	192.2	168	159		December	282.6	344	254
	July	208.9	186	145		Average	255.3	276	215
	August	323.9	179	173					
	September	216.9	181	179					
	October	216.9	200	195					
	November	215.9	203	195					
	December	220.0	199	198					
	Average	196.0	169	198					

⁵ Index numbers for rice and commodity prices, which are based on surveys by the Bank of Japan, are worked out from the prices of rice and commodities in Tokyo. Those for wages are calculated by taking as 100 the average rate of wages paid in 1900, as given in reports of the Department of Finance.

Other Cereals.

(Barley, wheat, rye, oats, etc.)

In the Japanese diet other cereals are as important as rice. Their prices and demand and supply relations are for the most part much the same as those of rice; and, under ordinary circumstances, the interrelationship is a very close one. It is true that these cereals were not so acutely affected by the War as was the rice crop; but since demands for them are far wider—worldwide—there is every reason to deal in detail with the War's effects on them.

Demand and Supply.

In Japan proper, barley is the most important of these secondary cereals, with rye and wheat following in turn. As will be noted in the table given below, the yield of all three had been steadily growing before the War, and their consumption for various purposes other than food had been rising by leaps and bounds. This accounts for the fact that although the import of barley was irregular, that of wheat was showing annual increases, the country from which the largest shipments were made being America.

When it comes to exports, barley will be found irregular, as in the case of imports, with wheat displaying signs of decline. Such exports mostly went to China, the Philippines, Siberia, and other parts of Asia.

Among the grains under consideration, wheat was more strongly influenced by the war conditions then prevailing than rice. That the equilibrium between the demand and supply of rice was badly unbalanced by the increase in the amount of consumption and the diffi-

TABLE 9
*Production of Cereals Other than Rice in Japan Proper
before the War.*
(in koku)

	<i>Barley</i>	<i>Rye</i>	<i>Wheat</i>	<i>Total</i>
1910	9,291,383	7,718,106	4,601,756	20,611,245
1911	9,345,480	7,505,811	5,009,840	21,901,469
1912	9,790,709	7,900,112	5,179,500	22,870,321
1908-1912	9,436,986	7,492,239	4,737,978	21,667,203
1913	10,643,660	9,180,739	5,226,925	25,050,324
1914	9,548,752	7,202,860	4,487,585	21,242,697

TABLE 10
Imports of Cereals Other than Rice before the War.
(in koku)

	<i>Barley</i>	<i>Wheats</i>	<i>Total</i>
1910	2,678	360,009	362,687
1911	84	399,794	399,828
1912	5	450,688	451,365
1908-1912	8,045	325,181	333,360
1913	8,402	1,238,485	1,247,223
1914	...	863,324	863,715
1912-1914	2,802	850,832	854,101

TABLE 10a
Quantity of Cereals Other than Rice Consumed in Japan Proper before the War.
(in koku)

	<i>Production</i>	<i>Excess of Imports and shipments from the Colonies</i>	<i>Consumption</i>	<i>Population</i>	<i>Per- capita con- sumption</i>
1898-1902	19,825,531	357,685	20,183,216	44,842,460	.4501
1903-1907	18,883,391	1,425,276	25,308,667	47,654,080	.4262
1908-1912	21,669,731	453,767	21,121,498	50,729,940	.4361
1913	25,050,454	1,309,954	26,360,408	52,911,800	.4982
1914	21,244,351	849,409	22,138,760	53,675,700	.4124

The totals for consumption are obtained by adding together the figures for production, imports, and shipments *from* the Colonies, and subtracting therefrom the sum of the exports plus shipments *to* the Colonies. The figures for population are those of the total population.

culties confronting the import trade has already been said. While the situation had its origin in the War, it is impossible to explain its whole development in such terms. Economically, the War benefited Japan immensely, and the buying power of her people was enormously increased by it. This, together with other causes, brought about an extraordinary increase in the consumption of rice. Thus the effect of the War on the demand and supply of rice should be called indirect and incidental. But the case of wheat was entirely different. As this grain is a food eaten by almost the whole human race,

* Wheat-flour imports are calculated as grain and included in the figures given.

28 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

it was not surprising that the War should directly affect the conditions of its supply.

In Japan wheat is mostly made into flour and used as a material for various food manufactures; or it is used in the form of grain for the production of soy sauce and miso. According to the statistics for 1914, the crop amounted to 4,480,000 koku, that of barley to 9,540,000 koku, and rye to 7,200,000 koku. It will be noted in the tables above that imports of wheat flour had been growing before the War; for the year 1914, wheat itself was brought in to the amount of 860,000 koku, and flour to 120,000 koku—(measured as grain)—giving a total of 980,000 koku. For 1913 the figures were, respectively, 1,230,000 and 170,000 koku, which aggregated 1,400,000 koku. This testifies to the fact that the consumption of wheat is constantly growing in Japan, and that the gap between the home production and the amount required is growing steadily wider. In *ante-bellum* days, the United States was the largest exporter; then came Australia and Canada. The figures for 1912 and 1913 are given in table 11.

The effects of the War upon the world wheat markets were conspicuously manifest in the case of Japan. For, as a result of the War Japan began to export wheat, instead of importing it. After the outbreak of war, the European belligerents ordered an immense quan-

TABLE 11
Wheat Imports, 1912-1913.

<i>From</i>	1912	<i>Percentage of total imports</i>
	<i>Quantities</i>	
United States	488,270 koku	97.2
Canada	2,711	0.6
Australia	2,816	0.5
Other countries	7,891	1.6
Total	450,688	100.0
1913		
United States	968,400 koku	77.8
Canada	60,746	4.9
Australia	211,915	17.1
Other countries	2,422	0.2
Total	1,238,485	100.0

tity of war materials and foodstuffs from the United States, wheat, in particular, was very urgently needed. In consequence when the United States entered the War, its Government was obliged to enact the Food Administration and Food Control Laws, and enforce the prohibition of the manufacture and sale of alcoholic liquor, one object of the last measure being to increase the production of cereals, equalize their distribution, and economize in their consumption. Naturally enough, the wheat and flour with which she would otherwise have met the needs of Japan were shipped instead to her allies in Europe. Similar measures were taken in Canada and Australia. It was no less natural that they could not now supply Japan. Moreover, the situation was made worse by the lack of cargo space, the rise in freight rates, and the high cost of the grain at the centers of production. Thus the value of imports for August, 1914, when the War began, was only ¥283,000 as against ¥1,247,000 for August, 1913. In September it rose to ¥930,000, exceeding the amount for September, 1913, by about ¥428,000; but it fell to ¥363,000 in October—¥1,165,000 less than the amount for October, 1913. November made a still poorer showing, as the figures dropped to ¥143,000, or ¥1,040,000 less than those for November, 1913. In December, imports dropped to ¥125,000, while those in December, 1913, had been ¥1,132,000 greater. After 1914 it became extremely difficult to import wheat at all, as shipments from the United States and Canada were practically cut off. While China and the Kwantung Peninsula sent a certain amount, the quantity was insignificant. Particulars are given in table 12.

It was quite natural that as shipments of wheat and wheat flour from the United States to Europe grew larger, what could go to Japan would correspondingly diminish. But this was not the only factor at work in bringing about an alarming decline in Japan's wheat imports, for prices in the United States were rising to extraordinary levels. Add to that the ceaseless increases in freight rates, as above mentioned, and the scarcity of shipping space. In 1917 the quantity imported was about one-twentieth of the amount for 1913. Nevertheless, conditions began to improve in 1918.

The export of wheat and flour followed an entirely different course of development, for here the conditions of the trade were completely changed by the War.

For the five years between 1908 and 1912, exports of wheat aver-

TABLE 12

Imports of Wheat and Wheat Flour into Japan during the War.

(in koku)

	<i>Wheat</i>	<i>Wheat flour</i>	<i>Total</i>
1907-1912	325,181	198,817	523,998
1918	1,238,485	172,470	1,410,955
1914	868,324	121,218	989,542
1915	161,730	18,274	180,004
1916	127,443	8,624	136,067
1917	55,999	3,519	59,518
1913-1917	489,896	64,820	554,716
1918	907,298	61,222	968,520

aged 5,557 koku a year, of which 124 koku was in the form of grain, and 5,433 koku in the form of flour. In 1913 not a single ton of grain was exported, while the total amount of flour exported was only 422 koku. In other words, as will be noted from the tables adduced above, exports were almost nothing before the War, while there was every promise of a steady growth in imports. All this was changed by the hostilities, which seemed to mark a new era in the trade, for better or for worse. While imports were continually dropping, export orders were repeatedly placed with Japan by the Entente nations in Europe, especially England, the countries of continental Asia, and the Malayan archipelago, which, before the outbreak of war, had called upon the United States for their supplies. The trade with China was prospering, as the high price of silver proved an additional stimulus. What these markets needed was flour, and flour exports showed the following increases: 1908-1912, 5,433 koku; 1913, 422; 1914, 18,064; 1915, 163,358; 1916, 208,748; 1917, 1,077,336; 1913-1917, 293,586; 1918, 639,030.

The conspicuous decrease in the volume of wheat imports, the remarkable growth of flour exports, and the high prices obtained led to the growing of more wheat. It became a more popular grain than barley or rye. It will be shown in the table given below that the acreage of wheat rose from 483,000 cho in 1913 to 567,000 cho in 1917; but barley dropped from 624,000 cho to 530,000, and rye from 720,000 to 627,000. We see the same thing in the crop records. While barley shows a decline from 10,642,000 koku to 8,362,000 during the period between 1913 and 1918, and rye from 9,180,000 to 7,777,000 koku, wheat production rose from 5,226,000 to 6,431,000 koku, an

increase of about 1,205,000 koku. There can be no doubt that this situation was largely due to the difficulty of importing wheat, and to the activity of the export trade, but it must not be overlooked that an increased demand for wheat flour for making bread, noodles, and other foods, as substitutes for rice, had something to do with the matter.

As regards barley, rye, and oats, it cannot be said that they were altogether unaffected by the War. Because of orders from England and France, barley which was needed for stock food, was largely exported up to 1918. Though from 1908 to 1912 the total exports were only 947 koku, in 1915 they were 85,140; in 1916, 45,562; and in 1917, 20,562.

Imports of barley were never large before the War. Even in 1913, the year showing the greatest activity in this grain, the amount was only 8,400 koku. The United States had supplied the greater portion and British India a large part, but imports from these countries were cut off after the outbreak of war just as in the case of wheat; with the exception of 1916, which registered imports of 1,800 koku, no year recorded a shipment from abroad. Because of strong demands for wheat, areas formerly planted with barley, rye, and oats were converted into wheat fields.

Tables 13, 14, and 15, giving areas under cultivation, production, and consumption of cereals other than rice in Japan proper during the War, shed light on the changes which the War brought about with respect to these grains.

TABLE 13
*Areas under Cultivation for Cereals Other than Rice in Japan
Proper during the War.*

	(in cho)			
	<i>Barley</i>	<i>Rye</i>	<i>Wheat</i>	<i>Total</i>
1908-1912 (average)	618,293	680,432	474,395	1,773,122
1913	624,127	720,843	483,458	1,828,429
1914	616,310	727,317	478,677	1,822,305
1915	595,865	715,207	500,756	1,811,829
1916	569,294	685,363	532,026	1,786,683
1917	536,727	641,797	568,261	1,746,786
1913-1917 (average)	588,464	698,105	512,636	1,799,206
1918	530,043	637,620	567,121	1,734,785

32 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

TABLE 14

*Production of Cereals Other than Rice in Japan Proper
during the War.*

(in koku)

	<i>Barley</i>	<i>Rye</i>	<i>Wheat</i>	<i>Total</i>
1908-1912	9,437,505	7,492,175	4,788,051	21,667,731
1913	10,642,768	9,180,739	5,226,947	25,050,454
1914	9,548,752	7,207,360	4,488,239	21,244,351
1915	10,253,615	8,297,701	5,230,069	23,781,385
1916	9,532,162	7,919,719	5,887,844	23,339,225
1917	9,168,844	8,197,099	6,786,207	24,152,150
1913-1917	9,829,228	8,160,524	5,523,761	23,513,518
1918	8,868,370	7,777,430	6,431,471	22,577,271

The above table is based on statistical reports of the Department of Agriculture and Commerce.

TABLE 15

*Export, Import, and Consumption of Cereals Other than Rice in
Japan Proper during the War.*

(in koku)

I

	<i>Production</i>	<i>Imports</i>	<i>Shipments from the Colonies</i>
1908-1912	21,669,731	531,631	14,716
1913	25,050,454	1,419,257	44,101
1914	21,244,351	984,537	52,671
1915	23,783,335	180,004	25,933
1916	23,339,225	139,893	64,558
1917	24,152,150	59,518	153,776
1913-1917	23,513,518	556,262	68,209
1918	22,577,271	568,620	145,492

II

	<i>Exports</i>	<i>Shipments to the Colonies</i>	<i>Excess of imports and shipments to the Colonies or reversals (—) of such excess</i>
1908-1912	6,504	86,076	453,767
1913	422	153,082	1,309,954
1914	18,064	124,735	894,409
1915	248,499	125,250	—167,812
1916	255,310	167,873	—221,290
1917	1,097,898	280,309	—1,164,913
1913-1917	324,059	170,248	130,071
1918	639,554	109,355	853,241

III

	<i>Total consumption koku</i>	<i>Population</i>	<i>Per-capita consumption koku</i>
1908-1912	22,121,498	50,729,940	.4361
1913	26,360,408	52,911,800	.4982
1914	22,138,760	53,675,700	.4124
1915	23,614,573	54,448,200	.4337
1916	23,117,935	55,235,000	.4185
1917	22,987,237	56,035,100	.4102
1918-1917	23,643,584	54,461,160	.4341
1918	23,435,512	56,851,300	.4122

Prices.

It has been shown that the grain most directly influenced by the War, both in the matter of prices and in relations between demand and supply, was wheat. The rise in its price is largely accounted for by the great difficulty of importing it during the War, and by changes in demand and supply such as enormous increases in the demand for wheat flour both at home and abroad. Other causes which operated to raise the price were the high price of rice, the increased cost of growing it, and the rise in wheat prices in foreign markets. Barley prices, likewise, tended to rise, due to an enormous demand from Europe, to large army purchases for fodder for the cavalry of the expeditionary forces in Siberia, to the high price of rice, and to increases in the cost of production. But it must be remembered that the rate of price increases was not so marked as in the case of wheat.

In the summer of 1914, on the immediate threat of war wheat prices rose abruptly throughout Europe and America. A cable of July 29, 1914, informed Japan that a rise of six cents had occurred in the New York market, of nine cents in Chicago, and of two cents at points on the Pacific seaboard. Another cable of July 31, reported that the Liverpool price had risen five shillings and six pence. In 1914 America had an abundant crop. Nevertheless, the presence of a very strong bullish feeling on the market forced prices up, and what had cost importers ¥4.70 per picul,⁷ f.o.b. Japan, had risen by ¥0.40 on July 30, with the result that the Japanese market, which had long been suffering from oversupplies, began at last to improve. Prices continued to go higher in America, owing to a constant increase in exports. In October they went higher than ever. As a result

⁷ 1 picul = 133.3 lbs.

34 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

the tone of the Japanese market which had been firm enough, because of the unfavorable crops in 1910 and the years following, became very much stronger; this, too, in spite of the great weakness of rice and barley. Toward the end of November, wheat was quoted at about 8.5 sho⁸ for one yen. In January, 1915, embargoes on exports were proclaimed in India and Australia, and in the following month large orders were received from England, resulting in raising the price to the level of ¥15 early in the month. But owing to the fact that in March the prospect of a successful crop had become certain, the market became weaker, and had many rises and falls till November and December when the price rose to the level of 7.8 sho for one yen.

As regards barley, the unprecedented dullness of the rice market, due to the outbreak of war, exercised a very bad influence and caused barley to go still lower on the appearance of the new crop in 1914. There was no recovery in the spring of 1915; on the contrary, the market situation became serious from April on, due to the forecasts of an abundant crop. Some improvement was noted in October, because raw silk and rice were displaying a certain activity. In 1916, the outlook for the crop was satisfactory, both in Japan proper and in Korea, while rice prices were badly depressed. Although in May, as is always the case in this month, rice showed some firmness, barley remained dull. Wheat and rye also showed little life. In June, barley dropped to the lowest point it had ever reached, and even the best grade of it was quoted at 20.5. But by the middle of July barley prices became gradually better, with wheat prices following in their wake. Although the barley market was rather uneventful in October and November, it experienced a grave flurry in December, owing to a sudden but temporary panic in the stock market; but the peace proposals of that time brought about its utter demoralization. In 1917 there was a general belief that the harvest of cereals other than rice would be short in Japan proper and Korea; yet the market was unaffected. Barley showed no tendency to rise, as the rice market remained stagnant. The situation underwent a change in March, and rice successfully lifted itself from its state of depression. The other cereals also showed a tendency to rise; in April flour prices rose; in May they had a further rise; but June and July were uneventful. The demand for barley could not be wholly met in the latter half of

⁸ 1 sho = 0.0496 bushels (British).

the year, as huge quantities were required for the army. In consequence, the laws for the regulation of the price of commodities, which were promulgated in September, failed to make themselves effective. The constant rise in the price of rice led people to eat a greater quantity of other cereals, and, in consequence, the market in their case grew active. In July and August, as a result of an enormous increase in the home demand, and of brisk exports to China, wheat flour rose to ¥3.80. In the early part of September, it was somewhat affected by the promulgation of the laws regulating prices; but the tendency to rise was soon resumed. In 1918, on several occasions the army bought large quantities of barley for fodder, in consequence of which the market remained high throughout January, February, and March. It fell in May, for spot rice had declined, and substitute stock foods were being largely imported from abroad. At the end of the month, barley fell to eight sho. Toward the end of June a shortage of supplies, and the current belief that the harvest would be bad, raised prices again. In July the news of the dispatch of troops to Siberia excited the market, and increased prices hugely. Further increases took place in August. The upward trend, though somewhat abated, was maintained throughout September and October; and it came to an end when the armistice was declared. Wheat, which attained the remarkable level of 4.5 sho toward the end of January, became weak in the last days of February, as a result of an embargo on flour. It was dull in May and June, and the price fell off to 4.9 sho at the beginning of July. Then the market became quiet again and had no noticeable rise or fall before the armistice.

TABLE 16

	<i>Wholesale prices</i> (per koku)			<i>Index numbers</i> ^a		
	<i>Barley</i>	<i>Rye</i>	<i>Wheat</i>	<i>Barley</i>	<i>Rye</i>	<i>Wheat</i>
1908-1912	¥6.34	¥ 9.17	¥10.34	122	126	122
1913	7.93	11.48	11.56	153	157	138
1914	5.49	8.08	10.85	106	111	129
1915	4.69	7.29	11.14	90	100	133
1916	5.01	7.41	11.02	97	102	131
1917	8.00	11.66	13.51	154	160	161
1918-1917	6.22	9.18	11.62	120	126	140

^a The index numbers given were obtained by working out the average for all years between 1898 and 1908, except 1900, 1904, and 1905, in which years the country was at war.

36 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

TABLE 17

*Wholesale Prices in the Tokyo Market by Months, between
1913 and 1918.*

(per koku)							
	Barley	Rye	Wheat		Barley	Rye	Wheat
1913 (average only)	¥7.94	¥12.25	¥12.00	June	4.28	7.28	9.97
1914				July	4.21	7.16	10.02
January	6.67	10.80	11.60	August	4.83	7.91	11.14
February	5.87	9.64	11.60	September	4.76	7.87	10.78
March	5.70	9.20	11.60	October	4.73	7.80	11.80
April	5.06	8.60	11.86	November	5.68	8.97	13.88
May	4.47	7.95	11.78	December	6.74	9.58	13.28
June	4.97	8.56	11.02	Average	4.75	8.06	11.64
July	4.65	8.55	11.03	1917			
August	7.87	8.28	10.93	January	6.44	9.55	12.41
September	5.28	8.61	11.70	February	6.17	9.14	11.44
October	4.68	7.97	11.70	March	6.50	9.89	11.50
November	4.50	7.88	11.70	April	6.75	10.40	12.41
December	4.38	7.75	11.94	May	7.10	10.60	13.77
Average	5.09	8.60	11.45	June	7.31	12.39	14.25
1915				July	8.28	14.28	14.73
January	4.58	7.44	12.19	August	9.20	14.68	15.78
February	5.45	8.75	13.72	September	9.80	14.23	15.73
March	5.27	8.76	14.14	October	10.22	14.84	16.88
April	4.66	8.40	13.82	November	10.33	15.59	16.54
May	4.49	8.34	13.88	December	10.82	16.11	17.29
June	4.15	7.73	12.12	Average	8.24	12.60	14.84
July	4.02	6.71	9.82	1918			
August	4.47	6.93	10.84	January	13.05	18.20	20.26
September	3.97	6.83	10.44	February	15.21	20.83	24.75
October	3.82	6.92	10.44	March	16.28	22.52	24.14
November	4.20	7.24	11.88	April	15.80	22.17	24.72
December	4.51	8.20	12.83	May	14.11	20.96	24.27
Average	4.46	7.72	11.96	June	13.83	20.76	21.66
1916				July	13.59	20.20	22.62
January	4.47	8.40	12.85	August	16.19	24.04	25.40
February	4.30	8.00	12.24	September	15.78	23.88	24.84
March	4.25	8.00	11.60	October	15.84	24.13	23.90
April	4.37	7.95	11.38	November	15.03	23.79	21.85
May	4.48	7.80	11.82	December	15.72	25.00	23.61
				Average	14.99	22.20	24.46

CHAPTER II

THE REGULATION OF RICE PRICES

MEASURES for the relief of economic derangements, arising from the War, comprised various plans and proposals, put forth from various sources. As regards agriculture, efforts were made to regulate the price of rice and raw silk. In the case of rice, these measures may be classified as: first, those taken by the Okuma Cabinet (1914-1916), which sought to raise market prices; and second, those of the Terauchi Cabinet (1916-1918), designed to bring them down.

Measures Adopted by the Okuma Cabinet.

As stated above, the depression of the rice market at the outbreak of war was in no way connected with the War, since the cereal market had always been affected by circumstances peculiar to this country alone. To be sure, rice rose to ¥16 on August 10, because of the reluctance of growers to part with their crops, the difficulty of importing rice from abroad, and the current rumor that large quantities would be required by the army and navy. But it was not long before all this was reversed. On September 1, when the first official forecast indicated that the forthcoming crop would be large, the market began to fall; on October 19 it had reached the level of ¥13; on December 10 that of ¥12. Meanwhile, much had been heard about the necessity of regulating prices directly, or of extending the benefits of a low-interest loan for the relief of farmers, or of barring Korean rice from the market. On October 15 the Imperial Agricultural Society proposed that the matter be investigated by some agency comprising representatives of both the Government and the people. The proposal embodied the following eight measures:

That Korean rice be officially barred in market transactions.

That the Government be requested to purchase rice from the producer or grant subsidies for its export.

That the Government be requested to compel the army, navy, and all prisons to buy what they would need for a year to come, and to buy it directly from the producer, through the intermediary of the various industrial associations.

38 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

That the Government be requested to make a low-interest loan, amounting to ¥20,000,000, to rice producers.

That there should be some improvement in the method of giving out forecasts of the rice crop.

That efforts be made to establish a system of storage warehouses for cereals.

That there should be a revision of the Cereal Exchanges Law with a view to preventing manipulation of rice prices for the sole purpose of speculation.

That there should be due care in the application of laws pertaining to rice imports in years of crop failure.

Moreover, since the consequences of low rice prices are serious, on December 24 the Government took action. In the Lower House it introduced bills for the regulation of the price of rice and asked for an appropriation of ¥15,000,000 to make it possible for it, the Government, to deal in it. The dissolution of the Diet prevented these measures passing. On January 25, 1915, the authorities having been forced to take the best measures under the circumstances, procured the issue of an Imperial Order, to the effect that if need arose the Minister of Finance should be at liberty to buy, sell, and exchange cereals; and that the buying, selling, and exchange of cereals, as provided above, could be carried on under contract at the pleasure of the Minister of Finance.

In actual practice the measure proved ineffective. The authorities had at their disposal an appropriation of ¥5,000,000, to buy up 3,000,000 koku of spot rice in the markets of Tokyo, Osaka, Hiogo, Nagoya, and Shimonoseki, and thus to raise the price to the level of ¥15 or ¥16. They began to buy on March 15, and the result was a price of ¥14.40. Toward the end of the month, the price began to fall, and dropped to ¥13.64 in April; to ¥13.43 in May; to ¥13.04 in June, and to ¥12.73 in July. Nothing had really been accomplished. A bill was introduced in the new Diet, proposing the establishment of a commission for the investigation of the price of rice. At the same time a resolution passed by the presidents of the agricultural societies, was put before the authorities. The Government, exasperated by the failure of its first plan, and aroused by the gravity of the situation, established the above Commission, and on October 7 made public its personnel and the methods to be followed. The Commission included some seventy of Japan's best-known public men, had

as chairman the Minister of Agriculture and Commerce, and was to conduct its investigations as directed by that Minister. Its first meeting was held on October 21.

The proposals for the regulation of the rice market which the Minister of Agriculture and Commerce submitted were: the establishment of rice warehouses; the issue of rice-warehouse certificates; the advancing by the Government of loans at low interest; and the raising of rice prices to a normal level by means of subsidies.

The Commission, before entering upon the discussion of these proposals, also urged the need of taking steps at once to halt the fall in prices, and its recommendations were:

The encouragement of rice exports; rice held by the Government should be exported as soon as possible; and further to expedite the export of rice, inclusive of stocks from Korea and Formosa, arrangements should be made either to subsidize some part of Japan's available tonnage, or to take some similar measure.

The Government should, as suggested, advance low-interest loans. Such loans should be made by the Deposit Section of the Department of Finance, by the Bank of Japan, by the Mortgage Bank, or by the banks of agriculture and industry, the amount loaned to each applicant to be limited to ¥2,000. And rice or other cereals should be regarded as security.

Freight rates on rice should be reduced.

The collection of the land taxes should be postponed.

The task of working out permanent measures was assigned by the Commission to a subcommittee which, though it toiled assiduously, was unable to decide on any definite measure before the end of the year. Meanwhile, the condition of the rice market was far from satisfactory. Though the price rose to ¥13.35 in August, there was a sweeping fall in September, and the price reached ¥10.80 at the end of the month, with an average of ¥11.43. The mean price for October, still lower, was ¥11.31; in November it was ¥12.53; and in December ¥13.36. The gradual rise was undoubtedly due to the various official steps that were being taken. But the interests concerned were by no means satisfied with the result. The Government found itself in an awkward position, because the low price made it impossible to dispose of the stocks it had purchased, and thus it sustained a substantial loss.

The low price of rice had its real origin in the increased harvests,

and they were due in part to favorable seasons, and in part to the fact that the gradual rise in prices during the past few years had in its turn caused growers to increase the area they planted in rice. The crop for 1914 exceeded that of a normal year by 7,000,000 koku; and in 1915 the excess was 6,000,000 koku. But while other commodities were rising in price, rice, under the influence of oversupply, now remained at a low level. Under the circumstances, growers were in urgent need of some remedy; and halfway measures were likely to further the interest, not of the grower, but of the speculator. The Government had contented itself with appropriating about ¥4,190,000, and purchasing about 320,000 koku, between March 10 and May 10. The money market being tight, and the exporting of rice proving impracticable, the Government had also to warehouse all it had bought on the market. Thus the appropriation was speedily spent without producing substantial results. In short, the benefits fell to the dealers in the big cities, and none reached the growers. The Government itself is said to have sustained a loss of more than ¥2,000,000 by its hazardous venture. In the early months of 1916 the market, which had started to turn upward by the end of 1915, rose to ¥15, as a result of the stimulus of a general rise in the price of commodities and the dulness of the money market. In May the tone grew weaker, with prices hovering about ¥14. In the meantime, the Rice Commission, after meeting twenty-three times, drafted a bill proposing, as recommended above, that the collection of the land tax be postponed. A special committee was also appointed to draw up a plan, the essential points of which were as follows:

The Government, when it seemed essential, should be at liberty to advance a low-interest loan to rice producers. For the above purpose, the Government should create an extraordinary fund; and in case a sum should be called for, larger than that provided by the extraordinary fund, the authorities might avail themselves of funds in the Deposits Section, or issue negotiable certificates.

In making low-interest loans the Mortgage Bank should act as a disburser. The aforesaid bank should advance such loans, while accepting rice as security. Loans so advanced should bear interest at 7 per cent. But when the Government had made loans to the Bank for the object in view, the said loan should be made at the rate of less than 5 per cent. Loans so advanced should be repaid in August, September, and October. They might, however, be repaid at any time prior to their maturity; or

if absolutely necessary, repayment might be postponed beyond the date fixed. If it were deemed necessary, the Mortgage Bank should be at liberty to require an applicant to repay his loan before it became due.

In the matter of import duties, Article 6 of the Tariff Schedules should be so revised by Imperial Order as to vary the import duty on rice, the limit upward being ¥2.50 per 100 kin¹ cleaned, or in husk ¥6.25 per koku. If deemed essential, rice might be placed on the free list. As for foreign rice imported into Korea, it should be taxed in accordance with the provisions of the tariff.

In case the price of rice should suffer an extraordinary fall, the Government should assist in its export, as provided below:

Shipments of rice by subsidized steamship lines should be accorded the benefit of a discount in freight rates, in return for the subsidy that the State grants to such steamship lines. Freight rates should be reduced on rice in transit from the place of origin to the port of export. Exporters should be given every aid in the sale of their commodities, and in the making of exchanges.

Pains should be taken to spread the knowledge of the advantage of agricultural warehouses; and the following measures should be carried out:

The cost of the establishment of agricultural warehouses should be defrayed in part by subsidies from the Government. Agricultural warehouses should be exempt from the payment of income and business taxes, and from the provisions of the stamp tax pertaining to agricultural warehouse certificates. A loan at low-interest rates should be arranged for the benefit of agricultural warehouses. Provincial Governments should also give them aid by advancing loans to them from the emergency funds. Assistance should be given to the promoters of such warehouses in their efforts to secure satisfactory sites. When an industrial coöperative association maintained and operated a warehouse, it should be at liberty to assume charge of the crops of persons other than its members.

In order to facilitate immediate sales of rice, the organization and business methods of markets should be perfected, and official quotations on immediate deliveries made public, this to be under the control of the officials concerned. No speculative profits should be permitted in the case of spot sales. A market should be an associated organization, and its membership open only to those actually dealing in the cereal. In a spot market, only its members, and persons authorized to participate in its transactions, should be permitted to become "bears." As regards "bulls," only members should be eligible to make deferred deals; but no restric-

¹ 1 kin = 1.32 lbs.

tion should be imposed on transactions for immediate delivery. Sales should be effected by samples, in the case of spot rice; and all deferred transactions should be kept within a time limit of fifty days. No transactions should be permitted of the sort made merely for the purpose of canceling orders, postponing settlements, or arranging margins. And no such transactions as sales by *grade and unit*, which transactions bear a close resemblance to futures, should be permitted.

The Land Tax Law should be so revised as to permit of the deferring of the date of the collection of the tax.

If the problem were properly handled, new uses could be found for rice and its substitutes. This would no doubt be one way of adjusting irregularities of price. In the past, too little thought had been given to the matter.

If possible, the agricultural problems of Japan proper, of Korea and Formosa, should all be treated as part of the same problem. Considering the conditions of demand and supply for rice in Japan proper, attempts should be made to encourage exports from Japan. If, furthermore, there were any crop other than rice which did well in the Colonies but not at home, it should be grown in them extensively, and special arrangements should be made to encourage its cultivation. This would put all areas concerned on the same agricultural basis.

It will be noted that the foregoing suggestions of the Rice Commission are all measures that might with advantage be permanently adopted. They were entirely different from those of the Government, which offered only temporary relief. As has been stated, the officials submitted four plans which it was believed would be less difficult to put in practice; but these plans were quickly rejected, and the above suggestions were adopted in their place. Among the measures drafted by the Rice Commission, the only ones that bore directly on the price of rice were the recommendations that the tariff be revised and that exports should be encouraged. It might, therefore, be said that the commissioners were opposed to official intervention so far as it called for regulation of prices, holding that the economic position of the rice grower should first be improved. But market conditions soon began to undergo a change. In October rice began to go up. In November, stimulated by a general rise in commodity prices, it rose to a new record for the past four years; in December it went above ¥19. Thus there was every indication that the necessity of regulating prices had disappeared. In January, February, and March, 1917, prices fell to between ¥16 and ¥17; but in April and May they were higher again.

Toward the end of May, despite the fact that the Government sold out its stocks, the price set a new record, with futures rising to ¥20.53 and spots to ¥18.70. In June both markets grew promising. As mentioned before, there was a complication of reasons for this—the expansion in the buying power of the lower classes which brought about a tremendous increase in the demand; difficulties met with in importing rice, arising from an extraordinary shipping situation and high prices in the producing areas; abrupt increases in rice exports, which served to decrease the stocks on the market; the cheapness of the grain as compared with other cereals; increased costs of production because of the rise in the price of fertilizers and higher wages for labor; and above all, the inflation of the currency, which affected all commodities.

Measures Adopted by the Terauchi Government for the Regulation of Rice Prices.

Rice prices, which had commenced to go up in the first half of 1916, meant a remarkably prosperous market in the second half. In July, the activity of the spot market sent futures to ¥24.72 which was then an unprecedented level, with the result that the public was aroused to the necessity of remedying the situation. The tone of the market was persistently strong in August; and on September 1 the new Government, with Count Terauchi at its head, promulgated the Anti-Profiteering Law, which was at once put into force. Although this law was not aimed directly at conditions in the rice market, it was believed that unless rice was governed by conditions entirely its own, the Anti-Profiteering Law would correct them, and other evils as well. It contained the following provisions:

In case it shall come to the knowledge of the Minister of Agriculture and Commerce that any person with a view to making excessive profits by means of sudden changes in the market prices of the undermentioned commodities, is seeking to make or have others make wholesale purchases of the aforesaid commodities, or is refusing to sell his holdings of the same, the Minister of Agriculture and Commerce may warn him that his actions come within the law as stated above; and if necessary, the Minister may impose limitations on the selling or buying of the commodities in question. The provisions of this article apply with equal effect to any person or persons seeking to cause, or causing others, so to act with respect to the following commodities: rice and other cereals; paper;

44 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

manufactures of iron; dyestuffs; coal; drugs and chemicals; and cotton yarns and fabrics.

Persons who, contrary to the provisions of the foregoing article, have made wholesale purchases of the commodities specified; or who refuse to sell their holdings; or who have put themselves within the terms of warning of the said Minister, shall be liable to imprisonment for not more than three months, or a fine of not more than ¥100.

The object of the Anti-Profiteering Law, it is easy to see, was to curb speculators. Although temporarily it had a great effect upon the cotton market in Osaka, rice was not markedly affected by this measure. All that it could do was put an end to unjustifiable manipulations of the market. While it brought a temporary decline in futures, spot rice was as high as ever; and when a typhoon occurred in September, the price rose so extraordinarily that the market had for a time to suspend. In November a plan to extend the range of rice grades handled in the market was under consideration; but this failed to bring about any improvement in the situation. December continued to maintain the upward trend of the foregoing months. In January, 1918, a short crop and the activity of other cereals sent the market up enormously, and toward the end of the month the Minister of Agriculture and Commerce had to give personal warnings to a number of offending individuals. The spot price rose to ¥25.50, a most startling price, in the latter part of February. Again the Minister was obliged to exercise his power of admonition. And when this failed to produce visible results, there were rumors that the Government would reduce the rice import duties. What the authorities did do was to reduce the unit for quotation and extend the range of grades handled. Conditions were quite grave in April. The steady rise of spot rice impressed the Government with the necessity of adopting drastic measures. As a result, the famous Law for Government Control of Imported Rice was promulgated. But the continual rise in price could not be halted, and ¥27, a new record, was reached. That led the authorities to examine the books and accounts of some of the brokers of the Rice Exchange. On May 27, official quotations for imported grains were made public, in accordance with the Control Law. This, together with the German offer of peace, had the effect of bringing about a slump in the market. But later the upward movement of prices was resumed, and the authorities were forced to work out a plan for importing Korean rice on a large scale.

Also the Government made a survey of the quantity of cereals in the hands of private holders, with a view to their expropriation. Then occurred the "rice riots," which, together with the above official efforts at control, caused a break in the market; a break, however, which soon gave place to new strength.

In addition to the Anti-Profiteering Law, the measures which the Terauchi Cabinet adopted, for the purpose of controlling the price of rice, comprised, as we have seen, government control of cereals, the suppression of market manipulations, the repeal of duties on foreign and imported grains, and a restriction of exports. All of these measures, commencing with government control will here be dealt with. And, for the sake of convenience, imported rice and home-grown will be treated separately.

Government Control of Imported Rice.

(Imperial Order No. 92 of April, 1925, pertaining to imports of foreign rice.)

ARTICLE 1.

In order to correct irregularities in the price of rice, the Minister of Agriculture and Commerce may resort to the following measures:

- (I) The importation of rice from abroad or from Korea or Formosa; and the buying or selling of the same.
- (II) The granting of a subsidy to any dealer who, in accordance with the terms and conditions fixed by the said Minister, is engaged in the importation of rice from abroad, or from Korea or Formosa, and in the selling of the same.

ARTICLE 2.

As regards Clause I of the foregoing article, the Minister of Agriculture and Commerce (a) may buy and sell rice by contract at his pleasure; (b) a special agency shall be established in the Department of Agriculture and Commerce for the control of imported rice, or rice brought from Korea and Formosa.

The Regulations for the Control of Imported Rice, as issued on April 26, were, in fact, as follows:

No person or persons other than the Minister of Agriculture and Commerce, and persons appointed by the said Minister, may engage in the business of importing rice from abroad, or bringing in the same from the Colonies.

Notwithstanding the foregoing article, shipments to fill orders for this cereal which have been placed with exporters abroad or in the Colonies before the promulgation of the Law may be brought in, provided that application for the permit therefore is made to the Minister of Agriculture and Commerce within one month after the law becomes operative. In this case, the Minister may impose conditions on the sale of the cereal in question in connection with the issue of the permit.

In cases where rice has been purchased and held before the promulgation of the law, by any person or persons intending to import the same into the country, the owner or owners may request the Minister of Agriculture and Commerce to buy from him or them the grain in question, within one month after the enactment of the law.

Prices to be paid for such rice must not exceed the sum of the cost price, plus freight, insurance, and such other charges. The Minister of Agriculture and Commerce, when requested to purchase a stock of rice, may cause any person or persons appointed by him for such transactions to effect the said purchase. The Minister of Agriculture and Commerce, and provincial governors, if necessary, are authorized to cause any person who owns, or holds, or has custody of, lots of rice or other cereals, to make report on the quantity of such holdings.

On May 5, 1918, the above regulations were revised, the chief changes being given below.

In case imported cereals are required as a material for the manufacture of ame (syrup and candy), liquor and alcohol, the manufacturer must first obtain the permit of the Minister of Agriculture and Commerce, furnishing him particulars as to the nature and quantity of the products to be manufactured, the address of his factory, and the place and time at which the imported rice is to be used.

The term "imported rice" as employed in this law does not include broken rice.

Any person or persons who shall manufacture ame, liquor, or alcohol with imported rice, except as above provided, shall be liable to a fine of not more than ¥100, or imprisonment for not more than three months.

After further amendment the above regulations for the control of rice imports were repealed November 1, 1918, by a Department Order, and at the same time an Imperial Emergency Order covered the repeal of import duties.

At the time of the enactment of these laws, the Government estimated the shortage of rice at about 2,000,000 koku, and tried to

bring in 3,000,000 koku. The quantities really brought in totaled 3,300,000 koku. The Minister of Agriculture and Commerce did not take part in actual business transactions in the cereal. They were left in the hands of dealers appointed by the Government; all that the Minister had to do was to fix sale prices and indemnify the dealers for any losses they might suffer. The Government made the sum of ¥9,000,000 available for the purpose. The authorities took the necessary steps to prevent the reexportation of cereals. But these efforts were all alike without effect. While negotiations for the purchase of rice were under way, embargoes on rice were proclaimed in the producing country, or steps which were taken for the regulation of the market miscarried, and the result was that the price rose instead of falling. It is said that in disposing of a quantity of rice comparatively small,—some 3,300,000 koku,—the Government lost ¥23,000,000.

Government Control of Home-Grown Rice.

With the above end in view, the following laws were promulgated:

An Imperial Order issued August 16, 1918, and known as the Order for the Expropriation of Cereals. It read, in part:

ARTICLE 1.

The Minister of Agriculture and Commerce, when he deems it necessary for the sake of the public welfare, is authorized to expropriate rice and other cereals, and to fix the sum due their holders, or cause other persons appointed for this purpose so to do.

ARTICLE 2.

Rice and other cereals expropriated in accordance with the provisions of the foregoing article, may be sold, or caused to be sold, by the Minister of Agriculture, who shall fix the price at which they may be sold. This article is also applicable to grains which were, or were caused to be, purchased by order of the said Minister.

ARTICLE 3.

Any person or persons who may complain of the prices fixed by the Minister of Agriculture and Commerce for a cereal to be expropriated as provided for in Article 1, may institute a suit in the regular courts, within three months after the date of the expropriation.

(The institution of suits as specified in the foregoing clause was not, however, to affect the expropriation of the cereals.)

ARTICLE 6.

Such measures as are necessary to the carrying out of the law shall be prescribed by the Minister of Agriculture and Commerce.

In August, 1918, when rice reached its highest point, it was rumored that the extraordinary state of the market had been purposely brought about by jobbers and market manipulators; and the consequence was that in many places riots—"the rice riots"—broke out. This led the Government to work out the above-mentioned plan for cereal control. The officials of the Department of Agriculture and Commerce were said at first to have been divided as to the course to be pursued. Some claimed that the best course would be the issue of an Imperial Order stating what the limit of rise should be. But others maintained that the satisfactory solution lay in getting together the supply of rice and other cereals in the larger cities. The latter view prevailed and resulted in the issue of the Order for the Expropriation of Cereals. However, the order unfortunately comprised no scale of prices for the rice expropriated—the most important point of all. And, accordingly, its results were disappointing. Grain did not come into the market so readily, and prices did not drop as had been hoped. And on September 5 a maximum price was officially fixed—at ¥33. This had some temporary effect; but the market commenced to rise again soon afterward. As for the business of drawing rice into the large cities, the officials in charge made plans by which dealers were authorized to purchase from growers; but all that was ultimately accomplished was the securing of an insignificant quantity, some 400,000 koku. The measure tended to raise the prices in the provinces, while utterly failing to effect the market in the country as a whole.

The Repeal or Reduction of Customs Duties.

A measure which had always been regarded as qualified to play an important part in any attempt to reduce the price of rice, was again brought to the fore by an Imperial Emergency Order of October 30. The decree, No. 373, known as an Order Pertaining to the Reduction or Remission of Import Duties on Rice, Cleaned and Husked, invested the Government with power to reduce or remit the duty for a period specified. On the same day another ordinance, No. 374, was promulgated and became operative, the effect of which was to fix the period as ending October 31, 1919. The duties which were enacted by

Imperial Order No. 119 on May 27, 1912, and which took effect on November 1 of the same year, amounted to one yen per 100 kin, and the remission of this duty was expected to reduce rice prices by ¥2.50 per koku. But the demand for rice abroad frustrated all the efforts of the Government.

The Restriction of Exports.

On September 18, 1914, by Departmental Order No. 22, the Minister of Agriculture and Commerce gave notice that under the exigences of war, his consent must first be obtained for the exportation of industrial materials. This order was so amended on February 23, 1918, that rice and other cereals were included in the commodities listed. A further amendment was made public on April 1, for the prohibition of the reexports of imported cereals. In consequence, despite the fact that the trade totaled ¥14,662,546 in 1917, 1918 made a showing of but ¥8,321,965.

The Revision of the Law Pertaining to the Cereal Exchanges.

The authorities concerned had always been alert to suppress price manipulation in the cereal exchanges, which the public had long suspected was going on. Thus on April 16, 1918, the Government addressed a mandate to the markets of the country calling for the restraint of speculation in spots for the current and the coming months. Again on June 14 the Government revised the laws so as to put a curb on fictitious sales, the purpose being to bring about a healthy development of the exchanges by means of restrictions upon lawless speculators. These revisions may be summed up as follows:

In dealing in futures, the broker shall not resell grain or buy it back, unless instructed so to do by the party or parties on whose behalf he has been acting.

In exchanges which require surety deposits to protect transactions made therein, it shall be unlawful to diminish the amount of such surety deposits, on the ground that a broker is at once both selling and buying, nor is it permissible to release him from his obligation to make such surety deposits.

These measures had a temporary effect in calming the market; but they proved ultimately to be no more than empty threats, and failed

50 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

to halt the upward trend of prices. Far from doing so, after the enactment of each successive measure, the situation became more serious. For instance, the price, while standing at ¥22.33 in September, 1917, when the Anti-Profiteering Law was promulgated, advanced to ¥23.81 in October. In February, 1918, the month following the enactment of the cereal embargo, it went ¥1.66 above the high point for the month before. Further, in spite of the fact that the "rice riots" were instrumental in lowering prices in August, 1918, an extraordinary advance in the market took place in September. The details are given in table 1.

TABLE 1

	<i>Average price per koku</i>	<i>Index number</i>		<i>Average price per koku</i>	<i>Index number</i>
1914 July	¥15.93	100	1918 January	¥23.84	150
1915 October			February	24.94	157 ²
(Lowest price)	11.42	72	March	26.60	167
1917 January	16.88	103	April	27.38	172 ⁴
June	19.77	124	May	27.46	172
July	21.91	138	June	28.34	178 ⁵
August	21.41	133	July	30.39	191 ⁶
September	21.83	134 ³	August	33.70	243
October	23.61	148	September	38.23	240 ⁷
November	23.81	149	October	43.91	276 ⁸
December	23.49	147			

Quotations are for the standard grades in the Tokyo spot market. Index numbers are arrived at by taking for basis the prices prevailing at the outbreak of the War.

² When the Anti-Profiteering Law was promulgated.

³ When trade restrictions were announced.

⁴ When various regulatory enactments were promulgated, reexports prohibited, transactions in spot rice forbidden, and the Government assumed control of imported rice.

⁵ When the publication of standard quotations for the entire country was prohibited.

⁶ When investigations into the stocks of rice were held in the country.

⁷ When "rice riots" occurred, and the Expropriation Law was promulgated.

⁸ When expropriation was discontinued, and both the law for the control of foreign rice, and import and export duties were repealed.

Recommendations of the Economic Commission.

In September, 1918, a National Economic Commission was organized by the Terauchi Government, under Imperial Order No. 343, and set the task of making all necessary investigations into the causes of the alarming rise in the cost of living, of suggesting remedies therefor, as also the best policies to be pursued in view of the country's rapidly changing social and economic conditions. This Commission was made up of some fifty persons, with the Prime Minister as chairman, and the Ministers of Finance and Agriculture and Commerce as vice-chairmen. On September 21 its first session was held, to discuss bills for the regulation of rice prices, and the bills were introduced by the Minister of Agriculture and Commerce. But on the same day the Government tendered its resignation; and when the succeeding cabinet was organized by Mr. Hara, these bills were withdrawn. The Commission, after holding several meetings under the new Premier issued, in May, 1919, a statement setting forth both its fundamental and its temporary policies. The statement had reference to the whole range of the food question, including the rice problem. Because of the fact that the root of the food question lies in the solution of matters bearing on rice and other grains, the author will give below a *precis* of the program that was to be followed in dealing with cereals and their prices.

Fundamental Measures.

a. To increase the production of cereals by:

The promulgation of laws to make easier the enlargement of areas under cultivation.

Intensive farming: Although the area on which two crops a year can be raised amounts to but 40 per cent of the aggregate acreage of land under tillage, the improvement of land may increase the above figures by 20 per cent.

The study of agricultural economy: For the general welfare of the farmer, it is highly important for him both to increase the quantity he produces, and to get his work on a more solid foundation in every way. In point of fact, the farmer is in a wholly bad position, in the matter of the agricultural implements he employs, his supply of capital, his purchases of fertilizer, and the selling of his produce. He is much behind in the use of animal-power and stable manure. Moreover, there is much that requires improvement or cor-

rection in farm life in general. All these things can be accomplished only after a thoroughgoing study of the whole business of farming. The promulgation of a tenant-farmers law: This will ensure the position of the tenant in the matter of the possession of his land, and raise his social standing.

The improvement of farm implements. Increased supplies of, and improvement in the breeds of cattle used.

Cheap and increased supplies of fertilizers for farm use.

The improvement of farming methods: Measures for the bettering of the living conditions of the farmer and his family; for the spread and advancement of instruction in agriculture; for the protection and relief of farm labor; for the supervision and promotion of the migration of farm labor; measures to permit soldiers, serving under the colors, to return home and assist in the work of the home fields; measures to improve agricultural credits; to fix minimum prices for grain; and to make grants for the encouragement of production. Measures to facilitate shipments of rice between Japan proper and the Colonies. Measures dealing with rice-producing areas abroad, and the emigration of Japanese to such areas; facilities for importing rice; and the repeal or reduction of import duties.

b. To improve distribution by:

A betterment in the methods of transacting business on the Exchange.

The establishment of more spot markets.

The establishment of more public markets.

The growth and encouragement of coöperative societies.

The adoption of trading by weight.

Better methods of transportation.

A Government monopoly of food.

c. To improve conditions of consumption:

A Government monopoly of the liquor trade.

A study of the relation between nutrition and food prices.

An investigation into substitute foods.

The improvement of methods of retailing.

The establishment of a laboratory for the study of foods.

d. To regulate prices by:

A survey of food supplies.

An improvement in the methods of transacting business on the exchange.

Supervision of the exchanges. Safeguards against wholesale buying by "bulls," and the protection from market "corners."

Measures for the control of currency and credits.

The prescribing of maximum and minimum prices.

The establishment of rice warehouses, and a cereal monopoly.

Temporary Measures.

a. To increase food supplies by :

A policy of increasing imports of the staple foodstuffs.

The restriction or prohibition of the export of staple foodstuffs.

A speeding up of the deliveries of new crops.

b. To restrict consumption by :

Restricting the use of rice for purposes other than food.

The encouragement of improved methods of cooking cereals.

Increasing the supplies of substitute foods and promoting their use.

c. To improve methods of distribution by :

Making it easier to ship rice.

The establishment of more spot markets and public markets.

The distribution of staple foodstuffs by public organizations, or by the Government.

d. The prevention of collapses in the rice market by :

Government storage of grain reserves, in case of future need.

Broadening the range of grades of rice authorized for exchange trading, and similar expedients.

Dispensing with the middleman.

Preventing wholesale purchases and "corners," for the purpose of making excessive profits.

Holding down increases in the prices of commodities, especially rice, by adopting suitable measures for the currency and international exchange.

Fixing maximum prices for rice and other staple foodstuffs.

Increasing wages and salaries, in order to keep pace with the rising cost of living.

CHAPTER III

OTHER CROPS

THOUGH rice and wheat were greatly affected by the War, its effect in the case of beans, peas, and the like was much less striking. Thus, speaking broadly, there is very little that need be said about them. But, an exception must be made for soy beans, the small red bean, for peas, and for French beans. In their cases, both prices and crops gave marked evidence of the influence of the War. And as long as it went on, they had an extensive sale at home and abroad.

1. *Peas.*

In 1913 the total pea shipments to foreign countries reached 8,609,259 pounds, valued at ¥561,127. But, with the War, Great Britain required immense quantities. British purchases for 1913 had amounted to 6,553,935 pounds, valued at ¥410,158. In 1914 they had a value of ¥1,351,869; in 1915, of ¥3,137,653; and in 1916, of ¥7,705,625.

This increase was because England, accustomed to supplying all her needs from her Colonies, especially India, found this no longer feasible, and also because crops in Europe showed a great falling off, while the demand grew vastly larger on account of the mobilization of troops. Prices became three times greater than they had been before the War. In addition to England, America and Canada were also in the market; but, later on, their purchases fell off, instead of increasing. The volume of the export trade showed the following growth: In 1913 its value was ¥561,127; in 1914, ¥1,452,824; in 1915, ¥3,276,046; in 1916, ¥7,873,069; and in 1917, ¥8,039,853.

Peas constitute a crop which is grown to some extent everywhere in Japan. But they are largely consumed within the country, and for export they must be obtained from the island of Hokkaido. A thriving trade was done. In 1912, an area of 17,537 cho was under pea crops, and produced 182,778 koku. In 1913 the figures were, respectively, 24,029 and 178,312; in 1914, 26,575 and 248,300; in 1915, 27,960 and 248,562; in 1916, 35,701 and 295,898; and in 1917, 68,715 and 633,666.

In 1912 the yield of peas in Japan proper was 373,970 koku. In 1915 it was 414,665. In 1917 it was 761,380.

2. *French Beans.*

As was the case with peas, exports in French beans were very large during, and owing to, the War. America was the principal consumer in *ante-bellum* days; but in the war years she consumed a great deal more. While her own needs increased she also did a great deal of re-exporting. Great Britain also placed large orders in Japan as did France and Canada. Where in 1913 the value of such exports had been ¥445,651, in 1915 it was ¥4,662,105; in 1916, ¥6,758,672; and in 1917, ¥22,559,918.

The active demand led the producers of Hokkaido greatly to increase their French bean acreages. In Hokkaido the area under crop rose from 26,202 cho in 1913 to 95,175 in 1917.

3. *Various Other Crops.*

Apart from beans, what may be called the lesser crops of Japan comprise foxtail millet, barnyard millet, proso millet, buckwheat, and maize. The War affected them little. Maize made some increase in exports. But in all these secondary crops there was a tendency toward a decrease in acreage. This tendency had been in evidence before the War; but its operation was more pronounced after its outbreak, maize being the only exception. When the rice and wheat market had a great drop at the time of the declaration of war, farmers were led to turn to the lesser crops, which returned them a larger margin of profit. This accounts for the fact that in their cases both acreages and harvests showed a considerable increase in the following years. But subsequently, when the price of rice and other cereals began to rise the grower was won back to them. In 1913 the area under soy beans was 475,284 cho. In 1917 it had fallen to 434,183. Production, however, had risen from 2,993,095 koku to 3,604,666.

CHAPTER IV

SILK

SERICULTURE is one of the great productive industries of Japan. It had its origin in ages remote, and, with the cultivation of the various cereals, is held to be one of the two most important branches of agriculture. The Government has always given them its marked consideration and support. And because of that such Sino-classical expressions as *No-so* (agriculture and mulberry, i.e., sericulture), and *I-shoku-ko-skoko* (clothing, food, husbandry, and weaving), have come into common use. In medieval times, when the Fujiwaras were the dominant clan, sericulture made great progress. And, thereafter, its story became one of ups and downs until 1859, when Japan was forced to open her door to the world's commerce. At that time the industry in Europe seemed to have fallen into decay, for the French Government sent to Japan for raw silk. Later it began to be exported in quantity; and in or about 1879, the annual total amounted to several million yen. It had become evident, indeed, that the foreign demand for raw silk was almost unlimited, and that a great future awaited the industry.

While authentic statistics are lacking as to the situation in pre-Meiji eras, some idea may be gleaned from the following table of exports to London, which is generally conceded to be as reliable as anything available. As the British capital was a center for the reexport of silk, table 1 gives a fair idea of the trade then carried on:

TABLE 1
Exports of Raw Silk in Pre-Meiji Years.

	Quantity	Value ¹
1859	488,000 pounds	150-175 ryo
1860	813,000	130-120
1861	922,000	150-175
1862	1,415,000	108-172
1863	1,295,000	164-180
1864	1,342,000	160-150
1865	942,000	220-200
1866	1,000,000	330-210
1867	1,102,000	200-210

¹ Values are based on the market prices ruling in the current year, the basis of calculation being one ryo per nine kwan, or about 74½ pounds of raw silk.

In the Meiji Era, the export of silk products grew greater than ever. While there were some dull years, as a whole the trade experienced an uninterrupted development, with the result that raw silk, spun silk, and other like products came to have a high place among Japan's exports. Yearly totals are given in table 2.

TABLE 2

	<i>Value²</i>
1868	¥ 10,364,418
1872	8,203,111
1877	10,667,997
1882	19,261,363
1887	21,920,902
1892	39,914,959
1897	58,719,101
1902	82,573,273
1907	123,292,259
1912	163,328,284
1913	203,316,344

As has been noted, the aggregate value of the different silk exports hovered about ¥10,000,000 in the earlier years of Meiji. In 1877, or the tenth year of the era, the figure rose to ¥20,000,000; in 1897 to ¥50,000,000; in 1906 to over ¥100,000,000; and in the last year of Meiji, to ¥150,000,000. It will, therefore, be seen that the volume of this trade doubled every ten years. This was due to the fact that the consumption of silk products by other nations had a tremendous increase. But we must remember that Japanese sericulture is a highly vulnerable industry. For, as most raw silk is intended for the foreign market, the least economic disturbance in a consuming country will have its effect upon the amount of consumption and the price of silk. Naturally the industry was violently affected by the War. When the news of its outbreak was received in Japan, there was a precipitate break in the raw silk market. The Yokohama Exchange, which had been quoting ¥99.80 for ten kin³ of coarse filatures on July 23, dropped to ¥78 on August 4, the lowest figure since 1900. Under the circumstances, it is no wonder that this exchange, though it closed its doors several times in the hope that the situation might be re-

² Every sort of silk product is included—cocoons, noshi, kibiso, and similar wastes, floss silk, waste floss silk, various sorts of raw silk, spun silk yarn, etc.

³ 1 kin = 1.322 lbs.

58 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

versed, found it impossible to tide over the crisis. On the last day of August the market fell to ¥76. Between July 23 and September 29, prices—per ten kin—were as given in table 3.

TABLE 3

July 23	¥99.80	July 28	¥94.20
24	99.60	29	94.40
25	96.50	August 1	89.80
27	95.40	4	78.00

(The market remained closed on the intervening days)

August 15	¥84.00	September 9	¥77.00
17	82.90	10	76.80
18	84.10	11	77.60
19	87.20	12	77.20
20	84.20	14	77.20
24	79.10	15	76.90
25	79.50	16	77.10
26	77.20	17	77.10
27	76.50	18	77.80
28	76.70	19	80.00
September 1	78.80	21	77.20
2	78.40	22	78.50
3	80.10	23	77.70
4	77.00	25	78.00
5	77.20	26	78.50
7	77.80	28	78.20
8	77.00	29	79.50

The total value of silk shipped in August reached ¥16,427,440, which, as compared with the corresponding month in 1913, showed a decrease of ¥4,765,943. In September the figures fell off to ¥12,904,889, or ¥6,014,797 less than the amount for September, 1913.

In volume of business, the United States comes first and is followed by France and Italy; but the trade with the two latter countries fell off strikingly, due to the loss of their manufacturing power caused by the War. In the United States, similarly, the outbreak of the War occasioned a slump in cotton and tightness of money, in consequence of which the silk textile business was directly affected. The raw silk market in Japan suffered in its turn. There was an alarming decline of exports, and the sericulturists began to demand relief. In September signs of recovery were in evidence, as new orders for future de-

livery were received from America. Europe, too, appeared in the market with the restoration of trade in the Mediterranean Sea. Since at the same time the United States appeared to be recovering her former prosperity, it was held by the trade that American demands for raw silk would not diminish. Nevertheless, the market remained very bad. In October, the feeling of optimism which had prevailed was completely dispelled. Now that the theater of the War had been greatly extended in Europe, business with that part of the world became hardly possible; at the same time America was not in a position to take the surplus stock which accumulated in the market of Yokohama. On October 10, futures fell below ¥75 per 10 kin; on the thirteenth a further drop was reported with the price standing about ¥71, and on the twentieth, ¥69 was reached. The extreme dulness of the textile industry and the cheapness of silver aggravated the situation. In November there was no sign of improvement, as the market remained at about ¥68 or ¥69. Conditions were unchanged in December, except for some small indication of firmness due to a decline in receipts of stocks through a cut in working time at certain mills, and to the popular expectation that the Government would put into practice an effective scheme of relief for the industry. Nevertheless, there was on the whole no visible improvement; speculators appeared to be groping in the dark. Ninety-day quotations, on the Yokohama Exchange, for October-December, were as given in table 4.

With respect to the month of October, it will be seen that the volume of trade with both America and Europe shows a noticeable decline. The value of exports was ¥12,478,093, or less by ¥9,550,547 than the exports for October, 1913. Exports grew weaker in November, and amounted only to ¥8,583,519, or less by ¥10,811,349 than November, 1913. In December a slight improvement was noted with a showing of ¥11,640,466.

On March 20, the Teikoku Sanshi Kabushiki Kaisha, the Association of Raw Silk Dealers, was incorporated by the Government and the silk trade, working together, but without satisfactory results. The advance of ¥5,000,000 which the former put into the enterprise, merely protected the raw silk output of 1914, and nothing could be done to cover production in 1915. Thus, much bitter controversy arose in the trade. The company was forced to wind up its affairs before the summer was over, or on June 15.

In August, however, there was every promise that better times

TABLE 4

October 1	¥78.00 ⁴	November 2	¥75.50
2	78.10	8	71.80
8	78.00	4	71.10
5	77.60	5	70.60
6	77.00	6	70.80
7	76.80	7	70.10
8	76.00	9	69.50
9	76.10	10	68.10
10	75.80	11	68.10
12	74.00	12	68.80
13	71.90	13	68.60
14	72.50	14	69.70
15	72.20	16	70.80
16	71.10	17	70.20
19	70.10	18	69.90
20	69.60	19	68.50
21	69.60	20	68.50
22	70.20	21	68.60
23	70.00	24	68.80
24	69.00	25	69.00
26	67.90	26	69.80
27	69.00	27	69.60
28	68.40	28	69.50
29	69.00		
<i>December</i>			
	<i>30 days</i>	<i>60 days</i>	<i>90 days</i>
Maximum	¥74.80	¥75.40	¥76.40
Minimum	69.50	69.70	70.80
Official	71.80	72.70	78.40

were to dawn at last. The spring cocoons of 1915 had been a partial failure, and the autumn production did not turn out so large as was at first expected, because of the excessive heat of the summer. Decreases in the amount of cocoons gathered were by no means confined to Japan, as all other silk-producing countries experienced a falling off in production. The cocoon yield in France was believed to be only 70 or 80 per cent of that of 1914, the Italian crop only 20 or 30 per cent, and the Chinese, 30 per cent. The world supply appeared to be quite inadequate to meet the demand, and the result was that in August the market began to rise. At that time the United States, eco-

⁴ Prices are quoted per 10 kin of No. 1 filatures.

nomicallly speaking, had begun to benefit by the War. Primarily because of Europe's immense need of her output of war materials, her cotton and money markets grew active, and this made Wall Street and the textile industry very optimistic. Raw silks from Europe were disappearing from the market, leaving the business in the hands of the Japanese exporters. The result was that by the middle of October, Shinshiu No. 1, the standard grade for exchange transactions, came to be quoted at ¥1,010 per 100 kin, the highest price realized since the opening of hostilities. In November, stimulated by the world-wide shortage of silk, and the restoration of France's textile industry, exports to Europe grew active, and contracts were made for delivery at ¥1,150, the best price since 1907. It would be erroneous to say that all this was due to the actual demand of the consumer; in fact, a certain quantity is known to have been bought for purposes of mere speculation. By the middle of December, the tone of the market was weaker, ending in a drop to ¥1,070, but the favorable conditions continued till the end of the year. Raw silk exports and quotations on the Yokohama Exchange for the year are given in table 5.

The prosperity of the business was well maintained after the new year. The tone of the market grew stronger, due to satisfactory sales, and to the fact that many inquiries from America were resulting in orders. There was a growing demand for the larger counts, of superior grade; for the manufacture of fine silk fabrics was increasing greatly in America, and France and Italy were unable to supply the raw silk that it called for. In consequence, the market became so strong that in the early part of February Shinshiu No. 1 rose to ¥1,350 and to ¥1,360 per 100 kin. In March, demands from foreign markets were as great as ever; and by the middle of the month, there was every promise that the market would regain its high point for 1907. But there was an indication of weakness toward the end of the month. Generally speaking, April was dull, as orders for exports fell off; and on April 24 the standard grade declined to the unprecedented quotation of ¥730. May was a better month, as a result of the rise of the London market and of the increased demands from the United States. Toward the end of the month, Shinshiu No. 1 rose to ¥1,100. From June on, no exceptional movement took place, and the year closed very quietly. In short, 1916 was a rather uneventful year; it was just able to hold the prosperity that had had its origin in the year before. While the business was still under the adverse influence

TABLE 5

I.

Raw Silk Exports, 1915.

	<i>Value</i>		<i>Value</i>
January	¥ 7,260,464	July	¥12,426,609
February	6,699,287	August	15,184,063
March	9,061,456	September	15,526,851
April	14,037,423	October	17,290,847
May	10,548,203	November	19,281,188
June	7,258,307	December	17,467,586
Total		¥152,080,518	

II.

*Yokohama Exchange Quotations for Raw Silk, 1915.**

	<i>Current Month</i>			<i>Future Delivery</i>		
	<i>Highest</i>	<i>Lowest</i>	<i>Official</i>	<i>Highest</i>	<i>Lowest</i>	<i>Official</i>
January	¥80.80	¥75.20	¥77.60	¥81.20	¥75.80	¥78.50
February	77.10	75.00	75.70	78.50	75.20	76.80
March	82.50	75.70	80.50	83.10	75.90	81.10
April	....	....	81.90	....	....	82.90
May	82.80	77.30	79.90	84.20	76.90	80.60
June	77.00	73.20	74.20	78.10	75.10	76.50
July	77.40	75.20	75.90	77.90	75.30	76.40
August	80.00	76.90	78.00	79.40	76.00	78.10
September	83.60	79.30	81.70	83.80	79.50	82.00
October	90.50	84.50	88.00	91.70	84.50	87.70
November	119.00	92.80	106.40	122.10	93.90	108.50
December	116.80	101.70	107.70	119.50	103.20	110.10

of the War, the United States was beginning to consume enormous quantities of Japan's raw silk, because the hostilities intensified her economic life, and increased the buying powers of her people. For the year, her purchases of raw silk amounted to ¥224,092,974, or almost 90 per cent of the total raw silk exports of Japan, which amounted to ¥267,005,932, and 70 per cent of Japan's entire export trade with the United States. Because of the fact that silk is by no means an absolute necessity of life, Europe did not make so urgent a demand for it; but when navigation became less perilous, and the supply of cargo space more ample, the situation there began to show

* Prices are for 10 kin of No. 1 filatures.

improvement. Exports to England grew to ¥2,019,689, thus exceeding the figure for 1915 by ¥1,214,442. In like manner, exports to France were increasing; and the value of her purchases reached ¥31,685,623, ¥11,284,917 more than for the same month of the previous year. To sum up, the export business for the year was not only greater by ¥114,967,148 than it had been in 1915, but it set a new record in the history of the raw silk trade; and in the main this was due to the extraordinary business activity of the United States, which in turn was an effect of the War.

TABLE 6
Raw Silk Exports, 1916.

	<i>Value</i>		<i>Value</i>
January	¥13,122,113	July	¥23,111,634
February	18,012,306	August	27,756,767
March	22,621,948	September	27,274,372
April	16,639,838	October	26,775,830
May	20,251,421	November	26,818,640
June	16,074,890	December	28,546,174
Total		¥267,005,933	

The market was firm in January, 1917; but this condition did not last for long. February was far from being satisfactory, in the matter of European trade. While the market was dull, the report came that Germany had declared unrestricted submarine war against Allied shipping. Later came the tidings that the United States and Germany had broken off diplomatic relations. This proved to be a very severe blow to the futures market, which had to suspend business for a number of days. Toward the close of the month, trade with the United States again grew active. In March, the tone of the market was at first inactive, as it became known that American silk manufacturers were hesitant because of the announcement from London of a prohibition on imports of silk goods. But the market started to improve by the middle of the month; exporters to Europe entered it, and the futures market grew very active. On March 17, information was received of the revolution in Russia; and on the following day, of the tendered resignation of the Briand Cabinet. Moreover, there were rumors of threats to navigation in the Indian Ocean; and the effect of all this on the market was discouraging. Worse still, exports to Europe experienced a sharp decline in price, while American busi-

ness men hesitated to place new orders. Toward the end of the month a report was received that France, too, would bar silk imports. This caused further depression. April was an uneventful month. In the early part of it, word was received that raw silk was not included among the import commodities on which the French Government looked unfavorably. It also became known that the United States was sending many orders to Japan, and this, too, strengthened the market. On July 10, as a result of short supplies, Shinshiu No. 1 was sold for ¥1,440, a price ten yen higher than the highest ever realized, that of April, 1907. After that prices steadily rose, and by the middle of the month they had reached ¥1,520. In July, the market recorded a rise of ¥360; but conditions were not at all favorable in August, owing to a collapse of cotton. At this juncture news was received of the Italo-American silk compact, which hastened the decline of the market. It was stated that Italy would send all her raw silks (yellow cocoon thread) to the United States to meet the costs of war materials. In September, rumors were afloat of the coming promulgation of laws for the regulation of commodity prices, and the control of shipping. This created conditions of semi-panic among speculators and hurt the market accordingly. The gold embargo which Washington put into effect at about this time made the situation more serious, and Shinshiu No. 1 was brought down to ¥1,350. Toward the end of the month an unfounded report that the United States would prohibit the entry of silk imports gained currency. Futures had a tremendous slump, and the spot market also became completely depressed. In October, the production of raw silk showed some decline, for the typhoon which raged on September 30 did much damage in the Kwanto districts. Furthermore, a new rumor that Washington would enact a law prohibiting silk imports was abroad, to the further injury of the market. The decline could not be checked before prices had dropped to about ¥500 below their high point. Shinshiu No. 1 fell to ¥1,250. And, to protect themselves, Shinshiu mill owners agreed to cease selling. But the situation could not be changed. In November conditions were as bad as ever, despite the fact that an agreement to cut down working hours had also gone into effect. To make the market worse the War was then going badly for Italy; and internal conditions were also bad in Russia.

On November 10 mill owners held a national conference to consider the best measures of relief. December gave no promise of im-

provement; it was only toward the end of the month that a falling off in the amount of unsold stocks, which had resulted from the suspension of spinning, gave some hope of recovery. In short, 1917 was full of stirring events; apart from the many turns taken by the War itself, the business world was seriously affected by many changes and developments,—England's trade embargo, the Russian revolution, America's entry into the War, and Germany's adoption of unrestricted submarine warfare. As for Japan, she enacted laws for the regulation of commodity prices, and the establishment of a shipping administration. Although the consequences of these events were not uniform in effect, they were at one in having an unfavorable influence on the market in one way or another.

Nevertheless, the exporting of raw silk went on actively, and the first half of the year totaled ¥141,214,037, or about 20 per cent of the value of the whole export trade. This figure, as compared with that of the corresponding period of the previous year, represents a gain of ¥34,491,521, or 32 per cent. The prosperity of the trade was due to the enormous consumption of raw silk in the United States. Such shipments reached 84 per cent of the aggregate value of silk exports. It may further be noted that the increase in the volume of silk exports over that of the corresponding period of 1916 was equal to 74 per cent of the increase of all exports. Trade with France more than doubled, the increase being about ¥16,000,000. All this is evidence that the United States was least affected by her entry into the War, and bought large quantities of silk, in anticipation of the imposition of a duty on raw silk; and that decreases in the production of France and Italy enabled the Japanese product to monopolize the world's markets. Conditions were as active in the second half of 1917 as in the first, the figures reaching ¥213,940,977. This sum, as compared with the same period for 1916, was greater by ¥53,626,897, or about 30 per cent; and it was 34 per cent as compared with the aggregate value of all exports. This was mainly due to the continued and tremendous growth of America's demand for silk fabrics, and the necessary importation of raw silk. Another potent cause was that silk prices were considerably higher. The year 1917 registered the huge total of ¥355,155,034 for silk exports, a figure which exceeded that of the preceding year by ¥88,118,416, an increase of more than 30 per cent over the total for 1916; and compared with 1914 or 1915, this 1917 total was more than double.

In 1918 a very large supply on hand, and the existence of the official quotations that had been in force since the latter part of the previous year, gave January an unfavorable start. Later, however, some orders were received from America, and this made the market buoyant. But in the middle of the month, it became dull again and began to fall. On January 24 the mill owners, or most of them, met in conference and adopted a resolution not to sell the standard Shinshiu grade below ¥1,300. Although this was intended solely to maintain prices at a decent level, the market became more seriously depressed than ever by the end of the month. The mill owners did their utmost to prevent a further decline of the market; but the situation was out of their control, due to the fact that any desire to buy, in Europe and America, had, for the time, come to an end, while stocks offered for sale were constantly on the increase. Intimidated by the ominous tone of weakness, those mill owners who had not entered into the agreement for mutual protection found it impossible to hold out until buyers entered the market; they commenced to sell their holdings at low prices. On February 2, Shinshiu No. 1 broke below the limit of ¥1,300, and was offered for ¥1,270. On February 12 a cable stated that the United States would restrict the volume of her import trade. This was a great blow to the market, and holders, in a frenzy of excitement, offered their stocks for whatever they would fetch. Ninety-day deliveries were quoted at ¥117.50 per 10 kin, the lowest price since May, 1917. On February 18, an official dispatch from Washington, stating that the American Government had no intention of adopting such severe measures eased the market; and, even by the day following it had begun to be active again. But on the twenty-fifth, another break in the market occurred, on the information that the Russian question was becoming menacing. In March, the situation promised nothing, and Shinshiu No. 1 fell off to ¥1,180, and great pessimism as to America's trade restrictions was still the controlling cause. The market managed to regain its normal balance for a time. On March 8, Shinshiu No. 1 rose to ¥1,240, and on March 20 to ¥1,300. But developments at the front caused a great deal of anxiety, and the tone of the market was very weak. April was notably bullish, and, on the twenty-fourth, Shinshiu No. 1 rose to ¥1,430, and, on the thirtieth to ¥1,540. In May, it was generally believed that Washington would exclude raw silk and silk goods as goods non-essential for the prosecution of the War; hence the market again be-

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came restless. But on the receipt of orders from American manufacturers, Shinshiu No. 1 rose to ¥1,400 on May 22, and to ¥1,600 on the thirtieth. June began with an increasing feeling of anxiety as to the turn the War was taking. Shinshiu No. 1 declined to ¥1,400. The market was profoundly affected on the seventeenth by the receipt of a cable to the effect that Washington intended to tax raw silk. But soon a new season opened, and there was much talk of new business. On June 25, Shinshiu No. 1 rose to ¥1,880, a price higher than the previous record, made in January, 1916. July was dull throughout. August was not a very satisfactory month, with the price of Shinshiu No. 1 hovering about ¥1,560; it was affected by the Rice Riots. September passed quietly. In October, the price rose to ¥1,600; but the market was agitated by the circulation of a new rumor that the United States would in some way restrict the silk textile industry, and futures declined by ¥10. As the result of a gradual increase in the supply on hand, the tone of the market was markedly weak in November. On the seventh, a national convention of mill owners and dealers passed a resolution calling for a thirty-day suspension of business in every filature in the country, beginning on December 1. On the twelfth, futures went up to ¥165.90 on the news that the armistice protocol was signed. On the day following, Shinshiu No. 1 rose to ¥1,620, but orders were scarce. On the twenty-eighth, the market dropped to ¥1,570, on the announcement that no action was to be taken on the above-mentioned resolution. December was in general uneventful, as there was a widespread nervousness lest the Armistice should be followed by some sudden turnover. Stocks were piling up on the market, and Shinshiu No. 1 was quoted at ¥1,520.

Quotations on futures for the latter half of 1918 are given in table 7.

TABLE 7

	<i>For delivery in:</i>	<i>Highest</i>	<i>Lowest</i>	<i>Official</i>
July	November	¥153.80	¥144.00	¥149.60
August	December	156.50	150.30	153.40
September	January	155.00	147.50	151.40
October	February	164.80	149.00	158.10
November	March	167.70	153.80	160.30
December	April	156.50	146.50	152.40

68 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

For the first half of 1918, raw silk exports amounted to ¥157,101,019, a sum ¥18,886,982, or 11 per cent, larger than that for the corresponding term of the previous year. In the case of both France and Russia, there was a decrease of about ¥4,000,000, while this was more than made up by England and Italy. Exports to America rose by ¥16,000,000. That her demands underwent such an enormous development was a result of her wonderful war-time business growth, which increased the consumption of silk manufactures. The middle- and lower-class Americans who make up the greater part of the population had been enriched by the higher wages and earnings of the war period; they had acquired the habit of using silk, and they had thus widely extended its consumption. Another thing that built up the sale of silks was that, comparatively speaking, they could be had cheaper than cotton and woolen manufactures. Thus silk goods became a necessity of life rather than an article of luxury. That the slightest fluctuation of general business conditions in the United States is quickly reflected in the silk trade of Japan had convincing proof during the War. In the second half of 1918 raw silk exports reached ¥213,236,036, which amount, though larger than the total for the first half by ¥56,000,000, was ¥704,941 less than that for the same period of 1917. ¥704,941 is not a large amount; it was due to the fact that while exports to France showed an increase of ¥7,400,000, those to the United States fell off by ¥3,600,000, England showed a loss of ¥2,500,000, Italy of ¥1,100,000, and other countries of ¥500,000. And, together, these declines may be taken as simply reactions from Japan's trade prosperity under war conditions. The total for the year amounted to ¥370,337,055, or more than that for 1917 by ¥15,182,021. The rise in the price of raw silk was by no means an insignificant factor in this increase. In the actual quantity of raw silk exported, 1918 represents a decline of 1,484,573 kin.

TABLE 8

Raw Silk Production and Exports, 1908-1918.

(Amounts in 1,000 kin; values in ¥1,000)

	<i>Production</i>	<i>Exports</i>	<i>Difference</i>	<i>Percentage</i>		<i>Exports</i>	
	<i>kin</i>	<i>kin</i>	<i>between</i>	<i>Not</i>	<i>Exported</i>	<i>Value</i>	<i>Value per</i>
			<i>production</i>	<i>exported</i>			<i>100 kin</i>
			<i>and exports</i>				
			<i>kin</i>				
908	16,947	11,522	5,425	32	68	¥108,610	¥ 943
909	18,139	13,469	4,670	26	74	124,243	922
910	19,840	14,846	4,994	25	75	130,833	881
911	21,342	14,456	6,885	32	68	128,875	892
912	22,781	17,103	5,678	25	75	150,321	879
913	23,381	20,229	3,153	13	87	188,917	934
914	23,474	17,148	6,326	26	74	161,797	943
915	25,287	17,814	7,472	30	70	152,031	853
916	28,249	21,742	6,507	23	77	267,037	1,228
917	33,235	25,829	7,406	22	78	355,155	1,375
918	36,222	24,234	11,987	33	67	370,337	1,528

TABLE 9

Raw Silk and Silk Yarn Production before and during the War.(Amounts in kwan)^c

I

Raw Silk.

	<i>Number of</i>	<i>Quantity</i>	<i>Value</i>
	<i>producers'</i>		
	<i>households</i>		
1908	391,114	2,711,471	¥144,427,032
1909	382,936	2,902,256	143,703,342
1910	375,587	3,174,475	163,540,126
1911	370,332	3,414,640	172,426,771
1912	346,279	3,644,955	185,224,161
1913	333,536	3,741,052	199,501,979
1914	303,636	3,755,886	176,111,686
1915	288,209	4,045,841	211,438,537
1916	284,500	4,519,850	313,832,959
1917	269,735	5,317,568	407,689,093
1918	255,750	5,795,542	526,708,000

^c 1 kwan = 8.27 lbs.

70 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

II

Silk Yarns.

	<i>Quantity</i>	<i>Value</i>	<i>Total quantity of both raw silk and silk yarns</i>	<i>Total value of both</i>
1908	801,494	¥ 4,235,638	3,512,956	¥148,662,670
1909	876,435	4,233,017	3,775,712	147,936,859
1910	973,335	5,275,923	4,147,810	168,816,049
1911	1,040,285	5,577,126	4,454,925	178,003,897
1912	1,083,686	6,397,175	4,728,641	191,621,336
1913	1,100,513	7,046,277	4,841,538	206,548,256
1914	1,112,880	7,484,062	4,868,766	183,595,748
1915	1,414,455	6,507,552	5,460,296	217,746,089
1916	1,564,558	8,718,701	6,084,406	322,551,660
1917	2,320,845	12,114,844	7,538,413	419,808,937

These tables are based on the statistical reports of the Department of Agriculture and Commerce.

TABLE 10

Raw Silk: Exports by Countries.

(in ¥1,000)

	<i>1914</i>	<i>1915</i>	<i>1916</i>	<i>1917</i>	<i>1918</i>
England	¥ 926	¥ 805	¥ 2,020	¥ 7,243	¥ 7,295
France	15,468	20,401	31,686	35,074	41,601
Italy	8,466	211	.....	1,176	1,533
Russia	1,459	3,172	8,892	4,561	.....
United States	134,800	129,349	224,093	306,170	318,673
India	.....	.....	.....	136	472
Other countries	679	93	347	795	763
Total	¥161,797	¥152,031	¥267,027	¥355,155	¥370,337

TABLE 11
*Raw Silk: Quotations during the War.*⁷
 (Averages by years and months)

<i>Maximum Minimum</i>			<i>Maximum Minimum</i>		
1913	¥1,030	¥ 840	1916 January	¥1,160	¥1,050
1914 January	965	930	February	1,230	1,160
February	1,010	975	March	1,350	1,230
March	1,015	980	April	1,340	1,050
April	1,010	980	May	1,100	1,030
May	1,030	975	June	1,070	1,025
June	1,025	985	July	1,130	1,060
July	1,000	950	August	1,210	1,140
August	950	775	September	1,180	1,130
September	785	760	October	1,150	1,130
October	760	700	November	1,340	1,250
November	700	700	December	1,320	1,230
December	750	700	1916, as a whole	1,350	1,025
1914, as a whole	1,080	700	1917 January	1,290	1,230
1915 January	775	750	February	1,275	1,200
February	770	760	March	1,245	1,125
March	805	760	April	1,270	1,135
April	820	800	May	1,265	1,145
May	810	765	June	1,350	1,200
June	765	735	July	1,720	1,380
July	780	750	August	1,850	1,750
August	800	770	September	1,520	1,350
September	830	830	October	1,400	1,250
October	905	830	November	1,300	1,300
November	1,150	920	December	1,300	1,300
December	1,180	1,020	1917, as a whole	1,750	1,250
1915, as a whole	1,150	735			
<i>Maximum Minimum</i>					
1918 January	¥1,300	¥1,300			
February	1,300	1,200			
March	1,400	1,180			
April	1,500	1,350			
May	1,600	1,400			
June	1,550	1,400			
July	1,650	1,500			
August	1,600	1,540			
September	1,550	1,510			
October	1,620	1,540			
November	1,620	1,550			
December	1,570	1,460			
1918, as a whole	1,650	1,180			

⁷ Per 100 kin of Shinshiu No. 1.

CHAPTER V

THE REGULATION OF SILK PRICES

As has been said in the preceding chapter, the price of raw silk experienced a serious fall at the beginning of the War. In Europe and the United States, especially in the United States, where the declaration of war dealt a severe blow to raw cotton, the stringency of the money market amounted to a panic, which spread to Japan and paralyzed the banking business, already badly disturbed. On August 7, 1914, Shinshiu No. 1, which had stood at ¥990, fell to ¥780. On the twenty-third, the market dropped to ¥775; on September 11, it gained ¥5; on October 12, it declined to ¥750; on October 19, to ¥700; and the result was an agreement of dealers to offer no new stocks of raw silk for sale. Later, a movement was inaugurated for the relief of the industry. The Government was induced to propose a bill to this end in December. In the following pages the author will deal with the matter in detail, together with the policies pursued by the officials concerned.

Seeing that the War would inevitably cause a grave fall in the silk market, some sixty representatives of the industry met on August 10, 1914, and adopted a resolution which a committee was later to put into effect. The purpose of the resolution was to provide proper protection when or if panic conditions should develop. In substance, it was to the effect that jointly and continuously sericulturists should endeavor to curtail production as much as possible; and that they should request the Government to adopt whatever measure or measures might be necessary or proper under the circumstances, for the relief of the industry.

The Minister of Finance, having been waited upon by the committee who laid before him data bearing upon the financing of their business, as also phases of foreign exchange and insurance which concerned silkmen, held a conference with the foremost bankers and merchants in Tokyo and made public the following statement:

The present deadlock in the raw silk trade with America is inevitable because of the fact that, no matter how large the demand in America may be, the issuing of foreign drafts between the United States and Japan is no longer possible; and settlements may cease to be possible

through London. But this must not be allowed to become an insuperable obstacle. It must, rather, be the business of the Government so to arrange things for the Yokohama Specie Bank that it may be able to assume the responsibility of handling foreign bills. While as yet stocks of raw silk on the market of Yokohama are limited, it is reasonable to believe that, under existing conditions, they will gradually grow till they are very large. Lacking the means to obtain financial aid, dealers will suffer from an overstock, and this will in turn mean financial panic for reelers and cocoon producers. We, therefore, propose that as a measure of protection against this, the Bank of Japan, when there is evidence that the accumulation of stocks has become a menace, shall rediscount raw silk bills, as this will induce other banks to accept them without any feeling of insecurity.

While the Minister of Finance was issuing the foregoing statement, silkmen had already begun to urge the necessity of curtailing reeling operations in order to adapt their own circumstances to prevailing conditions; and on September 2, at a national convention of sericulturists held in Yokohama, the following resolution was passed unanimously:

Filatures will not operate in the morning or in the evenings.

No summer reeling will be done later than November 30.

In Shinshiu, spring reeling will be commenced on March 1 of the year following, and in other provinces, on February 2.

Reeling to fill orders for future delivery, received prior to September 2, will be undertaken only by the consent of the Yokohama Raw Silk Guilds.

Every mill owner will strictly obey and adhere to the resolutions of the convention, and local guilds will coöperate with the Yokohama Raw Silk Guilds in seeing that the aforesaid resolutions are observed.

In the case of any unforeseen-situation developing, or of any extraordinary emergency or emergencies arising, a national conference of silkmen will be held at the Yokohama Raw Silk Guilds, in order properly to discuss the same.

In accordance with the foregoing resolution, the raw silk guilds of Nagano (Shinshiu), the chief center of the industry, met on September 5 and passed the following resolution:

No night work will hereafter be permitted under any condition whatsoever.

Spring reeling will not begin before March 1 of the year following.

Reeling will cease on November 3.

In case of infractions and disregard of this resolution, fines will be collected from the offending filatures at the rate of ¥1,000 a mill, and ¥20 a basin.

As has been said above, through prompt measures on the part of the officials concerned special facilities were provided for the financing of the raw silk industry. However, all these measures were for the benefit of mill owners only, and nothing had been done to help cocoon producers. This caused the Dai-nihon Sanshi Kai (the Sericultural Association of Japan), to make representations to the Railway Board, which finally granted them special rates on cocoons, valid between August 15 and October 31. The details follow:

For distances not greater than three hundred miles, raw cocoons, formerly entitled to rebates of 20 per cent, were to be granted rebates of 40 per cent. For distances greater than seventy miles, dried cocoons, formerly entitled to rebates of 40 per cent, were to be granted rebates of from 55 to 60 per cent.

For distances within five hundred miles, shipments of dried cocoons by weight (kin), formerly entitled to rebates of 20 per cent—and, for distances greater than five hundred miles, to 40 per cent—should have such rebates increased, respectively, to 40 and 50 per cent.

Furthermore, as a measure of expediency, the Dai-nihon Sanshi Kai recommended that the industry should adopt a system of reeling on a commission basis, which owed its origin to the ingenuity of the Credit and Sales Coöperative Guild of Komuro, Nagano. Its chief points were:

Mill owners, on taking delivery of consignments of raw cocoons, were first to make the most accurate estimate possible of the quantity and quality of the raw silk that would be obtained, the said estimate to form the basis for calculating what portion of the proceeds of the sale of the raw silk so obtained, the said mill owners should be entitled to, as their commission.

Mill owners, when they had received a delivery of consignments of raw cocoons, should dry them with special care, reel them, and offer for sale the raw silk so obtained in the following spring.

Proceeds from the sale of such raw silk should be shared among the parties concerned on the basis of the average price received for the season.

But the market which had proceeded far toward a collapse could

not be so easily supported now. In October it fell to the extraordinary level of ¥700. At once a great agitation for effective government relief broke out. And, at an emergency session held on November 8, the Dai-nihon Sanshi Kai adopted a resolution, which was referred to a committee of twenty-three members, who were to act upon it. The resolution was as follows:

In view of the fact that the condition of sericulturists has reached the most acute of stages, and the situation, if left unremedied, may bring about a general financial panic, it is hereby proposed that the Government be requested to appropriate a fund, through the proper channels, for the relief of the industry.

In view also of the fact that further transactions on the Yokohama Silk Exchange can only disturb still more the reasonable movement of market prices, and be an injury to the silk industry, it is likewise to be desired that the Government should be asked to close the institution.

The Government should also be requested to send abroad an official commission for the study of conditions in other countries.

The committee charged with the duty of presenting the above resolution made its due representations to the Government. At the same time such Yokohama silk dealers as did business directly with exporters obtained an agreement which guaranteed that, while the Bank of Japan and other banks were being approached for loans, silk production should be adjusted to the prevailing market conditions, and prices kept at reasonable levels. But all this was without result. On November 28, the raw silk dealers held another meeting, and agreed upon the following points:

In order to prevent the further fall of the raw silk market, it is agreed that Shinshiu No. 1 will not be offered for sale for less than ¥700. The sale of other grades will be regulated in accordance with the prices fixed for this standard grade.

It is, therefore, desirable that all mill owners be requested to cease operating on November 10, save for the execution of orders already accepted.

No drafts in payment will be accepted by us, after November 11, with the exception of drafts in settlement of orders already placed with mill owners.

In exchange transactions no evasion of spot deliveries will be permitted.

Members of the trade will put themselves on their commercial honor to make no attempt to take business away from one another.

When stocks now accumulating in the market have been reduced to a reasonable quantity, this Agreement may, with the consent of the members of the Association, be abrogated.

Meanwhile market conditions were growing more serious than ever, and some of the large mill owners decided to carry out the above agreement and close their plants. The Raw Silk Producers' Guild in the Tosan districts, Aichi, resolved to suspend business from November 11, 1914, to February 1, 1915, and the dupion silk manufacturers of the same region for sixty days from January 1, 1915. Mill owners in Matsumoto, Nagano, and the vicinity similarly agreed to close their mills on November 20 or later. In Suwa, Nagano, the great center of the industry in Japan, it was decided to cease operating on November 30. The examples so set were quickly followed in other parts of the country. Everywhere there was the same desire to maintain prices at a proper level, and in some way bring relief to the industry. As for the Government, all that was possible seems to have been done by its officials. In addition to the reduction of freight rates, a War-time Marine Insurance Law was enacted the purpose of which was to encourage foreign trade by preventing increases in insurance charges. Furthermore, to assist in such underwriting an appropriation of ¥8,000,000 was made by the Deposit Section of the Financial Department, and circulated by the Mortgage and industrial banks. As regards indemnification for losses and damage in shipment, the Government was to bear 80 per cent of the total amount, and underwriters the remaining 20 per cent. But the trouble was that, due to the limitation of the working capital of the insurance business in Japan, and to the fact that provisions for reinsurance were as yet inadequate to war-time needs, a great deal of difficulty was experienced in arranging contracts between the insurer and the insured. This meant that insurance could not be made to do its fullest work. In the matter, too, of the fund of ¥8,000,000, the best intentions of the authorities again ended in failure; for the amount was quite insufficient, and, moreover, terms and conditions imposed on applicants were unnecessarily complicated. These measures contributed something toward improving conditions; but they were altogether unequal to the tasks they were intended to accomplish. True, they were more effective in advancing the interests of foreign trade than they were in helping the silk industry. As we have seen, the leaders of the silk industry had done what they could. They had called for the clos-

ing of the Silk Exchange; they had agreed among themselves to postpone the settlement of drafts drawn against one another; to offer no silk products for sale; and to curtail or suspend the business of reeling. But to prevent the collapse of the market seemed to be beyond human power; for the real struggle was against the constant falling off in the foreign demand, against unfavorable trade and shipping conditions, and the inevitable accumulation and excess of supplies on hand. Under the circumstances, there was every likelihood that the industry would end by going completely to pieces. If it did come to that, the consequences would be alarming, for it would take away one of the chief sources of income of Japan's rural population. And the Government took new action.

On December 22, it introduced into the Diet a bill which read, in part, as follows:

ARTICLE 1. In case a bank has sustained losses by accepting for discount any bill or bills secured by raw silk, the Government will indemnify the said losses in toto, in accordance with the instructions issued to provide therefore.

ARTICLE 2. Bills discounted, as covered in the foregoing article, must come within the following categories:

- i. In the case of banks other than the Bank of Japan, they must be bills drawn or endorsed by manufacturers, or wholesale dealers in raw silk. In the case of the Bank of Japan they must be bills of the above description which the Bank of Japan has rediscounted.
- ii. In case banks other than the Bank of Japan accept a bill for discount, the rate of discount charged shall be that minimum rate which is charged for discounting bills of exchange or drafts, with collateral securities other than national bonds. In case the bank of Japan rediscounts the bill, the rate of discount adopted shall be ¥.002 less a day than that charged by the aforesaid banks.
- iii. Bills accepted for discount must mature prior to May 31, 1915.
- iv. Bills accepted for discount must be secured by raw silk for export of a standard equal to, or higher than that of, Shinshiu No. 1.
- v. Bills accepted for discount must be secured by some sum fixed by the Government, having reference to the price of Shinshiu No. 1 or its equivalent on the spot market, at the time of the promulgation of the Law.
- vi. A bill accepted for discount must be of such a sort that, in case the market price of raw silk exceeds the sum held as security for the bill, the discounting banks are given full power to dispose of the raw silk so offered.

78 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

ARTICLE 3. If a bank is desirous of discounting bills, such a bank is required first to obtain the consent of the Government. Without such consent no bank may either dispose of the security in question or relinquish any claim thereto. With respect to the disposal of such securities, no bank may refuse to carry out any order or instructions that the Government has issued to such bank.

ARTICLE 4. Amounts of indemnification shall be fixed by the Government in accordance with the provisions in force therefore.

ARTICLE 5. When the Government has indemnified a bank for losses, any claim or claims that constitute the basis of the indemnification shall be deemed to have been conveyed to the Government.

ARTICLE 6. Whatever the Government is called upon to perform in accordance with this law shall be carried out by the Bank of Japan.

Unfortunately the law failed of passage, owing to the dissolution of the Diet. The authorities, however, sought to put its provisions into force in the form of an Imperial Ordinance under the approval of the Privy Council. But the Privy Council, though it could appreciate the necessity for such a law, decided to send the bill back to the Government, on the ground that from the viewpoint of what was strictly constitutional, it was improper to have it promulgated as an Imperial Ordinance.

In the meantime, market conditions were as unfavorable as before, and on February 26, the Sanshi Boyeki-sho Dogyo Kumiai (The Associated Raw Silk Exporters) adopted the following resolution:

In order to maintain prices of raw silk on the present level, Shinshiu No. 1 will not be offered for sale for less than ¥760.

Drafts will not be honored after February 26, 1915, save those in settlement of orders which have been previously accepted.

In the Yokohama Silk Exchange no evasion of spot deliveries will be permitted.

All members of the association, being strictly governed by the principles of commercial honor, will refrain from any effort to encroach on the business of other members.

There can be no doubt that the adoption of the foregoing resolution had some favorable influence on the market; but the outlook was very gloomy, and the necessity of a remedy was most urgently felt. On March 3, the officials made public some general idea of the policy they proposed to follow; on March 20, after repeated conferences between them and representative silk dealers, the Teikoku Sanshi

Kabushiki Kaisha,—the Association of Raw Silk Dealers—was incorporated. Its expressed purpose was to engage in the buying and selling of raw silk. The capital was put at ¥2,000,000, represented by 40,000 shares of ¥50 each, which were taken up by its organizers. According to an official statement given out on March 3, the Government advanced to the Association the sum of ¥5,000,000, as a subsidy in the form of a “responsible appropriation,” that is, one made without the previous consent of the Diet. Furthermore, in the name of the Minister of Agriculture and Commerce, the Association was given a special mandate, the gist of which was as follows:

Transactions in raw silk shall be limited to goods for spot delivery. An exception, however, may be made in the case of sales effected for purposes of export.

With respect to transactions in raw silk, the Association shall under no circumstance refuse to heed the orders or instructions of the Minister of Agriculture and Commerce.

General principles of business policy and method shall be explicitly set forth in private regulations of the company, when the approval, therefore, of the Minister of Agriculture and Commerce has been obtained. In case their amendment becomes necessary, approval of the said Minister must first be obtained.

Dividends declared by the Association shall not exceed 8 per cent.

Consent of the Minister of Agriculture and Commerce is necessary for the laying down of rules for conducting the business of the company.

Both the manner of holding and controlling properties of the company, and the assignment of a bank or banks in which the Association shall carry accounts shall be decided only with the consent of the Minister of Agriculture and Commerce.

In case the Minister deems that the usefulness of the Association has ceased, the Association shall be dissolved within a period fixed by the said Minister.

In case the Association shall be dissolved, the sum remaining after deduction from the assets of the company of instalments on shares held by parties other than the Government shall be conveyed to the Government within a period fixed by the Minister of Agriculture and Commerce.

In order to help in forwarding the aims of the Association, the Minister of Agriculture and Commerce is invested with power to give orders or instructions to the Association upon all matters and projects which he may deem necessary for the benefit of the Association.

In case the Association has not fulfilled any order or orders given in the mandate, or has broken the laws of the country, the articles of in-

corporation of the Association, or any decision approved of by the Minister; or in case the Association has acted in such a manner as to be an injury to the public welfare, the Minister of Agriculture and Commerce may order the Association to restore to the Government the funds which the Government has advanced.

On March 29, the Teikoku Sanshi Kabushiki Kaisha held a directors' meeting and laid down the basic principles of its business policy, as provided in the mandate. The essentials of the points agreed upon were as follows:

The Association will follow ruling market quotations for the prices it will fix for the buying and selling of raw silk. However, on special occasions, this provision may be set aside with the consent of the Minister of Agriculture and Commerce.

Consignments of raw silk, purchasable by the Company, will be limited to those on the market of Yokohama; and prices to be paid for the purchases, so far as grades other than Shinshiu No. 1 are concerned, will be fixed by reference to the market prices for the grades in question during the previous three months.

The work of purchasing raw silk will be delegated and entrusted to export merchants of Yokohama. The procedure of purchase will conform with trade customs, and delivery of goods will be effected within two weeks after articles of sale have been drawn up.

The Association began to do business on April 1, when the market suddenly grew strong and emerged from its past depression. Soon, however, its tone again became weaker. While the Association made every possible purchase, the condition of the market was so bad as to seem to defy its efforts; and there was every indication that it would have to buy up very much larger stocks. But its capital was now insufficient, as its original resources were rapidly declining; in consequence, it had to ask the Government for an additional appropriation. Difficulties which arose from this came to be felt acutely toward the middle of May, when its business made some progress; but it became a moot question whether or not it should be allowed to continue. One opinion was that since only the production of the previous year enjoyed the benefits of the Association, no advantage could be derived from it for production in the present. It was urged that if the Government could be induced to grant another ¥5,000,000, the Association should be carried on. But the authorities, although they had been quite willing to advance the money before, were not in a posi-

tion to do it again, in view of the condition of the public finances; nor was it possible for them to take over the business and run it themselves. Therefore, it was decided, at a cabinet meeting on May 21, that the Association should be dissolved. It was so informed. By unanimous vote at a shareholders' meeting called on June 25, it wound up its affairs after a brief existence of two months. Nevertheless, it would be unfair to say that the Association failed to do anything to improve the condition of the raw silk market. Indeed, on this point it made a report, the following being a *résumé* of it:

Prior to the latter part of February or before, when it was publicly announced that the silk industry would be raised from its difficult position by the establishment of the Association, Shinshiu No. 1 had been quoted in the neighborhood of ¥750. That, despite the inauspicious situation, the market was able to maintain this price was due to the popular expectation that the proposed incorporation of the Teikoku Sanshi Kabushiki Kaisha would bring a solution of the matter. If the Association had not been formed, prices would have fallen below ¥700.

Between March 3, when the plan of relief was given out to the public, and May 11, transactions on the market totaled 61,700 bales, with an average price of ¥800 for Shinshiu No. 1.

Assuming that the Teikoku Sanshi Kabushiki Kaisha had not been called into being and that the market had remained at the level of ¥700, the difference in the average proceeds of sales for the same period might have been as much as ¥104 per 100 kin. There was reason in fact to believe that this difference was applicable to all grades of raw silk, including Shinshiu No. 1. If we so calculate, the prices received for the above 61,700 bales represented total gains of ¥3,609,450, and this one could rightfully attribute to the existence of the Association.

If the 25,000 bales remaining on May 11, and silk received up to the end of the month were counted in at the same rate, the aggregate sales made after the incorporation of the Association would amount to about ¥5,071,950.

The quantities of raw silk which the Teikoku Sanshi purchased at the standard price of ¥800 for Shinshiu No. 1 were as follows:

	Quantity	Value
First purchase	90,700 kin	¥ 755,500
Second purchase	592,900	5,610,000
Total	683,600	¥6,365,500

According to the business report, there was a deficit in the Association's accounts of ¥13,427,680. And after disposing of all its stocks, it placed itself in the hands of receivers and returned to the Government the advances it had made. As has been said above, all that it was able to accomplish for the benefit of the silk industry was to dispose of the 100,000 bales produced in 1914, which had become a heavy weight on the hands of the raw silk dealers of Yokohama; and before it could take over the 300,000 bales of the new crop, its own life was ended. Fortunately, the market rose in due course. On September 3, it reached ¥815, on September 6, ¥830, on October 7, ¥840, on October 23, ¥900, on November 1, ¥920, on November 15, ¥1,030, and on the thirtieth, ¥1,100. The average price in December was ¥1,040, with the promise of better times in the following year.

As to what should be done with the silk stocks held by the Association, it was variously believed by some that the Association should endeavor to sell out its entire holdings and retire from business; and by others that it should under no circumstances try to dispose of its stocks, as this would only make for a collapse of the market, which had begun to show a tendency to rise. And there were others who believed that, as there was every indication that the market would in the end become very strong, the Association ought not to offer its holdings for sale at any price below ¥1,300.

A great deal of acrimonious debate arose among the adherents of the three different opinions. If the holdings of the Association had been sold for the prices ruling in the market in the latter part of November, the concern would have netted a profit of about ¥2,000,000; yet the Government held that this was not the right time to sell, and let the year end without taking any steps in the matter.

In short, the measures for the regulation of raw silk prices ended in a fiasco; but unlike the attempt to regulate rice prices, which did more harm than good, it had been possible to offer some relief to the market. This difference may have been due to the fact that raw silk is distinctly an article for export, while rice is not. One thing common to both attempts was that the measures adopted accrued to the benefit of some dealers only, and failed to upbuild the industry, as a whole.

What has been said applies to the regulation of the market down to the end of 1915. But, as we have stated above, the conditions that prevailed after 1915 were entirely different.

CHAPTER VI

FERTILIZERS

Demand and Supply.

THE demand for commercial fertilizers was steadily growing, and, before the War, had reached the figure of ¥100,000,000, the leading products being superphosphate of lime, oil cake, fish waste, sulphate of ammonia, and bone meal. Although calcium cyanimid is not unknown, it is a comparatively new manufacture for Japan, and consumers have not as yet learned how best to use it; its consumption is, therefore, restricted. Despite the fact that the production of artificial fertilizer is still in its infancy, it is gradually coming to the fore. While in 1905 its value did not rise above ¥22,000,000, the figure for 1914 was ¥56,380,000, showing that there had been a gain of some ¥34,300,000—about 250 per cent during the intervening years. The development of the export-import trade in the commodity calls for comment. About 1885, fertilizers dealt in were limited to oil cake and fish waste, with a value of some thousand yen. The trade grew steadily, however, and the figures rose from ¥22,300,000 in 1905 to ¥63,100,000 in 1914. Before the outbreak of the War, an amount equal to 8 per cent of the aggregate production in Japan proper was brought in from Formosa, Karafuto, and Korea; of which about 80 per cent came from Karafuto. Both exports and shipments from the colonies grew larger with the development of the manufacture of artificial fertilizers, the markets abroad being Australia, the East Indies, Hongkong, the Straits Settlements, and Asiatic Russia. The trade averaged about ¥716,000 a year for the three years before the War. Shipments to the colonies amounted to some ¥1,870,000, Taiwan being the largest market, and requiring, together with Korea, constantly increasing quantities.

It is difficult to distinguish between the varieties of commercial fertilizers, and to indicate how much they were in demand at home. Judging from conditions of production and trade, the total consumption in 1905 may have amounted to ¥36,700,000, in 1907 to more than ¥61,200,000, and in 1914 to ¥100,000,000, which would indicate that in the decade under review, the total rose by about

¥70,000,000. While consumption enormously increased after the outbreak of war, due to the extension of the acreage under cultivation, to the high price of rice, the reclamation of waste land, etc., this will be considered in the sections to follow.

As to non-commercial manures, it is difficult to make precise estimates. It is believed that in 1913 the quantity produced totaled about 6,350,000,000 kwan, including stable manure and silkworm litter. Putting the value of 100 kwan at one yen, the total would amount roughly to ¥63,500,000. If kitchen leavings and other waste matter be included, the total would rise still higher. Green manure is another thing which is difficult for the statistician to handle. According to statistical reports of the Department of Agriculture and Commerce, in 1914 the area under *astragalus siniens*, soy beans, clover, horse beans, and peas amounted to 400,000 cho, from which 1,200,000,000 kwan, valued at ¥12,000,000, was gathered. Grass from "genya" (field) and woodland—believed to total 960,000,000 kwan, had a value of ¥9,600,000. If grass from ditch banks, and dams, and along pathways had been added, the amount might have been far greater. Human excrement, the quantity of which was put at 5,400,000,000 kwan in 1914, can reasonably be appraised at ¥54,000,000. Taken together, the value of non-commercial fertilizers used annually just before the War, may be put at ¥130,000,000.

The lack of authentic data as regards the effect of the War on the demand and supply of fertilizer prevents the author from making a comprehensive survey of conditions during hostilities. He is, therefore, forced to confine his inquiries to artificial fertilizers, bean cake, and a few other things, on which the War indisputably exerted an immense influence,

Sulphate of Ammonia.

Before the War the production of sulphate of ammonia was insignificant, and Japan had to meet the greater part of her requirements by imports from England. The total imports for 1913 amounted to 185,000,000 piculs and were valued at ¥16,000,000. Of this total England sent 181,000,000 piculs, of a value of ¥15,600,000. Next came Australia, with 3,000,000 piculs valued at ¥250,000.

Conditions in 1914 were entirely different. After the outbreak of the War, the countries which had been dependent on Germany for

sulphate of ammonia were forced to look to England, notwithstanding the fact that the calling out of so many of her men of working age considerably diminished her productive powers, and her exports to Japan of this fertilizer declined sharply. The figure dropped to 1,740,000 piculs, valued at ¥14,990,000. It is to be noted that while the quantity was less than 1 per cent of that of the preceding year, the value was almost as large, the cause being the extraordinary advance in the price paid for fertilizers in Japan. The trade with Australia was on the wane, likewise, with the result that the aggregate imports for the year dropped to 1,760,000 kin, valued at ¥15,140,000. In 1915 production in England was still interrupted, and accordingly prices rose to extraordinary levels. But on the other hand Japan was able to begin to manufacture sulphate of ammonia, and her supplies really grew in volume. Furthermore, the low price of bean cake tended to decrease the demand for sulphate. And finally shipments from England were quite irregular, in consequence of which importers were not encouraged to place orders with that country. The trade was able to register only 290,000 piculs in 1915, valued at ¥2,660,000. The showing for Australia for the year was only 330,000 piculs, worth ¥2,940,000, or 1,430,000 piculs, and ¥12,200,000 less than in 1914. In 1916 the situation was still serious, with England furnishing about 50,000 piculs valued at ¥1,119,000, 210,000 piculs and ¥1,740,000 less than 1915. For the decline of production in England had raised prices; a great part of what was produced was needed to take the place of the German product in the sugar beet districts in Europe, and in the cane fields of Cuba and Java. Production in Japan had considerably increased.

In 1917, trade conditions improved somewhat and the amount rose to 250,000 piculs, valued at ¥2,286,000. What came from England amounted to 180,000 piculs, valued at ¥2,000,000. This was due to the fact that the price, which had begun to rise by the autumn of 1916, was about ¥250 before the end of the year, so that there was no great difference between prices here and those in England. It is said that many shipments ordered in England at ¥200 in the previous season began to arrive in 1916. Later on, in January, 1917, England put an embargo on the product, the result being that Japan was cut off from her English source of supply, save for such shipments as had been ordered before the proclaiming of the embargo. The most noteworthy thing was that the American product which, owing to its

high cost, had never been able to secure a market in Japan, was brought in to some extent, the cause being the extraordinary prices now being obtained. In August, ¥480 was paid. The year 1918 made the poorest showing in imports; for the British embargo, coupled with the growth of Japan's chemical industry, reduced the figure to 18,000 piculs, valued at ¥300,000.

From 185,000,000 piculs valued at ¥16,000,000 in 1913, the volume of sulphate of ammonia imports fell rapidly after the outbreak of war, so that in 1918 such trade seemed to have come to an end. Many causes may be mentioned as responsible for this—increases in prices in the producing countries, decreased production, scarcity of cargo space, exorbitant freight charges, and the British embargo. But the outstanding cause lay in the wonderful progress of the Japanese fertilizer industry during the War, which rendered the country largely self-sufficing. As has been stated above, Japan had been lamentably backward in such manufactures in *ante-bellum* days, but after the outbreak of war, when high prices abroad, excessive freight rates, and the like were making this fertilizer so costly, there was every opportunity for the upbuilding of the home industry. At any rate, in 1915, Japan was able to turn out 30,000 tons, despite the fact that her annual production did not reach 10,000 tons during the three years immediately preceding hostilities. In 1916 the amount produced rose to 45,000 tons, and in 1918 to 66,000 tons. According to estimates worked out in a pre-war year, when the market price averaged ¥150, Japan needed about 85,000 tons per annum. She was then unable to meet such a demand by home production. But, thanks to the trade dislocations of the War, she seems able to do it now. Furthermore, the way was paved for the export of the commodity. In 1917, large orders were placed by Java; and when this brought about a decided rise in prices, the Government had to declare an embargo on its export. It is conceded by the trade that Java can take about 80,000 tons, and Hawaii 10,000 tons. Even granting that British and German producers reappear in these markets, the manufacturers and exporters of Japan are confident that she will be able to maintain her ground because of the advantage she possesses in lower cost for freightage. Below is appended a list of the manufacturers whose production expanded during the War,—with figures for production.

TABLE 1

	1915	1916	1918
Nihon Chisso Hiryo Kaisha—(The Japanese Nitrogenous Fertilizer Company)	15,000 tons	20,000 tons	3,600 tons
Denki Kagaku Kogyo Kaisha—(The Electro-Chemical Company)	5,000	5,000	18,000
The Yawata Iron Works	4,000	4,000	4,000
The South Manchuria Railway	3,500	3,500	6,000

Phosphate.

Of the fertilizers produced in Japan, phosphate stands first. Its manufacture is carried on upon so extensive a scale that before the War Japan exported it to the amount of 34,150,000 kin and to the value of ¥530,000 in 1912, and to the amount of 31,220,000 kin, valued at ¥440,000 in 1913, the chief market being Australia. The volume of the business began to grow enormously in 1914, owing to the outbreak of the War. As German and Belgian competition disappeared, Japanese phosphate began to sell in India; and the total exports, in 1914, were 32,680,000 kin, valued at ¥500,000. In 1915, the figure rose to 77,900,000 kin, of a value of ¥1,540,000, that is, by 45,220,000 kin, and ¥1,040,000, more than the totals for the previous year. 1916 was the most prosperous of the war years. Its totals were, respectively, 127,760,000 kin and ¥3,580,000. A striking thing, too, was that, in 1916, shipments of 54,020,000 kin, valued at ¥1,540,000 were made to Asiatic Russia, which for Japanese phosphates had hitherto been a closed territory. The year 1917 saw a falling off, the volume of exports being 420,000 kin with a value of ¥2,080,000; and this falling off may be set down to the difficulty of getting shipments to the Russian markets, and the virtual cessation of business in Russia; to the loss of much of the Australian market through price increases; and to the declaration of the embargo which went into force on September 20.

In 1918 the export trade in phosphates was very depressed. Only the market for superphosphate, which alone was exempt from the embargo, permitted it to reach a volume of 120,000 kin, with a value of ¥900,000. As compared with 1917, the decline was about 300,000 kin, or ¥900,000. Compared with 1913, the quantity is almost insignificant, though the prices obtained were twice as high. All in all,

TABLE 2
Phosphate: Exports by Countries, 1913-1918.

	1913		1914		1915	
	Quantity kin	Value	Quantity kin	Value	Quantity kin	Value
China	2,082	¥ 104	5,277	¥ 247	186,684	¥ 2,670
Kwantung Peninsula	9,840	225	92,052	1,872	112,543	2,659
Hongkong	249,337	4,932	92,220	1,702	147,530	5,981
Australia	20,972,988	291,446	20,402,241	318,929	27,027,612	440,974
Philippine Islands	289,206	6,498	74,072	4,706	225,330	7,694
India	236,207	4,200	1,014,522	18,505	12,633,951	258,474
Straits Settlements	71,350	2,975	65,306	607,105	607,105	12,898
Other countries	9,396,180	138,752	10,938,827	162,124	18,659,045	199,800
Total	81,227,190	¥449,132	32,684,516	¥507,091	77,904,204	¥1,546,481

	1916		1917		1918	
	Quantity kin	Value	Quantity kin	Value	Quantity kin	Value
China	65,193	¥ 8,527	431	¥ 2,479	111	¥ 871
Kwantung Peninsula	277,552	10,148	1,468	7,383	5,488	28,799
Hongkong	87,125	1,736	17	334	244	1,037
Australia	4,758,562	126,630	1	4	...	....
Philippine Islands	402,497	29,724	1,821	16,279	573	2,946
India	15,651,305	430,913	29,873	137,064	1,298	6,218
Straits Settlements	3,639,309	108,743	49,909	224,703	14,651	172,741
Other countries	77,233,598	2,288,992	251,913	1,455,963	104,557	687,529
Total	127,767,912	¥3,583,762	421,096	¥2,089,556	126,873	¥900,114

the immense increases for 1915 and 1916 were due as much to the War as were the declines for 1917 and 1918, the only difference being that in the former case the disappearance of German and Belgian phosphates gave rise to a demand for the Japanese product, while in the latter the falling off of the export trade and greater home requirements, which led to the declaring of the embargo, were solely responsible.

Rock Phosphate.

While phosphate fertilizer is largely exported from Japan, she is dependent on imports for supplies of rock phosphate requisite for the manufacture of the fertilizer. For the year 1912 the total volume imported reached 4,740,000 kin, valued at ¥7,450,000; in 1913, 5,520,000 kin with a value of ¥8,610,000. The outbreak of the War, which brought about an extraordinary shipping situation, so injured the development of the business that the Florida product could not be profitably handled. Subsequently, importing was resumed; but exorbitant ocean freight charges prevented manufacturers from ordering what they needed. Import figures for 1914 were only 4,750,000 kin and ¥7,110,000. In 1915 the decline of the rice market and a continued rise in freight charges further held down the trade, with the result that its volume dropped to 2,260,000 kin and ¥3,400,000, or 2,470,000 kin and ¥3,710,000 below 1914. It had been customary for the western provinces to consume about 50 per cent more fertilizers than the eastern; but the proportion of consumption having been upset, the requirements of the former fell away to one-third and those of the latter to one-half, so that the needs of the home market were satisfied by the stocks that were on hand. On the other hand, the rise in freight charges was so enormous that its highest point was three and a half times, and the lowest twice as high as before the War. This was what blocked the growth of the industry, the commodity itself being so cheap that about half of its cost price was represented by the mere cost of carrying it. It was natural, therefore, that the low-grade product from Florida, Egypt, Algeria, and Tunis should suffer a considerable decline. However, the output of Oceania, being cheaper, in comparison, was brought in briskly. 1916 made a poorer showing than the years before it, the volume of the business dropping to 1,660,000 kin, valued at ¥2,730,000. This was due to the cheapness of rice, which led farmers to use less fertilizer on their land,

and the continued increase in freight charges. The resulting scarcity of rock phosphate was successfully met, as the Imperial Navy, then taking over the exploitation of the guano deposits on Anguar Island, arranged to sell 4,000 tons of rock phosphate per month by auction at ¥25 a ton. Except for the output of Rasa Island, the phosphates imported for the year were mostly of high grade, due to the activity of export of superphosphates of high percentage. During the first three months of 1917, there was much slackness in the phosphate industry; because of an increase of freight rates amounting to 30 per cent, producers made little effort to obtain new supplies. They contented themselves with what they had purchased in the preceding year. But the demand for rice in April greatly extended the sale of superphosphates, which in August commanded unprecedentedly high prices. This stirred producers to take every measure to increase their supply. Their endeavors were in part successful. Furthermore, imports in 1916 had been restricted. Altogether, the import figures in 1917 were 2,590,000 kin, valued at ¥5,090,000, or 930,000 kin and ¥2,360,000 larger than those of the previous year. In 1918 manufacturing companies were cautious because of the em-

TABLE 3
Phosphate: Imports, 1913-1918.

	1913		1914		1915	
	Quantity kin	Value	Quantity kin	Value	Quantity kin	Value
England	369,378	¥ 698,680	.....	¥.....	.....	¥.....
United States	649,580	958,027	807,606	1,182,118	.....	.....
Egypt	495,762	667,506	856,502	1,044,167	185,829	237,878
Indo-China	.....	.....	.....	.....	17	26
Other countries	4,006,746	6,293,301	3,087,505	4,940,156	2,076,933	3,164,679
Total	5,521,471	¥8,617,514	4,751,613	¥7,116,441	2,262,779	¥3,402,583

	1916		1917		1918	
	Quantity kin	Value	Quantity kin	Value	Quantity kin	Value
Egypt	.....	.....	.....	.....	52,188	156,261
Indo-China	11	20	.....	.....	.....	.....
Other countries	1,661,684	2,730,595	2,590,774	5,098,523	1,440,681	4,913,788
Total	1,661,695	¥2,730,615	2,590,774	¥5,098,523	1,492,869	¥5,070,049

bargo on fertilizer exports, and the slump in bean cake. Another thing to make the situation worse was the steady rise in freight charges, in consequence of which importation became unprofitable. The volume of trade, therefore, fell away again, and stood at 1,490,000 kin and ¥5,050,000, or 1,100,000 kin and ¥40,000 less than in 1917. It is to be noted here that interruptions in manufacturing, due to a lack of raw material which developed from April to June, resulted in some manufacturers withdrawing from the market. They were so eager to dispose of their stocks with all possible rapidity that in some cases sales below cost price were reported. Conditions became worse than ever after the armistice and there was no demand for rock phosphate till the end of the year. In short, the War seriously interfered with the import trade, through the rise in freight charges, the fall in the price of rice, and the low prices of other fertilizers.

Bean Cake.

This fertilizer is of great importance in Japanese agriculture. Most of it is brought from China and Manchuria. In 1913 imports from China amounted to 3,640,000 kin, valued at ¥10,060,000; and those from Kwantung Peninsula to 7,350,000 kin, valued at ¥19,920,000. In addition small quantities were imported from India and Siberia. In all, there were imports of 12,110,000 kin, valued at ¥33,560,000. The War lent the trade a powerful stimulus. In 1918 the figures were 19,120,000 kin and ¥85,830,000. The only exception to the war prosperity was 1914, in which year the depression of the rice market brought about some decline. The reasons for the great demand for bean-cake imports may all be assigned to the War. For, as compared with other fertilizers, bean cake was fairly cheap. In contrast with the uncertainties and difficulties that beset the import of fertilizers of mineral origin, the trade in bean cake could be carried on very easily. The oil mills of England, Germany, Belgium, and Holland had suspended business. The shortage in the world's cotton crop and the tremendous ocean freight rates had cut down the production of cottonseed and linseed oil. There had been a huge increase in the consumption of bean oil, which had been made to take the place of cottonseed oil in America. Indeed, the oil presses of Manchuria had been working to capacity. All this made for an increased production of bean cake. And, in consequence, it was supplied to

TABLE 4
Bean Cake: Imports, 1913-1918.

	<i>1913 Value</i>	<i>1914 Value</i>	<i>1915 Value</i>	<i>1916 Value</i>	<i>1917 Value</i>	<i>1918 Value</i>
China	¥10,064,107	¥ 8,192,925	¥ 8,495,033	¥ 8,518,802	¥10,915,061	¥12,894,857
Kwantung Peninsula	19,927,822	18,627,854	17,999,857	19,542,476	29,114,485	57,459,609
Siberia	71,992	228,817	1,690,989	658,855	1,574,900	896,894
India	2,246	.....	.....	.....	.....	.....
Free ports	.....	.....	.....	.....	9,442,477	15,585,958
Other countries	8,499,809	2,735,091	4,201,852	5,852,848	.....	.....
Total	¥38,564,476	¥29,784,187	¥32,886,729	¥34,572,481	¥51,046,923	¥85,886,813

Japan in large quantities. Such imports, too, were the more necessary because many oil mills in Japan were manufacturing cocoanut oil, with the result that the home production of bean cake was so much the less.

Other Fertilizers.

Although there are other commercial fertilizers, such as rapeseed cake, fish waste, bone and bone meal, etc., and all find a large demand in Japan, only a few of the most important can here be touched upon.

Rapeseed Cake.

The demand for rapeseed cake, which had been largely imported from China and India, was adversely affected by the low price of rice; rice growers could not afford to use such quantities for their paddy fields as they had before. Decreased production of rapeseed oil in China, coupled with a rapid development of the oil business in Japan, also helped to account for the yearly decline of imports. In quantity they were, in 1918, only one-third of what they had been in 1913, or about 440,000 kin, and about one-half in value.

Cottonseed Cake.

Although attempts had been made by the Imperial Government, for example, by the repeal of import duties on cottonseed, to foster the development of this industry, the deep-rooted character of the business, and the cheapness of cottonseed cake in China rendered such efforts futile. Japanese manufacturers could not meet the competition. The War had no visible effect on Chinese imports, and their volume continued to grow. Nevertheless, the remarkable increase in the demand for fertilizers during the War gave ample room for a development of the home industry. Between 1913 and 1918, inclusive, the production of cottonseed cake rose from 680,000 kin to 770,000, and in value from ¥1,917,000 to ¥394,000.

Bone Meal.

Imports of bone meal from China, India, and Australia, the leading sources of supply, showed a marked decline in 1915 and 1916, due to the scarcity of cargo space, and the tremendous rise in freight charges.

TABLE 5
Fertilizer: Demand and Supply, 1910-1918.

	<i>Production</i>	<i>Imports (including raw materials)</i>	<i>Estimated value of raw materials com- prised in the two preceding items</i>	<i>Exports</i>	<i>Consumption</i>	<i>Index¹ number</i>
1910	¥34,676,784	¥37,935,379	¥12,840,429	¥ 603,485	¥ 61,231,500	118.8
1911	40,677,858	51,467,577	17,645,550	985,590	76,704,662	148.9
1912	51,444,536	52,591,423	18,711,859	824,670	88,068,949	170.9
1913	57,758,081	71,009,020	24,465,196	555,175	107,235,889	208.1
1914	56,889,771	63,193,110	20,688,536	768,993	100,508,787	195.1
1910-1914	48,189,496	55,239,302	18,870,314	747,583	86,749,877	168.4
1915	49,431,659	47,931,079	17,148,062	2,579,052	78,786,830	152.9
1916	61,111,914	50,092,284	20,503,490	4,127,635	86,463,534	167.8
1917	86,761,769	78,186,030	82,251,022	2,810,306	129,518,545	251.8

¹ The average for 1905-1909 = 100.

In brief, sulphate of ammonia and phosphate ore, which Japan imports, showed a decline; on the other hand, bean cake, another imported commodity increased; and exports of phosphate fertilizers increased tremendously. All branches of the fertilizer industry made wonderful advances because of the War. In the last two years of it, when rice commanded extraordinary prices, agriculture enjoyed a great prosperity, and its consumption of fertilizers multiplied proportionately. Nevertheless, the amount imported fell far below the demand, which gave impetus to the rapid development of the home industry. The production of sulphate of ammonia and phosphate rose to very high figures. The value of all fertilizer products, ¥57,000,000 in 1913, mounted to ¥61,000,000 in 1916, and to ¥129,000,000 in 1917. As for consumption, in 1913 it was ¥107,000,000, and in 1917 ¥129,000,000. Indeed, the War gave Japanese manufactures an opportunity to make a great advance. Constant improvements in farming methods have resulted in more intensive cultivation and an increased demand for fertilizers.

Non-Commercial Fertilizers.

For non-commercial fertilizers comprehensive data are wanting; nor is this the only difficulty encountered in a survey of them. The production of commercial fertilizers is always influenced by the financial position of the farmer, and by conditions of supply and price. The increasing use of non-commercial manures by the farmer is due to a variety of causes. The insufficient supply of imported fertilizers and the high price of cereals stimulated the use of the non-commercial substitute. According to official estimates, the value of such fertilizers, produced in 1917, was as follows; the grand total exceeding that of 1913 by about ¥15,000,000; human excrement, ¥54,000,000; compost and stable manure ¥65,000,000; green manure, ¥16,800,000; grass growing along pathways, dams, ditches, fields, and hillsides, ¥9,600,000; total ¥145,400,000.

After the outbreak of the War, green or mulch manure came to be regarded as a substitute for commercial fertilizers, and consequently its production increased.

Prices.

Below are given details as to the prices of representative fertilizers.

Sulphate of Ammonia.

As mentioned above, Japan had once looked to England for supplies of this fertilizer, and its price was always governed by market conditions in England. Shortly before the outbreak of war, its production conditions changed, for almost all consuming countries undertook its manufacture. America made great progress, while Belgium and Russia came to export large quantities. The progress of Germany in particular was so marked that she appeared to be overtaking the British in this branch of industry. The result was overproduction, with prices constantly dropping. It was quoted at ¥155 on the basis of CIF Yokohama. In June, 1914, the price had fallen to ¥122; and British manufacturers had to work together to hold it at an adequate figure. In August, however, after the outbreak of war, conditions changed again, and suddenly. Quotations went straight up to the neighborhood of ¥160. This was due to increases in marine insurance rates, to anxiety as to the possibility of making regular shipments, considering the dislocation of foreign exchange, and the scarcity of bottoms, and to the fact that at this season, midway between the summer and the autumn manuring, farmers were in need of immense quantities of fertilizers. The situation was much better in September, and in December the price fell to ¥120. For by then the cheapness of bean cake had drawn off many consumers who might otherwise have continued to demand sulphate of ammonia. And the agricultural depression which increased the financial pressure of the time likewise had much effect.

Because of the War, the demand for sulphate of ammonia in England continually increased, prices rising from ¥160, in early spring, to ¥167-168 in the summer, and to ¥182-183 in December. Notwithstanding the fact that a slump in rice, which made farmers economize in fertilizers, prevented prices in Japan from advancing as rapidly as in England; sulphate of ammonia was quoted at ¥140 in the spring, at ¥155 in the summer, at ¥158 by October, and at ¥160 in November. In 1916, as a result of decreased production and high prices in England, British imports were sold for ¥190 per ton; those from Russia at ¥175; those from Australia at ¥210; and those from India at ¥215, and this tended to drive Japanese market prices upward. Early in 1917 a new level, ¥230, was reached. The extraordinary price of ¥480 was paid in August, because of the many ob-

stacles encountered in the import trade, the return of prosperous times to the farming communities, and the establishment of an export trade in fertilizers. But the trade was soon to be checked by the embargo, and in September and October the price dropped to ¥285.

In 1918, prices were strong, because of the cessation of imports, the insufficient stock on hand, and the increase of the demand. The market price was from ¥300 to ¥320 in January and February, ¥360 in June, and ¥380 in August; it fell back to ¥365 in October and to ¥250 after the armistice. A level of ¥330 was regained toward the end of the year.

Bean Cake.

At the outbreak of the War, the fall of the silver market affected market conditions for this commodity so seriously that, for a time, it commanded a price of ¥2.62 per 10 kwan. Later, silver rose to 24 pence; and, due to this, and to the better facilities for exporting afforded by the Government in the form of war-risk insurance, the price reached ¥2.93. However, the market's tendency to rise was soon halted by the combined effects of another drop in silver, by obstructions to the shipping trade, by an enormous crop of beans in Manchuria, the cessation of exports to Europe, and the lessened buying power of the farmer. In October, quotations in Hiogo dropped to ¥1.50 for spot deliveries. Although a slight improvement in silver quotations appeared to impart some vitality, the highest November price was only ¥1.15. In February, 1915, a widespread expectation of a rise in rice raised bean-cake prices to ¥1.65 for spot deliveries; but this hope was doomed to complete disappointment. The demand by the rice growers showed no marked increase. Cheaper prices ruled in Manchuria, and the market fell to the neighborhood of ¥1.25 in April. The depression in rice and other cereals, as also in raw silk, brought about a further decline; and the extraordinary price of ¥1.12 prevailed toward the end of June. On the other hand, manufacturers who had been at work throughout the summer were now suffering from excess stocks, and accordingly agreed to reduce production by one-half. In November, when the prices of rice and raw silk advanced slightly, the market rose to ¥1.20, and in December to ¥1.33.

It is needless to state that the fertilizer market is very sensitive to

98 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

agricultural conditions, and in particular a good or bad rice crop has an immediate effect in determining prices.

The bean-cake market was dull during 1914 and 1915, largely as a result of the inactivity of rice.

The tendency of the rice market was still downward in 1916, and the financial situation in the country districts was very bad. The price of bean cake dropped repeatedly, standing at ¥1.19 at the end of May. But good harvests and the high price of silk cocoons, in June, put much money into the hands of farmers, who at once started to purchase fertilizers in quantity. This gave the market new life; and by the middle of the month the price was ¥1.31. Though a fall to ¥1.28 occurred in July, ¥1.36 was the level in August, and ¥1.32 in September; in October, the price reached ¥1.40. Despite the fact that ordinarily farmers would buy no more fertilizer after October, the demand for rice and raw silk, which greatly enriched the villages in the silk districts, lent further firmness to the market, with the result that bean cake came to be quoted at ¥1.50. In the early days of December it was somewhat low in price as compared with other things, yet the demand was strong because of the activity of rice and silver. Nevertheless, presumably due to the German peace overtures, the month closed with the price at ¥1.45. Table 6 gives the wholesale prices of bean cake in Tokyo for the middle of each month during 1916:

TABLE 6

January	¥1.34	July	¥1.28
February	1.30	August	1.36
March	1.32	September	1.32
April	1.39	October	1.36
May	1.37	November	1.45
June	1.31	December	1.51
Maximum ¥1.53 (¥1.35 for the preceding year)			
Minimum 1.25 (¥1.08 for the preceding year)			
Average 1.36 (¥1.20 for the preceding year)			

In January, 1917, bean cake was quoted at ¥1.43-4 and in February at ¥1.467 owing to the firmness of silver. March was stationary. In April a brisk demand brought the price to ¥1.48; and toward the end of the month to ¥1.52. Declines in stocks on hand, together with increased freight rates, carried the price up to ¥1.645 in May.

By the end of the month, it was ¥1.73. In June, owing to such varied causes as the prosperity of the silk industry, a tremendous rise in the price of rice, scarcity of sulphate of ammonia and superphosphate, and a low output of fish waste, every sort of fertilizer went up in price, and bean cake was quoted at ¥2. The same active market was maintained substantially throughout July and August. There was further activity in cereals and raw silk in September, and a lack of cargo space. And this had immense effect in advancing the market; it brought the price to ¥2.57 in the early part of the month. Nevertheless, the promulgation of the Anti-Profiteering Law and the embargo on fertilizers put an end to this; and, with the year end, the price was again about ¥2. The maximum price for the year was ¥2.58, the minimum ¥1.43, and the average ¥1.85, which as compared with prices for the previous year were, respectively, ¥1.04 (68 per cent), ¥0.18 (14 per cent), and ¥0.49 (36 per cent) higher. Undoubtedly, this was due primarily to the prosperity of agriculture. But, again, one should not overlook the part played by advances in freight rates, which rose from about 50 sen, in the early part of the spring, to ¥1 in the autumn. The wholesale prices quoted in Tokyo at the middle of each month for 1917 were as follows: January, ¥1.43; February, ¥1.47; March, ¥1.44; April, ¥1.50; May, ¥1.65; June, ¥2.00; July, ¥1.95; August, ¥2.45; September, ¥2.47; October, ¥2.25; November, ¥1.80; December, ¥2.00.

Early in January, 1918, the situation was rather bad, due to overstocks in Manchuria and declines in rates of freight; but a rise in the prices of various cereals, which occurred toward the close of the month, completely changed the situation. Prices rose gradually in February, though the announcement of trade restriction by the Washington government gave rise to apprehensions that led Japan's silk producers to devote smaller quantities of fertilizer to their mulberry trees. The receipt of the news of the revolution in Russia and the departure of the diplomatic corps from Petrograd proved to be potent factors in strengthening prices, which swiftly advanced to ¥2.43. When the export of bean cake from Vladivostok became impossible, and when it was feared that the despatch of troops to Siberia might result in a lack of bottoms, the tone of the market grew very buoyant. In March it was stronger than ever, and the prices passed the highest mark reached in September, 1917. April was somewhat weaker, because sales in the provinces were slow. Some

100 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

sharp fluctuations occurred in May. Although the collapse of the rice market at first brought bean cake down with it, it rose again toward the end of the month. In June it was quite strong, till the Government announced that fertilizers would thereafter be included among the commodities affected by the Anti-Profiteering Law. In July, when the manuring season was over on the farms, prices gave way abruptly; but they grew firmer in August, the activity of rice having a good influence upon fertilizers of all kinds. When the armistice was signed in November, the market stood at ¥2.46. For 1918 as a whole, the average market price was ¥2.44, which was ¥1.85 or 30 per cent higher than that of 1917; the maximum, ¥2.68, which exceeded that of 1917 by ¥0.11; and the minimum, ¥2.01, an excess of ¥1.43, or about 40 per cent, over the figure for the previous year. The wholesale quotations for the year are as follows: January, ¥2.01; February, ¥2.38; March, ¥2.63; April, ¥2.64; May, ¥2.48; June, ¥2.59; July, ¥2.33; August, ¥2.55; September, ¥2.50; October, ¥2.47; November, ¥2.30; December, ¥2.47.

Though differing in detail, all other fertilizers were influenced in price by the War as much as sulphate of ammonia and bean cake. All the imported commodities gradually rose in price, owing to the high prices ruling the market in the exporting countries and to the rise in freights and insurance, and difficulties in making shipments. This, in turn, caused the home manufactures to advance in price. But more potent than all were changes in the demand for rice and raw silk. The decline in the buying power of the farming community, during the first half of the War, led to the use of fertilizers in smaller quantities. On the other hand, the increased demand and the consequent activity of the market, as noted in the latter half of the war period, resulted from the boom in cereals and raw silk.

CHAPTER VII

THE FARMER AND THE AGRICULTURAL LABORER

EVEN before the War there was every indication that in the economic organization of Japan's villages and agricultural districts industry was about to undergo a change, as a result of the marked development of foreign trade and manufacturing, the rapid increase and centralization of population in the large cities, and the failure of the prices of farm products to maintain levels equal to those of other commodities. Many projects were proposed for the betterment of rural conditions. Although the acreage of arable land had been somewhat increased, this was neutralized by the growth of population; and the amount of land owned by the average farm household was only one cho and six se.¹ Both before and for some time after the outbreak of the War, when a fall in the price of cereals cut down the earnings of farmers, they were able to make good the loss, and more, by turning to other forms of labor, either of their own impulse, or through the help of the Government and the development of local manufacturing industries. Nevertheless, it was impossible to halt the ceaseless exodus of young men from the farming districts to the large cities, and the resultant rise in the wages of farm labor; and this was a very serious threat to ordinary farm life. As things were, middle-class farmers were gradually becoming extinct, while large land-owners and tenant farmers were increasing in number. No one could fail to see how rapidly the numbers and acreages of those farmers who tilled their own lands were falling off, with a corresponding increase in the numbers and acreages of tenant farmers. Farm lands showed a striking and unfortunate tendency to join together and pass into the hands of a few great owners. But, in 1915 and 1916, the situation took an entirely different aspect. Because of the steady rise in the price of cereals and raw silk, the earning power of the rural districts increased amazingly. Indeed, their economic standing was so immensely improved that the burden of the land and other taxes scarcely seemed to affect them. Moreover, the price of land became several times what it had been before the War, and the acreage of land under the plow was rapidly increasing. The consequence was that the trend of capital and labor to the large cities was neutralized

¹ About 2½ acres.

102 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

to a certain extent. But to this, too, there was another side. Betterments in the economic condition of farm households, and increases in the value of land, while bringing general prosperity to agriculture, gave added impetus to the tendency of land to pass into the hands of the large landlord. At the same time, the continued rise in the price of commodities and farm wages seriously crippled small landowners, and, in the nature of things, meant slow death to them. This stands out in the official statistics, which make it plain that the number of farmers owning small holdings was rapidly becoming smaller. Being unable to get from their farms harvests large enough to sustain their families, they had only one way to help themselves. That was, to rent the land of their richer neighbors, and grow large crops. But since the cost of labor and fertilizers was constantly going up, the hour of their final degradation arrived, and they fell into the class of tenants.

The countryside of Japan today, as compared with *ante-bellum* days, is characterized by a visible decay of tillers of their own fields and by the presence of an enormous number of tenant farmers under a few large landowners. And everywhere one finds those antagonisms and disputes which arise between these two opposing classes.

In the table 1 figures are given which illustrate in detail the general process of change that we have outlined above.

TABLE 1
The Farmer and the Land, 1908-1917.

	<i>Area under cultivation cho</i>	<i>Index number</i>	<i>Total number of farmers</i>	<i>Index number</i>	<i>Number of farmers owning their farms</i>	<i>Per- centage</i>
1908	5,504,323	1,000	5,408,863	1,000	4,936,769	100
1913	5,793,807	1,052	5,443,719	1,007	4,898,663	99.2
1914	5,815,695	1,056	5,456,231	1,009	4,873,395	98.7
1915	5,857,326	1,064	5,453,969	1,008	4,879,632	98.8
1916	5,896,476	1,071	5,457,793	1,009	4,859,829	98.6
1917	5,955,185	1,081	5,467,277	1,010	4,853,042	98.8

It will be seen that the area of arable land was gradually increasing before the War. While this was mainly a result of the growth of population, the development of manufacturing, and the high price of cereals, it was also due to the efforts to increase and improve farm land, and to the encouragement lent by the Government to reclamation projects. Thus, in 1913, as compared with 1908, the amount of

land under cultivation represented an increase of 290,000 cho or 0.5 per cent. The movement was more marked in 1914 and thereafter; and the increase by 1917 was one of 160,000 cho over the figures for 1913, and of 8.1 per cent over those of 1908. The general advance in the price of all agricultural produce, whether used as foodstuffs or as the raw materials of industry, which followed the years of depression at the beginning of the War, added to the farmer's income, and made it easier to extend the system of farm loans.

The number of farm households had gradually been growing before the War, as a result of the constant increase in the population. While this was likewise the case after the outbreak of war, the rate of growth was not so great as that of the acreage under cultivation. This is explained by the fact that, though farming became more profitable, after a first brief period of depression, following the outbreak of war, the manufacturing industries of the cities were far more profitable, and drew to them many people from the country districts. As regards the landowning farmer, the decline in his numbers seems to have been hastened by the War. The number of farmers of this class fell by 38,000 during the six years preceding the War, and by 450,000 during the five years following. At the present time in Japan, more and more farms are being bought up by a few people and tilled by a constantly increasing number of tenant farmers. And it was after the outbreak of the War that this movement came most into evidence. Very noticeable, too, was the difference in the rate of increase between paddy or irrigated fields and other forms of farmland, and also the difference of acreage increase between fields farmed by landowners and those farmed by tenants.

Classifying the total acreage of farm land into paddy and non-paddy or irrigated and non-irrigated, the former—(in round numbers, 2,870,000 cho in 1908)—showed a gain of about 70,000 cho or 2.5 per cent by 1913; that is, it grew to about 2,940,000 cho. In 1918, the increase amounted to another 57,000 or 1.9 per cent, the total then being 3,000,000 cho. This shows that the increase in acreage was by no means rapid. Non-paddy farm lands, which totaled 2,630,000 cho in 1908, stood at 2,840,000 cho in 1913, an increase of 210,000 cho, or 8.2 per cent. By 1918 the figures were 3,014,000 cho. In 1908 the ratio between the two kinds of farm land was 52 per cent for paddy and 48 for non-paddy fields; in 1913, 51 to 49; and in 1918, 49.9 to 50.1. That is, the ratio of 1908 had virtually been reversed. This remarkable increase of acreage in non-paddy land,

104 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

especially after the outbreak of the War, was a consequence of the industrial development, the tremendous increase in value of the rice crop grown on non-paddy land, and of other harvests during the War, and, above all, the immensely increased demands for agricultural products in manufactures. Details are given in table 2.

TABLE 2
*Increases in Area of Non-irrigated Farm Land from 1908 to 1918,
Classified by the Crops Grown Thereon.*
(in 1,000 cho)

	<i>Rice</i>	<i>Wheat</i>	<i>Peas</i>	<i>Potatoes</i>	<i>Peanuts</i>	<i>Flax</i>	<i>Sweet potatoes</i>	<i>Mulberry trees</i>
1908	83.7	....	29.6	60.6	5.9	...	17.2	....
1913	119.5	319.2	43.3	75.8	9.1	5.4	21.7	367
1914	123.5	310.8	43.9	83.8	9.5	7.7	22.6	366.2
1915	125.4	322.2	44.7	91.6	10.1	8.6	23.6	371.2
1916	128.6	335.4	51.4	103.5	12.2	12.5	24.7	381.6
1917	131.3	347.9	90.5	122	13.4	12.2	30.8	401
1918	....	346.3	...	....	...	...	...	425.7

The above crops all show a large increase in acreage. Among those enumerated, the first four are used for the most part only as food and increased in price as a result of the high cost of rice and wheat. The remaining four are largely used as the raw materials for manufactures; and, due to the development of industry during the War, they were in great demand. When rice, wheat, raw silk, and other crops, whether required as food or for industry, rose much higher in price, some time after the outbreak of the War, so much was added to the farmer's income that it was almost as if his land tax, and other taxes, had been remitted; and the price of land went up accordingly.

The following were the average prices of farm land for the entire country between 1914 and 1918, according to the Mortgage Bank.

	<i>Paddy or irrigated land, per tan</i>	<i>Non-irrigated land, per tan</i>	<i>Average and country-wide price of rice, per koku</i>
1914	¥280	¥145	¥16.13
1915	257	138	13.07
1916	272	151	13.76
1917	328	189	19.84
1918	441	250	32.42

Both paddy and non-paddy land fell in price in 1915, when the rice market was at its worst. Although conditions subsequently grew better, a careful investigation will show that the increase in value of non-paddy land was more striking than that of paddy, due to the fact that fields devoted to the production of the raw materials of manufacture (that is, non-paddy lands), yielded a larger margin of profit. In addition it was seen that the number of middle-class farmers declined notably, and there was a corresponding increase in the number both of very large and of very small landowners. Furthermore, despite the fact that the average acreage of arable land was increasing, the number of owners was steadily growing less.

TABLE 4
*Changes in the Number of Farm Owners, Classified by the
Size of Farms.*

	<i>Number of holders of less than five tan</i>	<i>Number of holders of more than five tan</i>	<i>Number of holders of more than three cho</i>	<i>Number of holders of more than five cho</i>	<i>Number of holders of more than ten cho</i>
1908	2,278,317	2,213,907	279,100	123,125	42,320
1913	2,355,023	2,113,011	263,549	123,355	43,725
1914	2,349,991	2,097,328	259,100	122,149	44,827
1915	2,367,089	2,090,245	257,498	120,458	44,339
1916	2,362,114	2,077,046	254,460	120,346	44,863
1917	2,370,686	2,063,969	351,233	121,058	46,096

As will be seen, both petty landowners who were in possession of farms of an acreage of less than five tan and those owning more than ten cho were increasing in number; but the number of middle-class farmers, that is, those possessing between five tan and ten cho, was growing fewer. The tendency of land to pass into the hands of the few having begun before the War, naturally moved more rapidly during the War itself. Most middle-class farm owners did not have time for any of that secondary work that would have added to their incomes. They were overwhelmingly affected by the rise in the cost of living, of wages, and the heightened burden of taxes and assessments. The result was that despite an ample yield of profit from the sale of their crops, in many cases they were forced to sell their farms, in order to make both ends meet. And the land they sold went to their richer neighbors.

Despite the steady increase in the total acreage of arable land, the number of landowners, as has been shown, was growing fewer. And, conversely, the area being farmed by tenant farmers was on the increase.

Both the acreages and percentages given above make it plain that in the case of irrigated, or paddy land, the area of such land tilled by the owner was steadily decreasing, and the area in the hands of tenant farmers was increasing. The contrary is the case with non-irrigated land. Areas tilled by landowners were not growing less. But the point is that increases in the area of land under tenancy are so notable that lands worked by their own proprietors are falling behind. It is significant that in the case of non-paddy land, both kinds of holdings were increasing. This is particularly noticeable after 1914, because the War so stimulated farming in general. Farm households were not growing in number as fast as the rest of the population, or as the land under tillage. It will be seen from the following that the marked decline in the number of farm households working their own lands, the increase in the number of tenants, and the sharp rise of those who, with their own land, tilled land leased from the large landowners are the prominent features of the war-time changes that took place.

We may say that the number of farm households that grew their crops on land they owned declined by 55,000 between 1908 and 1913, and by 49,000 between 1913 and 1917, or by about 100,000 in ten years. That is, they fell from 33.27 per cent of the total in 1908, to 32.05 in 1913, and to 31.02 in 1917, with every sign that the fall would continue. Those who were tenants only in part increased more rapidly than those who were wholly that because many small landowners who had dropped out of the middle class were, accordingly, being forced to become tenant holders. Or, more truly, the pronounced increase in this class was due to the large amount of petty landowners, who owned so little that they were much more like tenants than actual freeholders.

The tendency of land to become absorbed into large holdings was greatly accelerated by the abundance of money and the increase in the value of land in the provinces. As we have said, the country districts were coming to consist of a few big landowners and a great number of tenant farmers. Naturally, too, the former were seeking to raise rents, under the pretext that living and other expenses were

increasing as a result of the general rise in prices; while their tenants were demanding that their rent should be lowered, because landlords were making so much more from the crops they were raising. More than that, everywhere new social and political ideas were doing their work; and these conflicts between landlord and tenant attracted attention proportionately. In reports given out by the Minister of Home Affairs—reports made by the local governors—we find the significant fact that of the country's forty-seven municipal areas and prefectures, twenty-three in all—Osaka, Kanagawa, Kyoto, Hiogo, Nagasaki, Niigata, Saitama, Ibaraki, Nara, Aichi, Shinozuoka, Shiga, Shimano, Okayama, Yamaguchi, Wakayama, Tokushima, Kagawa, Kochi, Fukuoka, Oita, Kumamoto, and Kagoshima—as a result of the development of manufactures and the scarcity of farm labor, saw numbers of tenants demanding reductions of ground rent. At the same time, in some instances landlords are reported to have tried to raise the rent in like ratio with the increases in the price of farm lands. Enough that they encountered those newer conceptions of the relation between capital and labor, previously confined to the city, conceptions which, spreading everywhere now, made for anything but peace in the farming districts. From Fukuoka, a thriving manufacturing center, we learn that the industrial and mining boom in Chikugo and Buzen attracted so many farm workers, that the rural population of the prefecture fell by 11,310, in a single year. Broadly speaking, prefectures in sections of the country now in part industrial, had many tenant problems to handle. It was different, of course, in prefectures almost purely agricultural. There, such problems are still dealt with quite satisfactorily. For when conflicts arise the local agricultural association or some like body uses its good offices and all is settled peaceably.

Agricultural Labor.

The tendency of the man power of the farms and villages to be drawn to the manufacturing centers in city and suburb had been evident before the War. Indeed, whenever rice and wheat prices were bad, the trend seems to have become more pronounced. After the outbreak of the War, it was checked by the continued rise in the price of raw silk, and other commodities. For the wealth that came into the hands of people in the country seemed to take away their incentive to

108 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

migrate to the cities. But when the rush of foreign commerce made the large cities far more prosperous than the country districts, the exodus of farm and village labor began again. In brief, the outstanding fact in the movement of farm labor, as in that of capital, was a movement cityward.

Japan's labor statistics are still sadly deficient in many respects. But we learn from the reports on population that the rate of increase in that of cities is far greater than that of the rural districts. In table 5 are figures given out by the Minister of Home Affairs:

TABLE 5
Increases in Population: City and Country.

	<i>Rural districts</i>	<i>Increase</i>	<i>Cities</i>	<i>Increase</i>
1908	43,442,742		8,299,744	
1912	46,843,611	3,400,769 (7.8 per cent)	8,999,264	699,520 (8.4 per cent)
1918	47,220,709	384,098 (0.8 per cent)	10,560,688	1,561,424 (17.3 per cent)

Roughly, in the five years before the War the growth of population in the rural districts—the country towns and villages—amounted to 3,400,000 (7.8 per cent), or a yearly average of 680,000 (a trifle over 1.5 per cent). At the same time, the population of the cities, where commerce and industry were flourishing, gained about 700,000 (more than 8.4 per cent), or a yearly average of 140,000 (1.7 per cent). In other words the cities increased slightly more than the country. But for the five years following the outbreak of the War, a great change is seen. While the rural population increased by but 380,000 or 0.7 per cent, the urban population increased by 1,560,000 or 17.3 per cent. These figures warrant the statement that, though the tendency toward the centralization of population in cities had been in evidence before the War, the rate of growth received a new impetus after the War began. It must, however, be noted that the aggregate number of cities was 71 in 1913, and 77 in 1918. In other words, there were listed six newly incorporated cities, which had formerly been included in the territory designated as rural. Assuming that each of these six cities contained 30,000 souls, 180,000 was the gain by that. Adding this number to the 670,000 births in cities, reported during the years under review and deducting the total, 850,-

000, from the total increase of population, 1,560,000, we get a remainder of 710,000, which represents the real drift of population from country to city. And of this number the greater part were young men of the laboring classes, or those who could least be spared.

According to a survey of mills and factories made by the Factories Bureau of the Department of Agriculture and Commerce, the period between the outbreak of the War and October, 1917, saw the establishment of, or additions made to 19,531 factories in all, and an increase of 442,388 in the number of their employees. Of these, some 160,000 are believed to have been drawn from other branches of manufacturing, 110,000 from mining, commerce, and fishing, and 170,000 from agriculture. Since it is reasonable to assume that both those other branches of manufacturing, and also mining, commerce, and fishing, from which in all an army of 270,000 had been taken, were likewise in need of more men than they had lost, they had to turn to the country to supply their needs. Such being the case, the total of the country population must be held to have declined as much as the total of factory workers gained; that is, over 442,000.

The drift to the cities, furthermore, included more than merely those who went into factories. For much of this rural labor went to the cities to find jobs in business, in transport work, in government employment, or even in the ranks of the day laborer. Taking everything together we can safely say that this gain in city population of 710,000, was made up entirely of countrymen who left their homes for city life.

Before the War, wages paid for farm work were very small compared with those for other kinds of work, especially factory labor. In 1905, male farm workers were paid ¥0.30 a day and female workers, ¥0.19; fishermen, ¥0.39; gardeners, ¥0.31; and carpenters, ¥0.54. At the time of the outbreak of the War, fishermen's wages having risen to ¥0.60, gardeners' to ¥0.83, and carpenters' to ¥0.86, the wages of male workers on farms were but ¥0.47, and those of female workers, ¥0.30. In 1917 and thereafter, when rice, wheat, and other cereals were being quoted at fabulously high prices, and when farm labor had grown very scarce, this kind of work was still underpaid, compared with other forms of employment. In 1917, men were paid ¥0.56 on the farm, and women, ¥0.34; while fishermen received ¥0.61; gardeners, ¥0.96; and carpenters, ¥0.96. As for factory and mill workers, it was noted, in 1917, that ¥0.73 was

110 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

the average wage paid to male workers. Although the pay for farm laborers registered a distinct increase, the rate of increase was still the lowest in the entire range of labor. Even after making due allowance for the difference in the cost of living as between the large cities and the rural districts, and admitting that rates of wages paid for labor must vary according to the nature of the work involved, it is undeniable that farm work was looked down upon and paid accordingly. During the War, the difference between the wages of industrial workers and those of farm laborers grew steadily greater, as a result of the phenomenal rise in the former. Tables 6 and 7 show these differences, and also differences caused by the War.

TABLE 6

Farm Labor: Average Wages before and during the War.

	<i>Engaged by year</i>		<i>Engaged by day</i>	
	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>
1912	53.84	31.54	.44	.27
1913	51.86	31.07	.46	.29
1914	52.89	32.18	.47	.30
1915	53.70	32.53	.46	.29
1916	52.90	30.52	.48	.30
1917	59.40	34.93	.56	.34

TABLE 7

Index Numbers of Average Wages for Various Kinds of Labor before and during the War.

	<i>Agricultural labor (seven kinds)</i>	<i>Building trades (twelve)</i>	<i>Tools and utensil- making trades (nine)</i>	<i>Garment trades (nine)</i>	<i>Food producing trades (five)</i>	<i>Miscel- laneous (eight)</i>	<i>Average</i>
1912	155	165	155.5	148.4	147.3	164.9	157.2
1913	160.4	167.7	161.2	151.9	152.7	166.5	160.8
1914	164.9	164.3	157.9	151	157.2	164.9	160.1
1915	159.9	161	153.6	151.2	161.1	167.7	158.6
1916	159	164.6	160.4	158.3	167.1	173.7	163.1
1917	183.1	187	187.3	183.3	185.4	199.6	186.8

CHAPTER VIII

AGRICULTURAL CREDITS, AND RELIEF

As a result of centralized control of political and financial affairs, a policy that the nation has followed ever since the Restoration, monetary affairs have followed the same course, and banking has become centered in the capital and other large cities. The result, naturally enough, has been that enterprises in the rural districts, especially agricultural enterprises, were for many years denied the benefits of banks. In 1897 this long-felt need was met by the establishment of the Japanese Mortgage Bank in Tokyo, and branch banks of agriculture and industry in each prefecture or "fu." They were established to act as agencies for the loaning of money on the security of real estate, and for extending agricultural credit. Subsequently, in 1900, the Coöperative Associations Law was promulgated, which paved the way for the organization of industrial coöperative guilds—also known as credit guilds—in all districts and villages, as a means of supplying money to the peasant class of the rural community. While it is undeniable that the adoption of the industrial credit guild system did much good, a new and unwelcome tendency toward centralization developed, and set at naught the expected advantages of the system. Moreover, there was much to be desired in the activities of these financial agencies, which seemed to have been altogether unequal to the task of remedying the economic situation in the provinces. The farmers were left without adequate means of accommodation and forced to borrow from money lenders, at usurious rates, what they required for their farms or for the support of their families, with the result that an ever increasing number of them were very hard put to it. According to a report of the Financial Department, the total of farm indebtedness reached ¥746,033,311 by the end of 1912. The most startling thing was that the sums borrowed from money lenders represented the greater part of this amount, only a very small number of farmers having taken advantage of the loans offered by the Mortgage Bank, the banks of agriculture and industry, and the Hokkaido Colonial Bank. Interest rates were also declared to be usurious. About 65 per cent of the above total was lent at more than 10 per cent, while borrowers who

112 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

had to pay more than 20 per cent were by no means rare. The details are given in table 1.

TABLE 1
Farming Indebtedness, 1912.

<i>Source of loan</i>	<i>Number of borrowers</i>	<i>Amount borrowed</i>	<i>Per-centage of borrowers</i>	<i>Percentage of total amount</i>
The Mortgage Bank, banks of agriculture and industry, and the Hokkaido Colonial Bank	89,119	¥ 76,601,670	1.14	10.27
Other banks	495,246	181,863,216	6.86	17.62
Insurance companies	3,664	638,719	0.05	0.09
Industrial guilds, friendly societies, and other organizations	358,320	21,821,978	4.60	2.92
Money-lending firms and private money lenders	1,300,007	151,145,639	16.69	20.26
Pawn shops	1,048,306	9,881,107	18.46	1.26
Merchants, shopkeepers, etc.	284,594	12,826,116	8.65	1.65
Mutual credit societies and like agencies	1,050,303	62,910,015	18.48	8.43
Private individuals	2,925,020	269,934,479	37.54	35.91
Other sources	236,254	2,934,322	3.03	1.59
Total	32,113,686	¥746,033,311	100.00	100.00

TABLE 2
Rates of Interest Charged for Farm Loans.

<i>Rate of interest</i>	<i>Number of borrowers</i>	<i>Amount</i>
Less than 10 per cent	1,647,902	¥262,721,598
Between 10 and 15 per cent	3,278,795	334,891,901
Between 15 and 20 per cent	1,632,966	116,806,126
More than 20 per cent	1,231,170	32,113,686

Owing to Japan's being inadequately provided with agencies for advancing credits to rural communities, farmers were also forced to obtain short-time loans. In consequence, they had little real chance to get out of debt. Indeed, almost invariably the borrower found himself unable to meet his obligations satisfactorily, and the result was that the transference of lands, given as security for loans, be-

came very common—another thing that added to the undesirable tendency of land to pass into the possession of a few large owners. Having been forced to part with his land, which had been handed down from his forefathers, the borrower was reduced to the rank of tenant farmer. Often, indeed, he ended by giving up and emigrating to the city, the country districts being by so much the loser. The frequency of the changes in ownership caused such land to be badly cared for, and agriculture in general suffered accordingly. Finally, farmers so burdened by debt were unable to hold their rice for adequate prices.

Seeing that the advancing of money to the farmer by usurious lenders invited such serious results, the elimination of the evil became a matter of very grave discussion by the Government. In 1914, after the subsidence of the panic on the exchanges, due to the outbreak of war, the money market in large cities lost its tension, and there was a fall in the rate of interest on advances of all kinds. But this did not apply to the country districts, where the supply of money for loans was inadequate. This made still worse the position of the farmers, who, owing to the fall in the price of rice and raw silk, had had to endure enough before the War. Withdrawals of deposits and applications for loans became more frequent than ever, and both the Mortgage Bank and the banks of agriculture and industry did what they could to add to the funds for loan at their disposal. Conditions grew so urgent that the former was obliged to make special loans to the latter, wherewith to relieve the situation. In 1915, while the War was giving new strength to some of the manufacturing industries, the depression in rice and raw silk, together with the high cost of fertilizers and everyday necessities, tended to make business conditions in the rural districts very bad indeed. Farmers were so greatly in need of money both to carry on their farm work and to support their families, that the “koguchi-shikiu”—(“petty-loan funds”) which the banks of agriculture and industry were in the habit of granting them became vitally necessary. The Mortgage Bank, therefore, did all that was possible to amplify its working capital—by issuing debenture bonds, by calling upon shareholders to pay instalments on their subscriptions, and by encouraging the public to entrust it with more deposits. But the seriousness of the situation seemed to have got beyond the remedies offered. No great improvement was seen in the first half of the year 1916. Although the War

was a great stimulation to the business of the large cities, the three years of low prices for cereals continued to hold back the rural districts. In the last six months of 1916 the great demand for raw silk, a demand that had kept up ever since the War had begun, coupled with signs of a recovery in rice, seemed to make the situation better. The truth was, however, the amount of money for loan was never ample. True, there was an increase in the repayment of loans to the Mortgage Bank before maturity, and also a certain increase in deposits; and postal savings were growing satisfactorily. But even after the outbreak of the War, there had been a very wide difference in business activity between city and country, especially in the matter of easiness of money. In a word, the economic condition of country districts had been bad for so long that everyone had come to know the need of providing some measure of relief for them. And the only trouble was that such measures of relief were hindered by certain facts, which were these.

As the agencies for agricultural credit, Japan had the Mortgage Bank in Tokyo, forty-six banks of agriculture and industry in the provinces, and a large number of industrial and coöperative guilds in the districts and villages. This might make it appear that the country was fairly well endowed with institutions of this sort. But upon careful investigation, it will be found that coöperation among these agencies was not perfectly maintained, and the industrial guild system was as yet both embryonic, and in many respects, inconvenient; the result being that banks were unable freely to advance money to applicants of every sort. Accordingly, these banks had, as a matter of course, come to do business not of the sort for which they had been intended. They advanced loans on landed properties located in cities or towns, and they engaged in the discounting of bills. Inasmuch as this was a more lucrative business, and less troublesome than the financing of the farmer, they had taken to it very readily, and had really ended by giving agriculture a wide berth.

Because of the fact that good liquid security for loans is rather rare in the country, the ordinary banks naturally had sunk their capital in real estate. In consequence, they lacked liquid capital and could not satisfactorily meet the demand for it.

The maintenance, by city banks, of branch offices in country towns, the payment of taxes, postal savings banks, insurance companies, etc., all served to draw capital into a few large cities, while

at the same time there was no means or method by which money could automatically be returned to the country districts.

The collapse in the rice and raw silk markets had, as an immediate cause, weakened the economic position, that is, the value, of the resources represented by the rural districts.

As a result, and particularly as a result of the state of the rice market, which caused widespread depression in the country, there was a wide demand for the adoption of some measure of relief. It was very necessary for the Government definitely to lay down a plan and policy for the regulation of rice prices. In view of the fact that too meager a supply of capital would always be a source of distress for the farmer, that the existing agencies for agricultural credit fell short of his needs, and that there was much room for improvement in the banking system of the coöperative guilds, before the farmers could derive much benefit from them, the Government made one effort after another to revise and better those laws which governed the agencies of credit we have mentioned.

To take them in order, the Mortgage Bank of Japan, the central agency for agricultural credit, had always been regrettably fettered by shortcomings in its business regulations, and could not do really satisfactory work as a source of rural assistance. In consequence, the Government and the management of the Bank joined their forces, and succeeded in carrying through the following reforms:

Where the Bank had been granting loans desired by industrial, forestry, and fishermen's guilds, or their federations, it now—in June, 1915,—decided to extend the same borrowing facilities to the livestock guilds and their federation. Such loans were likewise to be advanced without security, and were to be redeemed at fixed periods or by yearly instalments.

In January, 1916, the Bank initiated the practice of discounting bills secured on Mortgage Bank, or bank of agriculture and industry debentures, through any bank of agriculture and industry. The purpose was to extend the benefits that might be derived from the petty-loan funds, commonly the source of advances, as we have said, to middle- and lower-class farmers.

In July, 1917, when the Industrial Guilds Law was revised, the laws governing the Mortgage Bank were likewise amended, with a view to enlarging the funds available for the industrial guilds. The Bank was, in fact, given authority to discount so far as the guilds

were concerned, to open current deposit accounts, and to grant overdrafts on the security of current deposits.

In January, 1916, the first short-term loans were advanced, at 6½ per cent; and they were made redeemable in two years. The purpose of these low-interest loans was twofold, to provide special accommodations for farmers and at the same time make use of the capital rapidly accumulating in the hands of the Bank.

Up to then, the Mortgage Bank had insisted that every arrangement for a loan should be made through a notary public, the only exception being loans not greater than ¥1,000 in amount; and it had been arranged that they should be granted by some bank acting as a proxy for the Mortgage Bank, with the said bank's consent. In the early part of 1916, this provision was so revised as to permit such free loans to be raised to ¥2,000 and to be effected by privately made contract.

The limit of the total amount of debentures issuable by the Bank had been fixed at a sum equal to ten times the amount of its paid-up capital. It was further provided that the total of bond issues should under no circumstances exceed the sum total of the yearly-redemption loans and bank of agriculture and industry debentures it should then possess. But in July, 1917, when the Law Governing the Mortgage Bank was amended, it was so revised that the periodical redemption loan came to be accepted as security for the Mortgage Debenture Bond.

It had formerly been provided that the Mortgage Bank's subscriptions to bank of agriculture and industry debentures should not exceed one-third of the total amount of issue. But the wonderful progress of the business of the Mortgage Bank, and of the banks of agriculture and industry showed that these restrictions had outlived their usefulness. In June, 1918, they were accordingly repealed.

The necessity of facilitating farm loans during the War brought about these new activities on the part of the Mortgage Bank. In like manner, the Government also knew that, in order to make them keep pace with the times, the business methods of the banks of agriculture and industry—banks more directly in touch with the people of the provinces—should be similarly changed. And here the legal amendments were as follows:

It had long been realized that, in order to bring about a development of a true Japanese live stock industry, members of live stock

guilds should be authorized and permitted to receive bank loans without being required to give securities therefor as, indeed, had been the practice in the case of the industrial and other guilds. This principle was embodied in the Law of the Banks of Agriculture and Industry, as revised in July, 1915.

When the Law Governing Industrial Coöperative Guilds was amended in July, 1917, it became necessary to take measures to facilitate the supplying of capital to the guilds and to extend the use of short-term loans. It was further deemed necessary that the Periodical Redemption Loans should be made use of as security for bonds issued by a bank of agriculture and industry, as the absence of such an arrangement had resulted in this inconvenience that, in case a debenture bond had to be issued, the issuing bank was obliged to secure it with capital on hand. Another thing that called for the use of the Periodical Redemption Loan for the purpose was the fact that, though the banks of agriculture and industry were as a rule disinclined to grant requests for this sort of loan as readily as Yearly Redemption Loans, the need of the guilds for the former was steadily growing. Thus, in June, 1917, when the Law Governing Banks of Agriculture and Industry was taken in hand for revision, the authorities conferred on the banks the right to issue debentures on the security of the Periodical Redemption Loans they had advanced. Further, it was arranged that they could employ their deposits and surplus capital for discounting bills and accommodating requests for overdrafts.

Since September, 1900, when the Law Governing Industrial Coöperative Guilds had been enacted, marked progress had been noted in the work of the guilds, owing to the fact that the Government had taken many measures for the encouragement of the growth of such organizations. Furthermore, the industrial prosperity that the War stimulated in Japan, had given a great impetus to the work of the guilds, which had also increased in number. The War eloquently demonstrated that the best way to help build up the manufacturing industry of the nation was to give adequate consideration to producers of the middle and lower classes. To do this it was found wise to have industrial guilds carry out all their functions properly. The result was that the Government made extended revisions of the above Law Governing Industrial Coöperative Guilds. These revisions were, in part, as follows:

The use of loans advanced to industrial guilds had been limited to productive purposes, in consequence of which members, no matter how heavily they ran into debt or were financially entangled as a result of unforeseen adversities, could hope to obtain no relief by applying for loans. But there was no doubt that the financial troubles of any single member greatly impaired the efficiency of the guild to which he belonged. And accordingly guild members came to be permitted to secure loans for the support of their families.

It is needless to state that attempts to increase deposits entrusted to credit coöperative guilds are essential not only as a measure of promoting thrift among the members, but also of providing it with money. Nevertheless, under the laws hitherto in existence, the eligibility of depositors was narrowly restricted, and guilds were the sufferers accordingly. This was remedied by the revised law, as the range of legal depositors was so extended as to include persons living in the household of a guild member, public organizations, and juristic persons or bodies organized to carry on non-commercial functions.

In order to have industrial coöperative guilds keep pace with the rapidly progressing economic organization of the nation, the number of shares of a guild open for subscription by any one of its members was put at thirty, instead of ten, as had been the limit before. Under certain special circumstances the limit of shares subscribable might even be raised to fifty.

The Federation of Credit Guilds was invested with authority to guarantee debentures issued by the Mortgage Bank, the Japanese Industrial Bank, the Hokkaido Colonial Bank, and banks of agriculture and industry, on behalf of the guilds and their federations. Moreover, the laws governing these banks were so revised as to permit them to discount bills and grant requests for overdrafts on the part of the guilds.

What the Government did to increase the extent and benefit of agricultural credits was by no means confined to the above-mentioned measures; for, in addition to the innovations introduced in the business of the Mortgage Bank, the banks of agriculture and industry, and the credit guilds, the authorities concerned authorized the Deposit Section of the Department of Finance and the Bank of Japan to grant loans for agriculture, under the terms of the Agricultural Warehouse Law. A *résumé* follows:

To provide farmers with ample funds, the Bank of Japan made

larger sums available for loan on the presentation of local warehouse certificates. With the Mortgage Bank, it was willing to place mortgage debentures on the list of collateral securities, the purpose being to give a greater reserve power in arranging debenture bonds. It also established branch offices at many places for the improvement of local money conditions.

When the National Budget of 1909 was being compiled, the Imperial Government decided to discard its policy of building railways with money raised by the issue of bonds; and, instead, it sought to meet the deficit by the use of funds drawn from the Postal Savings Bank. In view of the capital thus drained away by such use of deposits of the Postal Savings, it had also been arranged to set aside another portion of the Postal Savings deposits, and lend them out at low interest for the financing of local undertakings. But while this had been done for a time, the decline in deposits had caused the practice to be discontinued. In 1915, however, in view of the seriousness of the rural money stringency, the Government revived the arrangement, and so provided the country districts with funds more ample for their necessities. The sums so advanced are given in table 3.

TABLE 3

1915 Estimated	¥ 5,200,000
Actual	5,155,511
1916 Estimated	10,000,000
Actual	9,555,487
1917 Estimated	12,000,000
1918 Estimated	16,000,000

Another method by which the Government sought to facilitate farm loans was to provide farmers with the means of storing and marketing their crops, and to arrange for warehouse certificates for the rice they produced, thereby opening a way for loans advanced on agricultural products. With this end in view an Agricultural Warehouse Law, promulgated as Law No. 15, on July 20, 1917, was made effective on September 1; and its chief provisions were the following:

Organizations authorized under the Law to establish and maintain agricultural warehouses should be limited to industrial guilds, agricultural associations, public juristic persons engaged in the develop-

ment of agricultural pursuits, and township, village, and other like administrative bodies.

Agricultural warehouses should not be maintained for purposes of profit. Their business should consist in: (a) the storage of goods; (b) the manufacture, preparation, or packing of goods; (c) the transportation of goods, and the functions of broker and agent therefore; and (d) the advancing of loans on the security of warehouse certificates.

It was provided that the right of advancing loans, as mentioned in the foregoing clause, should be denied to agricultural associations and public juristic persons. By an industrial guild, the said right could be exercised for the benefit of its members only. Agricultural warehouse certificates, being deeds acknowledging the receipt of goods for storage (or that the said goods had been mortgaged, or merely warehouse certificates), owners of warehouses, when asked to advance loans on the security thereof, must ascertain if the certificate acknowledging the transaction in question was made and executed at their own hands, or had been accepted by some other warehouse as security.

In August, the Minister of Agriculture and Commerce made public a by-law for the administration of the Law Governing Agricultural Warehouses. Further, he promulgated the Regulations for the Encouragement of the Establishment of Agricultural Warehouses, under which subsidies were to be granted to persons proposing to enter the business. Thus, in December, 1918, there existed 1,105 warehouses, which occupied a total ground space of more than five acres.

In 1917, as a result of the prosperity of sericulture and the continued high price of rice, rural business conditions became much better. Such being the case, deposits by farmers in their local post offices doubled; and, in consequence, the total loans granted by the Mortgage Bank showed a decline of ¥10,000,000 in 1917, as compared with 1915. On the other hand, deposits went up so steadily that, at the close of 1917, their total reached ¥8,340,842, which amount was about double that of 1914. All these things indicate that, while it is undeniable that the time was not yet ripe for promoting new enterprises in the farming districts, money in very handsome amounts was pouring into the hands of the farmers. As for the experiences of the banks of agriculture and industry, it is stated that, in 1917, the total

of the yearly and periodical redemption loans amounted to only ¥4,000,000 more than that of the preceding year, while loans repaid showed a gain of ¥6,000,000. The same thing occurred in the case of the loans which other banks granted on behalf of the agricultural and industrial banks; for the total of redemptions rose by ¥6,000,000 as compared with a falling off of ¥2,000,000 in loans granted. It is, however, to be noted that behind these records was the fact that both the Mortgage Bank and the banks of agriculture and industry reduced the rate of interest particularly on behalf of applicants for small loans, and on loans applied for by a joint request of twenty persons. With respect to industrial guilds, by virtue of the revised laws therefor, a way was opened for advancing short-term loans; and, because of this, the banks made an effort to initiate two-year loans. In 1918, the economic position of the village communities was still better; capital was generously advanced for the needs of country people; and the result was that the totals both of deposits and of loans repaid considerably increased, while demands for loans remained stationary. However, one noteworthy thing was that the total of large loans was growing, as many enterprises for the improvement of tilled land and the opening up of land till then uncultivated, had been undertaken.

To come, now, to the rates of interest paid, from the beginning of the War till about 1916, the demand for money in the rural districts was immense, and money was so hard to obtain that the interest was very high. But in 1917 and 1918 the farmers were becoming richer and had much larger bank accounts. Accordingly, the need of loans varied or was not very pressing; and interest rates were at times as low as is shown in table 4.

Farm Relief.

The gravest blow suffered by agriculture was the collapse of the rice market in 1914 and 1915, and the collapse of raw silk in the early days of the War. Measures for the regulation of the prices of rice and raw silk having been fully considered in earlier chapters, we shall now deal with the more systematic measures followed for the relief of agriculture in general.

It is quite evident that the farming depression of 1914 was a result of the weakness of rice and silk, as well as of the sharp rise in the price of other commodities. Nevertheless, as the remoter and yet ac-

TABLE 4
*Rates of Interest on Loans Advanced on Farm Land and
 Real Estate, 1912-1918.*

	<i>By pri- vate lenders</i>	<i>By ordi- nary banks</i>	<i>By banks of agriculture and industry</i>	<i>By the Mort- gage Bank</i>
1912	11.40 per cent	9.80 per cent	8.40 per cent	7.50 per cent
1913	11.65	9.70	8.50	7.50
1914	11.72	10.00	8.50	7.50
1915	12.03	9.80	8.70	7.70
1916	11.66	8.50	8.50	7.40
1917	11.20	8.40	8.00	7.00
1918	10.46	8.80	7.98	7.00

Rates of interest asked by private lenders are the averages for the entire country. Those asked by the ordinary banks are the rates adopted for loans secured by notes, in November of each year, 1918 excepted, in which year that of October was followed. In the case of the Mortgage Bank and banks of agriculture and industry, the highest rate in the second half of each year is taken.

TABLE 5
Total Loans Advanced to Farmers.

	<i>By the Mortgage Bank</i>	<i>By banks of agriculture and industry</i>	<i>By the Hokkaido Colonial Bank</i>	<i>By industrial credit guilds</i>	<i>Advanced from postal sav- ings deposits</i>
1912	¥ 71,853,039	¥ 68,870,393	¥12,867,035	¥26,085,170	¥197,298
1913	82,494,879	80,295,291	15,878,158	81,798,180	195,678
1914	92,118,974	92,884,210	18,065,281	88,449,997	195,896
1915	108,969,046	102,808,718	17,642,422	44,041,655	221,840
1916	112,685,397	109,328,140	17,013,170	56,692,231	298,565
1917	107,648,676	108,904,162	16,377,528	.....	416,947
1918	81,826,251	108,279,292	17,470,828	.....	755,984

tive causes of depression it seems proper to enumerate the limited area of arable land held by the average farm household, the farmer's lack of business information, the inflation of the cost of production, the falling off in labor and of industry in farm work, taxes that were too heavy, inadequate banking facilities, and poor and antiquated methods of handling and working up the products of agriculture. Under the circumstances, Japan might be said to be agriculturally lacking in the power to resist the ill effects of general economic disturbances. A number of measures were adopted for improving the

conditions of the rice and raw silk markets; and they exercised some influence for good. But they were, after all, only temporary measures. Consequently, both the Okuma and the Terauchi Cabinets realized the need of a permanent policy. During their tenures of office the Government established the National Economic Commission for the purpose of having such a survey made as might lead to both temporary and permanent farm relief. It was given the added task of finding a solution for the food question. All projects adopted by the Government for the improvement of farming and village conditions will be treated in the following pages.

Measures of Relief Adopted in 1915.

In January, 1915, the Minister of Agriculture and Commerce issued a statement that, in view of the economic distress of the country districts, the difficulties of carrying on farming work and the small amounts of fertilizers that were then being used, certain steps should be taken, as indicated below:

To insure the country's independence of any foreign food supply, the following measures were advisable: the opening up of arable land hitherto unbroken; the provision of systems of improved and general drainage; the improvement of lands under cultivation and the intensive use thereof; the use of high-grade seeds; and improvements in methods of cultivation.

The country should consume home products wherever possible. Every farmer should produce whatever his farm was best fitted to produce, according as the need of it should arise.

A greater working capital should be provided for agriculture. It was especially desirable to make efforts to take full advantage of the agency of the industrial guilds, through which the capital provided would be circulated.

Efforts should be made to induce the farmer to think more highly of his work, to hold idleness up to scorn, to encourage diligence and hard work, and to cultivate a spirit of systematic labor.

Efforts should be made to discourage habits of luxury and to foster habits of thrift, to cultivate examples of simple living and, above all, to put an end to the foolish squandering of money on the occasion of festivities, marriages, and funerals.

Efforts should be made to build up an export trade in fruit, vegetables, and livestock, and to create greater demands therefor in the home market.

124 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

It was essential to seek to increase the production of the simple fertilizers, such as grass, green manure, and barnyard manure, in order both to obviate the need of importing foreign fertilizers, and to better the financial position of farm households.

To increase the stock of poultry and livestock, efforts should be made to improve the same by better methods of breeding.

All those industries which had been looked upon as constituting labor of a secondary nature, especially sericulture, should be regarded as important branches of agriculture to be carried on as seriously as the others, and made an equal part of them. None should be regarded as inferior in rank.

Warehouses and markets should be established.

Measures of Relief in 1916.

In 1916, in addition to the measures already carried out, the Department of Agriculture and Commerce addressed instructions to local governors calling for the encouragement of industries formerly known as secondary. The chief points stressed in these instructions were as follows:

With respect to the encouragement of the so-called secondary industries, the utmost care should be paid to establish harmonious relations between producers and their market, in order to prevent any given industry from being abandoned after it had once been undertaken.

Local governments should make careful surveys of all such secondary industries, including the supplies of raw materials required therefor, and the markets for their products; and they should make public the results of these surveys by any appropriate means.

The following should be the criteria that should lead a farmer to select such a secondary industry, to go with his principal industry or industries: The secondary industry should be of such a nature as would not in any way interfere with the principal industry followed. It should, moreover, be of a kind which could offer additional labor. It should be as simple as possible, so that it could be carried on by the aged, the young, or by women and girls.

The production and manufacture of the commodities so produced, the sale of the same, and the purchase of raw materials should be undertaken jointly by those engaged in the said industry, in so far as this was possible.

To add to the above, the Imperial Agricultural Association also began an inquiry into the need of protection for farmers with very small holdings.

Measures of Relief in 1917.

At a conference of experts of the agricultural staffs of the provincial governments, held at the Department of Agriculture and Commerce, a number of important resolutions were adopted, and, happily most of them were carried into effect. The conference's recommendations follow.

With a view to bettering the farmer's business methods a survey, and a basic and methodical survey, should be made of farm and village life in general; that help and guidance should be given in inquiries into the most profitable and systematic methods of getting the most from agriculture; that the adoption of bookkeeping should be encouraged in farm households; that encouragement should be given to the establishment of industrial coöperative guilds; that a medium should be provided for the co-operative selling of farm products; that advice and assistance should be given in the establishment and management of agricultural warehouses; and that help should be given in providing capital at low rates of interest.

As of help in furthering the education of farm and village people, by lectures, visits of inquiry and the like, their general moral and intellectual atmosphere should be elevated; the principles of agriculture should be taught to the girls, and the young men and women of the villages; the minor officials of agricultural associations should be guided and assisted in this discharge of their duties; and the instruction given in supplementary agricultural schools should be extended and improved upon.

For the social uplift of the farming population, all consideration should be given to the small landowner and the tenant farmer; deserving farmers should, furthermore, be given help in the sale of their produce, and the excellence of their work should be brought to public notice. In case of need emigration ought also to be encouraged.

As of help in improving and enlarging the area of arable land, there should be a survey of farm-land irrigation, and the enactment of what might be called "the water-supply law"; public recognition for those coöperative guilds that had done such excellent work; any large engineering work undertaken should be carried out by the local governments; there should be established at various points in the country national bureaus for the improvement of arable land.

In the matter of supplies and the use of fertilizers, help and guidance should be given in the adoption of economical methods of using fertilizers; the use of non-commercial fertilizers should be encouraged; the knowledge of the value of fertilizers should be increased in every way;

advice should be given as to the best methods of buying fertilizers; loans should be advanced for their purchase; there should be fertilizer inspections; and studies should be made of the soil itself, in order that the most appropriate fertilizers should be applied.

In the matter of the improvement of the breed of livestock, steps should be taken to extend popular knowledge in this regard; it should be made easier to obtain the sort of livestock desired; the country's supplies of fodder and stock-food should be increased; cattle and the products thereof should be turned to the fullest advantage; and the necessary steps should be taken to encourage the raising of livestock, and the bestowing on them of the needed care.

In the matter of sericulture, encouragement should be given to the establishment of sericulture guilds and help in bringing them to act in concert with other industrial guilds in the promotion of such local enterprises as might be deemed necessary; among such necessary enterprises might be cited the establishment of model mulberry orchards; the development of sericultural guilds, and the extension of the knowledge of their value. Silkworm growers should be shown the necessity of coöperative methods in the management of their business. As a measure of encouragement subsidies should be advanced to silkworm growers. And experts should be appointed to give them every possible assistance.

In May, 1918, a conference was held at the Department of Agriculture and Commerce, for the purpose of discussing means for the improvement and increased production of the principal foodstuffs of the people; and resolutions were passed calling for every encouragement for increased production of both the sweet and the common potato; the study of the various species of rice and wheat, with a view to their improvement; an increased production of fertilizers; experiments to show the possible connection between deep ploughing and greater crop returns, etc., etc.

It is impossible, however, to follow up and deal with all the measures that were taken for the betterment of agriculture. We must limit ourselves to the matter of the suggestions that were made for the improvement of arable land.

Table 6 gives the number of areas under improvement and the extent of their increase since the promulgation of the Law of 1900.

On August 31, 1916, the aggregate area of lands taken in hand was 438,785 cho, which area comprised a total of paddy and non-paddy fields amounting to 347,073 cho, 265,573 cho (65 per cent) being paddy, and 81,573 (18 per cent), non-paddy. When the proj-

TABLE 6

	<i>Number of new areas put under the plow</i>	<i>Total area of land reclaimed</i>
1900	17	684.3 cho ¹
1905	217	11,048.5
1910	749	39,759.8
1913	824	41,572.3
1914	757	45,830.4
1915	738	32,936.1
1916	712	28,294
1917	675	26,314

ect is completed, the total is expected to rise to 397,288 cho. Taking it all together, however, it is a project which means an extension of the paddy areas by 31.2 per cent and a diminution of the non-paddy by 44 per cent. In short, this work will change a large proportion of the non-paddy into paddy fields. It will also bring under cultivation, of course, great areas of land that were once forest and desert, while likewise draining many lakes and bogs. In the matter of areas, that will of necessity come into the possession of the State,—that is, land that will be covered by roads, ditches, dams, dikes, reservoirs, and the like,—their total will be increased to the extent of 41.6 per cent; and they will, as planned, provide better means of travel and irrigation.

Of the total benefit that will accrue from the work it is difficult to speak comprehensively, as the results differ greatly, according to the original condition of the areas improved, and according to the nature of the developments carried out. Referring, however, to the figures for the end of 1912, areas on which a winter or second crop could be grown had risen from 18.3 per cent to 37.3 per cent of the whole; and the per-tan yield of paddy rice had increased from 168 sho to 186. When it comes to the non-material benefits, such as improvements in the means of travel and transportation, and in irrigation,—the latter meaning a great economy in labor,—and the addition to the value of the land, the results already accomplished are really wonderful.

In short, the improvement of arable land offers one of the great possibilities of Japanese agriculture; and to add to that it is an important measure of farm relief. The authorities accordingly give it much thought and make financial advances to those who engage in it.

¹ The cho = 2.45 acres.

CHAPTER IX

THE TREND AFTER THE WAR

WE have seen that, because of the War, Japanese agriculture underwent extraordinary transitions, both in matters of demand and supply, and in market conditions. Increases in the supply kept pace with those of demand, with the result that the nature of foreign trade in farm products changed greatly. At the same time prices rose tremendously, and this inevitably set the Government the task of regulating prices, in so far as home consumption was concerned. As regards the post-war situation, no marked change seems to have occurred. To be sure the news of the armistice caused a serious halt in the business of Japan; but when it was discovered that for Europe's warring nations the work of restoration would call for imports in enormous quantities and of many kinds, business revived and a new era of prosperity seemed to have been ushered in. Many new enterprises were launched and there was a vast inflation of the currency, culminating in an unexpected rise in commodity prices. This was at once reflected in the market for farm produce. That is, the demand for it grew stronger than ever. In contrast, mining and the shipping trade gradually fell into depression after the armistice, while by 1919, in the balance of trade an excess of imports took the place of Japan's excess of exports during the War. In the following paragraphs we shall study *post-bellum* conditions in the case of rice, other cereals, and raw silk, for they show most strikingly the changes that took place after the armistice.

Rice.

Even as in the course of the War, the demand for rice continued to grow. This can be proved by citations from trade statistics. For the first half of 1919, exports of rice reached 147,053 piculs, valued at ¥2,615,017, which figures, as compared with those for the same period of 1918, represented a falling off of 214,920 piculs and ¥1,784,123, respectively. Imports on the other hand continued to rise. For the same six months, rice imports amounted to 7,472,365 piculs, with a value of ¥82,058,101. These figures exceeded those of

the corresponding period in 1918 by 4,180,317 piculs and ¥58,-584,245.

TABLE 1

Monthly Imports of Rice, November, 1918, to October, 1919.

(in koku)

	<i>Quantity</i>		<i>Quantity</i>
1918 November	616,864	1919 May	386,930
December	802,342	June	192,188
1919 January	702,516	July	238,776
February	549,748	August	498,763
March	581,654	September	414,167
April	575,308	October	187,378
Total		5,428,256	

In 1919 the following monthly imports of rice took place under government regulation: July, 210,909 koku; August, 441,267; September, 348,465; October, 11,567; November, 1,778; December, 18,767; total, 1,148,598 koku.

Despite bad weather, the crop of 1919 was an exceptionally good one, as the high prices of rice led farmers to give the utmost care to their crops, and use more fertilizers than ever before. The harvest amounted in all to 60,733,387 koku, a total greater than that of 1918 by 6,034,300 koku, or 11 per cent, and exceeding the average year by 6,242,677 koku, or 15 per cent. With respect to the market, both futures and spots appear to have been indifferent to the effects of the armistice, save that in March and April, 1919, prices fell somewhat, owing to the importation of foreign rice. Even this fall was of only a temporary nature; the market quickly recovered, and for a long time retained its upward trend. The maximum and minimum quotations for futures and spots on the Tokyo market between November, 1918, and June, 1919, are given in table 2.

Other Cereals.

For the first half of 1919, exports of other cereals amounted to 59,220 kin, valued at ¥5,011, which figures, compared with the preceding year, show a decline of 19,220 kin and ¥1,657. Imports also diminished. They amounted to 1,345,024 piculs in quantity and

130 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

TABLE 2

	<i>Maximum</i>		<i>Minimum</i>	
	<i>Futures</i>	<i>Spot</i>	<i>Futures</i>	<i>Spot</i>
1918 November	¥36.69	¥42.80	¥32.20	¥38.00
December	38.69	....	36.34	....
1919 January	39.30	42.00	37.60	40.50
February	39.28	41.30	35.10	39.40
March	35.29	40.00	27.05	34.90
April	33.00	41.60	29.50	38.00
May	38.32	44.30	32.11	40.90
June	....	45.20	....	43.50

¥1,868,320 in value, or 1,190,204 kin and ¥8,550,341 less than the figures for the previous year. While this is hard to explain, it is not impossible that the excessive imports in 1918 and the large exports to Europe from other foreign centers of production were in part responsible.

From January to April the tone of the market was weak, owing to the poor demand for rice, to the many extraordinary sales being made by growers in the provinces, who were glad to get rid of their holdings as fast as possible; to certain indications that the coming harvest would be a large one; and also to increased imports of foreign rice. But after May the situation underwent a complete change, with a notable buoyancy of prices, due to a rise in rice, increase in the demand, and a decline in stocks on hand. In table 3 monthly quotations on the Tokyo market in to¹ are given for the first six months of 1918 and 1919.

TABLE 3

	<i>1918</i>			<i>1919</i>		
	<i>Barley</i>	<i>Wheat</i>	<i>Rye</i>	<i>Barley</i>	<i>Wheat</i>	<i>Rye</i>
January	.60	.41	.38	.58	.43	.36
February	.60	.39	.44	.60	.45	.34
March	.63	.43	.44	.75	.56	.38
April	.75	.56	.38	.67	.54	.38
May	.67	.54	.38	.58	.42	.39
June	.58	.42	.39	.61	.44	.44

¹ One to = 3.99 gallons, or almost 1½ bushel. The figures given are for the quantity purchasable for one yen.

Raw Silk.

Silk exports to England, France, and Italy fell off in the first half of 1919; but this was amply made good by increases in shipments to America. In consequence, the period under review, as compared with the corresponding period in 1918, showed an increase of 681,335 kin, valued at ¥38,953,320. The total volume of the export trade was 11,898,904 kin, and ¥196,004,339. The details are given in table 4.

TABLE 4
Raw Silk Exports, 1919.

	1919		<i>Increases or decreases as compared with the corresponding period for 1918</i>	
	<i>Quantity</i> kin	<i>Value</i> ¥	<i>Quantity</i> kin	<i>Value</i> ¥
India	.....	¥.....	² —79,156	—¥ 463,213
England	52,985	848,108	—236,586	—3,156,647
France	462,876	7,764,162	—636,647	—7,680,840
Italy	19,000	295,500	—95,642	—1,237,322
Russia	.....	.....	.....	.....
United States	11,362,217	187,107,627	1,811,992	51,967,254
Other countries	1,853	28,942	—82,626	—475,912
Total	11,898,904	¥196,044,339	681,335	¥38,953,320

Orders for exports were not forthcoming to the extent expected, the market became depressed, and in February and March prices repeatedly fell. In April, the demand from America was strong, while the silk industry in Europe was on the way to recovery, after a lapse of several years, due to the War. The general demand for raw silk was beginning to be very powerful. Shinshiu No. 1 rose to ¥1,720 by the end of April, and reached the unprecedented figure of ¥1,920 on the Yokohama Exchange at the close of May. The last day of June established a record of ¥2,320. The quotations for the first half of the year are given in table 5.

² (—) Indicates a decrease.

132 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

TABLE 5
Quotations^a for Raw Silk (Spot Goods) on the Yokohama Exchange.

	1919			1919		
	<i>Fine Filatures</i>			<i>Filatures No. 1</i>		
	<i>Highest</i>	<i>Lowest</i>	<i>Average</i>	<i>Highest</i>	<i>Lowest</i>	<i>Average</i>
January	¥1,610	¥1,565	¥1,586	¥1,520	¥1,350	¥1,442
February	1,500	1,420	1,447	1,500	1,400	1,448
March	1,500	1,450	1,461	1,340	1,300	1,319
April	1,750	1,590	1,640	1,720	1,520	1,554
May	1,950	1,750	1,808	1,920	1,720	1,778
June	2,270	2,270	2,270	2,340	1,930	2,386

TABLE 6
Quotations per 10 Kin for Raw Silk (Futures) on the Yokohama Exchange.

(Filatures No. 1.)			
1919	<i>Official average</i>	<i>Highest</i>	<i>Lowest</i>
January	¥144.80	¥151.50	¥129.80
February	135.80	141.60	126.80
March	136.70	144.50	133.00
April	150.30	162.50	142.00
May	171.10	194.00	154.50
June	205.10	228.80	179.00

^a The prices quoted are per 100 kin.

PART II
MINING AND METALLURGY

CHAPTER X

GENERAL SURVEY

Conditions before the War.

IN the period before the War the mineral production of Japan had been showing annual gains, for, following the general progress of industry, both home consumption and exports were constantly on the increase. Gold, lead, petroleum, sulphur, and coal made very remarkable production records. In output coal came first, followed in order by copper, iron, petroleum, gold, and silver.

In 1877 the aggregate value of all mineral products stood at the almost insignificant sum of ¥3,391,000. In 1887 it rose to ¥8,199,000; and to ¥32,121,000 in 1897. The increase was greater than ever in the following decade, and the total in 1907 was ¥110,552,000. In 1913 it was ¥146,848,000. Taking the output in 1897 as 100, the index number for 1907 was 344, and that for 1913 was 457. If 1877 be taken as the base, the business of 1907 was more than thirty-two times as large and that of 1913 was more than forty-three times.

Before the War the trade in mineral products was growing steadily, in home consumption, in exports, and in imports of minerals not produced in Japan. The leading minerals exported were coal, copper, sulphur, and zinc ore, while the leading minerals imported were iron, petroleum, refined zinc, tin, and lead. The salient feature of the pre-war trade was the excess of imports over exports.

TABLE 1

Exports and Imports of Mineral Products before the War.

	<i>Exports</i>	<i>Imports</i>	<i>Excess of imports</i>
1907	¥51,476,113	¥ 67,471,343	¥15,995,230
1908	42,942,556	67,417,343	24,474,787
1910	42,674,238	73,296,029	30,621,791
1911	41,976,412	88,816,671	46,840,260
1912	49,455,319	109,714,488	60,259,169
1913	57,612,495	109,374,169	51,761,674

Production.

Regarded from the viewpoint of the mining industry, 1914 cannot be said to have been very prosperous. Coal alone displayed a cer-

tain degree of activity in the early part of the year; but weakness was in evidence by April, and later the situation grew quite unfavorable. In July, when hostilities broke out in Europe, trade took a very serious turn. This rendered the export of copper, zinc, tungsten ore, etc., impossible, with the result that many producers either had to curtail operations, or close down altogether. Nevertheless, despite the expectation that the production of these metals would be seriously affected, the quantity produced seems to have been in no way diminished. Gold increased by more than 30 per cent; lead, 21 per cent; tin, about 250; zinc, about 400; pig iron, 31; phosphate ore, more than 200; petroleum, 39; and sulphur, 25. With reference to values, copper and petroleum led all others; silver and iron dropped off somewhat, while coal, with an output valued at ¥153,310,000, increased by about ¥6,460,000, or 4.4 per cent, due both to increased production and higher prices. In 1915, owing to the recovery of the export business in metal goods and ore, and rapidly increasing orders for war materials, the market became active and prices buoyant. This was quickly reflected in metal production. That of zinc showed an increase of 257 per cent; antimony, 116; tin, 253; and tungsten ore, 91. Others that showed increases were gold, with about 16 per cent; silver, 5.5 per cent; copper, 7; lead, 4.4; and steel, 9. The metal-liferous minerals were prosperous as a whole, except pig iron and iron pyrites, which fell off by about 12 and 42 per cent, respectively. But non-metalliferous minerals all suffered more or less seriously from a depressed market except phosphate ore, which had an increase of 51 per cent. While the petroleum output increased by about 11 per cent, coal diminished by 8.1 per cent, and sulphur by 2.6 per cent. As regards the value of mineral products, the total rose to ¥175,958,000, without including the products of the Government Steel Foundry at Yawata. This exceeded the production of 1914 by ¥2,928,000, or 13.5 per cent. The value of the metallic minerals rose to ¥97,943,000, an increase of ¥35,730,000 (57.4 per cent) over that of 1914. The value for the year of the non-metallic minerals dropped to ¥78,015,000, ¥14,801,000 (14.2 per cent) less than that of the preceding year. This was due to a decline in the value of the coal output, which fell off ¥15,280,000. Conditions were quite different in 1916, for the general prosperity of industry, which created a greater demand for the metals; the difficulties of the import trade; and the promising outlook for exports greatly helped to strengthen the posi-

tion of mining. As to production totals, all were satisfactory, save those for gold, tin, and petroleum; the latter remained stationary. Copper increased by 33 per cent, coal and iron by 12 per cent; zinc, 85 per cent; antimony, 30; silver, 13; sulphur, 47; lead, 139; tungsten, 88; phosphate ore, 99; manganese ore, 99; and chrome iron ore, 177. As a result of the increase in output and rising prices, the total value rose to ¥325,000,000, an excess of ¥122,143,000 (62 per cent) over that of the previous year. Copper showed an increase in value of 104 per cent; iron, 66 per cent; petroleum, 52; lead, 285; sulphur, 126; tungsten, 384; phosphate ore, iron pyrites, manganese, and chrome iron ores, from 100 to 380 per cent. The year 1917 was still more prosperous. While it is true that the lack of mining machinery and the high cost of equipment, as also high wages, caused a considerable increase in the cost of production, and made the operation of the business very difficult, this was neutralized by the continuously active demand for minerals, both for war munitions, and for other purposes. In consequence, market prices were as high as in 1916. Manufactures of the various metal products and the output of ore grew proportionately larger. An increase of 22 per cent was registered by silver, 7 by copper, 37 by lead, 40 by zinc, 43 by pig iron, 22 by steel, 33 by iron pyrites, 15 by coal, and 11 by sulphur. However, gold, tin, antimony, and crude oil declined by 10, 16, 38, and 3 per cent, respectively. The value of the various minerals, ¥442,516,000 in amount, represented an increase of ¥117,516,000 (36.2 per cent) over the preceding year, and 202 per cent over 1915, both the quantity of output and the value having risen. It is to be noted that this was, in large measure, a result of phenomenal increases on the part of coal and iron, which were, respectively, 74 and 86 per cent. Other metals that were on the increase included copper, 8 per cent; silver, 67 per cent; petroleum, 30 per cent; and lead, 50 per cent. As a result of the great world change, both political and economic in 1918, depression followed, and many minerals experienced declines. Silver fell off by 4 per cent, copper by 16 per cent, lead by 32, tin by 20, zinc by 27, tungsten ore by 17, and crude oil by 14. On the other hand, gold advanced by 9 per cent, pig iron by 51, steel by 3, manganese ore by 19, phosphate ore by 58, and coal by 6. Despite the decrease in the amount of production, values continued to rise, the total standing at ¥514,090,000. As compared with 1917, this represents an increase of ¥150,650,000 (42 per cent) and

138 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

compared with 1914, about ¥359,000,000 or 303 per cent. This enormous increase of value was due to the prosperity of the trade in the non-metallic minerals. Above all, coal rose by ¥146,020,000. Petroleum, despite a diminished output, represented a value 60 per cent greater, and phosphate ore 500 per cent.

What has so far been said about the mining industry refers to Japan proper; but a similar development occurred in Korea, Formosa, and other colonial possessions. In table 2 the growth of the industry is shown in both Korea and Formosa.

TABLE 2

Values of Mineral and Metal Products of Japan Proper, Korea, and Formosa, during the War.¹

	<i>Japan Proper</i>	<i>Korea</i>	<i>Formosa</i>	<i>Total</i>
1914	¥166,692,829	¥ 8,402,649	¥4,539,787	¥179,635,763
1915	202,856,610	10,577,297	5,090,759	218,524,666
1916	325,000,002	14,078,188	5,686,630	344,764,820
1917	442,516,068	17,058,102	6,677,754	466,251,924
1918	621,413,403	30,838,078	7,429,157	659,680,634

Trade Conditions.

The trade in mineral products was growing steadily more prosperous before the War. An increased production of minerals made for activity in the export trade, while the rapid development of manufacturing gave a constant impetus to imports. In 1913, the aggregate of exports and imports was ¥166,986,000, ¥57,612,000 representing exports and ¥109,374,000 imports, the excess of the latter amounting to ¥51,761,000. The principal articles of export were copper, coal, and sulphur, while the import trade was headed by manufactures of iron, followed by lead, tin, zinc, petroleum, and phosphate ore. It is needless to state that increases or decreases in the volume of the trade in these articles bear a very close relation to the prosperity of the foreign trade of Japan. In 1914, up to the outbreak of the War, trade conditions were relatively favorable. Coal suffered a slight decline, but copper and sulphur were represented by a larger figure than in the year previous, while the trade in antimony registered a marked growth. But imports were inactive, and

¹ Figures for Japan proper include those of the products of the Government Steel Foundry at Yawata, Kiushiu.

showed marked decreases in metal goods, due to the economic dullness which had prevailed from the beginning of the year. When the War broke out, the channels of international trade were at once affected. Shipping was seriously blocked in many seas; ocean freight rates rose precipitately; and facilities for foreign exchange were deranged. As the situation went from bad to worse, the dullness of trade became stagnation. Exports of such leading commodities as copper, coal, and sulphur showed sharp declines; while zinc ore and tungsten ore dropped to nothing.

It was the same with imports, the depression in manufactures of iron being the most apparent. Although conditions showed some improvement toward the end of the year, the foreign trade in minerals amounted to but ¥141,500,000; while exports registered an increase of about ¥100,000 over those of the previous year, imports diminished by ¥25,580,000, with the result that the combined total fell off by ¥25,480,000. In 1915, iron imports, which had been gradually declining since the outbreak of war, suffered a further drop, in consequence of the extension of the theater of war. Tin, phosphate ore, and railroad materials were likewise dull, and the aggregate of the import trade fell below the mark of the preceding year by about ¥4,000,000. In sharp contrast, exports were all prosperous with the exception of coal. Copper, brass, and antimony, tungsten ore and molybdenite ore were in demand. Especially worthy of note was the development of the zinc industry. Formerly zinc had been exported as ore, and imported in manufactured forms; but owing to the outbreak of war, further importations of smelted zinc became impossible; on the other hand the demand for this metal for munitions of war grew enormous in England, France, and Russia. This gave an impetus to its manufacture, and when the industry was fairly established, the way was opened for export, the value of zinc exports reaching ¥4,000,000. Simultaneously, uncommonly large gains were achieved by sulphur and by tungsten ore. The prosperity of the import trade, which had always exceeded the export trade by somewhat between ¥50,000,000 and ¥60,000,000, was at an end; and there was an excess of exports (¥6,930,000) for the first time in the history of the metal trade. The total amount of both exports and imports reached ¥168,000,000, or more than that of the previous year by ¥25,635,000. The year 1916 was very active; especially, from the standpoint of exports. The import trade managed to regain its nor-

mal volume, due to the briskness of pig iron, steel, lead, zinc, etc., with the result that the total rose to ¥326,208,000, or twice that of 1913. Further, it is to be noted that as exports amounted to ¥151,200,000 and imports, to ¥175,000,000, the excess of the latter was about ¥23,800,000. The business done in 1917 was record breaking. Among exports, the commodities which suffered a decrease were coal, sulphur, antimony, and tungsten ore; but the gains in copper, brass, zinc, etc., were far larger and in consequence the total figures for exports rose to ¥209,554,002. As regards imports, lead and petroleum alone were inactive, the iron and steel trade was particularly prosperous, and its figures reached ¥307,425,000. The combined total for both branches of trade grew to ¥516,979,000, more than three times its volume before the War. In 1918, however, market dulness and industrial inactivity at home rendered the metal trade utterly stagnant. All exports, except coal, were dropping; but the import trade, comprising such goods as iron, lead, tin, coal, and petroleum was very active, indeed. The difference between exports and imports amounted to ¥275,118,000; exports ¥151,603,000, were ¥57,950,000 below the figures of 1917; while the total of imports rose to ¥426,722,000, or ¥119,296,000 more than that of 1917. Exports and imports together amounted to ¥578,325,000.

To sum up, Japan's war-time trade in mineral products commenced very stagnantly because of the general dislocation of business at the beginning of the War. In due course, the growth in home production and in consumption abroad reacted favorably on exports, which reached their height in 1917. The import trade was at first hindered by many obstacles, but when these were eliminated, it became very active, and remained so till the armistice was signed. Increases in the amount of trade were remarkable, the total of ¥167,000,000 for 1913 increasing to ¥578,000,000 in 1918, or about 350 per cent. The details are given in table 3.

Applications for Prospecting Rights and Mining Concessions.

Some idea of the activity of the mining industry of Japan during the war years can be obtained from the number of applications for prospecting rights and mining concessions that were received by the Government, as also from the increase in the area of mining concessions. Figures are given in tables 4 and 5.

TABLE 3
Exports and Imports of Mineral Products during the War.

	<i>Exports</i>	<i>Imports</i>	<i>Excess of exports</i>	<i>Excess of imports</i>
1913	¥ 57,779,297	¥109,874,531	¥.....	¥ 52,095,234
1914	58,374,701	84,510,737	.....	26,136,036
1915	87,282,012	80,381,373	6,900,639	.....
1916	151,200,861	175,007,194	.....	23,806,333
1917	209,554,002	307,425,194	.....	97,871,421
1918	151,603,460	426,722,074	.....	275,118,614

TABLE 4
*Number of Applications for Prospecting Rights and Mining
Concessions, 1905-1918.*

	<i>For pros- pecting rights</i>	<i>For mining concessions</i>	<i>For alluvial mining concessions</i>	<i>Total</i>
1910	3,356	240	206	3,802
1911	3,836	175	226	4,237
1912	4,850	185	450	5,485
1913	5,731	171	383	6,285
1914	5,735	180	294	6,209
1915	6,460	159	237	6,856
1916	14,919	266	373	15,518
1917	22,826	334	973	24,133
1918	29,388	392	2,191	31,971

TABLE 5
Increase in Area of Mining Concessions, 1905-1918.
(in tsubo)²

	<i>Productive</i>	<i>Unproductive</i>	<i>Total</i>
1905	416,708,560	425,552,268	842,260,828
1906	426,403,501	450,292,792	876,696,293
1907	462,899,128	489,027,489	951,926,617
1908	463,560,860	552,462,738	1,021,023,598
1909	484,971,714	598,665,864	1,083,637,578
1910	470,426,502	657,791,694	1,128,218,196
1911	488,370,221	659,456,461	1,147,826,682
1912	515,600,074	662,879,383	1,178,479,457
1913	550,468,853	653,636,414	1,204,105,267
1914	587,459,335	667,884,824	1,255,344,159
1915	616,432,811	658,318,784	1,274,751,595
1916	672,348,207	638,304,111	1,310,652,318
1917	760,040,359	622,417,115	1,382,457,474
1918	823,457,731	642,931,040	1,466,388,772

² One tsubo = 6 square feet.

142 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

Mining Claims and Concessions.

The notable increase in the number of mining claims and concessions gives an idea of the activity of the industry during the War.

Mining Investments.

Investments in mining increased with the development of the industry. As there is no means of ascertaining the amount of capital represented by non-corporate firms, we shall have to confine ourselves to corporate firms alone. And for the five years between 1914 and 1918, inclusive, the number of such companies that were promoted almost doubled, their paid-up capital more than doubled and their authorized capital almost trebled. The following table offers particulars:

TABLE 6
Increase in the Capital Invested in the Mining Industry.

	<i>Number of companies</i>	<i>Capital</i>	<i>Paid-up capital</i>
1910	252	¥191,109,650	¥147,459,400
1911	256	218,465,850	160,461,350
1912	264	222,489,850	176,258,600
1913	280	232,680,550	178,146,625
1914	312	251,441,400	201,578,975
1915	331	255,195,200	205,835,446
1916	367	299,632,200	225,432,446
1917	445	444,656,750	306,677,625
1918	596	751,934,370	495,572,735

CHAPTER XI

COPPER

Production.

COPPER is the most important metal in Japan, as it is produced in such quantities as to be surpassed only by coal. As a copper-producing country, Japan ranks second in the world, America alone producing more. With reference to its production before the War, the year 1877 saw an output of 6,570,000 kin, valued at over ¥1,432,000, while the output in 1907 had risen to the remarkable figure of 64,522,000 kin. Because of a tremendous rise in market prices, the value, which had been advancing quite rapidly, stood at ¥32,467,000 in 1907. In other words, production rose about ten times, and the value of the product twenty times. The output continued to rise between 1908 and 1911; but values fell off. In 1912, the figures were 104,037,000 kin and ¥40,252,000; in 1913, 110,835,000 kin and ¥42,012,000. This was equivalent to about 30 per cent of the aggregate value of all the mining products of Japan. In the early months of 1914, trade was dull, due to a fall in market prices; but in July, when the War commenced, conditions at once became really serious; for exports to Europe, which had been absorbing a very large amount of the Japanese production, came to an end. Another circumstance that was a great blow to the copper trade was China's failure to float her Currency Loan, which reduced the demand for copper for coining. This meant the frustration of the producers' only hope, and the market groaned under the weight of surplus stocks. In short, it looked as if the whole world were turning its back on Japan's chief metal. Some large producers tried to curtail their production, while smaller ones were forced to close their plants. But at the same time, while the industry in general was calling for relief, other producers were of the opinion that the depressed market was a mere passing phenomenon. Instead of trying to restrict their production, they had recourse to every measure for the maintenance of the *status quo* and piled up the largest stocks they could. Consequently, accumulations of the metal on the market grew very serious, and by the end of October, the total was put at upwards of 20,000 tons.

144 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

Then, toward the end of the year, large orders found their way from Russia; while simultaneously it was reported that the London demand had begun to exhibit strength. This breathed life into both market and industry, and many mines which had closed down again began to produce. Meanwhile, many new mines were opened up and developed. As a result, the output of copper for 1914, though at first it appeared to have fallen off, increased steadily, and reached 116,359,000 kin, valued at ¥38,350,000. This was 5,524,000 kin, or 15 per cent more than the output in 1912; however, the decline in price reduced its value by ¥3,661,000 or 8.7 per cent. In 1915 the market grew stronger daily, for Russia needed enormous quantities for military purposes, while home consumption was fast increasing. Although the producers did their utmost to increase their output, they were unable to handle all the orders that came in. Moreover, the firmness of the London market wonderfully consolidated the position of the market in Japan. As a result, the mines of lesser importance which had been forced to close were led to resume operation.

As compared with the preceding year, 1915 had a production 7 per cent larger in quantity and 37.5 per cent greater in value—125,692,000 kin and ¥53,731,000. In 1916, enormous war orders were placed by England, France, Russia, and Italy, while at home the arsenals of the army and navy were in need of great quantities of the metal; in short, producers had tremendous demands to meet. Prices constantly rose. Naturally enough, this made mine operators feverishly eager to exploit new resources. Efforts were made to enlarge refineries or to open new ones. Indeed, while producers were vainly seeking to meet their orders from the raw ore, some ingenious individuals, seeing that immense quantities of small and discarded Chinese copper coins were in the hands of the people of Shantung, went there, coaxed the owners to part with them for a price that was attractive in Chinese eyes, brought them back, and with them helped meet the insatiable demands of the refineries. The total quantity of Chinese coins so imported is said to have totaled 50,000 tons. The output grew larger monthly, amounting, by the end of the year, to 167,725,000 kin, valued at ¥109,812,000; an increase over the figures for 1915 of respectively 33.4 and 104.4 per cent.

During the first half of 1917, there was a decline in the Russian demand, due to exchange difficulties. Nevertheless, the trade was as

prosperous as ever. America's entry into the War made it impossible for her to supply other nations with commodities. Consequently, Britain and France, till then dependent on American manufactures, sent large orders to Japan. In addition, British India and China were in need of Japanese copper. Consequently, the output of these six months, 75,329,000 kin, was 9,727,000 kin, or 15 per cent, larger than that for the corresponding period in 1916. However, in the second half year the story was a different one. First, the weakness of the London market badly affected conditions in Japan. The activity of the German submarines seriously reduced the available bottoms and considerably hampered the trade with England and France. Stocks of copper began to accumulate on the Japanese market. This reacted powerfully on production, and in the second half year less copper was put out than in the first. Yet as compared with the same period of the previous year, the gain was about 4,850,000 kin, making a total of 76,350,000 kin. As regards the entire year, the output was 180,063,000 kin, valued at ¥118,692,000. It will be seen that these figures are 7.4 and 8.1 per cent greater than those for the year 1916.

The copper market, which had been prosperous for many months, received a decided setback in 1918. During the first half year it was affected by the dulness of the market in London and New York. In England and France, copper prices were lower than those ruling in Japan; moreover, the revolution in Russia hermetically sealed that door against Japanese commerce. Under these circumstances, it is natural that production should have fallen to 69,165,000 kin, or 6,163,000 kin less than that of the corresponding period of the preceding year. In the second six months, the market once more seemed to have become buoyant in consequence of a demand for exports to China and Malaysia; but when the news of the armistice was received, the market broke precipitately. European demand for Japanese copper fell off. All the mines in the country, except six or seven, were forced to curtail production; and in consequence, the output, 65,805,000 kin, dropped below the figure for the same period in 1917 by 15,045,000 kin. For the twelve months of 1918, production amounted to 150,568,000 kin, valued at ¥90,390,000, or 16.4 and 23.8 per cent less than the previous year.

The figures for production, before and during the War, are given in table 1.

TABLE 1

Production of Copper before and during the War.

	<i>Quantity</i>	<i>Value</i>
1877	6,570,744 kin	¥ 1,482,372
1902	48,890,687	18,742,941
1907	64,522,797	82,467,871
1913	110,835,408	42,012,126
1914	117,489,081	89,067,887
1915	125,692,782	58,781,798
1916	167,725,869	109,818,610
1917	180,068,949	118,692,244
1918	150,568,821	90,890,282

Trade Conditions.

Among Japanese metals copper ranks first in point of commercial importance. During the years immediately preceding the outbreak of war, the value of copper exports ranged between ¥20,000,000 and ¥28,000,000, with indications that the figures would further increase. The products most in demand were ingots and sheet copper; wire and cable amounted to but 10 or 20 per cent of the total. A great proportion of the output, ranging from 62.7 per cent in 1912 to 86.7 per cent in 1908 was exported. From 1908 to 1913, inclusive, as production had grown from 67,754,886 kin to 110,835,408, and exports from 60,721,224 to 71,141,065.

As the foregoing table shows, the copper trade grew steadily. In particular, shipments to China, England, and France were rising rapidly.

In 1914 conditions were fairly favorable, until the War broke out. Exports increased by about 9,700,000 kin, as compared with the corresponding period of 1912. The declaration of war laid a dead hand on the trade, and for a time the markets of Europe seemed to have been closed against copper from Japan. Subsequently, conditions changed, as the consumption of the metal for war purposes increased in Europe, which continued to require large quantities till toward the close of the year. Moreover, China was actively in the market, while Russia, who had never needed Japanese copper before, was now forced to turn to Japan to meet her needs. In consequence, the volume of the export trade arose to 73,540,000 kin, an amount 3,310,000 kin larger than that of the preceding year; nevertheless,

the value was ¥987,000 less, or ¥27,198,000. Table 2 shows in detail how the War affected the export trade.

TABLE 2
Copper: Exports in 1914.
(in kin)

	<i>China</i>	<i>England</i>	<i>Germany</i>	<i>France</i>	<i>United States</i>
January	2,013,427	1,337,668	761,031	550,785	716,219
February	2,054,287	559,449	338,684	1,155,275	590,636
March	3,570,808	796,197	421,011	765,119	327,193
April	3,760,616	211,525	508,020	556,008	621,801
May	3,019,388	42,341	465,680	250,775	1,009,822
June	3,277,973	128,019	719,025	384,436	1,228,135
July	2,100,752	294,672	351,005	1,102,214	523,830
August	707,180	.....	.....	84,650	.....
September	1,467,657	537,600	.....	89,650	38
October	1,044,030	84,000	.....	168,000	630,731
November	336,417	2,201,896	.....	462,000	1,555,493
December	195,385	5,343,707	.....	336,000	757,785
Total	23,574,919	2,537,074	3,564,456	5,904,912	7,961,683

In 1915 trade with Great Britain and France was very active. Shipments to Russia, when she had begun to buy Japanese manufactures about the end of 1914, became so large that these engrossed the interest of the trade for the year. In sharp contrast, China's demands fell off markedly. China needed copper for minting. But the Peking Government had made it known that the output of the Chinese mints would be considerably curtailed. Later, China's financial distress, the rise in the price of copper, and the fall in that of silver, exerted an adverse influence on the demands from the Chinese mints. Under the circumstances, it is not surprising that China's need for Japanese copper should decline.

During the first half of 1915, the Japanese export trade in copper had been carried on chiefly with Russia, America, and England, but in the second half America fell behind, leaving the market to England and Russia. Shipments to Belgium and Italy were completely at a standstill, though trading with enemy nations could not as yet be completely halted. The aggregate amount of trade for the year was

95,684,000 kin, valued at ¥44,264,000. These figures are 22,143,000 kin and ¥17,067,000 larger than those of the previous year.

Finished copper goods began to come into the trade though the amount was still insignificant as compared with that of ingots and sheets. Although plates had been exported to China to the value of ¥200,000 a year, and to other destinations to a somewhat smaller value, the figure for 1914 rose to ¥720,000, of which British India took ¥280,000, and Russia ¥20,000. In 1915 the quantity exported was 2,734,000 kin, valued at ¥1,445,000, a sixfold gain over 1913. Wires and cables, which amounted to only ¥54,000 in 1912, increased to ¥180,000 in 1913, and to ¥240,000 in 1914; but in 1915 they reached ¥453,000 (878,000 kin). In brass wire and cable exports 1914 is represented by about ¥110,000; and 1915 by ¥256,000.

The copper trade taken as a whole attained a still greater development for declines in sales to the United States were more than offset by gains in the European and Chinese trade. The reasons for the decline in exports to America were the dearth of shipping space, the readiness of Europe to give better prices for Japanese manufactures than the United States, and the enormous increase in the output of the metal in the latter country. The growth in the needs of China was due to the fact that the Chinese Bureau of Mints had succeeded in installing the necessary equipment, and was therefore in a position to use copper in quantity. The active trade with Europe was due to the enormous amounts consumed by the War, the requirements of Russia and Britain being especially great. The total figures for the year were 98,949,000 kin and ¥66,119,000, including Russian purchases of 59,682,000 kin valued at ¥39,293,000. The strongest demand was for electrolytic copper as this was the leading item in orders from Russia and England.

Among finished copper goods, plate decreased, standing at 1,256,000 kin valued at ¥936,000, but wire and cable increased to 4,191,000 kin valued at ¥2,254,000. Owing to the considerably increased requirements of Russia, brass and bronze amounted to 10,211,000 kin, valued at ¥8,056,000, as compared with 3,040,000 kin with a value of ¥1,659,000, for the preceding year.

The trade of 1917 was seriously affected by the Russian revolution and the entry of the United States into the War. Owing to the tremendous depreciation in the value of the ruble in other countries and

the consequent difficulty of exchange with Russia, the Russian trade was most seriously affected, and dropped to one-third of the total of the previous year. The participation of America in the War exerted an unfavorable influence on commerce with that country. But this made England and France turn to Japan for supplies which America had formerly furnished, with the result that exports to England grew more than 150 per cent larger, and those to France 400 per cent. Italy also sought her supplies in this country, while China and India bought a great deal more than before. Thus the decline in the trade with Russia and the United States was easily made up for by increases in the exports to the remaining countries. The aggregate volume of exports jumped to the unprecedented figures of 120,322,000 kin, valued at ¥87,495,000, exceeding the figures for the year before by 21,372,000 kin and ¥21,375,000. Copper plates made only a trifling gain; but wire and cable showed an increase of 5,804,000 kin, the value of which was ¥4,378,000. The figures for brass and bronze together were 20,440,000 kin, and ¥18,769,000, twice the totals for the previous year.

The year 1918 failed to bring about any evidence of prosperity. Because of the revolution Russian trade dropped to nothing, save for Siberia, where there was a slight demand for import commodities. America was not in a position to buy much from Japan, owing to the shortage of cargo space and to the lower prices at home. The consumption of Japanese copper in England and France was very limited, for exports were handicapped by the exorbitant freight rates, and America could supply their requirements with much cheaper goods than Japan. The demand of India was on the wane, due to an after-armistice hesitancy and the unfavorable monetary situation. Although exports to China showed a big increase, as a result of the fact that the provincial mints had been made ready for business, this did not go far toward making good the falling off in the trade with other nations. France alone was in need of Japanese copper. In consequence, the total volume of trade was only 53,439,000 kin, or ¥37,748,000, the share of France being 14,412,000 kin, with a value of ¥10,371,000. As compared with the figures for 1917, the decrease was 66,883,000 kin, valued at ¥757,000. Trade in finished goods was likewise impaired. And while the sale of wire and cable was not so very seriously affected, brass and bronze plate declined to 7,749,000 kin, valued at ¥6,952,000; that is, to about one-third of the volume

150 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

of 1917. This, in large measure, was a result of the condition of the Russian trade.

The effect of the War on the Japanese copper trade is indicated by the fact that the output rose from 70,220,000 kin valued at ¥28,180,000 in 1913 to 120,320,000 kin, valued at ¥87,490,000 in 1917. The increase amounted to over 70 per cent in quantity and to more than 300 per cent in value. Particulars are given in table 3.

TABLE 3

Exports of Copper Ingots and Sheets during the War.

	Quantity	Value
1913	70,227,062 kin	¥28,183,904
1914	73,540,473	27,196,617
1915	95,684,438	44,264,801
1916	98,949,668	66,119,107
1917	120,322,234	87,495,102
1918	53,439,669	87,748,643

TABLE 4

Exports of Copper Ingots and Sheets, by Countries, 1913-1918.

(in kin)

	China	Russia	England	France	United States
1913	22,105,225	.....	13,067,683	9,934,987	8,177,378
	89,401,486	.....	5,207,540	3,955,522	3,304,087
1914	23,547,919	8,570,485	11,203,174	5,904,912	8,295,533
	9,227,247	2,750,869	3,953,326	2,224,049	3,002,955
1915	2,424,451	50,016,801	20,746,781	6,702,260	13,264,459
	1,014,797	24,867,895	9,063,873	2,869,808	5,382,701
1916	2,522,979	59,682,242	24,302,629	7,070,696	4,945,012
	1,630,062	39,293,553	16,828,572	5,020,963	3,054,289
1917	8,346,804	18,232,793	41,637,354	30,443,243	4,432,112
	6,363,829	11,912,562	30,642,368	22,195,923	3,202,616
1918	12,566,088	235,194	9,162,524	14,412,082	63,503
	9,236,650	124,653	6,174,959	10,371,896	47,186

Prices.

At the time of the outbreak of the War, the world's copper markets were suffering under depression. Toward the end of June prices on the London market had dropped to £60 per ton. In the following

month the situation slightly improved and there was a recovery of one point. When Austro-Serbian relations reached a serious stage, the market became panic-stricken. On the last day of July, prices fell to £55/15-0, and for some time the Exchange had to suspend business. Thus the world's copper market lost the one agency for fixing standard quotations, the result being that chaotic conditions followed; and the Japanese market could not escape the influence of these disturbances. Despite the fact that prices in Japan were kept buoyant by orders from China, there was much trouble from slow payments. This was due to the failure of the Currency Loan, which has been mentioned above. This failure forced the Chinese Government to restrict the minting of copper coins. For Japan the further exporting of copper became impossible, and the copper trade in general appeared to have come to a standstill. To repeat, but only in so far as is necessary, the large producers adopted short hours in their mines and refineries, while the small ones were forced to shut down. The situation was at its worst in October and November, when the G. M. B. fell to ¥25 per 100 kin.

But, toward the close of the year, Russia entered the market again, and actively. At the same time, England and the United States showed their willingness to place orders in Japan. It was also reported that the London Copper Exchange was opening again, and the result was that conditions improved. In December prices rose to the level of ¥30. In 1915, apart from some minor reactions, the market continued to improve in response to the activity of the London market, and to the increased demands at home and abroad. Thus, in August, when the London market fell badly as a result of the situation at the front, the demand in Japan was quite vigorous because of the Russian orders in hand; and prices stood at a level much higher than those in London. This lasted throughout the year. The maximum price in the Osaka market was ¥49.96 per 100 kin in December, and the minimum ¥32.59 in January.

Conditions were better in 1916, as the demand grew stronger at home and abroad. While the market tone was somewhat stagnant during the first six months, because of the slackening of trade with Russia, and of lower prices in London, still prices showed a steady upward tendency. In May ¥70.27 was quoted in Osaka, and in March ¥80 for electrolytic copper in Tokyo. Slight depressions occurred in July, the market being overstocked. The price of elec-

trolytic fell to ¥53.63 in Osaka, and to ¥70 in Tokyo. But again the London market became remarkably active and the demand for Japanese exports brisk. The Japanese market in its turn became very strong, with prices constantly rising as the year drew toward its close. In December the price reached ¥75.47, the highest known in the Osaka market, a figure ¥27.47 higher than that of the year before.

On the whole, the market of 1917 displayed a tendency to fall, owing to the rumor of peace which had obtained currency toward the end of 1916 and had resulted in a cessation of the demand in London and New York. The average quotation for electrolytic copper in Tokyo, which had been ¥85 per 100 kin in December, 1916, fell to about ¥75 during the first ten days of January. In Osaka, the new price was ¥60. From the second ten days of January till the end of March, the demand was decidedly strong, a reflection of the strength of the demand in New York. But from April on there was depression, following the unfavorable turn that the markets in London and New York had then taken. This weakness was due in part to a decline of orders and price inquiries from abroad, and to overproduction. But the principal reason was the increasing activity of the German submarines. Subsidized steamships which maintained their service to Europe had to adjust the schedule of their sailings to the new order of things, and the consequence was that bottoms became scarce, and shipments of copper destined for Britain, France, and Russia were handled with greater difficulty. Stocks were meanwhile fast accumulating, so that in the later months of the year, Osaka quoted ¥56 for electrolytic, and Tokyo ¥64. Hardly any indication of improvement was noted in the first half of 1918, as both London and New York continued dull. Demands were falling off at home and abroad. With the exception of some March quotations, the Tokyo market rose no higher than ¥64 for electrolytic, while that of Osaka hovered about ¥57 or ¥58. However, conditions finally began to improve, for it was reported that Washington would probably raise the maximum price it had fixed for copper. Many requests for prices on imports were coming in from South China, and stocks on hand were rapidly growing less.

The market was holding well at the end of the first half of the year, and in Tokyo the price rose to ¥70 for electrolytic by the latter part of July, a rise of ¥7 since the first of the month. There were several

reasons for this. Washington had raised its maximum price from 23 cents a pound to 26½. At the same time the London price was rising. The hoped-for sales to South China had gone through. And the excess stocks on hand had been greatly reduced by restricted production.

August was quite active, and electrolytic was quoted at from ¥73 to ¥77 during the early part of the month. Nevertheless, September was unfavorable, for repeat orders could not be obtained from South China. True, in spite of the dulness of crude copper, copper manufactures were rather active, owing to increasing demands from Malaysia and India. In October conditions again became better, by reason of the conclusion of contracts for the export of ingots to the Chinese Republic, and to the continued decrease in stocks on hand. By the middle of the month, electrolytic rose to the neighborhood of ¥77, or four or five yen higher than in the preceding month. November was buoyant. At the beginning of the month electrolytic copper reached ¥80 in Tokyo. Though the news of the armistice affected the Osaka market, it remained firm; for in spite of the shortage of stocks, the Chinese continued to take Japanese copper. December was weak, and there seemed to be no sign of recovery because of the general depression of the metal market.

CHAPTER XII

IRON

Production.

IRON is by far the most important of the metals, and to procure an adequate supply of it is as necessary a condition for the upbuilding of the industrial activity of a nation as is an abundant supply of coal. Japan is rather amply endowed with coal, but very meagerly with iron, and has to meet the greater part of her iron and steel requirements by importing. That she was unable till quite recently to develop her iron industry to any considerable extent was largely due to her too scanty supplies of iron ore. Added to this was the difficulty of obtaining coke, Japan's backwardness in technical training, and the fact that the industry requires an enormous capital.

Historically speaking, the smelting of iron is by no means a new art in Japan. In Chugoku, charcoal was formerly used for smelting iron and steel, and air was forced into low furnaces by man power. Later on, pig iron was also produced; but the date of the introduction of the art cannot now be ascertained. Moreover, little was produced, for the demand was proportionately small. After the Restoration, when the demand considerably increased as a result of the adoption of western institutions, Japan imported the greater part required. Later, in 1882, the Government took in hand the development of the Kamaishi Iron Mines, in conformity with the principle of mercantilism. But the enterprise was given up as a failure, and the mines passed into private ownership. It was entirely due to the energy of the new owner that the foundation of the industry was securely laid.

About 1881 the Japanese people came to realize that iron manufactures were essential for the development of industry, and for any real independence in the production of arms. The Sino-Japanese War gave an impetus to the movement, with the result that, in 1895, a commission for the study of the Iron Industry was appointed by the Government, and was entrusted with the task of making a general and comprehensive investigation of the subject. The findings of the Commission resulted in the establishment of an iron foundry at Yawata, Kiushiu, which, in 1900 produced 876 tons. In the same

works steel making was undertaken in 1901, and the output in that year reached 4,957 tons. Through the Russo-Japanese War Japan became keenly alive to the need of developing this branch of industry very thoroughly. With that end in view, the authorities concerned perfected a plan for increasing the capacity of the Yawata works to 180,000 tons a year. The project was carried out between 1906 and 1909. However, it was soon discovered that the *post-bellum* requirements of Japan were very much greater than such an expansion of the plant could meet. It was planned that the mills should be expanded to an annual capacity of 350,000 tons, and that the work should be completed between 1911 and 1915. Before this was carried out, the Great War began. Imports of iron from Germany and England became impossible, and the result was that it became very difficult for Japan to satisfy her needs. This meant a great deal, and aroused intense feeling on the part of those depending on the industry; and when the United States decided to prohibit the exportation of iron, there was widespread apprehension. A general movement began to make the country self-sufficient in the matter of its supply of iron and steel. The War had, in fact, opened the eyes of the people to the folly of being dependent on others for anything so vital.

In 1913, the output of iron ore was only 153,000 tons, the principal mine being the Kamaishi, with the Sennin and the Kurinoki following in the order named. If iron sand be included, the total output would amount to about 170,000 tons. Including the output of Korea, 142,000 tons, the total for the year reached 300,000 tons. About 278,000 tons were imported from China and 280,000 from England and other countries. Thus in 1913 Japan depended on foreign nations for more than one-half of the ore she required, and on Korea for half of her own production.

In the production of pig iron, the Government's iron foundry at Yawata stood at the head of the list, with Kamaishi, Sennin, and Kurinoki following. In addition, a certain amount was produced from iron sand. The aggregate production was somewhat over 240,000 tons, while imports from England, China, Germany, etc., amounted to 265,000 tons. As regards steel, the output of the Yawata works was on the increase; but it was barely equal to supplying one-third of the total amount required, and the remaining two-thirds had to be met by imports from abroad. The amount of steel produced in

1913 was 254,000 tons, including the 216,000 tons of the Yawata works; while imports amounted to 538,000 tons. If manufactures of steel imported be included, the total would rise to an enormous figure.

For her ore, pig iron, and iron and steel manufactures, Japan had in many ways to depend on other countries. In July, 1914, when the War broke out, imports from England and Germany became impossible, or where they were possible, were attended with many difficulties, while to obtain the necessary supplies from British India and Sweden was impracticable. Under the circumstances, Japan had to approach the United States, at the same time doing all that was possible for the encouragement of home production. A plan was mapped out by the Government for a third extension of the Yawata works, at an outlay of ¥4,500,000, an extension intended to enlarge their capacity to 650,000 tons a year. It was also decided to encourage private manufacturers to engage in iron making, and a new Commission was appointed, the result being that in 1917, Law No. 26,—The Law for the Encouragement of the Iron Industry—was promulgated. This law offered many privileges and special favors to those engaging in the industry. The consumption of iron and steel was increasing rapidly in consequence of the development of the mechanical industries. The branch of the industry which showed the greatest progress was shipbuilding. Although Japan had always lagged behind other nations in this respect, her tonnage had been steadily increasing since the outbreak of the War. In 1914 she put 136,000 tons into the water; in 1915, 98,000 tons; in 1916, 200,000; in 1917, 450,000; and in 1918 more than 500,000 tons; and these figures included steam vessels of more than 1,000 tons. Thus, the shipbuilding industry alone required an enormous amount of steel. The same need was felt by other industries, for the general industrial activity caused a tremendous demand for structural materials, machinery, railroad supplies, and for hydro-electric equipment. Steel consumption which had been 661,000 tons in 1914, rose to 819,000 tons in 1916, and to 1,083,000 tons in 1917. Because of the difficulty of importing it, the only possible course for the nation was to make every effort to produce more at home. The embargo proclaimed by Washington on all exports of steel not covered by orders already accepted, was a direct and painful object lesson. For Japan it gave an impetus to the promotion of many projects for the upbuilding of the industry.

In the following paragraphs, the conditions of production of ore, pig iron, and steel will be dealt with in turn.

Ore.

Before the War, Japan had imported from Korea and China the greater part of the iron ore she required. Her own ore output met barely one-fourth of her consumption. It is estimated that the iron deposits of Japan amount to 70,000,000 tons. In pre-war years the average amount mined annually was some 150,000 tons, or about twenty ten-thousandths of the total estimated supply. As the average output in the case of other countries is about twelve ten-thousandths, and that of America not more than eight ten-thousandths, it would seem that Japan is drawing upon her reserves too rapidly. No matter how well the iron-producing industry is promoted, this country will never be able to become self-sufficing in the supply of ore. In Korea, the total deposits are estimated to amount at not more than 30,000,000 tons. That is, Korea, too, is poor in iron ore. Manchuria is said to possess 220,000,000 tons. But that is mere guesswork, and should not be accepted offhand. It is easy to talk of being independent in iron and steel, but independence cannot be achieved without adequate supplies of ore. It is inevitable that countries like Japan, which are unfortunately situated in this respect, should seek additional supplies abroad, as their needs grow larger. This is the only way to maintain a balance between demand and supply. The War and America's steel embargo indelibly impressed on the mind of the Japanese the unfortunate position of a nation insufficiently endowed with iron ore, and the immediate necessity of finding a way out.

When the War began iron ore production was deranged by the general economic disturbances, but this was a temporary phenomenon. After 1915, the difficulty of importing and an abrupt increase in consumption gave an impetus to the extension of the work of mining, to the taking out of concessions for new mines, and to prospecting for new deposits. In 1917 the industry was working at high pressure, both in mining and in smelting ores, and the output rose to 229,000 tons, compared with 152,000 tons in 1913. This was well maintained in 1918, and a number of new deposits were developed. The iron sands in Awomori, Iwata, Hiroshima, Shimane, and Tottori, and especially those in Chugoku were worked, and many small foundries sprang into existence.

158 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

While the output of ore increased so greatly, the demand grew far more rapidly. The deficit was met by shipments from China and Korea. For 1915 the ore produced at home amounted to only 20 per cent of the total consumption as shown in table 1.

TABLE 1

Proportion of Ore Obtained from Various Sources in 1915.

<i>Places of production</i>	<i>Quantity</i>	<i>Percentage of total</i>
Japan proper	136,155 tons	20.8
Korea	209,937	32.0
China (Taiyeh)	308,459	47.1
England	661	0.1
Other sources	54	0.0
Total	655,266	100.0

TABLE 2

Yearly Production of Iron Ore in Japan Proper, 1913-1917.

(in tons)

<i>Mines</i>	<i>1913</i>	<i>1914</i>	<i>1915</i>	<i>1916</i>	<i>1917</i>
Kemaishi	136,351	99,515	79,572	97,067	148,421
Hida	.....	10,579	20,794	22,660	27,556
Sennin	3,869	6,130	6,864	7,710	6,192
Kuriyama	6,023	3,668	3,786	7,157	5,512
Others	6,858	1,744	8,439	5,359	41,776
Total	153,101	121,636	118,955	139,953	229,457

Pig Iron.

The production of pig iron increased from 23,000 tons in 1903 to 140,000 tons in 1907, and to 240,000 tons in 1913. The greater part of the output was produced by the Government's works at Yawata, and the foundries at the Kamaishi, Sennin, and Kuriyama mines, while a very small portion came from the smelting of iron sands.¹ As has been stated, the rapid development of the industry required a greater quantity of pig iron than could be met by home products. Thus, even before the War, the country was forced to import about as much pig iron as she was able to produce.

¹ Literally, sands rich in iron, or powdered ore.

But when the War rendered imports from England and Germany impossible, Japan was forced to look to China and British India, or secure what she needed from America. The Government did everything possible to increase home production, and on May 6, 1916, the above-mentioned new commission was set on foot,—the Seitetsu-gyo Chosa-kai—the Iron and Steel Commission, to which everything bearing on the matter was referred. The Government also, on July 24, promulgated the Law for the Encouragement of the Iron Industry. This, together with the extraordinary rise in the price of pig iron, and the American steel embargo, resulted in the erection of many new furnaces in Japan. The production for 1918 rose to 694,000 tons, as compared with 242,000 tons for 1913. The number of foundries increased from about twenty before the War to more than 250 in 1918, of which more than 40 met the standards that qualified them to receive the government assistance granted by the above law. Especially noteworthy was the revival of the production of pig iron from iron sand, in the Chugoku provinces. This type of smelting had died out almost everywhere, because of the predominance of western methods. The amount produced, 9,862 tons in 1890, dropped to 2,275 tons in 1914. However, the prosperity of the pig iron market revived it, with the result that the total for 1915 was 4,540 tons; that for 1916, 6,950 tons; 1917, 18,000 tons; and 1918, 37,000 tons. In 1906-1910 the total production of pig iron averaged 158,245 metric tons, an increase over 1901-1905 of 19.19 per cent. For 1911-1918 the annual production figures were 204,622, 239,168, 242,696, 299,461, 319,832, 391,892, 501,402, and 694,838.

Steel.

The production of steel has been increasing steadily. The output, which was only 1,200 metric tons in 1896, increased very rapidly after the Russo-Japanese War, and had grown to 255,000 tons in 1913. In the same years consumption rose from 222,000 tons to 765,000 tons. These figures indicate the dependence of Japan on imported steel. In 1902 the consumption was 218,000 tons, and the home production supplied but 31,000 tons, or less than 15 per cent of this total. Because of the productiveness of the mills at Yawata, the nation had succeeded in largely increasing the output by 1909. Yet in 1911 she was unable to produce more than 191,000 tons, about

30 per cent of the total consumption, 654,000 tons. In 1913 home production rose to about 33 per cent of consumption. This increase in domestic production, from less than 15 per cent in 1902 to 30 per cent ten years later, and 33 per cent in 1913 indicates that Japan was on the road to self-sufficiency in steel supply, and that the policy of both the Government and of those far-sighted men who wished to make the nation self-sufficient, was making progress.

The outbreak of war gave it greater impetus. Imports, which had reached 542,000 tons in 1913, dropped to 408,000 tons in the following year, and to 243,000 tons in 1915. Those from England, Germany, Belgium, and France were falling away. In 1916 their place was taken by imports from America, with 450,000 tons in that year and 670,000 tons in 1917; and there is reason to believe that had Washington not proclaimed the steel embargo, the figure would have risen much higher.

The shipbuilding industry was not alone in demanding tremendous quantities of steel. The requirements for structural materials, machinery, and railroad and hydro-electric equipment were rapidly on the increase, as a result of the widespread activity of Japanese industry in general. Consequently the tonnage of steel consumed, 661,000 in 1914, grew to 819,000 in 1916, and to 1,182,000 in 1917. The fact that imports were cut considerably helped the home industry. In 1914, 282,000 tons were produced. The tonnage rose to 529,000 in 1917, or to almost twice as much, and to 556,000 in 1918. When the armistice was signed, the mills engaged in the production of steel numbered forty. While the ratio of imports to home manufactures was about 44 to 56 in 1917, in 1918 it was 33 to 67. Table 3 shows the changes in the steel situation after the outbreak of the War.

Trade Conditions.

Ore.

Before the War, about one-half the ore that Japan required was imported from abroad, and about one-half of the remainder from Korea. The lion's share in the imports was the output of the Taiyeh Mines, near Hankow, China. Of the total, 74,732,000 kwan in 1913, China supplied 74,194,000 kwan, most of which came from Taiyeh. The stagnancy of the market which had been affecting the trade since the beginning of the year was greatly intensified by the out-

TABLE 3

Steel Production and Steel Imports and Exports, 1896-1918.

(in metric tons)

	<i>Home production</i>	<i>Imported and shipped from the Colonies</i>	<i>Total</i>	<i>Exported and shipped to the Colonies</i>	<i>Balance</i>
1906	69,375	348,136	417,511	4,942	412,569
1907	90,579	464,063	554,642	17,028	537,614
1908	99,255	439,939	539,194	11,719	529,475
1909	102,982	280,104	383,086	15,054	368,032
1910	167,967	366,027	533,994	17,247	516,747
average	106,031	379,654	485,685	13,198	472,487
increase of average over average pre- ceding it	155.0%	52.8%	67.5%	278.0%	64.9%
1911	191,700	488,911	680,611	25,666	654,945
1912	219,714	640,966	860,680	37,129	823,551
1913	254,982	543,910	798,892	33,220	765,672
1914	282,516	408,467	690,983	29,622	661,361
1915	335,509	243,382	578,892	25,000	553,891
average	256,884	465,127	722,111	30,127	691,884
increase of average over average pre- ceding it	142.3%	22.5%	48.7%	128.3%	46.5%
1916	384,025	454,957	838,982	19,025	819,957
1917	529,614	675,581	1,205,195	22,266	1,182,929
1918	556,357	.....	.....	.....	.....

break of war. But owing to the fact that both the Yawata Iron Works, which depended upon ore from China, and the Wanishi Iron Works, in Hokkaido, increased their producing capacity, the volume of Taiyeh imports was not seriously affected. In fact the quantity rose to 79,797,000 kwan, and the value to ¥729,000, which figures, respectively, exceeded those of the previous year by 5,065,000 kwan and ¥143,000. In 1915, when the difficulty of obtaining steel supplies awakened the nation to the possibilities of the iron industry in this country, such mills as the Yawata and the Wanishi Iron Works were called upon to produce to their utmost capacity. As a consequence, there was a great increase in the tonnage of imports,

162 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

the total running up to 82,446,000 kwan, valued at ¥830,000. The year 1916 was depressing in the pig iron market, and imports of ore fell to 74,704,000 kwan and ¥1,671,000, or less than those of 1913. Owing, however, to the progress of iron manufactures, imports returned to their former position in 1917. Moreover, ways were found for bringing in ore from British India and Australia; and, in 1917,

TABLE 4
Imports of Ore, 1913-1915.

<i>Imported from:</i>	1913	1914	1915
China	{ 74,194,912 1,587,012	79,847,888 1,671,428	82,255,712 1,786,824
England	{ 581,586 47,978	609,024 57,618	176,826 25,618
British India	{ 272 12	..... .....	..... .....
Australia	{ ..... .....	..... .....	..... .....
Other countries	{ 5,682 209	784 27	14,384 869
Total	{ 74,782,352 1,585,211	79,797,696 1,726,068	82,446,432 1,812,811

TABLE 5
Imports of Ore, 1916-1918.

<i>Imported from:</i>	1916	1917	1918
China	{ 74,550,608 1,641,467	78,948,720 2,382,011	95,919,392 9,601,071
England	{ 149,744 30,150	..... .....	..... .....
British India	{	16,482 3,421	3,056 790
Australia	{	297,648 73,158	271,472 69,177
Other countries	{ 3,792 119	4,336 538	54,192 2,841
Total	{ 74,704,144 1,671,783	79,267,136 2,759,128	96,248,112 9,672,879

the total imports amounted to 79,267,000 kwan, ¥2,459,000 in value; that is, 4,563,000 kwan and ¥788,000 in excess of the figures for 1916. In 1918 the trade was very active. Owing to the great prosperity of the iron industry, the demands for ore went up enormously and the total imports amounted to 96,248,000 kwan, the value being ¥9,673,000. With the respective quantities, in kwan, are printed the values, in yen, beneath them.

Pig Iron.

In the years before the War the quantity of pig iron imported was about equal to the home production. In 1913 imports amounted to 441,776,000 kin valued at ¥10,389,000, of which 65,716,000 kin (¥4,164,000) were imported from Great Britain, with British India, China, and Sweden following. In 1914, conditions were very unfavorable, consumers were hesitant, and the German importers in Japan, who had been intermediaries in the pig iron trade, either proceeded to Tsingtao, or were called home. English pig iron, which had formerly been shipped by way of Hamburg, was now without shipping facilities. The result was, that the volume of trade declined to 281,822,000 kin, valued at ¥6,595,000. In 1915 imports from Europe further fell off, not only because the requirements of the belligerents rose tremendously, but also because the shipping situation was still unfavorable. But China and India came to the fore, and the Kwantung Peninsula (the Japanese concession in the Liaotung Peninsula) made shipments amounting to 2,806,000 kin. The total of the year dropped to 278,007,000 kin, with a value of ¥6,540,000. In 1916, imports from Europe further declined. On April 15 England proclaimed an embargo on steel and pig iron. She could accept no new orders; any shipments made were only to fill existing contracts. On the other hand, India and Manchuria established an export record of 386,746,000 kin, valued at ¥13,794,000.

Two reasons explain the growth of the import trade; an anticipation of a rise in prices, and speculation for a rise in the demand due to the manufacture of munitions. In 1917 everything pointed to the probability that imports would keep pace with the demand though it was growing very rapidly because of the ever increasing need for war materials. To say nothing of England's inability to accept new orders, India was under the painful necessity of proclaiming an em-

bargo. When, in June, a way appeared at last to open for business with the United States,—until then, because of a wide gap in prices, nothing had been done in the way of importing American pig iron—Washington proclaimed an embargo which became operative on August 15. As regards China, it was found that a striking increase in her own consumption made it impossible for her to go further toward meeting Japan's needs than fulfilling contracts with the government mills at Yawata. Moreover, Penhsi Hu, Manchuria, where a Sino-Japanese foundry had been established, was unequal to meeting any large call for exports, its output having decreased. Accordingly, importers were handicapped. They did a total business, in 1917, of 387,086,000 kin, valued at ¥23,848,000, which, it is true, was more than that of 1916, but only by a trifle. In 1918, because of the embargo, not a ton of pig iron could be obtained from England, America, or India, except a few English and Indian shipments, to meet the special demand of the naval arsenals and certain private mills, and also a few other shipments, from America, despatched on the understanding that Japan was to make return for them in finished ships. China alone made large shipments. But all imports from her were turned over to the Government's mills; and all private mills were thus left unprovided. The total imports amounted only to 375,166,000 kin. Yet, owing to high prices, the value rose to ¥59,092,000 or about two and a half times that of the preceding year.

TABLE 6
Imports of Pig Iron, 1913-1915.
(quantities in 1,000 kin; values in ¥1,000)

<i>Imported from:</i>	1913		1914		1915	
	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>
China	99,908	¥ 2,054	91,980	¥1,940	188,174	¥2,890
England	165,716	4,164	100,856	2,518	60,548	1,826
Germany	18,797	441	10,590	224	.....	....
Sweden	20,208	784	18,631	679	11,446	474
United States	677	15	5,257	185	1,695	63
India	136,468	2,931	52,389	1,047	63,401	1,233
Kwantung Peninsula	.....	....	.....	....	2,806	64
Other countries	2	....	2,621	51	2	....
Total	441,776	¥10,390	281,823	¥6,595	278,072	¥6,459

Imports of Pig Iron, 1916-1918.

(quantities in 1,000 kin; values in ¥1,000)

II

<i>Imported from:</i>	<i>1916</i>		<i>1917</i>		<i>1918</i>	
	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>
China	170,638	¥ 5,029	182,947	¥ 9,388	262,911	¥41,814
England	52,692	2,106	9,103	625	29,743	3,878
Germany	610	26	....	....	....	....
Sweden	4,628	244	6,244	709	7,029	1,035
United States	6,138	354	41,360	3,225	21,684	2,998
India	104,583	3,613	101,866	5,318	11,756	911
Canton Peninsula	....	....	....	....	....	....
Other countries	9	....	584	61	574	77
Total	386,747	¥13,794	387,087	¥23,848	375,167	¥59,092

Steel.

Steel imports had amounted to about twice the home product, the leading countries from which imports came being Germany, Belgium, and England. The outbreak of the War considerably changed the situation. Imports for 1915 fell to less than one-third of those of 1913. In 1916, however, because of a sudden increase in shipments from America, the trade again began to grow, and in 1917 it exceeded that of 1913. It was even more prosperous in 1918. Indeed, if the United States had not imposed various restrictions, it might have been much more prosperous.

In the table below, figures are based on the trade in bars, rods, and angles, the principal shapes in which steel is produced. To include steel in every form would be an almost impossible task.

Prices.

Iron prices had shown signs of weakening in 1913. They experienced a decided depression in 1914. The market in England had become worse than it had been. In Japan there was a falling off in the demand, and accumulated stocks already imported were constantly increasing. In fact, owing to the larger production of iron at home, the relation between demand and supply was unbalanced.

The demand was so poor in May and June, 1914, that sales were made at prices below cost. On the outbreak of the War, some specu-

TABLE 7

Imports of Steel (Bars, Rods, and Angles), 1913-1915.

(quantities in 1,000 kin; values in ¥1,000)

<i>Imported from:</i>	1913		1914		1915	
	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>
China	.....	¥ .....	.....	¥ .....	784	¥ 58
England	63,314	3,698	56,640	2,784	21,080	1,565
France	898	40	259	10	....	....
Germany	156,951	6,089	143,910	4,915	5,447	209
Belgium	67,887	2,617	48,499	1,644	1,156	47
Italy	206	96	68	18	....	....
Austro-Hungary	1,554	296	364	72	....	....
Holland	178	7	15	1	....	....
Sweden	4,177	322	2,448	188	1,244	128
United States	13,116	685	4,813	249	66,754	3,508
Other countries	897	40	900	45	1,288	91
Total	308,678	¥13,840	257,915	¥9,866	94,704	¥5,601

Imports of Steel (Bars, Rods, and Angles), 1916-1918.

(quantities in 1,000 kin; values in ¥1,000)

<i>Imported from:</i>	1916		1917		1918	
	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>	<i>Quantity</i>	<i>Value</i>
China	6,773	¥ 757	11,763	¥ 2,396	16,858	¥ 4,319
England	32,124	4,152	11,462	2,714	6,407	2,593
France	....	....	....	....	....	....
Germany	4,928	346	20	2	....	....
Belgium	315	16	....	....	....	....
Italy	....	....	....	....	....	....
Austro-Hungary	....	....	....	....	....	....
Holland	....	....	....	....	....	....
Sweden	3,947	691	677	226	693	287
United States	188,573	16,237	298,348	39,475	416,052	76,394
Other countries	2,770	309	7,129	1,557	2,973	630
Total	239,430	¥22,508	329,398	¥46,369	442,985	¥84,222

lators made efforts to force up prices, on the ground that Germany and Belgium had been shut off from the world's trade. Toward the end of the year a demand for shipbuilding materials developed, which

made for higher prices. In 1915 imports from Germany and Belgium ceased completely, while exports from England were on the wane. Japan was accordingly forced to look to America for her supplies. But in November the United States Steel Corporation decided to offer nothing more for sale with the exception of pipes, tubing, and similar lines. This decision was attended by a great advance in prices in America, which was reflected in the strong tone of the Japanese market. In 1916, the Japanese market declined as a result of weakness in the American market, due to overproduction, and of heavy "bear" operations. But it was not long before an improvement was effected, owing to a widespread development of industrial enterprises, especially shipbuilding, and to repeated calls for war materials from the Allied Powers. Thus, despite the fact that the market was amply stocked with American steel, prices rose continually, until they were twice as high as those of 1915, and more than three times those of 1914.

In 1917, as a result of America's entry into the War, and her declaration of the steel embargo in August, Japanese steel imports suffered greatly. Home production, no matter how rapidly it increased, could not meet the requirements of industry, and the ever increasing demand for munitions. Under the circumstances, it is no wonder that the market rose repeatedly until it was in a state of frenzy. In 1918, the difficulty of importing and the increasing demand still had an active influence; and in August prices were from seven to eight times as high as before the War. By the end of September, the situation began to change on the receipt of the news that Bulgaria was suing for peace. Signs of a collapse of the market became evident upon the signing of the truce between Italy and Austria, and Germany's overture for peace. When the armistice was signed, prices broke almost instantly, the market becoming utterly chaotic. Yet, even so, prices remained some four times higher than they had been before the War.

In 1913 they had averaged ¥2,970 (per 10 kwan of 4-inch bar steel). In 1915 they were ¥2,500. But in 1916 they were ¥8,510; in 1917, ¥13,510; in January, 1918, ¥15,220; and in July, 1918, ¥20,012. By December they had dropped to ¥11,560.

CHAPTER XIII

ZINC

It is not true that Japan is inadequately endowed with zinc, or conspicuously backward in the production of zinc ore. Owing to backwardness in metallurgy, however, there had not been much activity in the development deposits. Refining was troublesome, for it involved the pollution of the vicinity of the refinery. So when Japanese producers learned that zinc ores could command a large market abroad, they worked their mines with all energy, exported the output, mainly to Germany and Belgium, and production increased year by year till the War came. But Japan had been content to continue to be a supplier of ore, and for her supply of refined zinc looked to Germany and Belgium.

Conditions changed completely after the outbreak of war. Germany became an enemy state, and Belgium could produce no longer. The United States, though the largest producing country in the world, could not take the place of Germany and Belgium, not only because of the immensity of her own home consumption, but also because, after her own entrance into the War, her exports to Europe were tremendously on the increase. The requirements of the belligerents were rising to enormous quantities, and market prices repeatedly rose with them. Home consumption also increased. All these circumstances, in brief, worked together to forward and hasten the development of the zinc-refining industry, with the result that the establishment of new mills or the enlargement of those already in existence became a matter of common occurrence. The production of the metal, which had never been attempted before the War, showed the following growth given in table 1.

TABLE 1
Zinc Production.

	<i>Quantity</i>	<i>Value</i>
1914	9,855,199 kin	¥ 1,369,017
1915	35,218,951	12,952,591
1916	64,989,177	27,215,753
1917	91,197,327	27,005,322
1918	66,525,805	17,780,927

Such an extraordinary development of refining naturally stimulated the production of ore. In table 2 is given the production for the war years and for a few years preceding the outbreak of the War.

TABLE 2

	<i>Quantity</i>	<i>Value</i>
1906	14,259 metric tons	¥ 208,169
1909	19,173	478,145
1913	34,676	857,179
1914	36,373	725,952
1915	38,780	2,285,693

Statistics giving the total production for the years following 1916 are not yet obtainable. But, taking the output of the leading mines in Japan, as given in statistical reports of the Department of Agriculture and Commerce, it will be found that in 1916 there was a total of 56,000 tons; in 1917, 47,000; and in 1918, 45,000. The Kamioka Mines, in Gifu, which constitute the largest deposit in this country, produced 6,584 tons in 1914; in 1917 this rose to 8,250 tons, and in 1918 to 21,438.

In short, far-reaching as the effects of the War were on many metals, on none was the effect so marked as in the case of zinc. A country, which before the War had been dependent on other countries for every ton of its supplies, thus became not only self-sufficient in respect of zinc manufactures, but also became an exporting country. What disturbs the industry today is the possible shortage of ore. Of the aggregate tonnage required, only 58,000 or about 40 per cent, is obtained at home. The rest must be imported from abroad.

Trade Conditions.

It has been stated above that although, before the War, Japan had exported zinc ore and imported refined zinc, the impossibility of so conducting the trade any longer brought about a rapid development of the refining industry and a remarkable increase in the amount produced; and that large shipments were made to England, France, and Russia as war materials. Despite the fact that not a ton was exported until 1915, 1916 could show an export total of 38,689,000 kin; 1917, 61,389,000 kin; and 1918, 28,344,000 kin.

TABLE 8
Zinc: Ingot and Sheet Exports by Countries, 1916-1918.

To:	1916		1917		1918	
	Quantity kin	Value	Quantity kin	Value	Quantity kin	Value
China	22,168	¥ 10,482	2,150,735	¥ 715,974	627,545	¥ 232,840
Kwantung Peninsula	19,586	10,961	58,870	86,093	128,794	54,625
Hongkong	2,354	2,101	18,488	7,088	78,172	80,469
India	674,193	287,437	3,371,747	1,196,052	5,888,502	1,868,490
Straits Settlements	3,026	2,589	1,744	435	2,520	1,069
Dutch East Indies	1,666	860	21,956	8,030	152,955	46,508
Asiatic Russia	20,210,463	11,328,206	12,278,053	3,899,103	.....	.....
Philippines	.....	.....	9,180	5,243	15,499	8,067
Siam	853	431	33,803	13,053	32,828	13,045
England	13,420,491	5,372,507	31,839,527	10,977,179	6,998,188	2,339,546
France	4,334,955	2,235,076	9,953,415	3,566,323	2,852,182	3,517,231
Italy	.....	.....	127,006	44,025	915,931	272,763
United States	80	25	16,800	6,060	253,950	60,150
Egypt	.....	.....	346,522	256,450	1,146,923	541,950
Australia	.....	.....	656,953	226,753	201,693	76,533
Other countries	.....	.....	.....	.....	3,956	3,387
Total	33,689,840	¥19,250,675	61,339,759	¥20,947,366	23,304,639	¥9,066,733

TABLE 4
Zinc: Ingot and Sheet Imports by Countries, 1913-1915.

	1913		1914		1915	
	Quantity kin	Value	Quantity kin	Value	Quantity kin	Value
Straits Settlements	187,176	¥ 16,484	2,246	¥ 270	1,260	¥ 289
Indo-China	352,724	49,349	122,664	15,655	150,577	36,619
England	1,889,941	333,502	1,781,759	282,767	49,034	12,249
Germany	3,197,783	512,852	1,572,618	240,367	85	24
Belgium	785,757	148,872	447,232	63,215	.....	.....
China	286,331	36,194	243,677	30,826	2,438,133	637,092
Sweden	799,733	147,284	67,506	12,050	.....	.....
United States	939,610	140,914	252,787	46,925	816,242	220,779
Australia	1,180,884	138,113	84,679	11,637	689,933	154,378
Kwantung Peninsula	}	}	}	}	56,667	18,643
Hongkong					643,471	193,680
Other countries					20,437	4,192
Total	9,882,629	¥1,566,201	4,605,853	¥ 708,644	4,865,839	¥1,277,945

TABLE 5
Zinc: Ingot and Sheet Imports by Countries, 1916-1918.

	1916		1917		1918	
	Quantity kin	Value ¥	Quantity kin	Value ¥	Quantity kin	Value ¥
Straits Settlements	10,184	¥ 4,278	.....	¥ .....	.....	¥ .....
Indo-China	808,803	129,692	.....	.....	.....	.....
England	4,176	1,088	42	13	12,728	5,145
Germany	.....	.....	.....	.....	.....	.....
Belgium	.....	.....	.....	.....	.....	.....
China	1,748,151	702,134	1,143,334	299,883	1,030,802	342,159
Sweden	.....	.....	.....	.....	.....	.....
United States	833,310	316,276	88,176	33,040	2,713,233	931,808
Australia	220,285	89,873	.....	.....	.....	.....
Kwantung Peninsula	405,071	133,153	338,686	101,346	96,970	24,435
Hongkong	89,615	3,743	80,995	19,866	.....	.....
Other countries	1,844,575	576,217	5,860,533	1,310,109	229,509	63,078
Total	5,414,240	¥1,966,454	7,511,771	¥1,764,077	4,082,742	¥1,866,626

While the total for the last-named year was comparatively small, it was a remarkable figure in view of the serious depression of the market, and also of the fact that almost no business was done with Russia. On the other hand, imports of refined zinc were falling annually, finally dropping below exports. As for the trade in ore, exports had completely stopped, due to the outbreak of war, and the entire output was required for smelting at home. Still, the activity of the industry drove consumption to such a height that Japan was obliged to supplement her supplies by imports, and ultimately to a very large extent.

TABLE 6
Zinc Ore Exports.

	<i>Quantity</i>	<i>Value</i>
1906	19,275 metric tons	¥460,825
1909	18,325	642,756
1913	27,452	943,271
1914	14,100	282,353
1915	6,121	360,774
1916	2,189	183,064
1917	163	27,234

TABLE 7
Zinc Ore: Imports by Countries, 1917-1918.

	<i>1917</i>		<i>1918</i>	
	<i>Quantity</i> piculs	<i>Value</i>	<i>Quantity</i> piculs	<i>Value</i>
China	29,201	¥ 154,008	2,886	¥ 13,397
Indo-China	290,019	1,921,801	223,610	1,442,525
Asiatic Russia	68,548	329,200	22,438	132,500
Australia	1,144,237	5,319,550	748,094	3,288,250
Other countries	23,874	98,720	1,170	5,741
Total	1,555,879	¥7,823,279	998,198	¥4,882,413

Prices.

The fact that down to the War Japan had been dependent on imports for her refined zinc rendered it inevitable that the market price should be constantly influenced, if not controlled, by market conditions in the exporting countries. Although prices were firm throughout the War, certain fluctuations, with wide margins be-

174 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

tween the highest and lowest points, could not be avoided. As soon as hostilities cut off imports from Germany and Belgium, the tone of the market was strengthened, and there was every indication that favorable prices would be commanded throughout the War. Subsequently, when the import trade became more difficult, and when Russia and other European belligerents turned to Japan for supplies, the market rose again and again. In this way the refining industry was built up. The height of the trade's prosperity was reached in the second half of 1915 and the first half of 1916. After this, prices tended to fall steadily, except shortly before the armistice. All in all, various causes were at work to increase prices during the first years of the War, and they were, roughly, the decline in imports; the activity in exports; a rapid increase in home demands, and the attractive market conditions abroad.

But in the latter part of the war period, which commenced with the second half of 1915 and the first half of 1916, prices gradually weakened, and this was due to a sudden growth of production, brought about by the development of the refining business; to the revolution in Russia, which brought trade with that country to a standstill, at a time, moreover, when the demand from other nations was not very strong; and, finally, to the low prices being paid abroad.

TABLE 8
Market Prices of Zinc.
(per 100 kin)

	1913	1914	1915	1916	1917	1918
January	¥17.60	¥14.19	¥17.49	¥51.40	¥23.15	¥23.78
February	15.97	13.77	24.17	50.07	24.88	24.27
March	15.84	13.60	27.84	47.54	25.28	24.03
April	16.05	13.40	30.62	45.42	25.18	24.25
May	16.10	13.22	38.23	46.43	26.04	25.60
June	16.03	12.85	46.89	40.27	25.63	29.39
July	15.07	13.04	46.70	32.98	25.04	37.93
August	14.97	14.67	39.73	31.93	24.51	38.57
September	14.97	14.97	44.03	28.92	25.22	37.69
October	14.99	14.99	47.08	24.00	24.75	37.40
November	14.66	14.66	52.54	23.92	23.98	27.97
December	14.36	14.36	54.96	25.40	23.80	23.91
Average	15.53	15.53	39.19	37.86	24.78	29.57

CHAPTER XIV

COAL

Production and Consumption.

IN 1877 Japan's entire coal production amounted to little more than 499,000 tons. But the increase was rapid. In 1887 the figure was 5,188,000 tons and in 1907, 13,803,000 tons; that is, twenty-eight times what was produced in 1877. And, the increase still continuing, in 1913 production had gone above 20,000,000 tons. When the War broke out, however, bunker coal showed a decided decline; for European vessels in Oriental waters were gradually becoming fewer, while many Japanese ships were on charter by the belligerents in Europe. Another thing that tended to diminish the demand for coal was the feeling of uncertainty as to the War's future developments, which, for some months after the declaration of war, made mill owners curtail or suspend their operations. The production of coal was carried on at the same speed as before, and in a little while mine owners were suffering from overproduction. The industry in Northern Kiushiu in particular was quite seriously overstocked. This caused the proprietors of collieries there to come to an understanding for a reduction of working hours and a regulation of the business in other ways. Coal mining felt the depression in business in 1914 and 1915 more than any other branch of industry and production fell off. When, however, the War still continued, and with a growing intensity, the carrying trade became very active, and began to need many new ships. At the same time new manufactures were being established, many new mills were opened, and the result was that the demand for coal gradually increased. The mine owners discarded the agreement that called for short hours. In due course, it was found that not enough coal was being mined to meet demands. Not only in Northern Kiushiu, but also in Hokkaido, Hitachi, and Iwaki, small collieries which had been abandoned as worthless, or unprofitable, were got going again; and many new deposits were opened up. In 1915 the output was 20,490,000 tons, which was less than that of 1913 and 1914 by 1,000,000 and 1,800,000 tons, respectively. But in 1916 the figures rose to 22,901,000 tons; in 1917, to 26,361,000; and in 1918, to

176 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

28,029,000. The value of the product for the year 1918 was ¥286,032,000, or about twice that of the preceding year, and four times that of 1913. The quantity of coal consumed, which had been 10,858,135 metric tons in 1907, had risen to 14,924,437, to 16,250,978 in 1915, to 18,579,126 in 1916, and to 19,923,139 in 1917.

TABLE 1
Coal Production, 1907-1918.

	(in metric tons)	
	<i>Quantity</i>	<i>Value</i>
1907	13,803,969	¥ 59,961,264
1913	21,315,962	70,956,121
1914	22,293,419	80,850,887
1915	20,490,747	65,068,894
1916	22,901,580	80,625,582
1917	26,361,420	140,009,591
1918	28,029,425	286,082,498

Trade Conditions.

Before the War little coal was exported, for home demands were immense, and China was producing a great deal. However, in the years immediately preceding the outbreak of war, trade conditions were improving. The year 1913 made an especially good showing with a record of 3,839,000 tons.

Japanese coal was in demand abroad as a substitute for that of England, Australia, and India, where miners' strikes or lack of proper transportation facilities had disorganized the business. In 1914, when conditions abroad became normal, it appeared likely that the demand would fall off. And, though the volume of business showed no marked decrease during the first six months, conditions during the remainder of the year were very different. Because of the War, England prohibited the export of coal; Australia imposed restrictions, and India was handicapped in her shipping facilities. Thus, the markets of the Orient became dependent on Japanese supplies. It must be said, however, that the requirements of the Oriental markets had declined through the world-wide commercial depression, and the withdrawal of the ships of the warring nations from Asiatic waters. When a shipment was to be made, the shipper

was confronted with many difficulties, such as the lack of bottoms, the presence of enemy warships, exorbitant increases in insurance rates, the extraordinary fall in the price of silver, the derangement of banking connections, etc. Moreover, when the destination was south of Hongkong or in Malaysia, the trade was subjected to special regulations of the Government. In consequence, the export figures for 1914 dropped to 2,558,000 tons. The difference between the tonnage of that year and that of 1913 was 282,000; nevertheless, the increase in prices caused the value represented to grow to ¥23,914,000, which exceeded that of the previous year by ¥285,000. In 1915, the disappearance of the coal of other countries from many markets abroad made Japanese coal the only supply obtainable; but the volume of the trade dropped to 2,900,000 tons, valued at ¥19,236,000. This was because the consuming countries needed much less on account of the industrial decline; and this in its turn had been brought about by the War. The great increase in the Chinese output, which badly affected the market for Japanese coal, the scarcity of cargo space, and the rise in freight rates also had much to do with the decline of the trade. In 1916, owing to the fact that China, which had suffered greatly through civil war in the previous year, was becoming prosperous again by her increased manufacturing and the rise in the price of silver, business with that country was satisfactory. In like manner, trade with Indo-China and the Philippines was on the increase, so that the total volume of coal exports amounted to 2,993,000 tons, valued at ¥20,405,000. These figures exceeded those of 1915 by 92,000 tons and ¥1,169,000. The year 1917 was not a very good one, in consequence of the fact that the remarkable development of manufactures, which rapidly increased home consumption, raised domestic prices, and often rendered exporting impossible. The quantity exported—2,791,000 tons—fell below that for 1916 by 201,000 tons; but its value, rising by ¥6,048,000, reached ¥26,454,000. The situation in 1918 was not so good as a result of the smaller amount of bunker coal sold to foreign ships calling at Japanese ports, the increased prices, the high cost of transportation, and the continued growth of home consumption. But, while the amount of coal exported dropped to 2,189,000 tons, its value reached ¥32,009,000, or ¥5,500,000 more than the figure for the previous year.

It will be seen that the *quantity* of exports showed some decline

each year, the volume for 1918 being only 57 per cent of that of 1913. The value, however, moved inversely, and was 35 per cent larger.

Before the War the tonnage of coal imported was usually less than one-tenth of what was exported. Imports were on the increase and the rate of increase became greater by 1912. In 1913 and 1914, especially, the home demand for coal was enormous. When the War broke out, imports from England and elsewhere were shut off. The tonnage, which had been 572,000 in 1913, rose to 950,000 in 1914, fell off to 609,000 in 1915, and to 551,000 in 1916. When manufacturing became active in 1917, the increased demand and accompanying rise in coal prices attracted foreign coal, and thus the import trade became more prosperous. The value of imports was ¥9,038,000 in 1917, and ¥15,763,000 in 1918. As imports in 1913 had a value of only ¥4,034,000, the increase indicated by the above figures is striking enough. Thus, while exports were falling year by year, imports were steadily increasing, after adverse times in the first years of the War. Figures for the export trade are given in tables 2 and 3.

In 1913, a total of 577,771 metric tons of coal was imported, and it came almost wholly from China and the Kwantung Peninsula. In 1914 the total was 957,709; in 1915, 1,614,517; and in 1916, 1,556,000, of which 1,124,564 was supplied by Indo-China. In 1917 the figures were 713,080, and in 1918, 768,798. In both cases, too, China proper and the Kwantung Peninsula were again the chief sources of supply.

Prices.

The coal prices which have been quoted in this survey were those that prevailed at the pit mouth. The prices ruling at the points of consumption will naturally vary, according to the distance between those points and the mines. Thus, it is very difficult to decide what prices should be regarded as standard for any survey of this sort. But the price of first-class Buzen lump coal was gradually rising from the 1909 level, when a low point of ¥41.20,¹ or ¥6.86 per ton, was reached. In July, 1914, the market price remained at ¥50.70, or ¥8.45 per ton; while the average for the entire year was ¥52.45, or ¥8.70 per ton. In 1915 it dropped month by month, and reached

¹ Per 100 piculs.

TABLE 2
Coal Exports, by Countries, 1913-1915.
(in metric tons)

	1913		1914		1915	
	Quantity	Value	Quantity	Value	Quantity	Value
China	1,289,600	¥ 7,333,321	1,198,251	¥ 7,458,902	954,054	¥ 5,850,608
Kwantung Peninsula	8,518	40,801	3,052	17,308	5,188	26,853
Hongkong	1,057,641	6,267,938	1,039,087	6,776,055	715,726	4,483,606
India	181,264	1,095,095	82,279	511,358	38,940	277,159
Straits Settlements	522,169	3,594,418	474,902	3,648,608	436,944	3,268,898
Dutch East Indies	91,541	638,620	123,129	1,055,587	199,041	1,499,710
Indo-China	43,671	236,636	67,265	406,192	34,045	191,540
Asiatic Russia	62,110	421,817	70,210	492,700	96,389	631,083
Philippine Islands	368,783	2,301,896	328,819	2,171,510	309,558	2,089,449
England	20,169	104,436	19,070	116,322	.....	3
United States	157,850	1,100,712	86,024	632,688	11,631	63,092
Hawaii	20,288	147,439	22,352	186,669	93,825	775,167
Other countries	46,996	326,743	63,366	440,697	8,751	70,557
Total	3,870,600	¥23,628,372	3,586,806	¥23,914,591	2,924,092	¥19,236,725

TABLE 8
Coal Exports, by Countries, 1916-1918.
(in metric tons)

	1916		1917		1918	
	Quantity	Value	Quantity	Value	Quantity	Value
China	1,121,021	¥ 6,549,122	1,137,687	¥ 9,786,011	820,093	¥10,871,507
Kwantung Peninsula	3,706	19,890	418	3,923	1,267	18,830
Hongkong	740,350	4,953,671	715,058	6,740,371	432,099	6,489,080
India	20,409	157,259	14,754	178,848	32,079	514,959
Straits Settlements	408,673	3,195,259	403,412	4,350,632	441,789	6,966,145
Dutch East Indies	109,156	898,065	55,087	633,040	69,327	1,074,200
Indo-China	50,733	324,678	68,144	670,522	43,275	469,514
Asiatic Russia	52,656	355,418	36,271	337,674	26,746	469,514
Philippine Islands	363,823	2,690,592	343,706	3,835,133	307,350	4,599,988
England	.....	.....	7	107	1	211
United States	12,222	110,719	.....	.....	.....	.....
Hawaii	92,211	773,513	17,926	136,335	9,329	145,580
Other countries	45,932	377,758	20,992	230,395	13,434	232,100
Total	3,016,947	¥20,405,969	2,313,462	¥26,454,041	2,197,037	¥32,009,494

¥45.90 in September and October, with the result that the average price declined to ¥49.15, or ¥8.20 per ton.

In 1916, the progress of the War, which brought about an economic depression in other belligerent nations, had quite the contrary effect on Japan. As her export trade had greatly expanded, industrial enterprises and the carrying trade began to thrive, and demands for coal increased accordingly. Also, as a result, its price rose to ¥72 at the end of the year, averaging for the year ¥54.62, or ¥9.10 per ton. This was ¥5.47 per ton higher than in 1915. Business was still more flourishing in 1917; above all, the development of the iron and steel industry was phenomenal. The result was that coal, which stood at ¥72 in May, jumped to ¥81 in June, to ¥114 in August, and to ¥120 in October. The average price for the year was ¥94, or ¥15.66 per ton. A general level of ¥126 was maintained during the first half of 1918; in the second half the price went up; and, at the end of the year, it reached ¥150, the average price being ¥130.75, or ¥21.80 per ton. Prices had thus risen to three times the pre-war average. This advance was far greater than that experienced in England. Whereas in June, 1914, first-class Yorkshire coal was quoted at ¥8.80, Japanese currency, and that of Buzen coal at ¥8.45 per ton, or approximately on the same level, the former had advanced to ¥11.50 and the latter to ¥20 at the end of 1917. In December, 1918, the respective prices were ¥17.50 and ¥25.

Comparative figures, in detail, are given in table 4.

TABLE 4

		<i>June, 1914</i>	<i>June, 1917</i>	<i>December, 1914</i>	<i>December, 1917</i>
England	First-class Yorkshire	¥ 8.80	¥10.80	¥11.50	¥17.50
	First-class Newcastle for steaming purposes	7.30	14.80	15.00	....
United States	F.O.B. Chicago	7.10	13.00	8.20	....
	Anthracite coal for stove use, New York	10.10	11.40	12.85	....
	Bituminous coal,				
Japan	First-class Buzen coal (at the mine)	8.45	13.50	20.00	25.00
	First-class Buzen				
	coal (in Tokyo)	11.48	20.38	28.50	37.50

182 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

The quotations in the Tokyo market showed a more remarkable rise, due to the difficulty of transportation and the exorbitant increase in freight rates. The market price of first-class Buzen coal in Tokyo began rapidly to rise in November, 1916, reaching ¥97.09 in December. Its high point in 1917 was ¥173, in September. In 1918 it rose from ¥178 in January to ¥225 in November, when it began to fall again.

CHAPTER XV

PETROLEUM

Production.

JAPAN is not abundantly endowed with petroleum. In 1876, the output amounted to 10,000 koku, the value of which was just a trifle over ¥80,000; in 1886 it amounted to 30,000 koku and ¥126,000; in 1896, to 231,000 koku and ¥348,000. A tremendous increase took place in 1906, when a total of 1,513,000 koku valued at ¥5,218,000 was reached. Production continued to grow, and the industry reached 1,693,000 koku, ¥12,498,000 in value, in 1913. As imports from other countries, principally America, were estimated at 1,011,000 koku, valued at ¥11,101,000, the ratio between home production and imports was 52 to 48. On the outbreak of the War, the home industry was stimulated by many things, the lack of cargo space for imports; the falling off in the supply from the Dutch East Indies, for such shipments were now going to Europe instead of to Japan; the great increase in home consumption; the shortage in China and the constant rise in prices. Production which had been 1,693,000 koku before the War, rose to 2,358,000 in 1914, and to 2,613,000 in 1915. The factor, however, which most directly influenced the prosperity of this branch of industry was not the condition of the market but the resources of the oil fields. The output could not be increased at will, just because the demand and the market situation had improved. In 1916, the high cost of tubing and other equipment was an obstacle encountered by operators in exploiting new wells; and in the following year, when the importing of tubing and machinery was made difficult by the steel embargo, operators were forced to content themselves with the fields which they had already opened. With respect to volume of output, that for 1915 was the high point; in the succeeding years signs of decline were in evidence. In 1918, the quantity of oil produced amounted to 2,142,000 koku. In consequence of a rise in the market price, the value advanced to ¥30,417,000. In 1915 it had been ¥10,070,000.

The development of the industry carried the nation far toward

184 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

the self-supplying stage. The proportion between home production and imports was 85 to 15 in 1917, as against 54 to 46 in the pre-war days.

TABLE I
Growth of Petroleum Production, 1870-1918.

	<i>Quantity</i> (in koku)	<i>Value</i>
1870	10,114	¥ 80,805
1888	80,808	126,298
1897	231,321	348,219
1902	877,837	2,077,840
1907	1,513,944	5,218,787
1913	1,693,582	12,498,506
1914	2,358,094	9,631,049
1915	2,613,281	10,070,820
1916	2,592,707	14,996,695
1917	2,508,943	19,003,950
1918	2,142,589	80,417,097

Trade Conditions.

Before the War the yearly imports of petroleum had been very large, especially from America and the Dutch East Indies. But, despite the fact that industrial development tends to extend the use of oil, as for instance for motor engines and as lubricants for machinery, before the War there was a tendency toward decrease in the value of imports owing both to the development of electricity, which rendered obsolete the employment of petroleum for illuminating purposes, and to the steady increase in home production. But the War, which deranged the international petroleum market, meant much trouble for Japan. As soon as hostilities commenced, Russia prohibited the export of oil; Germany and Austria were cut off from the commerce of the world; and the result was that other nations looked to America and the Far East to supply their wants.

To repeat, the Dutch East Indies, which had been making large annual shipments to Japan, had to meet the needs of Europe; and trade with that part of the world fell off noticeably. Another obstacle consisted, as we have said, in the lack of shipping space, together with unprecedented increases in freight rates and insurance charges. Thus the volume of imports, which had been upward of 1,000,000

TABLE 2
Imports of Petroleum, 1913-1918.

	1913		1914		1915	
	<i>Quantity</i> koku	<i>Value</i>	<i>Quantity</i> koku	<i>Value</i>	<i>Quantity</i> koku	<i>Value</i>
Dutch East Indies	315,619	¥ 3,524,817	189,781	¥2,255,498	150,692	¥1,768,247
United States	696,053	7,577,131	544,712	6,401,823	570,856	6,695,406
Other countries	.....	.....	1	6	2	22
Total	1,011,672	¥11,101,948	744,494	¥8,657,327	721,550	¥8,463,675
<i>From:</i>	<i>Quantity</i> koku	<i>Value</i>	<i>Quantity</i> koku	<i>Value</i>	<i>Quantity</i> koku	<i>Value</i>
	1916		1917		1918	
Dutch East Indies	51,883	¥ 587,849	31,139	¥ 400,594	73,781	¥1,147,212
United States	416,415	4,983,089	376,821	4,904,277	414,812	7,387,233
Other countries	1	12	3	50	222	3,170
Total	467,749	¥5,570,948	407,963	¥5,304,921	488,815	¥8,537,615

186 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

koku in 1913, fell to 744,000 koku in 1914; to 721,000, in 1915; to 467,000, in 1916; and to 407,000, in 1917. Although 1918 imports increased by about 81,000 koku, this does not imply that it was less difficult to carry on import trade. The increase was due to the fact that the boom in manufacturing created so huge a market for gasoline, light oils, lubricants, etc., that the petroleum industry had to produce them to the exclusion of kerosene; and the shortage of the latter forced the trade to seek its supplies abroad. A most noteworthy development at this time was Japan's effort to enter the export trade. In China and the Kwantung Peninsula, the importation of Russian oil had been completely suspended, American oil could not be obtained in any large quantity, prices were high, silver was rising, so there seemed to be an import market for Japanese oils. A trial shipment was made in 1916. In the following year, 3,594,000 gallons valued at ¥1,794,000 were sold to China. In the first half of 1918, however, this trade fell off, and it came to a standstill in the second half; for Japan was now in need of all the oil she could produce, and home prices were higher than those in China. The quantity exported in 1918 was 1,655,000 gallons with a value of ¥1,066,000.

TABLE 3
Exports of Petroleum, 1917-1918.

	1917		1918	
	Quantity gallons	Value	Quantity gallons	Value
China	2,438,082	¥1,209,401	841,669	¥ 500,578
Kwantung Peninsula	1,151,189	582,921	658,926	458,617
Asiatic Russia	120	61	181,866	92,684
Others	4,633	2,534	23,917	14,572
Total	3,594,024	¥1,794,917	1,655,878	¥1,066,401

Prices.

The petroleum market of Japan is controlled by an understanding among local interests comprising the Nihon Petroleum, the Hoden Petroleum, and the Rising Sun Companies, acting with representatives of the Standard Oil, and conditions are always affected acutely by the prices prevailing in markets abroad. In the pre-war

years, the market was generally depressed through overstocking, so that prices had to be kept up by the coöperation of the firms concerned.

In 1914, the above oil group in Japan found it difficult to get rid of its surplus, for it was constantly accumulating, and the result was a rate war. However, by the end of April peace was reëstablished, and a schedule of new and higher prices was issued. At the outbreak of the War the market grew buoyant, and all grades of petroleum, imported or home-produced, advanced together. If imports from the Dutch East Indies had fallen greatly, those from America had not, while the home product was on the increase. But the demand now began rapidly to diminish because of the fall in price. And the result was the complete demoralization of the market. Tariff schedules came to have no meaning whatever, for the time. Then, in 1915 a new understanding was arrived at, with a view to saving the market in some way. And toward the close of the year, the situation underwent a change. The scarcity of cargo space interfered with the importation of foreign oil; the suddenly increased demands from Europe made it evident that in any case Japan could not hope to obtain much more from abroad; and at the same time stocks of home oil were getting very low. In consequence, the oil interests raised prices twice during the middle of November—the standard grade to ¥4.15, American oils to ¥4.20, and the “tank” brand to ¥4.25.

In 1916, the market was in a flurry and repeatedly rose. While this was in part due to the higher cost of containers, more potent causes were the rise in freight rates and higher prices in those countries which had been meeting half of the Japanese demand.

On February 22, 1916, the oil trade issued a new tariff with prices higher by ¥0.50 for all lines; and the interests concerned looked forward to a very prosperous year. But their expectations proved to be unwarranted, as an increase in the domestic output, the development of electric lighting, the cutting down of consumption, the adoption of substitutes, and hesitancy in buying on the part of retailers rendered the market a weak one. In June the trade had to cut prices. In October conditions were beginning to improve. The demand, both from home consumption, and from exporters, increased wonderfully, and supplies seemed to be inadequate. Yet

188 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

again, in 1917, an overstocked market and seasonal influences brought about such dulness that the new oil tariff was discarded, and those holding oil were glad to offer their stocks for whatever they would fetch. In short, the year was depressing throughout. Though a notable decline in the volume of imports, coupled with the establishment of export trade relations, gave every promise of a time of active trade with foreign countries, this did not materialize, and the market remained weak. The year 1918 was remarkable, and conditions underwent a change for the better. This is to be accounted for by the diminished domestic output, by the enactment of a law for government control of petroleum in America, which strengthened the market, and by the increased price of materials for packing, and increased freight rates. In the second half, especially, the demand grew larger than ever, supplies still more inadequate, and the market registered abnormal quotations.

The maximum price, realized in November, 1918, was about three times as high as the price before the War.

The figures are given in table 4.

TABLE 4
Market Prices of Petroleum.

	1913	1914	1915	1916	1917	1918
Crude Oil (Higashi-yama)	¥8.15	¥5.92	¥5.89	¥7.25	¥7.56	¥15.08
Crude Oil (Ni-idzu)	5.65	2.82	2.20	5.84	9.06	16.50
Kerosene (Chester Brand)	4.52	4.85	4.70	6.02	6.86	8.74
Kerosene (Tank Brand)	4.05	3.79	4.38	5.66	5.97	7.74
Kerosene (Sei-ho-o)	4.09	3.95	4.27	5.54	5.67	7.66
Kerosene (Kuro-ichi-wa)	4.04	3.66	4.28	5.56	5.67	7.78

CHAPTER XVI

OTHER MINERALS

Tin.

TIN stands next to zinc in the mineral imports of Japan. For its supply Japan was almost entirely dependent on importations. In 1913 home production reached 65,000 kin and imports 1,956,000 kin; the proportion between them was one to thirty. But when the War broke out, Japan's tin-mining industry received a great impetus; for the import trade declined, while the need of a larger quantity of the mineral for the manufacture of cans and other utensils swelled the demand enormously. In tracing tin production since 1914, it will be seen that, except in 1917 and 1918, in which years a certain amount of imported tin was required, the tin industry in Japan made satisfactory progress as compared with *ante-bellum* days.

The most prosperous year was 1915, with a record of 569,000 kin, more than eight times the total in 1913. Imports fell off till 1916; but in 1917 and 1918 home production being on the wane, despite a larger consumption of the metal, the volume of imports rose to a notable figure.

It cannot be said that the effects of the War on the tin market were very significant. Closely following the outbreak of war, prices nearly doubled in a very short time, for speculators anticipated a complete cessation of imports, and an increasing demand for the production of war material. But when they became aware that their anticipations were unfounded, the market fell far below the pre-war level. This extraordinary condition soon passed; but tin never enjoyed such prosperity as did certain metals during the War. By the second half of 1917 conditions showed some improvement, by reason of heavy buying by the United States, the growing demand from China, the British embargo, and the decrease of stocks in Japan. In August, 1918, the market reached the height of its prosperity, with prices two and a half times as high as before the War. Later, conditions became bad again; and when the armistice was announced, prices fell precipitately.

TABLE 1
Tin Production, 1910-1918.

	Quantity (in kin)	Value
1910	38,910	¥ 84,933
1911	41,404	45,647
1912	58,834	71,701
1913	65,188	82,111
1914	161,189	150,224
1915	569,494	581,482
1916	421,485	464,557
1917	853,457	473,025
1918	880,808	569,808

TABLE 2
Tin Imports, 1910-1918.

	Quantity (in kin)	Value
1910	1,557,400	¥1,800,852
1911	1,851,891	1,925,880
1912	2,005,461	2,071,990
1913	1,956,779	2,820,814
1914	2,183,703	2,063,106
1915	1,989,540	1,823,873
1916	1,839,190	1,796,544
1917	3,377,701	3,780,773
1918	4,755,700	8,271,273

Lead.

Lead mining in Japan had been decidedly backward before the War; and, as in the case of zinc and tin, the nation depended largely on imports. In 1913, home production amounted to about 6,294,000 kin, and imports to 24,790,000 kin, the ratio between them therefore being one to four. Again, as in the case of zinc, tin, and other metals, the growth in home requirements, together with a hampered import trade, led the industry to make amazing progress. In 1917, home production increased to 26,345,000 kin, more than four times that of any pre-war year. In value, the rise was sixfold.

In its entirety, the volume of the trade did not show a marked falling off. While the strife in Europe prevented Austro-Hungarian

tin from finding its way to Japan, and while shipments from England and Australia diminished remarkably, the deficits in imports were made good by America. It may therefore be said that the development of the lead industry during the War was due more to increases in the demand and to the activity of the market than to the difficulty of making importations. Generally speaking, the market conditions were satisfactory, especially from the end of 1916 till 1918.

In August, 1918, when the market rose to its highest point, the metal was quoted at ¥31 per 100 kin in Osaka. This was three times the pre-war average, which was about ¥11.

TABLE 3
Lead Production, 1910-1918.

	<i>Quantity</i> (in kin)	<i>Value</i>
1910	6,512,026	¥ 488,828
1911	6,874,586	506,604
1912	6,222,113	531,282
1913	6,294,854	617,866
1914	7,603,654	827,282
1915	7,940,593	976,389
1916	18,951,514	3,755,933
1917	26,345,308	5,661,020
1918	17,806,677	4,152,991

TABLE 4
Lead Imports, 1910-1918.

	<i>Quantity</i> (in kin)	<i>Value</i>
1910	19,516,896	¥ 1,531,398
1911	24,437,916	1,947,796
1912	30,249,487	2,873,742
1913	24,790,493	2,615,999
1914	25,829,841	2,950,068
1915	24,209,981	2,910,043
1916	34,672,674	7,462,566
1917	26,274,051	5,871,209
1918	60,212,252	14,746,998

Sulphur.

Sulphur ranks next to copper and coal among the mineral exports of Japan, and both the output and exports were increasing annually.

The production, which amounted to 33,000 tons, valued at ¥788,000 in 1907, rose to 59,000 tons, valued at ¥1,568,000 in 1913. During the same years, the volume of trade grew from 52,309,000 kin, valued at ¥1,019,000, to 90,426,000 kin with a value of ¥1,980,000.

In 1914, when the outbreak of war endangered the world's steamship service and lessened the supply of cargo space, the trade in the mineral fell away, and mining work was cut down to part time. But in 1915 circumstances were quite different. In the first place, production declined 2,000 tons, to 72,000. Then the Italian product, which had been competing with the Japanese in the Australian market grew scarce; for further shipments were put under the ban by the authorities at Rome.

America, where the consumption of sulphur underwent an immense growth, due to the great growth of manufactures, especially paper making and the production of sulphuric acid, came to need Japanese sulphur, as her own production became inadequate. Lastly, Russia required exceedingly large quantities for the making of explosives and poison gas. In consequence the trade was very active. The output for 1916 reached 106,000 tons, ¥4,295,000 in value, and the figures rose to 118,000 tons and ¥4,766,000 in 1917, the quantity doubling and the value trebling.

However, in 1918 production decreased conspicuously, owing to the fact that the conditions of demand were unfavorable. The development of the export trade was likewise noteworthy. The volume steadily increasing in 1917, reached 142,409,000 kin, the value being ¥6,142,000, a gain over the last pre-war year of 57 per cent in quantity, and more than 300 per cent in value. At the beginning of the War, the market dropped below the *ante-bellum* levels; but a turning point was reached by the close of 1915, and the situation in 1916 improved by reason of the Italian embargo, constantly increasing orders from Russia, and the fact that the requirements of America and Australia were on the increase. Thus, stocks became light, bringing on frenzied quotations, the high point of ¥124

being realized in March. This was about four times the pre-war price. Later on, although the growth of production, the decline in the amount shipped to Australia, and the complete cessation of business with Russia, combined to render the market quiet, prices continued to be higher than before the War.

TABLE 5
Sulphur Production, 1910-1918.
(in metric tons)

	<i>Quantity</i>	<i>Value</i>
1910	43,847	¥1,047,764
1911	50,275	1,271,672
1912	54,554	1,372,824
1913	59,448	1,568,432
1914	74,115	2,002,788
1915	72,206	1,902,219
1916	106,387	4,295,539
1917	118,089	4,776,516
1918	64,711	2,532,425

TABLE 6
Sulphur Exports, 1910-1918.

	<i>Quantity</i> (in kin)	<i>Value</i>
1910	75,404,959	¥1,396,412
1911	61,778,854	1,250,812
1912	81,859,863	1,745,276
1913	90,426,750	1,980,835
1914	85,947,040	1,845,923
1915	124,789,532	2,487,634
1916	137,811,544	6,215,539
1917	142,409,530	6,142,793
1918	90,161,847	3,569,289

Gold.

The output of gold, which amounted to slightly more than 93 kwan in 1877, rose steadily and reached 773 kwan in 1907, and 1,477 kwan in 1913.

The demand being fairly even at all times and prices stationary, the metal was least responsive to the activity or quietness of general

mining or business conditions in the country. But, the effects of the War were so powerful that they cannot be passed over. In 1914, when its beginning brought about a drop in copper prices, the refining of gold became active.

The Hitachi Copper Mines, in Ibaraki, seemed in particular to have concentrated upon gold. In consequence, gold production showed an increase of 439 kwan, or 38 per cent, over the previous year; and, similarly, 1915 exceeded its predecessor by 295 kwan, or 18.3 per cent. But by 1916, when copper prices began to improve, producers came to pay less attention to the precious metal.

Other things, too, had much to do with the decline of the industry. As a result of the War, the importation of quicksilver and cyanide of potassium, which are needed for the extraction of gold, grew next to impossible, and the cost of reducing the ore became very high. Thus the profits of the industry fell accordingly. The price of other metals rose considerably under the influence of conditions in Europe, while that of gold remained comparatively low. Consequently, mine operators found it more profitable to handle the former than the latter.

Increases in mining wages and various other charges tended to cut down the profits of gold mining. And for this reason, also, especially where the ore was of low content, mining was gradually abandoned. In fact, gold production grew to be looked upon in time as merely one of the incidentals of silver and copper smelting.

TABLE 7
Gold Production, 1910-1918.

	<i>Quantity</i> (in kwan) ¹	<i>Value</i>
1910	1,164	¥ 5,671,806
1911	1,248	6,059,497
1912	1,373	6,799,072
1913	1,477	7,252,000
1914	1,916	9,898,449
1915	2,211	10,804,546
1916	2,104	10,412,845
1917	1,887	9,887,647
1918	2,051	10,242,591

¹ 1 kwan = 8.29 lbs.

Silver.

In 1877 the total amount of silver produced in Japan was little more than 2,945 kwan. But the total rose to 24,388 kwan in 1907. And from then on the figures steadily increased. In 1913 it was 39,007 kwan. The outbreak of war seemed to injure the industry very little, although bad conditions in copper hurt the showing for 1914 and 1915, and there was no great increase. Production in 1916 and the years following showed decided gains, owing to a constant rise in prices. The output of 1915 exceeded that of 1914 by 13 per cent; and 1917 exceeded 1916 by 22 per cent, the value having almost doubled.

TABLE 8
Silver Production, 1910-1918.

	<i>Quantity</i> (in kwan)	<i>Value</i>
1910	37,763	¥ 4,896,188
1911	36,811	4,761,652
1912	39,995	5,896,084
1913	39,007	5,635,124
1914	40,251	5,370,278
1915	42,469	5,287,624
1916	48,180	7,135,060
1917	58,992	11,946,403
1918	54,743	12,622,005

The year 1914 was characterized by falling silver prices. In August, the British and American governments made large purchases for minting, and accordingly silver prices, both in England and the United States rose somewhat. But the demand soon became dull again and the price fell frequently till the summer of 1915.

The effects of the depression abroad were felt by the Japanese market; and, thereafter, the course which it followed was virtually a parallel to that of the market in Europe and America. The dawn of a better time was observable by the end of 1915. When great quantities of silver were required for the mints of the Allied nations, as also for China and India, and when silver stocks in England fell too low, there was a rise in price, which was pretty steadily maintained until the armistice. An exactly similar movement took place in the market in Japan.

CHAPTER XVII

THE MINERS, AND MEASURES FOR MINING RELIEF

THE wonderful development of the mining industry during the War naturally meant a constant increase in the number of mine workers. Investigations of the Department of Agriculture and Commerce revealed the fact that at the end of June, 1907, there were in the country 76,731 persons employed in mining the various metals, 128,712 in coal mining, and 8,946 in other branches of the industry, the total being 214,439. At the end of June, 1910, miners of the first category numbered 84,345, of whom 71,532 were males and 12,813 females; coal miners numbered 145,205, of whom 107,210 were males and 37,995 females; and workers in mines of other sorts had dropped to 3,867, of whom 3,447 were males and 420 females. In addition, the oil fields gave employment to 4,949 males and 325 females.

This gives a total of 187,138 male workers and 51,563 females, aggregating 238,591. As compared with the figures for 1907, the increase in the number of metal miners amounted to about 10 per cent, that of coal miners to over 12.7 per cent, and the total to over 11.3 per cent.

Table 1 gives the figures for the end of June, from 1914 to 1918, inclusive.

TABLE 1

Number of Workers Engaged in Mining during the War.

<i>Years</i>	<i>Metal mining</i>		<i>Coal</i>		<i>Petroleum</i>	
	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>
1914	79,890	14,893	135,718	51,400	4,944	283
1915	83,593	13,533	133,613	46,487	4,450	230
1916	119,467	19,708	144,486	53,421	5,533	333
1917	141,651	23,500	133,578	66,566	7,019	633
1918	137,799	23,161	206,894	80,265	7,375	688
	<i>Miscellaneous</i>			<i>Total</i>		
	<i>Males</i>	<i>Females</i>	<i>Total</i>	<i>Males</i>	<i>Females</i>	<i>Total</i>
1914	6,570	715	7,285	227,122	67,291	294,413
1915	5,913	698	6,611	227,269	60,948	288,217
1916	8,994	565	9,559	278,480	74,032	352,512
1917	10,037	859	10,896	342,285	91,558	433,843
1918	7,971	574	8,545	360,039	104,638	464,725

With reference to metal mining, 1914 shows an increase of 24 per cent over 1907; 1915 an increase of 26 per cent; 1916, of 81 per cent; 1917, of 115 per cent; and 1918, of 102 per cent. The rate of increase of coal mining was: 1914, 45 per cent; 1915, 32; 1916, 54; 1917, 94; and 1918, 123 per cent. For the number of miners the percentages of increase were: 1915, 34; 1916, 64; 1917, 104; and 1918, 116 per cent. Although there was an increase in the number of metal miners in 1915, colliery workers fell away by 7,018, and workers in other branches of the industry declined somewhat. This was due to the fact that the coal business was so depressed during the second half of 1914 and the first half of the following year that mine operators had come to an agreement and reduced their output. In sulphur, likewise, there was overproduction, and producers had to curtail their working hours, culminating in an extensive discharge of men. The fact that, contrary to the situation in coal and petroleum, both the metal and miscellaneous mining industries showed some decline in 1918 was a consequence of the general dullness in copper and certain other metals.

Wages.

There were at work two factors making for increases in the wages paid to mine workers. One was that a huge demand for labor had developed in some mining industries, due to the prosperity of the business, in consequence of the War. The other was the extraordinary rise in the cost of living. The author regrets that the necessary data on this subject are wanting. Under the circumstances he must content himself with offering the tables 2 and 3 that follow, and that show the scale of wages paid to coal miners in Northern Kiu-shiu.

It will be seen that in the case of female workers, the maximum gain was 209 per cent for carpenters, blacksmiths, etc., and the minimum gain 61 per cent for carriers, with an average of 116 per cent. As for male workers, helpers gained 182 per cent, miners 121 per cent, and the rest less than 100 per cent. This shows that female workers secured greater increases than male, the reason being that there was a decided lack of the former and they had to be offered more attractive inducements than the men. The fact that among the men, miners received better pay than others is explained by the nature of their work, which is the hardest of all.

TABLE 2
Underground Workers.

	1913		1918		Percentage rate of increase	
	Male	Female	Male	Female	Male	Female
Miners	¥0.83	¥0.68	¥1.84	¥...	122.0	....
Timber men	0.70	0.51	1.85	...	92.0	....
Helpers	0.62	0.54	1.75	1.55	182.0	180.0
Carriers	0.55	0.29	1.18	0.58	114.0	82.0
Carpenters, black-smiths, etc.	0.64	...	1.23	...	92.0	....
Machine men	0.58	0.32	1.02	...	75.0	....
Others	0.48	0.86	0.94	0.68	95.0	88.0

TABLE 3
Surface Workers.

	1913		1918		Percentage rate of increase	
	Male	Female	Male	Female	Male	Female
Dressers	¥0.45	¥0.29	¥0.81	¥0.62	80.0	118.0
Carriers	0.50	0.36	0.80	0.58	60.0	61.0
Carpenters, black-smiths, etc.	0.62	0.23	0.98	0.71	55.0	209.0
Machine men	0.58	0.30	1.10	0.58	89.0	93.0
Others	0.44	0.29	0.84	0.59	90.0	103.0
Average	...	...	...	...	95.0	116.0

Measures of Relief.

Because of the growing importance of accident prevention in mines,—and accidents tend to be of more frequent occurrence as the mining industry is extended,—the control and regulation of mine work must be increasingly exact, far-reaching, and carefully planned out. In August, 1916, the authorities concerned gave out a revision of the police regulations for mines, setting forth detailed provisions, which it was the duty of mine operators to take for the prevention of accidents. The matters provided for related mainly to engineering equipment, and the provisions made were inadequate for the object in view. Mention may also be made here of the enactment of a list of "Regulations for the Protection of Miners," which were issued on the same day as the police regulations. The reason

for these regulations was that,—in connection with the Factories Law which had been enacted,—a revision of the existing rules for the aid and protection of miners had become necessary, and the very rapid progress that the mining industry had made during the War rendered it imperative to provide more perfect measures for the prevention of disastrous accidents in mines. The essential points of the regulations were as follows:

Holders of mining rights should not permit (a) persons under twelve years of age to be engaged in any kind of work in mines; (b) persons under fifteen years old, and women employees, to work more than twelve hours a day; (c) any worker less than fifteen years old, or any woman employee, to engage in work between the hours of 10 P.M. and 4 A.M.; (d) youths under fifteen or women employees to engage in any dangerous form of labor; (e) any worker suffering from illness to engage in labor; (f) and should not hire for any kind of work women employees within thirty-five days after they have given birth to a child.

In addition, in case mine-workers were injured, became ill, died, or met their death from causes arising from their labor, and in case it was proved that the said causes were not the result of any carelessness or mistake on their own part, holders of mining rights should be obliged to maintain them, as provided in this law. Unless otherwise provided, the discharge of a mine-worker injured or rendered ill should not absolve the holders of mining rights from the obligation of maintaining the said mine-worker. In the case of a mine-worker receiving bodily injuries or becoming ill, holders of mining rights should extend to him at their own expense such medical or surgical treatment as might be necessary for his recovery. And they should furthermore defray any expense or expenses incidental to affording him the medical or surgical treatment required.

In case a mine-worker, even by injury or illness, incapacitated for work, and therefore, rendered incapable of earning wages, the holder of mining rights should pay him daily a sum amounting to not less than one-half of his regular wages. When, however, such sums of money had been paid for more than three months, the amount might be reduced to one-third of his wages.

In the case of a mine-worker who had received injuries, or contracted illnesses from which he had not recovered, and which would result in permanent disability of a nature to include him in any one of the following classes, holders of mining rights should pay him a sum of money for his support as provided below:

200 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

Those so injured as to be rendered incapable of supporting themselves for the remainder of their lives, should receive an amount not less than their wages for one hundred and seventy days.

Those so injured as to be incapable of physical work for the remainder of their lives should receive an amount equal to their wages for one hundred and fifty days.

Those so injured as to be throughout life incapable of performing the labor they were formerly engaged in, should receive an amount not less than their wages for one hundred days.

Those who, while incapable of restoration to their former state, were none the less able to follow the work they had been doing, should receive an amount not less than their wages for thirty days.

In case of a mine-worker's dying or meeting his death from causes arising from his labor, holders of mining rights should pay his surviving family an amount not less than his wages for one hundred and seventy days.

Seeing that the prevention of explosions in collieries from the combustion of gases and coal dust is a matter of great importance in the development of coal mining, in December, 1913, the Department of Agriculture and Commerce promulgated regulations for the prevention of coal-mine explosions, and minutely prescribed the duties of owners or operators, and rules to be followed by the miners themselves. But at the same time the authorities concerned saw that there was great necessity for them to make practical investigations into the causes of disasters, and into methods of preventing them. For this purpose and with the coöperation of the operators' guild in Northern Kiushiu, in 1916 they opened a bureau at a point in Fukuoka, and entered upon a series of painstaking investigations.

CHAPTER XVIII

TENDENCIES AFTER THE WAR

As a result of the War, the mining industry of Japan made extraordinary progress, due to her peculiar position in the War, and experienced in a few years a development that would normally have required many years. A turning point, however, was reached in November, 1918, when the armistice was signed. Feelings of apprehension then began to be entertained as to the future of the industry; for there was a general belief that the demand, both at home and abroad, would fall off. Iron, copper, and zinc, which had made rapid progress during the war years, found a very dull market after the armistice, resulting in a decline in production. In the case of gold, silver, sulphur, and petroleum, though they were still selling actively enough, there was a falling off in output. It was different with coal, however, because, though both prices and output were not unsatisfactory, the increase in production was not so great as during the War. Consequently, taken as a whole, the *post-bellum* condition of the mining industry was frankly bad, especially in the case of the so-called "war minerals." In the following pages the author will trace the market conditions of the outstanding minerals for the first half of 1919; that is, for the period of six months following the close of the War.

Gold.

The production of gold for the period under review was a trifle over 894 kwan. This, as compared with the first and second six months, shows a decrease of 108 and 70 kwan, respectively. This decrease is attributable to the fact that, owing to the difficulties that mine operators suffered because of a labor shortage, increased cost of production caused by the high prices of commodities and labor, and scarcity and high price of cyanide of potassium, a necessary material for the extraction of gold, many mines had to suspend or reduce their operations. The output during these months of 1919 was as follows: January, 154 kwan; February, 173; March, 159; April, 126; May, 163; June, 116; total—894 kwan.

202 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

As a result of embargoes still remaining in force in many countries, shipments of gold were seriously interrupted, and the volume of trade ebbed markedly. Absolutely no business was done in exports, and some ¥74 was the amount of the import trade. As compared with the same period in 1917, there was a great decline, amounting to ¥465,890. The gold shipments per month in 1918 were January, ¥99,733; February, ¥8,021; March, ¥241,247; April, nothing; May, ¥224,690; June, ¥465,964; total, ¥832,549.

During the six months under review, conditions were quite remarkable, for, while stocks were declining, the demand, for surgical, artistic, and ornamental purposes, was rapidly increasing; consequently prices, running far above the official quotations, reached the level of ¥7.50 per momme in January. The Government, realizing the urgency of the situation, caused the Bureau of Mints to sell gold bullion to the value of ¥15,000,000 to meet the public demands. At the same time, the Yokohama Specie Bank was instructed to sell foreign gold, brought in by travelers, at the rate of ¥5.50 per momme. Although this temporarily relieved the situation, the market again showed an upward trend in April and May, and the metal was quoted at ¥6.30. However, in June, as the result of the receipt of the news that America had repealed her gold embargo, conditions began to return to normal, and the six months closed with the price of gold tending to fall.

Silver.

The total output of silver during the first six months of 1919 was 19,802 kwan, or 6,134 kwan less than that for the corresponding period of the previous year. This decrease was a consequence of high cost of production and a shortage of labor, as was the case with gold. Production was as follows: January, 3,316 kwan; February, 3,255; March, 3,671; April, 3,280; May, 3,643; June, 2,635; total, 19,802 kwan.

The fact that the embargo on silver was still in force brought the export trade to a standstill. As regards imports, China and the Kwantung Peninsula sent Japan silver to the value of ¥711,800. Although London and Washington repealed their restrictions on silver exports, no shipment is known to have been made to this country.

Copper.

The extraordinary activity of copper during the War inspired in every producing country the desire to increase its output; and consequently the aggregate quantity of production throughout the world grew very large. However, when, as a consequence of the armistice, the demand abruptly fell off, the result was a partial or complete cessation of the operations of mines and refineries, and there were many Japanese copper producers who cut down their output. In consequence, the production for the six months dropped to 62,495,677 kin. This was 6,459,093 kin less than that for the corresponding term of the preceding year. The output was as follows: January, 9,970,046 kin; February, 9,963,513; March, 11,114,306; April, 10,432,505; May, 10,411,532; June, 10,542,351; total, 62,495,677 kin.

The armistice delivered a severe blow to the copper trade. The markets abroad which had been dependent on exports from this country were depressed and offered a much diminished demand. The total exports for the half year were 25,642,810 kin, the decline from the figure of 38,754,138 kin for the same period in the previous year being 13,111,328 kin. In detail the figures are given in table 1.

TABLE 1

<i>Importing countries</i>	<i>1919</i>	<i>1918</i>	<i>Increase (+) or decrease (—) compared with the first six months of 1918</i>
China	16,809,465 kin	3,879,982 kin	+13,929,483 kin
Kwantung Peninsula	1,337,544	219,892	+1,117,652
Hongkong	441,764	115,644	+326,120
India	1,126,543	2,751,324	—1,624,781
England	511,958	7,236,316	—6,724,368
France	238,769	8,834,000	—7,595,231
Italy	3,145,444	3,849,999	—709,555
Other countries	51,647	2,296,768	—2,245,121
Total	23,663,134 kin	29,183,925 kin	—5,520,791 kin

The price of copper, falling since the second half of 1917, appeared to have risen somewhat shortly before the signing of the armistice. When the news of the armistice was received the market

dropped precipitately, and conditions in 1919 were such that it was hard to tell when they would improve. However, in April a tendency toward higher prices was apparent, owing to the combined forces of reduced production, scarcity of stocks in the market, and increasing demands from China and Malaysia. But the degree of prosperity that had been enjoyed during the War could not be attained again. Prices per 100 kin of electrolytic copper in the Tokyo market for the first six months of 1918 were ¥64, ¥64, ¥65, ¥64, ¥64, and ¥64. For 1919 they were ¥56.66, ¥52.66, ¥38.66, ¥44.66, ¥54, and ¥54.33.

Iron.

That the iron industry of the nation should be seriously affected by the restoration of peace was inevitable. The output of ore of the leading mines aggregated only 34,626 tons. This was 8,091 tons below that for the first half of 1918. The figures are as follows, in metric tons: January, 6,553; February, 5,732; March, 4,832; April, 5,333; May, 5,616; June, 6,560; total, 34,626 metric tons.

Iron fell steadily after the signing of the armistice, the market dropping several points almost daily. Pig iron, which had reached the extraordinary level of ¥500 in the summer of 1918, fell to ¥120 at the end of June. The production of one ton of pig iron called for the following outlays:

Thirty yen for two tons of 55 per cent ores, ¥65 for 1.3 tons of first-class coke, ¥15 for wages and other miscellaneous expenditures, and ¥5 for ferro-manganese, lime, etc., the total being ¥115. It will, therefore, be seen that the margin between the quotation of ¥120 and the cost of production was about ¥5. This put the iron industry in a very difficult position, with the consequence that many corporations which had done a prosperous business during the War, had either to suspend or cut down their operations. Such being the case, a movement was set on foot by the business to obtain government protection for their industry. In fact, the Government's mills at Yawata purchased 42,000 tons in the Osaka and other markets, and paid ¥160 per ton. But this failed to bring about any change in conditions. The following prices were quoted for pig iron and steel in the Tokyo markets, in the first six months of 1918—¥332.5, ¥360, ¥360, ¥367, ¥386, and ¥410. In 1919 they were, ¥386, ¥380, ¥380, ¥220, ¥220, and ¥250.

For the same months in 1918 the prices of manufactures of steel (per ten kwan of 4-inch bars) were, ¥15.14, ¥13.60, ¥13.10, ¥13.40, ¥14.20, and ¥16.50. In 1919, they were ¥9.20, ¥8.0, ¥7.2, ¥7.8, ¥8.5, and ¥9.1.

Zinc.

For the period in question, the export trade amounted to 7,696,957 kin, which exceeded by 2,845,612 kin the total of imports, 4,845,612 kin. The trade for the corresponding period of the year 1918 amounted to 2,853,190 kin less in imports and 15,821 more in exports.

The zinc market was dull for some time after the armistice, despite the popular expectation that the agreement for a restriction of production, which had been in force since 1918, would have some effect in sustaining market prices. Nevertheless, by the middle of March, when a one-point rise was reported by the London market, the outlook of the export business had grown much better, while both production and the stocks already on the market were declining. In consequence, prices became very much better, and this condition was maintained till the end of June. Quotations per 100 kin in Tokyo were as follows for the first six months of 1918: ¥24.5, ¥24.66, ¥25, ¥24.76, ¥25.28, ¥28.16. For the same months in 1919, they were ¥25.66, ¥21.33, ¥19.33, ¥21.50, ¥24.33, ¥25.

Coal.

The output of coal amounted to 12,994,525 tons, exceeding the figure for the first six months of 1918 by 561,423 tons or 4.6 per cent. The rate of increase for January-June, 1919, when compared with the 15 per cent increase for the same months of 1918, and the 15 per cent increase during those of 1917, undoubtedly points to a falling market; but as compared with the percentage for the entire year of 1918, which was only 1.6 per cent greater, it will be found that the period under consideration was far more active. The gradual falling off in the coal output is believed to have been due to a shortage of labor and to a decrease in the miners' productive capacity, as a result of an increase in their pay. Production figures, in tons, for the first six months of 1919 were 2,011,812 tons, 1,913,797; 2,283,697; 2,250,303; 2,281,713; 2,174,566; total, 12,994,525 tons.

The total volume of coal exports reached 883,327 tons, ¥16,037,173 in value. As compared with the corresponding period of the previous year, the quantity fell by 284,018 tons, and yet the gain in value was ¥31,448. This is also true of every half-year subsequent to 1917, indicating that the tonnage of home consumption and coal prices were both rising. The country which imported the largest quantity of Japanese coal was China. Her purchases reached 34 per cent of the total. Then came Hongkong (21 per cent) and the Straits Settlements (19 per cent). Imports stood at 350,970 tons, valued at ¥9,621,819, a drop of 49,412 tons, and a gain in value of ¥2,758,488. As was the case with exports, China stood first in imports; hers amounted to about 60 per cent of the total. In spite of the armistice, the market was a better one, and prices maintained their war-time levels. This was owing to the prosperous industrial conditions of the country after the War. Although the output of coal showed only the slight increase of 4.6 per cent over the corresponding months of 1918, the demand was constantly growing. It is true that some industries, such as manufactures of iron and the production of chemicals, which sprang up during the War, were falling away. But, to make up for that, large numbers of mills and plants were being newly established or enlarged; and at the same time foreign steamers were beginning to call at Japanese ports in steadily increasing numbers. Consequently, the demand for coal rose continuously.

The rise in coal prices was in fact inevitable. For, despite the fall in the demand for coastwise and other local shipping, and the proportionate loss of market for bunker coal, there was an increase in the cost of production, which in turn was a consequence of a rise in the prices of materials and labor. One noteworthy thing about the demand and supply of coal is that the better grades of the commodity were rather scarce and costly, and the inferior lines decidedly abundant and cheap. To do highly efficient work, many consumers, that is, manufacturers, had equipped their plants and mills with complicated engines and boilers, which called for the better grades of coal. The increase in available cargo space, and the drop in freight rates, quickened and expanded the movement of lower-grade coal. Finally, the owners or operators of collieries which produced inferior coal had become hard pressed for capital,

due to the dulness of the market, and had begun to part with their stocks for whatever prices they would bring.

F.O.B. Moji prices for Northern Kiushiu coal, quoted during the first six months of 1919, and prices for the same six months of 1918, are given in table 2.

TABLE 2

	<i>Lump</i>		<i>Mixed</i>		<i>Dust</i>	
	1918	1919	1918	1919	1918	1919
January	¥16.67	¥33.83	¥15.08	¥22.17	¥14.00	¥21.67
February	16.67	25.33	15.08	23.67	14.00	22.33
March	16.67	25.25	15.08	23.58	14.00	22.25
April	17.17	25.25	15.58	23.58	14.50	22.25
May	17.08	25.17	15.50	23.50	14.42	22.17
June	17.00	25.17	15.42	23.50	14.33	22.17
Average price	16.88	25.03	15.29	23.33	14.21	22.14

Petroleum.

The production of petroleum, which fell to 930,196 koku, was 102,516 koku less than that for the second half of 1918, and 124,733 koku less than that for the first half of the same year, a falling off for which there were several reasons. Increasing imports had made the supply adequate. At the same time, the cost of coal and obstacles in the way of importing the needed machinery and tools for the boring of oil wells made their sinking very expensive. And operators were compelled to cut down their activities accordingly. The figures follow, with those for 1918 in table 3.

TABLE 3

	1918 koku	1919 koku	Decrease
January	180,949	161,525	19,424
February	164,724	139,255	25,469
March	174,081	156,800	17,281
April	169,663	150,629	19,034
May	185,029	160,718	24,311
June	177,324	161,269	16,055
Total	1,051,770	930,196	121,574

Imports of kerosene totaled 13,102,821 gallons, valued at ¥7,319,556. These figures, as compared with those for the same six

208 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

months of 1918, were larger by 650,221 gallons (5.2 per cent) and ¥3,100,533 (73 per cent).

The increase of imports from the Dutch East Indies was mainly responsible for this. As regards the market situation, conditions remained practically unchanged from the end of the previous year, for the increased volume of imports was sufficient to neutralize the effects of the decline in home production and its higher cost. However, as compared with the same period for 1918, the market showed a considerable advance. Following are tables which give the average price per case of Shiro-ichiwa and Chester brands, monthly, during the period, as quoted in the Tokyo market, and monthly quotations on crude oil at Ni-idzu and Higashi-yama, which form the basis of prices of kerosene in Japan:

TABLE 4

<i>Chester.</i>			<i>Shiro-ichiwa.</i>		
	1918	1919	<i>Increase</i>		
January	¥6.079	¥15.380	¥9.301	January	¥5.665 ¥8.64 ¥2.975
February	7.180	15.380	8.200	February	5.822 8.64 2.818
March	7.510	15.380	7.870	March	6.857 8.64 2.288
April	7.897	15.380	7.483	April	6.578 8.64 2.067
May	7.986	15.290	7.304	May	6.740 8.64 1.900
June	8.255	15.290	7.035	June	6.840 8.64 1.800

<i>Higashi-yama Crude.</i>			<i>Ni-idzu Crude.</i>		
	(per koku)				
	1918	1919	<i>Increase</i>		
January	¥ 9.500	¥26.000	¥16.500	January	¥18.800 ¥28.000 ¥9.200
February	9.500	26.000	16.500	February	18.800 28.000 9.200
March	10.800	25.000	14.200	March	15.000 28.000 8.000
April	11.700	25.000	13.800	April	15.000 28.000 8.000
May	13.200	23.500	10.300	May	15.500 28.000 7.500
June	13.800	23.500	9.700	June	15.500 28.000 7.500

PART III
FORESTRY AND FISHERIE

FORESTRY AND FISHERIES

CHAPTER XIX

FORESTRY

Conditions before the War.

THE outstanding feature of the topography of Japan consists of a complicated network of mountain ridges, the plains occupying a limited area. The slopes of the hills and mountains are thickly clothed with woods. And the total area of forest land amounts to 28,880,000 cho or 74 per cent of the entire area of the country, a fact which may indicate the position of forestry among Japan's basic industries. The forests, in addition to being a source of industrial activity, are of profound importance to the Japanese people because of the part they play in public health and welfare, in scenic beauty, and in the regulation of the country's stream flow. Nevertheless, forestry as compared with other branches of industry, is not given the consideration and respect that it deserves. The use of wood for industrial purposes is not yet fully developed. Tree cutting is carried on at a rate much more rapid than tree planting. And the depletion of the forests and the retardation of the progress of the various forest industries is inevitable. Moreover, this needless felling of trees, bringing about as it does landslides and floods, both large and small, is a very serious cause of disasters; for Japan is a country with an unusually heavy rainfall. For instance, the area flooded in 1912 totaled 271,539 cho. The casualties were 712. And the damage and loss in properties amounted to ¥52,679,000. The following year the flooded area rose to 349,704 cho, and the value of the property damaged or destroyed to ¥63,364,000. The lives lost numbered 559.

Changes during the War.

Any investigation into the effects of the War upon forestry in Japan must encounter two serious difficulties. First, there is a lack of authentic statistical data. Second, as compared with agriculture and mining this industry presents many obstacles to the determination of the scope, the extent, and the nature of the War's

effects upon it. All that one can do is take up two or three of the more striking changes worked by the War, and use such data as lie within one's reach.

It seems almost superfluous to state that the one purpose of forestry is to produce lumber and timber. Lumber, classified according to its uses, falls under many categories. It comprises commodities of everyday need such as fuel, building materials, timbers for engineering work, wood for match sticks, box board, etc. Then there are the woods and timbers used for shipbuilding, for railroad ties, for the manufacture of rolling stock, and telegraph and telephone poles. The use of wood for props and supports is indispensable in mines, and as charcoal it is also indispensable for the smelting of iron. When a chemical industry develops, wood is required in ever increasing quantities for paper pulp, for tannin extract, for dry distillation, and the like.

The author regrets that, in the lack of actual figures, he must content himself with general inferences. But it is estimated that in 1916, the total amount of timber produced amounted to 120,000,000 koku, of which about 34,660,000 koku was intended for building, manufacturing, shipbuilding, mining, and other purposes, and 1,240,000 koku for export. The proportion between the first-named category and firewood, including wood for charcoal, was as 42 to 58 per cent. If we make the former 100, we find that structural timber accounts for 47 per cent; mine timbering, 13; bridge work, 9; wood pulp, 5; railroad ties, 5; box board, 5; casks, kegs, and barrels, 4; telephone and telegraph poles, 2; shipbuilding, 1; rolling stock, 1; geta (wooden footwear), 1; and miscellaneous, 7. As to fuel, 58 per cent is used directly as firewood and 42 per cent in the form of charcoal. The demand for all alike had, of course, been growing before the War; but after its outbreak, their consumption showed a sudden increase, as a result of the great activity of industry, mining, and shipbuilding. Moreover, the exporting of wood grew brisk.

To illustrate from the figures for lumber for building materials, the demand for it increased as follows during the War:

The quantity of lumber required for the construction of one house is about eighty koku.

It will be seen from table 1 that during the five years between

TABLE 1

	<i>Total number of houses built</i>	<i>Increase in total number of houses built</i>	<i>Increase in quantity of timber used koku</i>	<i>Average increase yearly koku</i>
1908	9,250,484	.....	.....	.....
1913	9,720,486	470,002	37,600,160	7,520,032
1916	10,105,410	384,974	30,797,920	10,265,972

1908 and 1913, the consumption of wood averaged 7,520,000 koku a year, while for the war years between 1914 and 1916, the amount ran up to 10,260,000 koku, showing that after the outbreak of war the demand increased by about 3,000,000 koku.

With respect to the need for props, stays, and supports in collieries, which is the largest item among the various timbers required for mining, one might infer from the increased output of coal during the War that the following growth took place in the demand for wood:

TABLE 2

	<i>Output of coal metric tons</i>	<i>Increases in the out- put of coal for every five years metric tons</i>	<i>Increases in the consump- tion of props every five years koku</i>	<i>Average yearly in- creases in the con- sumption of props koku</i>
1908	13,803,969	.....	.....	.....
1913	19,639,755	5,835,786	1,458,946	291,289
1917	26,361,460	6,721,705	1,680,426	356,085

It will be noted that the increase in the demand for mine props was from 291,000 to 356,000 koku a year; and, for the five years between 1913 and 1917, inclusive, showed a growth of 64,000 koku over that of the five years before. Seeing that there was further need of timber for other mines, and that a great deal of lumber was used in building houses, offices, etc., the reader can imagine how large was the total quantity used. The production of wood pulp, which reached 76,081 tons in 1913, is another arresting item; for the difficulty of importing paper, and the consequent activity of the demand for paper of home manufacture, was instrumental in 1917 in raising the output to 169,039 tons. In other words, paper pulp showed a growth of 202 per cent. The wood required amounted to

214 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

1,013,526 koku in 1913; and the figure for 1917 was 2,319,267 koku.

The average amount of charcoal consumed in Japan annually is believed to be about ten kwan per capita; and to produce ten kwan one koku of wood is required. Estimating the population of Japan at 55,000,000 it will be seen that in charcoal alone we consume 55,000,000 koku a year. As there is reason to believe that the demand for firewood is about equal to that of charcoal, these two items, when taken together, amount to 110,000,000 koku a year.

Charcoal and firewood are indispensable in the Japanese household, and about 70 per cent of the total is so consumed. Despite the fact that, in recent years, coal, coke, gas, and electricity have come largely into use, the demand for charcoal and firewood has increased as a result of the growth of population and the rise in the standard of living. Moreover, the type of construction of Japanese dwellings, the customs of the people, and considerations of economy, induce them to continue to use tremendous quantities of wood and charcoal for cooking and heating. Hence there is every assurance that the demand for charcoal will continue to grow. Apart from its uses in the household, it is required in agriculture and the manufacturing industries; and the amounts so used are gradually rising. After the outbreak of the War, its use in manufacturing grew enormously. Details for 1917 and 1918 will be found in table 3.

TABLE 3

		<i>Quantities</i>	
<i>Used in</i>		<i>1917</i>	<i>1918</i>
Manufacturing industries:	Mills and factories	50,674,260 kwan	79,573,274 kwan
	Sericulture: for heating rooms in which silk cocoons are being produced	33,440,000	35,542,710
Agricultural industries	Sericulture: for drying cocoons	7,650,000	8,198,429
	Sericulture: for reeling cocoons	6,060,000	5,903,030
	In drying tea	4,210,000	4,802,500

No mills and factories are included which required less than 10,000 kwan a year.

The charcoal consumed by mills and factories in 1918 amounted to a figure which exceeded that of the preceding year by 28,863,014 kwan, or about 57 per cent, due to the impetus given by the War to the production of pig iron. In like manner, the demands of sericulture experienced a striking increase. Naturally, the tremendous increase in the demand for charcoal occasioned an increase in prices. Taking the 1917 prices in Tokyo as the basis of calculation, it will be found that charcoal, while showing an increase of 13 per cent in 1913, dropped about 8 per cent from 1914 to 1916; but it showed signs of improvement by the autumn of 1916. The market grew firmer by the beginning of 1917, and it rose by about 50 per cent in the summer. At the close of 1917, prices were higher than those of 1912 by more than 200 per cent. In 1918, they had at first a fall of about 30 per cent, but they suddenly began to gather strength in August. In September they reached a point where they were 203 per cent higher than in 1912.

Demands for lumber having shown an immense increase, the felling of trees increased proportionately, and in 1917 the stumpage cut reached 186,000,000 koku. Table 4 gives the figures for production between 1912 and 1917, in koku:

TABLE 4

	1912	1913	1914	1915	1916	1917
Lumber	26,852,634	26,415,813	22,983,225	29,246,889	35,770,977	43,422,905
Fuel	124,064,094	139,767,432	124,429,816	107,021,579	117,785,696	143,145,037
Total	150,916,728	166,183,245	147,413,041	136,268,468	153,556,673	186,567,942

As for reforestation, it must be admitted that the area reforested was very much less than the area cut. During the War lumbering in its most reckless phase became the regular thing, while the high cost of labor and commodities resulted in considerably retarding the work of tree planting; hence the great disparity between cutting and planting.

While the natural growth of the forests relieved the situation in some measure, restoration by planting was lagging. This state of affairs gave the farsighted much cause for alarm. Under the circumstances, it is not surprising that the price of lumber should have been most sharply affected by the War. When it broke out, rice was constantly falling in price. In consequence, the price of everything else was falling with it; and the lumber market could not

TABLE 5
Lumbering and Reforesting:

I.				
<i>National Forests.</i>				
	<i>Area cut</i>	<i>Area replanted</i>	<i>Excess of area cut</i>	<i>Percentage of area replanted to area cut</i>
1915	256,860 cho	154,077 cho	102,783 cho	59 per cent
1916	296,637	128,471	171,166	42
1917	345,278	113,334	231,944	32

II.				
<i>Forests Privately Owned.</i>				
1915	165,654 cho	77,859 cho	87,794 cho	47 per cent
1916	194,523	62,340	132,183	32
1917	242,987	56,930	186,057	23

remain unaffected by the general trend. At that time prices ruling for lumber were somewhat lower than they had been for the past ten years. But by about September, 1915, the stimulus of the War began to be felt; for the scarcity of cargo space had operated to drive prices up. By July, 1917, all market dullness had been left completely behind, and prices were 37 per cent higher than in July, 1914. This was due to a complication of causes, the rise in the price of commodities which, compared with prices before the War, amounted to a rise of 65 per cent; the lack of bottoms; the decline in the carrying capacity of railways; the strength of the demand; and the decrease in deliveries of lumber from the mills. Besides, the cost of transportation had risen above the pre-war level by about 1,000 per cent. In 1918, the demand was even stronger, prices in July, 1917, being 84 per cent higher than those for July, 1914. The figures in table 6, obtained by taking prices in July, 1914, as 100, will give some idea of the price of lumber on the Tokyo market during the War.

TABLE 6					
	<i>Index number</i>	<i>Price¹</i>		<i>Index number</i>	<i>Price</i>
July, 1914	100	8.5	July, 1917	137	6
July, 1915	96	9.7	July, 1918	184	4.2
July, 1916	104	9			

¹ The figures given are for the number of cryptomeria boards purchasable for one yen.

Conditions after the War.

On the receipt of the news of the armistice, demand fell off at once, and dealers looked forward to very low prices in the future. Although there was also a gradual drop in both ocean and railroad freight rates, bankers had grown extremely nervous, and exercised every measure of caution in granting loans. Such being the case, timber prices fell repeatedly.

It was not long, however, before affairs reached a turning point. In May, 1919, when the lumber season was close at hand, conflagrations occurred in Yokohama and elsewhere, while the trade became optimistic over the prospect of perpetual peace. These conflagrations created a heavy demand for lumber, at a time when the available market supply was very short; for an urgent need of lumber had grown up at points nearer the forests and mills. Just at this time, too, municipal housing had come much to the fore in the large cities, and it would create another demand for lumber. Finally, fewer freight cars were available for moving lumber. Before the end of May prices had reached a mark 128 per cent higher than in May, 1914, and the market seemed to be on the way to permanent recovery.

CHAPTER XX

THE FISHERIES

Conditions before the War.

THE land of Japan is indented by numerous gulfs, bays, and inlets. The coastline is therefore extensive and may, roughly, be put at 15,000 miles. The shores of Japan are constantly washed by both warm and cold ocean currents, and as a result her fisheries are unsurpassed. From time immemorial there have been maritime industries everywhere on the coasts of Japan. Moreover, the Okhotsk Sea, one of the world's three largest ocean fishing grounds, lies to the north and provides her with deep-sea fishing; and many of Japan's seafaring sons, not content to remain in the nearer seas, have in late years made their way to the waters of Australia, the Philippines, Hawaii, and continental America. Thus in 1913 Japan derived from her fisheries, both coastwise and deep sea, almost ¥110,000,000. And in her manufactures of marine products she is as successful as in her fisheries.

Before the War Japan's production of sea foods was increasing in value annually. It was ¥65,334,000 in 1908, and in 1913 ¥95,065,000, a gain of 45 per cent in six years. In 1913, fish constituted the leading item, being valued at ¥73,411,000, or 77 per cent of the total. Aquatic animals, occupying the second place, yielded ¥12,660,000 or 13 per cent. Then came seaweed and shellfish.

In like manner, manufactures of marine products were steadily growing before the War. In 1908 their total value was estimated at ¥35,491,000; and that of 1913, at ¥51,726,000, an increase of 45 per cent. Among the commodities produced, foodstuffs took the chief place; in 1913 their value was ¥36,694,000, or 70 per cent of the total. The next largest item was fertilizer, which was represented by ¥13,802,000, or 26 per cent. Then came fish oil.

Exports of marine products had been quite heavy before the War. In 1897 their total was ¥4,485,000; in 1907 the figure rose to ¥8,978,000; in 1913, ¥13,709,000 was reached. As the table comprises twenty-one foodstuffs only, it is believed that if the amounts of such other items as tinned goods, fish oil, whale oil, iodine and iodide of potassium, pearl buttons, coral, etc., were included the re-

sult would be a very much larger figure. In 1913, the total for all these articles stood at ¥24,365,000.

The following figures, taken from the Annual Reports of the Foreign Trade of Japan, show the increases in the values of exports of salt, laminaria, and nineteen exports before the War: 1877, ¥1,531,500; 1887, ¥3,131,992; 1897, ¥4,485,381; 1907, ¥8,978,848; 1908, ¥7,257,842; 1909, ¥8,470,815; 1910, ¥9,107,390; 1911, ¥9,112,010; 1912, ¥11,690,047; and 1913, ¥13,709,123.

Changes during the War.

The most remarkable effect of the War consisted in the changes wrought in the export trade in fishery products and manufactures. Owing to the fact that the foreign demand came to be enormous there was an especially striking growth in exports of tinned goods, isinglass, pearl buttons, iodine, and iodide of potassium. It must be admitted, however, that for the trade as a whole the showing made by exports in 1914 and 1915 was rather poor as compared with 1913, which was because of the civil wars in China, and the interruption of the means of travel and communication, for which the Great War was directly responsible. It was only in 1916, when commercial intercourse with Britain and America had become less difficult, that the trade came to show a decided increase in volume.

The yearly value of the trade, and the index numbers of increases thereof during the war years, are given in table 1.

TABLE 1
Exports of Manufactures of Marine Products, 1912-1918.

	<i>Value</i>	<i>Index number</i>
1912	¥19,307,406	1,000
1913	24,365,503	1,262
1914	22,493,397	1,165
1915	22,315,974	1,155
1916	30,483,290	1,580
1917	33,411,190	1,735
1918	42,814,449	2,217

It will be seen that the aggregate value of exports in 1918 was more than 120 per cent greater than that of 1912, showing how

220 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

much the fishing industries were helped by the War. In the following paragraphs the course of eight representative marine products during the War will be considered in detail.

Salt.

It would be difficult to say that salt exports were directly influenced by the War, as the trade was stimulated by the activity of deep-sea fishing in the Okhotsk Sea and the waters off the Kamchatka Peninsula, where salt was in great demand. This, however, was a result of the volume of the export business. The details follow: In 1912 the figures, respectively, for production and value were 10,301,641 kin and ¥237,419. In 1913 they were 13,058,615 and ¥185,177; in 1914, 12,134,258 and ¥266,176; in 1915, 24,626,595 and ¥443,252; in 1916, 27,767,555 and ¥536,032; in 1917, 21,194,775 and ¥482,226; and in 1918, 17,311,181 and ¥611,799.

Food Products (Laminaria, Salted Sea Trout, and Twenty Other Commodities).

Since these products went to China and Singapore, it would be hard to say that for them the influence of the War counted greatly save in so much as the value of the trade increased yearly, in consequence of rising prices. In 1912 the figures for production and value were 111,822,476 kin and ¥9,835,496. In 1913 they were 118,208,136 and ¥11,750,207; in 1914, 116,445,459 and ¥11,293,326; in 1915, 111,277,195 and ¥9,785,039; 1916, 113,950,943 and ¥11,950,627; in 1917, 112,030,017 and ¥13,706,969; and in 1918, 114,635,644 and ¥16,487,550.

Tinned Goods.

Although the trade in tinned goods was gradually developing before the War, it quickly became very prosperous after its outbreak. Business with England, the United States, Russia, and other warring nations rose to tremendous proportions; and very large orders also came from the Straits Settlements and neighboring regions. Based on the figures for 1913, 1914 showed a growth of only 1 per cent, 1915 an increase of over 16 per cent, 1916 of 65 per cent, and 1917 of more than 120 per cent. In 1918, despite the fact

that England laid a partial ban on imports of tinned goods, the business continued to grow, resulting in an increase for the year of over 180 per cent. In 1912, the figures for production and value were 736,983 kin and ¥2,292,808. In 1913 they were 861,984 and ¥2,710,843; in 1914, 939,881 and ¥2,734,743; in 1915, 1,206,445 and ¥3,152,902; in 1916, 1,430,942 and ¥4,445,737; in 1917, 1,584,217 and ¥5,949,467; and in 1918, 1,755,220 and ¥7,601,254.

Isinglass.

The Dutch East Indies had been the largest consumer of Bengal isinglass, with China and Germany following in order. But conditions underwent a radical change after the outbreak of war, for as consumers the Germans dropped out, while England, France, and Russia suddenly came to the fore. In 1915, England's purchases rose by 248 per cent over the preceding year, and she came to be the largest buyer; trade with her took 18.5 per cent of the total. France, with an increase of 68 per cent, rose from the sixth place to the fourth. In 1917 there was depression for a time, because of the closing of the Russian market. But brisk demands from China and America more than made this good in 1918. In 1912, the figures for production and value were 2,048,941 kin and ¥1,617,132. In 1913 they were 2,277,702 and ¥1,773,739; in 1914, 2,324,526 and ¥1,856,695; in 1915, 2,202,613 and ¥1,706,964; in 1916, 2,785,710 and ¥2,446,863; in 1917, 2,106,942 and ¥1,954,983; and in 1918, 2,639,456 and ¥2,969,311.

Fish Oil and Whale Oil.

Although before the War these products were mainly shipped to Germany and Belgium, with the War the market shifted to America, England, and Australia. There was a decline in the quantity of exports; but this was amply made up by a rise in values; and, because of this, 1918 showed an increase of more than 40 per cent over 1913. The increase over 1912 was 125 per cent. In 1912 the figures for production and value were 25,250,945 kin and ¥2,175,758. In 1913 they were 40,841,474 and ¥3,484,290; in 1914, 28,503,920 and ¥2,656,965; in 1915, 25,823,563 and ¥2,236,177; in 1916, 30,661,838 and ¥3,384,519; in 1917, 24,158,277 and ¥3,635,502; and in 1918, 23,724,596 and ¥4,986,363.

Iodine and Iodide of Potassium.

Due to the outbreak of war, which closed the world's market to German exports, the demand for Japanese manufactures achieved a sudden growth; for Russia turned to Japan with her immense orders, while in England, the United States, British India, and Australia there was a more urgent demand than ever. Consequently, in spite of the fact that sales to Russia declined as a result of the political changes in 1917, and in spite of the fact that sales in England were unfavorable, the total volume of the trade seems not to have suffered. The business of 1918 exceeded that of 1913 by 230 per cent in quantity and 240 per cent in value. In 1912 the figures for production and value were 82,062 kin and ¥407,269. In 1913 they were 74,435 and ¥454,431; in 1914, 105,645 and ¥710,074; in 1915, 133,617 and ¥1,016,794; in 1916, 169,517 and ¥1,206,632; in 1917, 212,773 and ¥1,371,168; and in 1918, 246,339 and ¥1,563,497.

Pearl Buttons.

The disappearance of the manufactures of Germany and Austria, which had gained a hold on the world's market before the War, caused China, British India and Dutch Indies, England, France, America, Canada, and Australia to turn to Japan for supplies of pearl buttons. Shipments to the United States increased especially. In 1912 the figures for production and value were 5,005,882 gross and ¥1,985,031. In 1913 they were 6,519,098 and ¥2,960,496; in 1914, 4,877,765 and ¥818,095; in 1915, 8,545,392 and ¥1,733,942; in 1916, 12,959,923 and ¥2,447,569; in 1917, 14,530,764 and ¥2,528,585; and in 1918, 11,366,515 and ¥2,881,895.

Coral.

Formerly coral had for the most part been exported to Italy, but the trade gradually fell off after the outbreak of war, due to an extraordinary rise in ocean freight rates. While growing demands in the Straits Settlements and the East Indies swelled such exports in 1916 and 1917, a sharp decline took place in 1918, as is shown below: In 1912 the figures for production and value were, respectively, 36,781 kin and ¥545,875. In 1913 they were 53,815 and ¥906,497; in 1914, 32,516 and ¥365,021; in 1915, 26,199 and

¥336,602; in 1916, 38,200 and ¥383,622; in 1917, 43,067 and ¥437,042; and in 1918, 12,314 and ¥216,848.

On the whole the War was a great stimulus to the export trade in marine products. This was especially true in 1916 and 1917, when the fishing industries, particularly manufactures of marine products, reached unprecedented prosperity. In the table below increases during the War are given by classes of commodities in ¥1,000.

TABLE 2

	<i>Fish</i>	<i>Shellfish</i>	<i>Aquatic animals</i>	<i>Seaweed</i>	<i>Total</i>
1913	¥73,412	¥3,674	¥12,660	¥ 5,320	¥ 95,066
1914	71,980	3,807	11,502	7,765	95,054
1915	73,724	4,090	9,877	7,145	94,836
1916	74,500	3,536	13,864	10,343	102,242
1917	92,721	4,942	15,142	10,428	123,233

The following table shows the favorable influence which the prosperity of both the export and home trade exercised on manufactures of marine products. The increases in value in the case of fish oil and *gliopeltis furcata* are especially striking. The former increased by 80 per cent during the period above, and the latter by 260 per cent. The figures in table 3 are in ¥1,000.

TABLE 3

	<i>Food products</i>	<i>Fertilizers</i>	<i>Fish oil</i>	<i>Gliopeltis furcata</i>	<i>Total</i>
1913	¥36,694	¥13,302	¥ 998	¥232	¥51,727
1914	36,839	14,047	1,002	237	52,175
1915	42,480	11,160	829	339	54,809
1916	49,403	13,262	1,382	353	63,999
1917	65,227	16,689	1,791	836	84,544

In conclusion, the outstanding effect of the War was that it ended trawler fishing. In 1913 boats of this type in Japanese waters numbered 138. But there were eight less in the following year, as a result of the bitter competition in the business, and the consequent impossibility of maintaining it on a paying basis. There were other causes. Along with the activity of the carrying trade, a scarcity of ship bottoms was keenly felt, and anything that resembled a ship went up in value tremendously. Under the circumstances, it was

224 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

quite natural that some trawler owners should convert their vessels into cargo craft, while others sold their vessels to France and Italy, which were urgently in need of mine sweepers in the Mediterranean Sea. Thus the number of trawlers fell off rapidly. In 1915 there were 124; in 1918, 80; in 1917, only 8; and in 1918, 5. Alarmed by this, in January, 1917, the Government revised the fisheries regulations. The revisions provided that the number of licenses granted to trawler owners should be fixed at 70, that no license should be granted to any trawler of less than 200 tons, instead of 180, as before, and that licenses should be revoked in the case of holders whose vessels had been employed for any but their proper use for more than one year, and who had failed to notify the department within six months of such use.

Tendencies after the War.

As might have been expected, those fishing industries whose war-time prosperity owed its origin to the activity of the foreign and the home trade, suffered a setback and became stagnant on the receipt of the news of the armistice. Thus, as compared with exports of ¥17,099,000 in 1918, salt and twenty-one other foodstuffs totaled only ¥16,191,000 in 1919. It was the same with isinglass, tinned goods, fish oil, and whale oil. As regards fish, shellfish, aquatic animals, seaweed, and other aquatic products, accurate figures are not obtainable. As for the future Japan has no need to be pessimistic, for the world demand for fish and marine products is growing steadily greater. Trawler fishing, which the War so seriously injured, is on the point of recovery. And the author is inclined to believe that the future of the industry is promising.

PART IV
ECONOMIC MEASURES AND SOCIAL EFFECTS

CHAPTER XXI

ECONOMIC MEASURES

Economic Conditions during the War.

THE effect of the Great War was without parallel in the history of Japanese commerce and industry; and nothing so eloquently illustrates this as the remarkable growth of foreign trade during the war years. While imports and exports aggregated ¥1,359,000,000 in 1913, and imports exceeded exports by ¥98,000,000, in 1918 foreign trade had risen to ¥3,630,000,000 and there was an excess of ¥294,000,000 of exports over imports. Trade had almost tripled, and the whole export balance for the war period was ¥1,460,000,000. Japan not only emerged from the rank of importing nations, and secured a place among the exporting, and therefore creditor, nations, but did such a business in shipping, in the chartering of ships, in marine insurance, and in the exporting of war materials that her accounts receivable exceeded her accounts payable by ¥1,320,000,000. Consequently, her gold reserve grew from ¥358,000,000, in July, 1914, to ¥1,588,000,000 in December, 1918, and to ¥2,000,000,000, in December, 1919. The gain for the war period was ¥1,230,000,000. Of this sum, about ¥1,135,000,000 was retained in foreign money centers; and, while formerly England was the only country where Japan kept her moneys on deposit, America now became the custodian of ¥500,000,000. In consequence, Japan's position was greatly improved in the world's money market. While her loans advanced to other countries had scarcely risen above ¥120,000,000, which had been lent to China, Japan had been indebted to Europe and America for as much as ¥1,524,000,000 in bonds, and ¥454,000,000 in other forms of loans. But the War swiftly changed all that, and Japan could supply some ¥1,270,000,000 for the redemption of her various debts and in investments abroad. The result was that Japanese government loans were reduced by ¥178,000,000, and municipal and private loans by ¥118,000,000. Especially striking was the growth of the Chinese loans which, if only ¥120,000,000 before the War, reached ¥220,000,000, thereby placing Japan second to England instead of fifth among the creditor nations of China.

As regards home trade, there was similar prosperity. At the beginning, the abrupt change of condition, resulting from the outbreak of war, resulted in an utter collapse of the stock exchange, and of the rice and raw silk market. It was a collapse that overwhelmed the money market, and blighted almost all forms of commerce and industry. These were, however, only temporary phenomena. When the export trade became active and money abundant, commerce and the manufacture of commodities for export awakened to new life. Prosperity became general, and while there were occasional reactions, they never resulted in checking the influx of specie, the inflation of currency, and appreciation in the price of necessities. Consequently, the promotion of business enterprises was always so active that, during the four and a half years of the War, it resulted in the investment of about ¥5,000,000,000, of which ¥2,000,000,000 was actually paid up. In like manner, banking attained a phenomenal development, the deposits growing from ¥2,060,000,000 to ¥6,290,000,000, and postal savings from ¥200,000,000 to ¥550,000,000. Business prosperity was soon faced with a great shortage of man power, which seriously affected business activities in city and country alike, and which doubled wages and in some cases trebled them. In the city of Tokyo the average index number of wages paid went up from 142 to 224; unemployment disappeared. Because of the remarkable rise in the value of raw silk and farm products the farmers had greater buying power than ever before, thus straining the capacity for production of the manufacturers beyond their ability to execute all the orders received. The extraordinary prosperity of the farmer awakened his interest in speculating, with the result that the village began to flourish much more than the city. All branches of transportation became active. This was especially true of the shipping trade, which, quickened by the world-wide shortage of bottoms and the enormous demand for ships to transport war materials, attained an unprecedented prosperity; with the consequence that freights and charterage and the prices of ships rose with extraordinary bounds. Railway business remained depressed till the end of 1915, when traffic took an upward turn. Returns from the state-owned lines show that their earnings, somewhat over ¥111,000,000 in 1913, grew to ¥231,000,000 in 1918. The increase of earnings was in all

about 100 per cent, and that of the volume of traffic about 90 per cent.

The Outbreak of War and Industrial Relief.

The raw silk market of Yokohama was completely demoralized by the outbreak of the War. Prices broke immediately by from two to three yen, dropping to a figure as low as ¥94.40 on July 29. In August there was another collapse of from seven to eight yen, and silk for future delivery was quoted at from ¥75 to ¥78. It was necessary to close the Raw Silk Exchange for some days, which rendered the condition of the market more chaotic. This was a staggering blow to reelers of raw silk and growers of cocoons, who at once began to curtail production, and the question of relief for the silk industry became a burning one. But the adverse effects of the War were by no means limited to the silk market; on the contrary they involved all other branches of industry. Measures of relief taken by the authorities were varied and numerous; and, as taken from bills introduced by the Government in December, 1914, they may be summed up very briefly.

In the matter of assistance for manufacturers and producers of leading export commodities the Government advanced ¥5,000,000 to the Mortgage Bank with this object. It is estimated that ¥1,500,000 went to the industrial associations. The latter advanced ¥3,830,000 to the Central Guild. To individual applicants the Mortgage Bank advanced, or was prepared to advance, ¥534,300; and ¥965,700 had been applied for and already allotted.

The Colonial Bank of Hokkaido and the banks of agriculture and industry advanced, on behalf of the Mortgage Bank, loans estimated at ¥3,500,000. The industrial associations applied for loans to the extent of ¥1,500,425. Other sums advanced or assigned for advance, amounted to ¥1,231,225. And, in addition, applications for loans under investigation totaled ¥269,200.

When necessary, loans advanced directly by the Mortgage Bank were transferred to some other bank which acted as an agent for it, or *vice versa*.

Likewise working through the banks, the Government made other loans to manufacturers and producers of the most important exports, as also to manufacturers of substitutes for imports, it being explicitly provided that the said manufacturers and producers

230 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

should be residents of cities and actually engaged in business. To the Industrial Bank it advanced ¥3,000,000. Loans were applied for to the amount of ¥4,137,050. Such applications accepted or marked for acceptance, amounted to ¥1,943,050. And loans applied for and taken into consideration totaled ¥2,194,000.

Finally, the following measures were taken by certain of the official banks at the instance of the Government:

By the Bank of Japan.

The maximums for special loans on raw silk were increased after the War broke out, and at the same time terms and conditions were made more favorable, with the result that the total of loans reached a very large figure. It was also decided that, at the end of the year, further loans should be advanced for the benefit of raw silk dealers.

More warehouses were opened in many localities, and made eligible for the storage of raw silks offered as security for loans. This was a great accommodation for those who wished to secure loans on such raw silk and habutai.

Arrangements were made in Hakodate for granting loans on the security of marine and agricultural products.

The Bank of Japan supplied funds, at a very low rate of interest, to the Bank of Taiwan, which, for the encouragement of export trade and the influx of gold, was to employ such funds for the purchase of export bills to South China, Java, Sumatra, the Straits Settlements, and other places.

The Bank of Japan was given the custody of national securities amounting to ¥5,000,000 which were held by the Deposit Section of the Department of Finance, in order that through the Bank of Japan the Government might have ample capital for the Mortgage Bank, on whose shoulders the task of relief partly fell.

The Bank of Japan granted the Yokohama Specie Bank all necessary assistance in obtaining funds that might be needed for the maintenance of foreign trade, especially for the import of raw cotton and the conversion of short-term foreign loans.

By the Yokohama Specie Bank.

On August 15, despite the great risk, the Specie Bank resumed the buying of bills on England. In due course, the business was

restored to its normal volume. The bills which the bank had drawn on England from the outbreak of the War totaled about ¥16,000,000, which sum fell short of that for the corresponding period of the previous year by about ¥24,000,000. The decrease was, however, due chiefly to the drop in exports, and to the fact that an ever increasing number of bills were being settled in America on account of the inconvenience of exchange on Europe.

The Specie Bank, in an endeavor to encourage the export of raw silk, did its utmost to facilitate American bills, in consequence of which the half year set a record of about ¥35,000,000. As compared with the corresponding period of the previous year, the increase was some ¥11,000,000.

Great difficulty had been experienced in drawing bills on China and certain other countries; but this was much alleviated by the introduction of remedial measures. After a while, it became no more difficult to do so than it had been in times of peace.

The Specie Bank distinguished itself by being the first to discard war rates. In this way it conscientiously looked after the needs of the shipping trade.

With respect to imports of American raw cotton, this bank was in possession of adequate capital and responded to every call for loans.

Special attention was paid by the Specie Bank to the needs of the raw silk trade. Loans advanced for that trade amounted to considerably over ¥10,000,000 by November 30.

This bank was also able to render every assistance to firms having loans abroad that required conversion. With the exception of two or three cases, its assistance made possible the successful carrying out of conversion operations.

War-time Insurance Indemnification.

Alarmed by the breach between Serbia and Austria, some of the foreign banks of Yokohama gave notice to shippers that they would be forced to impose war rates in accepting drafts on export cargoes. It was decided to increase the rate for Austrian steamers by one per cent, for French, Italian, German, and Russian steamers by one-half per cent, and for British ships by three-eighths of one per cent. The new rates, it was understood, were to be applied only to those

vessels which had already set sail for Europe, but had not yet reached the Mediterranean Sea. Toward the end of July, when the War seemed likely to extend to other nations, the Hongkong-Shanghai Banking Corporation, the Chartered Bank of Australia, India, and China, the Yokohama Specie Bank, the International Banking Corporation, and the Russo-Asiatic Bank addressed to their shipper customers a joint note, stating that they were forced to adopt war-time rates. On August 2, the rate on cargoes of Japanese liners bound for England rose ¥2 at a leap; and five days later rose still higher. Moreover, the confusion in all matters of exchange prevented the shipment of goods and caused the cancellation of many contracts for cargo space. The inevitable consequence was the swift decline of the carrying trade, so that the holds of Nippon Yosen Kaisha liners carried only one-tenth of what they had before the War. The *Kumano Maru*, scheduled to leave on August 15, canceled her sailing at the request of the Government, and steamship communications with Europe came to an end for some time. Word was then received to the effect that on August 5 the British Government had put into effect a very remarkable measure for the benefit of British shipping. It was reported that His Majesty's Government proposed to have Lloyd's place insurance, at from one to five per cent, on all steam vessels under its register, provided the said vessels were registered in the United Kingdom, and flew the British flag; that the Government would hold itself liable for 80 per cent of all losses on vessels so insured; and that cargoes carried by such ships would be insured by the Government at rates of from one to five per cent. This official announcement exerted so great an influence in diverting shipping to British bottoms that Japan's carrying trade felt it seriously. The result was an urgent demand that the Government take over the marine insurance business. Later on, following the declaration of war against Germany, the Japanese navy was assigned the patrol of the seas east of Suez, and the freight situation was greatly improved. On September 1, rates to England dropped to ¥2 while the lines to China and Hongkong required no insurance. However, the rates to America, Europe, and many places in Asia remaining at from ¥1 to ¥3, trade was much trammelled, and the press clamored for the Government to underwrite both ships and cargo. With this in view, the Silk Goods

Dealers' Association of Yokohama, the Chamber of Commerce of Tokyo, and the Association of Sericulturists of Japan made representations to the authorities. At a cabinet meeting of August 28 the Government decided to introduce a bill authorizing the proposed measures of relief. On September 12, after giving the matter thorough consideration, the Diet enacted the law later known as "the Law for the Indemnification of War-time Marine Insurance Losses." With the promulgation of this law, an order (No. 19) of the Department of Agriculture and Commerce was issued, stating that the amount of the official indemnity would be 80 per cent of the total sum of the loss incurred by underwriters, and that the indemnity for risks reinsured would be the sum obtained by subtracting the amount of such reinsurance from the original face of the policy. At the same time the Minister of Agriculture and Commerce made public a table of special insurance rates, for all classes of shipments, a table revised from time to time, but the rates of which were in force till September 20, when the War-time Reinsurance Law came into effect. This law was made applicable not only to Japan proper, but to the Colonies and to Japanese concessions in China.

War Commissions.

The Rice Commission.

The War early and adversely affected the price of rice. When the crop of 1914 was put at 58,000,000 koku—a large harvest—and when the fatal days of September had been safely passed, a great fall in the cereal market began. Spots and futures, both of which had stood at ¥17 early in the month, fell off respectively to ¥13.50 and ¥14.00 in the beginning of October. Alarmed, the Imperial Agricultural Society held a special meeting and passed a resolution which was later laid before the Government. The resolution presented the measures deemed necessary by the Society for both the immediate and the permanent relief of the rice market. At the same time those members of the Diet who represented the agricultural interests of the country, and who belonged to the *Nosei Kenkyu Kai* (the Association for the Study of Matters of Agricultural Administration), agreed without fail to bring the question before the Diet. Toward the end of the year the Government introduced a bill embodying these proposals. But before the bill could be

taken up for debate the Government was defeated on the army-increase question, and the authorities being left to do the next best thing, the Law for the Adjustment of the Price of Rice was called into being. Notwithstanding, the market failed to show any such upward tendency as had been expected, and much was made of this in the press. The Minister of Agriculture and Commerce, then decided to go into the matter from the bottom, and proposed to organize a commission in which public opinion could find a voice. The law which sanctioned the project, Imperial Order No. 179, was made public on October 7, 1915; and, roughly, the Commission, consisting of a chairman, a vice-chairman, and a membership of not more than seventy, was formally placed under the authority of the Minister of Agriculture and Commerce, and itself given authority to make investigations, and report, at his suggestion, on matters connected with the regulation of the price of rice.

On October 21 the minister laid before the Rice Commission a number of bills, together with four suggestions which he thought would be of great assistance in attaining the desired end. They were, the establishment of rice granaries, the establishment of warehouses authorized to issue rice certificates, or *beiken*, the granting of loans at low interest, and the compensation of rice dealers who had incurred losses. The Commission, however, adopted measures to meet only the immediate needs of the day. Rejecting the above suggestions, it was instrumental in the passing of a bill designed—(1) to provide and advance a loan at low interest; (2) to revise the customs tariffs then in force; (3) to aid in the export of rice; (4) to aid in the establishment of agricultural warehouses; (5) to regulate and lay down rules for the Rice Exchange in the matter of spot deliveries; (6) to set forward the final dates for the payment of farm taxes; and (7) to make researches into the various products, food and other, that might be derived from rice.

In addition to the foregoing projects, the Commission passed a unanimous vote recommending a bill for the study of scientific methods for preserving cereals, and referred this bill to the Minister of Agriculture and Commerce. He acted upon it; and, in the fiscal year, 1916, he inserted an item of ¥32,000 for the construction of warehouses, in the supplementary budget for the preceding fiscal year. However, before the resolutions of the Commission were car-

ried out, the rice market underwent a change, with the result that it was needless to put them into effect. Rice prices began to rise in August, 1916, and on September 30, the measure was repealed.

The Economic Commission.

On April 25, 1916, the Government promulgated laws for the organization of an Economic Commission (Imperial Order No. 116). The authorities concerned stated that there was every reason to believe that the effects of the hostilities, which had already been serious enough for the business life of Japan, would probably become more so with the continuation of the struggle; that when peace was restored, the belligerents, it was reasonable to assume, would exert themselves to the utmost to recover from the disastrous consequences of the terrible ordeals they had undergone; and that, in view of these facts, the time had now come for Japan to determine what measures she should adopt after the advent of peace, and thereby place her present economic position on a solid foundation. The objects of the Economic Commission were to secure data upon the effects of the War on commerce and industry, and to make a study of the same. This was to be done in the hope that a method might be devised by which to avoid the evil consequences of Europe's fatal struggle, to take advantage of any desirable consequences it might have for Japan, and to deal with the many baffling financial and economic problems which were then arising. In short, it was to work out a *post-bellum* economic policy. As expressed in the law creating it, the Economic Commission should, under the direct authority of the Prime Minister (Article 1) make investigations and consider such economic matters as were deemed important in connection with the War; give its counsel, (2) to any Minister connected therewith, in response to his request; be at liberty, (3) to make representations to any Ministers connected therewith; have an organization consisting, (4) of one chairman, two vice-chairmen, and not more than sixty-five private members; and be free to form special committees for the consideration of special matters. The Prime Minister was, (5) to act as chairman, the Minister of Finance and the Minister of Agriculture and Commerce as vice-chairmen; and both the members of the Commission and of committees appointed by it should be chosen by the cabinet, and be officials—of

the rank of *kotokwan*—of the Cabinet and Departments of the Government, or men of special education or experience. The Chairman, (6) should have power to superintend the business of the Commission, and, in case the chairman should be prevented from discharging his duties, the vice-chairman should act in his stead. The Commission should (7) be organized and consist of the following five sections (each section being in the hands of a special committee); Foreign Trade, Taxation, Communications and Transport, Finance, and Industry; the allotment of committeemen to be carried out under the instruction of the chairman. Each section of the Commission should (8) have its sectional meeting, and if need arose, all the sections should meet in intersectional conference.

There were also three other articles, but they are here omitted. It will be seen that the work of the Commission was extensive and important. The commissioners first conferred on April 29. A number of general meetings were held at the official residence of the Prime Minister, and sectional and intersectional meetings at the various Departments of the Government, the Commission being finally abolished on November 30, 1917.

The Iron and Steel Commission.

Seeing that the greatest lesson of the War for Japan was the urgent necessity of encouraging the iron industry, which is the basis of all forms of industrial activity, the Government decided to create an Iron and Steel Commission that would cover the field in question. The Commission was given legal life (by Imperial Order No. 124) on May 6, 1916. It was to have a membership of not more than twenty, the Minister of Agriculture and Commerce being its *ex-officio* chairman. It met first on May 8 and discussed (1) the raw materials for the production of iron and steel; (2) the various branches of such production; (3) the harmonious coöperation of the Government with the private manufacturer in the industry; and (4) matters promising to promote the development of the industry. The commissioners held several meetings and laid before the Minister a memorial and a report based upon the above four subjects of study and discussion.

Although Japan is not a great producer of pig iron suitable for the manufacture of certain sorts of steel, her ordinary steel does not

yield to that of any other country in the matter of quality. With respect to the cost of production of pig iron, she cannot be regarded as too unhappily situated; but it must be admitted that in Japan this is an industry requiring a larger amount of capital than elsewhere. The interest on the investment, the taxes, and various minor expenditures are also greater. Nevertheless, there is every reason to believe that the manufacture of pig iron and steel can be successfully undertaken.

The following suggestions were made for the development of the industry:

When a smelting works has a producing capacity of upward of 35,000 tons of pig iron a year and requires land for further expansion, the Government should use its good offices in the matter, and if need be, expropriate the land required.

In case state-owned lands are required for the site of a smelting works, the Government, wherever possible, should sell the aforesaid land to the interest concerned at a specially reduced price, or grant a long-term lease thereof.

Iron works capable of producing upward of 35,000 tons of pig iron or steel a year should be exempt from the payment of the business tax, the income tax, and various local taxes, for a period of ten years after the date of establishment.

The Government should give due encouragement to the production of pig iron which contains a specially low percentage of phosphorus.

No duty should be imposed on the products of mills established in Korea when brought into Japan proper.

The Government should give what aid it can to iron-producing industries owned by Japanese abroad.

For the development of the iron industry in Japan, the Government mills should set aside a portion of their profits for use in scientific research of possible value to the industry.

Government mills should do what they can to train and educate every possible man who may be of value to the industry.

On December 21, 1916, the above Commission was dissolved.

Other Agencies for Investigation.

In addition to the foregoing commissions, during the War the Government set going other investigating commissions. They owed

their origin to the War; but the nature of their work had a value beyond any mere war-time need. They were: the Special Pharmaceutical Commission, established December, 1914, and the following, established on February 12, 1917: the Special Bureau of Investigation of the Department of Finance; the Special Bureau of Investigation for Industry, of the Department of Agriculture and Commerce; the Special Bureau of Investigation of the Department of Communications; and the Special Bureau of Investigation of the Foreign Office.

The Encouragement of Home Manufactures.

The disappearance of imported goods, because of the War, gave much alarm to the business world. The shortage of drugs and chemicals, which also rose to exorbitant prices, was regarded with the utmost apprehension. In like manner iron and steel, machinery, glass, paper, woolen fabrics, provisions, etc., were constantly rising in price, and the public welfare suffered accordingly. The result was, naturally, a country-wide campaign for the encouragement of home manufactures, and also of the manufacture of all such substitutes as might serve to take the place of imported articles. With this end in view there arose the Society for the Encouragement of Home Manufactures, and it was a movement initiated in government offices and in the Imperial Household.

On October 5, 1914, circulars were sent out over the names of Barons Takei and Shibusawa and Mr. Nakano to some three hundred and fifty business men, all prominent in their own localities, asking them to become supporters of the movement. Toward the middle of the month a meeting for organization was held in the Department of Agriculture and Commerce, rules were adopted, resolutions were passed stating the objects of the Society, and officers were elected. As stated anew, in its articles of incorporation, its aim was to encourage the manufacture of domestic products, to increase their use, and also to extend their sale in foreign markets. And, with a view to this, the Society pledged itself to the following program:

Surveys of home industries; the holding of fairs and exhibitions for the display of domestic products; the giving of public lectures; the answering of inquiries as to home manufactures; the collection and display of samples and catalogues; the publication of a review, etc., etc.

The Society should be known as the *Kokusan Shoreikai*—"The Society for the Encouragement of Home Manufactures"—and its main office should be in Tokyo.

Seeing that the work which the Society proposed to carry on was in part official, the Government decided to make an appropriation of ¥3,000 toward its maintenance in 1914, and ¥5,000 a year from 1915 on. In December, 1914, under its auspices the first public exhibition of home manufactures was held in Tokyo. It was followed by a number of other exhibitions in the provinces; and the publication of its review helped further to carry on its work.

The Regulation of the Price of Rice.

Efforts Made by the Okuma Government To Increase Prices.

As has been stated, the collapse of the rice market, which began in the middle of September, 1914, caused the Imperial Agricultural Society, the *Nosei Kenkyu Kai*, and other organizations of growers to undertake to secure government regulation of rice prices. The bill which the Government introduced in the Diet contained the following recommendations: (1) the Government should be invested with the power to sell or buy rice, whenever it was deemed necessary, and all other measures deemed necessary for the purpose should be legalized by Imperial rescript. But before the bill could be considered the Diet was dissolved; and in consequence, on January 25, 1915, the Cabinet issued its order for the regulation of the price of rice in the form of an Imperial Emergency Law.

This Law, which became effective on the day of promulgation, empowered the Minister of Finance, whenever he might deem it necessary, to buy, sell, or exchange rice, and to enter into any and all such contracts as might be called for.

By virtue of these foregoing provisions, in March the Minister of Finance purchased 187,488 koku at an average price of ¥14.229, for the fiscal year of 1914. Again, in May, he bought another lot of 114,675 koku at an average price of ¥13.303. To meet the cost, which amounted to ¥4,193,430, he drew upon an appropriation of ¥5,000,000, made up of a Treasury and Reserve Fund surplus. The stocks of rice bought were held in warehouses in various localities, in the hope that this would prevent any further fall in prices. Yet the market continued to fall, and reached ¥13 for middlings, in

April and May. This made the government authorities hesitate. They had declared that they would buy up to the limit of one million koku. But in the end they were forced to cover themselves by the establishment of an advisory agency. When, in October, rice took a further drop, to ¥10.90 for spot delivery and to ¥11.35 for futures, a rice commission was set up in the Department of Agriculture and Commerce.

The establishment of the Rice Commission has been treated in detail elsewhere. During its existence the Government did little, itself; but in May, 1916, when the market appeared to be improving, the officials concerned disposed of what rice they had bought. According to a statement which the Terauchi Government, the successor to Marquis Okuma's, gave out in the Diet in June, 1917, the lot of 302,163 koku, for which the nation had expended a sum of ¥4,193,430, decreased by 21,753 koku, through the fact that about 90,000 koku were exchanged for grain of the new crop. Again, before the stock was disposed of, the quantity on hand grew less in handling by 3,841 koku, so that when on May 19, 1917, it was sold, the total quantity was only 276,569 koku. As this brought only ¥3,633,301, the loss which the nation sustained by these transactions was ¥559,984.

Efforts of the Terauchi Government To Increase Prices.

The collapse of rice prices reached its limit in March, 1916, when spot rice was quoted at ¥12.40 and futures at ¥13.03. Following that the market grew stronger; and, in August, it suddenly became active. In the summer of the following year, prices were twice what they had been at their low point, with spot at ¥22 and futures at ¥24. Thus the price of rice again became a subject of unusual discussion, this time the public demanding that it be lowered. The authorities themselves were aware of the necessity of regulation, and, on September 1, they made public the ordinance for the regulation of prices. This law, otherwise known as the Anti-Profitteering Law, was, with the help of the Administration, to put a curb on the hoarding of rice for a rise. Yet what followed was disappointing. Despite the fact that the crop for 1917 was expected to reach 59,000,000 koku, the market, instead of dropping, rose; and later, with the news of a damaging blizzard in the Northeast, it went up

to ¥25 for futures. The Minister of Agriculture and Commerce thought it time to act, and cautioned those brokers who had been suspected of illegal speculation. As this accomplished nothing, he dealt with the matter differently, and prohibited speculation for deliveries for the current and the succeeding month in all the Cereal Exchanges. Having failed again, on April 25 he promulgated the Ordinance for the Control of Imported Rice, the intention being to import rice and sell it on the responsibility of the Government. With this end in view, he appointed the Mitsui Bussan Kaisha, the Suzuki Shoten, of Kobe, the Yuasa Shoten, and the Iwai Shoten as importers, while making public the official prices, terms and conditions of importation, and the instructions to these importers. Moreover, in order to prevent the cornering of the market, an Imperial Order was issued on June 14 to revise the Exchanges Law, to keep brokers from reselling or buying back rice ordered by their clients, without the instructions of the latter. It was further decided to put an end to a particular transaction called the *Koguchi-Otoshi* (petty-sum set-off), the broker's practice of requiring no guarantee money from his clients or a sum less than necessary, and the practice of buying and selling simultaneously.

As mentioned above, the Government tried to increase the supply of rice by importing it, while suppressing market manipulations, in order to prevent the driving of prices to exorbitant heights. But the situation was evidently beyond remedy. Spot rice in particular was on the rise. The price jumped to ¥43 in August, and was the cause of much public distress. Early in the month a small riot occurred in Toyama, and gave the word for similar demonstrations in many other places. Alarmed at the situation, the officials concerned determined to resort to extreme measures. An ordinance legalizing the seizure of rice was promulgated on August 16. And it said in effect that if it should be deemed necessary for the welfare of the people, the Minister of Agriculture and Commerce should be authorized (1) to seize rice stocks on the payment of indemnities, or to cause persons appointed by him to do so in his stead; that he should (2) establish fixed prices for the rice so commandeered, and sell it or cause it to be offered for sale; that any possessor of rice stocks who was dissatisfied with the indemnity offered for his stock might (3) bring suit in any regular court, within

three months after the date of seizure; that any person refusing to dispose of his stock of rice under a seizure order should (4) be liable to imprisonment for not more than six months, or to a fine not exceeding ¥3,000; that anyone (5) selling rice for a price higher than was above permitted should be liable to imprisonment for not more than three months or a fine not exceeding ¥1,000; and that the Minister of Agriculture and Commerce might (6) delegate to local governors the above authority, as by the law provided.

On August 27 the Department of Agriculture and Commerce announced the prices that would be paid for stocks of rice so seized. They were as follows:

For spot middlings in the Osaka and Tokyo markets, from September 5 to September 20, 1918, ¥33 or less per koku, and after September 20 until further notice, not more than ¥30; for rice seized before September 5, prices to be fixed at the time of seizure; prices paid for rice in places other than Tokyo and Osaka and for grades other than middlings in Tokyo and Osaka to be fixed in proportion to the foregoing rates.

Because of the widely held belief that the riots had a far greater importance than the Government had at first attributed to them, the public felt that the Terauchi Cabinet had lost its hold upon the people. In consequence, on September 21 it tendered its resignation and was followed by the Hara Administration. As for the business of seizing rice, it was later announced that the first step called for the appropriation and purchase of some half a million koku in the markets of Tokyo, Osaka, Kobe, and Kyoto, before September 10; and with this end in view, on September 1 buying agents were appointed, and 265,992 koku were purchased.

Measures of Relief for Silk.

The War was a source of great losses to producers of raw silk; and the Sericulture Society of Japan and other allied organizations took the lead in coming to their relief. But their position was also a source of much concern to the Government; and in December, 1914, it came to their aid. It brought in a bill providing, in brief, that in case a bank accepted for discount drafts secured by raw silk,—such drafts maturing not later than the end of May, 1915,—and thus incurred losses, the Government should indemnify the

bank for them; that banks, before they discounted such drafts, should obtain the consent of the Government; that, furthermore, banks should not dispose of raw silks so held without official consent; that, when the Government had indemnified a bank for a loss, the security for it should pass into the hands of the Government; and that the percentage of indemnity permissible, and the method of indemnification should be duly made a matter of law.

Due to the dissolution of the Diet, these efforts came to nothing. The need of help for the silk industry was, however, pressing, and the authorities undertook to accomplish the desired end by the promulgation of an Imperial Emergency Decree which embodied all the foregoing points. The draft of the Decree was laid before the Privy Council, which, however, being of opinion that it would be an infringement of Article 70 of the Imperial Constitution, rejected it, though only after deliberating for several sittings. Moreover, when this plan had proved a failure, the authorities worked out another, which aimed to establish a company that would have the nature of an association. The project was outlined as follows:

It is hereby agreed that for the relief of the silk industry, a company having the character of an association under the law, should be established; that it should have a capital of ¥2,000,000; that all of this said capital should be taken up by private subscription; and that the Government, after laying down detailed rules and regulations for the guidance of the aforesaid company, should advance it a subsidy of ¥5,000,000, for which it should hold itself responsible.

The company was formed. Upon it was laid the task of purchasing raw silk, of regulating market prices, and of advancing loans to silk dealers. It was provided that in case the company incurred a loss, the loss would be made good through the above-mentioned government subsidy. This had a powerful effect upon the silk trade, and nearly all the leading raw silk merchants of Tokyo and Yokohama consented to become shareholders of this company. On March 20, 1915, its organizers met in conference and incorporated it under the name of the *Teikoku Sanshi Kabushiki Kaisha*, or the Imperial Raw Silk Company. The terms and charter conditions which the Minister of Agriculture and Commerce imposed upon it, were:

1. It should receive a government advance of ¥5,000,000.
2. Its transactions should be limited to dealings in silk for immediate delivery, except when purchases were made for export.

3. It should agree to carry out all instructions received from the Minister of Agriculture and Commerce.

4. In all matters of fundamental policy it should draft memoranda covering the same, the said memoranda being both for its own guidance and for submission for the approval of the Minister. In case it should become necessary to amend the terms and conditions of a memorandum, his consent should likewise be obtained.

5. The Company should not declare dividends exceeding 8 per cent per annum.

6. In case it should become necessary to dissolve and wind up the affairs of the Company, it should surrender to the Government, within the time fixed by the Minister of Agriculture and Commerce, the remainder of its properties after the deduction of all its debts, obligations and subscriptions paid in by the shareholders.

7. In case the Company should not, at the time of its dissolution, possess sufficient resources for the repayment of its paid-up capital (after settling all claims against it), the Government should from its own holdings in the Company assist in the meeting of such a deficit.

In March, when the news of the organization of the company was made public, the market grew firmer and Shinshiu No. 1 went up to more than ¥800. But there arose an insurmountable difficulty. All that the officials had aimed at was relief for the crop of 1914, and if the product of 1915 was to be taken in hand the Company would have to secure more capital. Although the director made efforts to have the Government advance ¥5,000,000 and continue its business, financial difficulties caused the authorities to decline the request. On June 15, at a general meeting, the Company voted to dissolve.

At the time of its dissolution, raw silk had dropped to the neighborhood of ¥740; and if the Company had decided to dispose of all its stocks, its losses would have amounted to a huge sum. But the liquidators retained them till the market showed an improvement, and, in consequence, losses were very small.

Restrictions upon the Export of Raw Materials and Finished Goods.

When the supplies of commodities possessed by the warring nations began to run short, they lost no time in imposing restrictions

on the export both of raw materials and of finished goods. Scarcity of raw materials, however, was by no means unknown in Japan, for in many cases Japanese manufacturers were dependent on raw materials produced abroad. When, therefore, such supplies began to fall short, the Minister of Agriculture and Commerce proclaimed an embargo on the export of any commodity which might enter into the making of a finished product. This was on September 18, 1914, and the commodities specified were yellow phosphorus, red phosphorus, caustic soda, soda ash, borate of soda, chlorate of potash, alizarins and anilines, imported glue and artificial indigo, the embargo on the last two articles, however, being subsequently canceled. On March 3, 1915, the promulgation of a new order from the Department of Agriculture and Commerce added to the list raw rubber and rubber goods. Later it was several times revised. And in September, 1917, when extensive changes were made it received these further additions: chloride of potash, niter, nitrate of soda, cyanide of soda, cyanic salts which contained either of these two substances, sheets of iron and copper when tinned (including tin plate), paper pulp, printing papers exclusive of cheap copy paper, superphosphate of lime, and those mixed fertilizers which contain sulphate of ammonia, superphosphate of lime, or nitrate of lime. In due course, too, tin and manufactures of tin, chromium, ferrochrome, chrome steel, tungsten steel, molybdenum steel, tin ore, salt of tin, nickel ore, nickel, ferro-nickel, manganese ore, spiegeleisen, ferro-manganese, cobalt, ferro-cobalt, molybdenum, ferromolybdenum, tungsten, ferro-tungsten, antimony, graphite, mica and its manufactures, wool, woolen yarn, military clothing, woolen blankets, woolen underwear, gloves and socks, were placed on the list.

It will be noted that the above-named commodities were either factory goods, mineral products, raw materials, or goods partially manufactured and awaiting completion. When, however, articles of daily need, especially rice, experienced an extraordinary rise in price in 1918, and when debate in the Diet became acrimonious on the subject of the prices they had risen to, the Government extended its ban to rice, wheat, and wheat flour. This was in March, and cotton yarn was taken up next. In November, 1919, it had risen exorbitantly in price, a result of disorganization, and the public

asked for restrictions on its export. The authorities invited representatives of the trade to a conference, and decided to check the export of cotton yarns of Nos. 1 to 20. Contracts were prohibited which extended to all goods deliverable more than twelve months ahead. This was legalized by an order of the Department of Agriculture and Commerce on November 13, which revised the order of 1914. For the phrase "during the War" there was substituted "for some time"; and cotton yarn was listed under the head of goods of the second class.

Trading with the Enemy, and the Black List.

On April 24, 1917, by Imperial Order No. 41, the Government promulgated the Trading with the Enemy Law, which, in accordance with a resolution of the International Economic Conference held in Paris in June, 1916, put an end to all forms of commerce with enemy states or with enemy subjects. Article 2 of the Law ran as follows:

Unless otherwise provided by the Minister concerned (the Minister of Agriculture and Commerce), no business transaction shall be carried on either with or on behalf of:

Enemy States; subjects or juridical persons of an enemy state; parties, or businesses carried on by parties whose residences are in an enemy state; and such business enterprises as are listed by the Minister of Agriculture and Commerce as being wholly or partly under control or influence of subjects of an enemy state.

Article 4 was to the following effect:

Unless otherwise provided by the Minister concerned, any person who intends to import products of an enemy state or goods which come from an enemy state must first obtain the consent of the said Minister.

The penalties attached to the violation of the above-quoted provisions were imprisonment for not more than one year, or a fine of not more than ¥200. It was further provided that in Chosen, Taiwan, Kwantung Peninsula, and Karafuto, the governor-general or governor should act on behalf of the Minister of Agriculture and Commerce. As regards detailed regulations for the application of the Law, the Ministers of Foreign Affairs, of Finance, Agriculture and Commerce, and Communications, respectively, issued depart-

mental mandates, specifying exceptions that might be made. This example was followed in Chosen, Taiwan, and Kwantung Peninsula by their respective governors. In order to put the law into effect, a number of special officials were appointed from the Department of Agriculture and Commerce and from the governments of the provinces concerned. Black lists were published by the Department from time to time, giving new names of tabooed firms or individuals.

The Laboratory of Chemistry and Physics.

In March, 1915, some of the members of the investigating committee appointed to study the chemical industry proposed the establishment of a laboratory. The proposal was adopted and submitted to the Minister of Agriculture and Commerce. This was the beginning of a country-wide campaign in favor of this proposal. Due investigations having been made by the agricultural and commercial authorities concerned, in June, 1915, the representatives of the chambers of commerce were invited to express their opinions on the matter at a national conference held in Tokyo. This conference emphasized the necessity of having such a laboratory, and appointed a special committee to consider the project. It was decided that the laboratory should have a capital of ¥8,000,000, of which ¥5,000,000 was to be met by public subscriptions, ¥2,000,000 by government grant, and ¥1,000,000 by a gift from the Emperor. But, though the government grant was approved by the Diet, popular subscriptions were so slow in coming in that but for the efforts of Baron Shibusawa the project would have ended in failure.

In April, 1917, however, all difficulties were straightened out. Those in authority decided to send two scientists to America to collect data there. The site was chosen, at Sugamo, Tokyo. And the construction of the laboratory was started in July. Nor was this the only such institution then to be established. In the Tohoku Daigaku or Northeastern University another was made possible by a gift of ¥15,000 from Mr. Shiobara. And at the same time other scientific workers were carrying on their researches independently.

Assistance Given to the Manufacture of Drugs and Dyestuffs.

War put an end to the import of the basic materials for the production of drugs and dyestuffs, Japan having been largely depen-

dent upon supplies from England and Germany. Stocks on hand were adequate only for a few months, and the cornering of the drug market drove prices up to two or three times what they had ever been before, which of course was the source of much apprehension to the medical profession. The shortage of dyestuffs, which directly affected the weavers of Kyoto, Kiryu, and Ashikaga, raised prices by from 20 to 50 per cent. The Minister of Home Affairs, in whose hands the control of such matters rested, saw the need for relief and by a Department Order, in August, 1914, proclaimed an embargo on the export of these commodities. Later on, in December, he brought about the establishment of the Emergency Committee of Investigation for the Pharmaceutical Industry, which was to report on the best method of regulating the supply of drugs during the War, and of developing drug production. The membership of the Committee comprised government officials, scientific experts, and business men; and, in February, 1915, they adopted a resolution proposing the encouragement of the industry at home and the regulation of imports. It was suggested that the Naikoku and Toyo Pharmaceutical Companies be given financial aid by the Government. Simultaneously the Minister of Agriculture and Commerce organized the Chemical Industry Committee and appointed as its members experts and officials of his own department; it was to be advisory to himself. The first problem it investigated was the possibility of promoting coal-tar distillation. After due deliberation, it was decided to recommend the founding of a dyestuffs company under official protection. In June, 1915, the Law for the Encouragement of the Manufacture of Dyestuffs and Drugs was promulgated, and it gave guarantees that the above company should pay dividends of 8 per cent a year. There were, however, many difficulties to surmount and it was not till January, 1916, that the subscription lists could be opened. When the shares were offered for sale, the applications totaled more than eight hundred times the total issue. On February 25 an organization meeting was held in Tokyo. The company was called the *Dai Nihon Senryo Seizo Kabushiki Kaisha*, the Japanese Dyestuffs Company. It had a capital of ¥8,000,000, and established a producing plant in the City of Osaka.

Aiding the Iron and Steel Industry.

The shortage in bottoms resulted in unheard-of activity in the shipbuilding industry, and the demand for manufactures of steel grew to enormous proportions. England, which had been supplying all the needs of Japan of this character, found it no longer possible to do so. By the early part of 1915, America took her place, and the price of steel rose about 40 per cent. In April, 1916, when the British Government placed a ban on the export of crude iron manufactures, steel plates, structural steel, wire, pipes and tubing, blooms and ingots, the shipbuilding industry and iron trade were seriously affected, and demands that the country should be made self-sufficient in the matter of iron and steel found strong expression everywhere. The authorities, who had never been satisfied with their plans for expanding the mills at Yawata, decided to encourage non-government manufacturers, and introduced into the Thirty-ninth Session of the Diet a bill calling for aid for the iron industry. This bill was framed along lines suggested in the report which the Commission on Iron Manufacturing had laid before the Minister of Agriculture and Commerce. It became Law No. 27, and was promulgated on July 25, 1917. According to this law, mills capable of producing 2,500 tons of low-phosphorous pig iron and 5,250 tons of ordinary pig iron a year should be exempt from the payment of business and income taxes. Mills which could manufacture 35,000 tons or more a year, should be granted other special privileges including the benefits conferred by the law for the expropriation of land, and exemption from the payment of duties on whatever machinery, materials, tools, and general equipment they might need. And the advantages offered by this law led to the establishment of one iron company, The Oriental Iron Works.

The Encouragement of Secondary Industries in the Villages and Country Districts.

Secondary, or odd-time industries, had been generally regarded as a means by which farmers might tide over periods of economic depression, and many efforts had been made to promote them. When rice took such a headlong drop after the outbreak of war, the means taken to meet the situation failed, and it became evident that more far-reaching measures were necessary. On June 29, 1916, the Min-

250 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

ister of Agriculture and Commerce addressed to the prefectural governors a circular embodying the following advice and suggestions under the title of "Data for the Encouragement of Secondary Industries and Occupations":

When farmers take up a secondary industry, great care should be exercised to insure its product a satisfactory market, lest, for lack of it, such labor result in final failure.

The sons and the younger kinsmen of wealthy farmers should be advised to take up such forms of work. This would kill two birds with one stone; it would best insure the success of the projects in question, and at the same time procure the kind of services that would be most valuable.

Local officials should make surveys of the secondary industries that were, or might be made, available; of the equipment and raw materials that might be needed; and of the markets that could be opened to the products of such industries. And local officials should also make public the results of their surveys.

Save where the circumstances were exceptional, the following points should be carefully noted when choosing a secondary industry:

The secondary industry should be such as would in no way interfere with the farmer's chief work, and such as could be carried on in leisure hours.

It should be labor so simple that it would not require special training. This would permit the employment of women, and of those both old and young.

It should be such as would require but little capital and bring in quick returns.

The equipment required should be abundant and easily procurable.

The market for its products should be large and open all the year round.

Work which in general required machinery should be avoided.

The additional processes required for bringing the products of a secondary industry to the finished state should be undertaken by the local productive associations, live-stock associations, fishery associations, or by other organizations of the same sort.

All selling should be done by the local purchasing associations.

The agricultural and forestry societies should also assist in the sale of said products.

Funds required for the purchase of equipment and the carrying on of work should be advanced by the local credit association.

On behalf of farmers wishing to undertake a secondary industry, the local government in question should always keep in touch with the local agricultural society, the forestry society, the industrial association, the live-stock association, and chambers of commerce.

The services of the coöperative sales association, of the live-stock association, or of the fishery association should be utilized for the sale of the products of such secondary occupations for farmers. Moreover, the agricultural society, the forestry society, and the productive association should use their good offices for the coöperative sale of the said products.

For defraying the expenses of the undertaking of secondary industries among farmers, the Minister of Agriculture and Commerce included an appropriation of ¥33,000 in the supplementary budget for 1917. Of this sum, ¥14,000 was to be used for the purpose of making a ¥300 grant to each prefecture, to help in carrying out the campaign.

Assistance in the Establishment of Agricultural Warehouses.

The establishment of agricultural warehouses, which in Kumamoto and Hiroshima had long been in existence under the name of *beiken soko*, had been talked of in many places before the War. After it began, with the consequent and extraordinary collapse of the rice market, many prominent men at once saw in them one method of steadying the situation. The Rice Commission, under the Okuma Government, had made the same recommendation, and the result was that in the budget of 1917, the authorities included an appropriation of ¥75,000 for the establishment of warehouses at fifteen important places in the country. Although the Thirty-eighth Session of the Diet was dissolved without an opportunity to consider the bill, it was passed in the following session, and promulgated as Law No. 35, on July 21, 1917. Among its provisions were the following:

Article 3 provided that agricultural warehouses should not be maintained for purposes of money-making; Article 4, that no other

organized body except the local industrial association, and the agricultural society, the municipality, the township, and the village should be authorized to establish, maintain, and operate warehouses; and Article 10, that goods accepted for storage should not be kept for longer than six months. Moreover, Order No. 15 of the Department of Agriculture and Commerce, which was given out on August 5, furnished detailed measures for the application of the law. Order No. 16, issued on the same day, covered the matter of government aid in the establishment of such warehouses. One of its clauses was to the effect that, in case warehouses were erected, reconstructed, repaired, or purchased, the Government should grant, within the limit of the appropriation, a bounty equal to 20 per cent of the total cost of the work undertaken. The budget having been approved by the Diet, the last measure was made law on September 20, 1917. The total thus appropriated amounted to the ¥75,000 above mentioned, in 1917; ¥13,310, in 1918; and ¥156,667, in 1919.

Curbing the Profiteer.

In the second half of 1917, the export trade achieved phenomenal growth, the currency was much inflated, and the prices of commodities showed an enormous increase. Because of the rise of rice and other necessities, the standard of living was endangered. And while various theories were advanced to account for the situation, the authorities were of the following opinion:

In view of the fact that the extraordinary rise in commodity prices was largely a result of dislocated relationships between demand and supply, due to the War, the Government had given all possible thought to the correction of this state of affairs. In connection therewith it was regrettable that there were in Japan persons who, for the sole purpose of their own private gain, were seeking, and by the most improper methods, to bring about sudden changes in the market price of necessities, and were thus working harm to the well-being of the public and the business life of the country that was very serious.

This was aimed at both profiteers of the kind who sought to purchase whatever supplies they could lay their hands on, and at those who were hoarding for a rise. And the Government, after due de-

iberation, on September 1, 1917, promulgated the much-heralded Anti-Profiteering Law. It was made effective from the day it was promulgated. And it read in part:

1. In case any person, with a view to securing excessive profits, seeks to corner the market, in the case of any of the following commodities, or refuses to sell his stock, in the hope of thereby working sudden changes in the prices of commodities, the Minister of Agriculture and Commerce will, in a preliminary warning, order him to cease from such practices, or, if necessary, the said Minister will at once arrange for the sale of the commodities he is hoarding.

The foregoing provisions shall also apply, *mutatis mutandi*, to persons who may cause others so to offend, or who have already done so. And the commodities in question are: cereals; iron and steel products; coal; cotton yarns and fabrics; paper; dyestuffs; and drugs and chemicals.

2. Any person who, despite the fact of his having been warned by the Minister of Agriculture and Commerce, in accordance with the foregoing article, thereafter continues to make further attempts to corner the market, or refuses to sell his stocks, or in any way acts contrary to such above-mentioned conditions as may be imposed on him by the Minister shall be punished by imprisonment not exceeding three months, or by a fine of not more than ¥100.

It must be said, however, that while many warnings were given, under the above law, there was only a single case of prosecution.

The Suspension of the Import Duties on Rice.

The Rice Riots of August, 1918, brought no relief to the market. On the contrary, rice prices rose repeatedly. Standard quotations for spot rice in Tokyo went up to ¥38 and ¥39 in August; to ¥43 by the end of September, and to ¥45 in mid-October. Moreover, at the end of October, stocks of rice in the warehouses of Fukagawa, Tokyo, had dropped to 52,570 bales. The situation was alarming enough, and the Government—the Hara Cabinet was then in power—believed it imperative, as a measure of relief, to increase available stocks. It planned to do this by suspending the duties on imported rice. And Imperial Emergency Order No. 373 for the Reduction of the Rate of Duty on Rice, or for the Repeal of the Same, was promulgated on October 30. This was followed by the issue of Imperial Order No. 374, which legalized the repeal of the import duty on

both cleaned and uncleaned rice, for one year from November 1, 1918.

Prior to this, the Government, under the Law for the Control of Imported Rice, had dispatched officials to China, Indo-China, and India, to negotiate for rice exports to Japan. Though China maintained an embargo on such exports, a surplus stock of about 3,000,000 koku in the Province of Kiangsu, was made the basis of negotiations. They resulted in a note from Peking that authorized the shipment of the entire amount, the note being sent on August 23, 1918. The people of the province, however, were so aroused that the shipping had to be effected in secret. As for Indo-China, there had also been a crop failure there, and the Government had placed an embargo on rice exports. It had been made effective in November; and it blocked any exports of Rangoon rice until removed in January, 1919.

War-time Control of the Mercantile Marine.

In April, 1917, the representatives of the chambers of commerce in western Japan met in conference and passed a memorial, for submission to the Government, which dealt with the shortage of bottoms. The demand for both cargo space and vessels on charter was constantly increasing, and the ocean freight rates in July, 1917, were immeasurably the highest that had prevailed since the beginning of the War. There was much public feeling, and from many sides there were demands that all shipping should be placed under government control. At first the authorities concerned showed no desire to accept such a responsibility; but finally, in the second half of 1917, when war-time business conditions prevailed everywhere, government control became a reality, and with it many other measures of like nature. The enabling law was promulgated on September 29 as Imperial Emergency Order No. 171. At the same time, Order No. 30 of the Department of Communications laid down detailed regulations for the carrying out of the law. On October 1 both went into effect. Furthermore, and on the same day, Imperial Emergency Order No. 176 was promulgated to facilitate the organization of the War-time Shipping Control Board, which was to act as the Government's representative. Attached in an advisory capacity to the Minister of Communication, it was in part com-

posed of government officials, among them the vice-ministers of the departments concerned, and in part of shipowners.

Reductions in the Size of Coins, and a Petty Paper Currency.

The signal rise in the price of metals after the outbreak of the War culminated in an unforeseen phenomenon. The high price of silver, nickel, and copper caused coins of these metals gradually to disappear from circulation, so that the course of small everyday business was greatly hampered. But, as a measure of expediency, the Government reduced the weight of nickel and copper coins, issued additional paper currency of small denominations that might further take the place of the disappearing coins, and altered the size, weight, and fineness of its silver coinage.

Reminting the Nickel and Copper Currency.

Despite the fact that, in the days immediately preceding the War, the price of copper was about ¥42 or ¥43 per 100 kin of *choji* copper, it fell off to about ¥35 after the commencement of hostilities. And then, later, it rose again to ¥57. The demand was so intense that nickel and copper coins in huge amounts were melted for bullion. As the shortage of such auxiliary coins grew very serious, the authorities revised the Currency Law and in February, 1916, reduced the respective weight of small coins. The 5-sen¹ nickel piece was made to weigh 1.14 momme instead of 1.24 momme, the 1-sen copper piece one momme instead of 1.9008 momme, and the half-sen copper piece 0.56 momme instead of 0.9504 momme. This applied, however, only to new pieces. Those already in circulation were left untouched.

Petty Paper Currency.

The trouble caused by the lack of sufficient small currency began to be acute in April, 1916. In October it was a handicap to the sale of everyday necessities. And on October 28, the Government promulgated a law authorizing the issue of notes of petty denominations, at the same time giving out an order of the Department of Finance covering the issue, the withdrawal of the former notes, and

¹ 1 sen = $\frac{1}{2}$ cent.

their replacement, when they were torn or old, by the new. It was provided that there should be denominations of 50, 20, and 10 sen; that the Bank of Japan should be under obligation to maintain a cash reserve equal to the amount of such note issues, for their conversion if called for; and that such notes were not to be issued for circulation after the expiration of one year from the restoration of peace.

Reminting the Silver Coinage.

In the first half of 1914 the price of silver ranged between 26 and 27 pence; but, shortly before the outbreak of the War, it dropped to between 22 pence and 23. No great change was then experienced in the market till the latter part of 1915. In the first half of 1916, the price of silver advanced to 30 pence. In the second half of 1917 the record price of 40 pence was reached. Although the Government put into circulation 10- and 50-sen silver pieces to the amount of ¥4,000,000, these quickly disappeared and left no trace behind. The authorities then issued paper notes of small denominations; but this measure was altogether inadequate. It was clear that the situation could not successfully be remedied without the adoption of a more radical change in the currency. This involved the revision of the Coinage Laws, and to that end the authorities introduced a bill in the Fortieth Session of the Diet. The bill passed into law on May 1, 1918. Meanwhile, Imperial Order No. 144 of 1897, pertaining to the size, shape, weight, etc., of metal coins was amended by the promulgation of a new Imperial Order, No. 131. Owing to these revisions, the 50-sen piece, which had a diameter of 9 bu, approximately nine-tenths of an inch, and weighed 2.7 momme; the 20-sen piece, which had a diameter of 6.7 bu and weighed 0.8 momme and the 10-sen piece, which had a diameter of 5.8 bu and weighed 0.6 momme, were reduced respectively to the following dimensions; 8.2 bu and 1.8 momme in the case of the first; 6.5 bu and 0.8 momme, in that of the second; and 5.3 bu and 0.4 momme in that of the 10-sen piece. At the same time the silver content first of the 10-, and then of the 20-sen piece, was debased from 80 per cent to 72 per cent, the remaining 28 per cent being *Sanwa* copper. It is said that in 1918 the mint issued these new coins to the amount of ¥20,000,000, and put them in circulation through the Treasury. At the same time it had been arranged that the old

pieces in circulation, and also the petty paper notes, should be returned to the Treasury.

The Embargo on the Export of Gold and Silver.

The War was carried on for four years; and America's participation made it "a World War" in the true sense of the word. The belligerents, to obtain the sinews of war, issued enormous amounts of paper currency, while suspending the conversion of negotiable notes into specie, and prohibiting the export of gold and silver. In spite of this the disappearance of standard moneys was rapid and unpreventable. Such being the case, both Japan and the United States, which had remained free markets for the precious metals till the last, were forced to follow suit.

First, as regards silver. On the outbreak of war it began to rise, due to a decrease in production and enormously increased demands for silver for minting. Then in August its rise suddenly became rapid until, on September 5, it stood at 47½ pence. The result was an utter collapse of the exchange rate with China, entailing much difficulty for those who had to do business with that country. There were many proofs that some shrewd Chinamen were collecting the metal and sending it home. On September 6, 1917, the Minister of Finance promulgated an ordinance prohibiting the export of silver coins and bullion except by his consent. It was declared unlawful to gather, melt, or chip silver coins, for the purpose either of selling them or of using them for manufacturing purposes.

The United States, though it had taken the place of England as a free market for gold, grew apprehensive over the enormous specie shipments to Mexico, Spain, and Japan. On September 7, the President, following the suggestion of the Federal Reserve Board, placed an embargo on the export of gold and silver, except by special permission of the Secretary of the Treasury, the embargo being made effective on September 10. This awakened Tokyo to the necessity of following the same course, since it was through America that Japan had been enabled to obtain supplies of the metal. Consequently, on September 12, the Minister of Finance promulgated a mandate which banned the export of gold, except under official license, and which rendered it illegal to gather and melt gold coins for sale as bullion.

The Steel Pact between Japan and America.

On August 2, 1917, the President of the United States instructed the Secretary of Commerce to place the following embargo on the shipment of steel:

(1) All shipments to those nations associated with the United States in war are, until further instructions, to be licensed freely, without reservation and without restriction, except iron and steel plates, pig iron and steel scrap and steel billets, for which licenses shall be granted in case the said articles are destined for actual war purposes or will directly contribute thereto.

(2) Licenses which may be properly issued will be granted for the shipment of all iron and steel plates and structural shapes and other articles properly included under these headings under the following conditions:

I. Application for such license must be received by the Department of Commerce, Division of Export Licenses, Washington, D. C., on or before August 10.

II. Such articles shall be completely made up and manufactured on or before August 10.

III. Such licenses shall be valid and shall indicate that they are valid only in case such shipments are covered by the railroad or the ocean bill of lading dated on or before August 15.

A report from Washington stated that the American Government wished to see the greater part of the Japanese merchant shipping appropriated for the needs arising from Germany's submarine warfare, and that Japan's requirements of steel for shipbuilding purposes would be subjected to conditions to be imposed at a subsequent date. Should this be true, the blow to the shipbuilding trade of Japan would have been a very serious one, for shipbuilding had yet to execute orders amounting to more than 400,000 tons. To meet the danger they formed an organization called, frankly, the *Beikoku Tetsu-rui Yuhitsu Kaikin Domei-kai* (the League for the Repeal of the Steel Embargo), and induced the Minister of Communications to open negotiations with Washington for the shipment of 420,000 tons of steel material already on order in America. But the American authorities would not consent, the result being that more negotiations were entered into regarding the ship tonnage that Japan could promise the United States, and the steel tonnage which the United States was to make free for export to Japan. It

was decided that Japan, with a view to rendering as much assistance to the United States as possible, should furnish finished steamships amounting to 150,000 tons dead weight, within six months; and in April, 1918, an agreement in the following terms was signed between Japan and America:

(1) The Japanese Government will charter 150,000 tons of ships at the ordinary rate of hire in Japan and turn over the aforesaid ships to the American Government at the international charter rate in April and May. It is further agreed that the Japanese Government will hold itself liable for the sum of approximately ¥18,000,000, or the difference between the ordinary rate of charter in Japan and the international rate, and the difference between the rate of insurance in Japanese waters and the war-risk rate on the European lines.

(2) The shipbuilders and shipowners of Japan shall furnish to the United States Shipping Board 130,000 tons of ships, now under construction, in the period between May and December, 1918. As a matter of compensation, they will receive a supply of steel in the proportion of one ton of completed shipping for the same quantity of steel.

(3) The shipbuilders of Japan shall construct ships to the amount of 234,000 tons, which they shall deliver to the United States Shipping Board during the year 1919. The United States in turn will provide supplies of steel, one ton of steel being exchanged for every two tons of ships.

As will be noted, Japan was to offer 514,000 tons, inclusive of the tonnage of the ships which the Government furnished, and America was in compensation to deliver 364,000 tons of steel. Although later on this ratio was somewhat changed, speaking broadly, it stood throughout.

Financial Aid for the Allies.

The length of the War meant an increasing financial drain upon the Allies, while Japan was accumulating immense quantities of gold by her trade activities. It was argued that the money thus amassed should be invested in foreign bonds. It was pointed out that this would be one way of giving financial aid to the Allies and, at the same time, a very practical method of putting to use the gold that was so rapidly piling up. It was a suggestion that, by the latter part of 1916, was being put into practice. To Russia Japan both lent money and supplied goods; to Britain, France, and China

260 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

she lent money, on several occasions. And in all, between 1914 and 1918 foreign loans were made by Japan, as follows:

To Great Britain	¥189,017,477
France	133,632,476
Russia	255,949,823
China (Chinese Treasury Bonds)	85,000,000
Total	¥663,599,276

In addition, Petrograd paid the munition manufacturers of Japan ¥48,569,718 for what they had supplied to the Russian Army. It should, however, be mentioned that what they received was in the shape of promises to pay. As for the Chinese loans, they were by no means limited to the amount given above. There were other advances which were made on the security of the treasury notes of the Chinese Government.

CHAPTER XXII

SOCIAL EFFECTS

Introductory.

THE effects of the War on the social life and organization of Japan were almost incalculable. The gap between the rich and the poor grew greater than ever, the lot of the middle classes became a very difficult one, and the War gave rise to a thousand and one other changes.

As has often been said, it did much for the nation economically. The extraordinary development of exports, the activity of manufacturing industries, the abundance of money, the continued flotation of new business projects, the declaring of dividends at rates hitherto unknown, the frenzied stock markets, and the high prices of commodities, these are some of the more salient effects of the War.

The abundance of money, yielding enormous profits because of the exceedingly high prices that were commanded, showed its effect in the conduct of the newly rich, who lived lives that were wantonly wasteful, and whose extravagance sowed the seeds of further price increases. Their ways were evil, and the public had good cause to find fault with them. As for the middle classes, on the other hand, the plentifulness of money and the extraordinary prices of commodities were with them a source of distress. Many were reduced to poverty, and the members of such families had to fare as best they could. The presence of women seeking their living in the outside world may bear witness to the activity of commerce and industry; but it is also proof sufficient that the standard of living was being endangered by the soaring prices. And when we come to the lower classes, always open and susceptible to the spirit of radicalism, it was not uncommon for workers either to go on strikes or to idle away their time at work, in order to force their employers to grant them shorter hours of work and higher rates of wages. While this may have been due to their awakening, through the novel circumstances of the time, or to the contamination of western thought, a surer reason was that their wages did not keep pace with the increase in the cost of living.

In the end, however, this brought to their senses those who had become too deeply absorbed in the business booms of the day. It caused many measures of relief to be given most serious attention,—price regulation, the establishment of public markets, and the best methods of dealing with the unemployed. It culminated in the organization of the *Ro-shi Kyocho Kai*—the Association for Harmonizing the Relationship between Capital and Labor—proposals for luxury taxes, and the education of people in habits of economy. Nevertheless, the measures adopted were far from perfect. The moneyed classes were only in part aroused to their responsibilities. And much must still be done before decent standards can be established.

The High Price of Commodities.

Since the Restoration, commodity prices in Japan have gone steadily upward, a trend which the War greatly accelerated. When peace was restored, the tendency of prices to rise was in no way checked; on the contrary, it grew more pronounced. But taking the War period alone, how great the rise in prices was during those years is shown in table 1.

TABLE 1
During the War.
(Prices in June, 1914, = 100)

	1914	1915	1916	1917	1918
January	....	100.5	141.9	152.2	221.5
February	....	103.0	148.0	153.8	218.1
March	....	105.2	153.4	156.5	222.9
April	....	109.8	148.8	166.6	221.6
May	....	110.8	145.0	170.4	223.2
June	100.0	112.9	134.5	178.6	223.5
July	98.4	110.7	132.6	193.8	233.9
August	110.0	109.4	136.0	205.3	243.6
September	103.2	112.5	140.0	200.6	247.6
October	98.3	117.7	146.2	195.3	251.3
November	97.7	130.6	157.0	195.6	244.3
December	98.3	133.8	156.6	194.3	233.7

As for price increases in the case of some of the more important staples, in Tokyo, the Chamber of Commerce of Tokyo issued the

following table,—the average of prices for each commodity group in 1914 being taken as 100: (Columns 1, 2, and 4 are index numbers.)

TABLE 2

	<i>September, 1914</i>	<i>September, 1918</i>	<i>Rate of increase</i>	<i>June, 1919</i>	<i>Rate of increase</i>	<i>Increase (+) decrease (—) of rate of change as between 1918 and 1919</i>
Cereals	148	308	108	382	158	+ 50
Cereals, manufactured	157	257	62	334	112	+ 50
Foodstuffs of animal origin	125	208	66	278	122	+ 56
Materials for clothing	109	299	174	375	244	+ 70
Metal goods	97	971	901	352	262	—639
Fuel	146	349	139	418	196	+ 57
Lumber—rough and dressed	122	252	106	330	170	+ 64
Miscellaneous	105	178	69	229	118	+ 49
Average	126	305	142	336	158	+ 16

The most remarkable of individual price increases was one of 900 per cent in the case of gold and silver manufactures by 1918. But, as will be seen, among the necessities of life, materials for clothing set a record of more than 170 per cent, fuel of 39 per cent, and cereals of 108 per cent, with a general average for all groups, of 142 per cent—assuredly a very extraordinary state of affairs. Although in 1919 gold and silver manufactures experienced a head-long fall, everyday necessities maintained their upward movement.

While these increases in commodity prices, doubtless, were partly a result of increases in the demand, the decline in the effective value of money through the inflation of currency and credit must be held as a more potent cause. The rise in prices was not a phenomenon confined to a particular sort of merchandise; it involved all commodities. Under the circumstances, it is not surprising that both the possessors and producers of commodities reaped all the benefits, while pushing non-possessors and consumers (excluding those consumers who at the same time are producers or manufacturers) to the wall. Those who profited most were proprietors and operators of big manufacturing plants. With respect to labor, it is difficult to deter-

mine whether the Great War was really a blessing. This is a point which can be settled only after the intricate problem of the relation between wages and the cost of living has been solved. But there can be no doubt that small tradesmen and proprietors and the general public were the worst sufferers from the extraordinary levels of prices. The hostilities produced different effects on different classes of people. This explains why the amazing waste of money by the war rich and the extreme indigence of hundreds of thousands of the war poor were found side by side, and why other and more ugly social questions made their appearance.

Enormous Profits.

When the operations against the Germans in Tsingtao resulted in victory, the commerce and industry of Japan broke away from the depression hitherto existing and gave much promise for future prosperity. The policies that the Government had adopted for making the nation self-reliant in the matter of commodity supplies began to have their effect; and, simultaneously, demands for exports by other nations grew very much larger, as a result of the ruin of the trade of Europe. Then followed an extraordinary period of economic activity, the outstanding features being general business booms, an abundance of money, constantly rising prices, and the promotion of new industrial enterprises. According to the Department of Agriculture and Commerce, the number of business firms established between 1915 and 1919 aggregated 28,016, with a nominal capital of ¥4,462,871,517. The prosperity of firms already in existence was almost beyond belief, and it was considered that to declare dividends of from 50 to 80 per cent was rather a commonplace thing. For the matter under review the author selected 127 companies—omitting banks and insurance companies—all of which declared dividends of 10 per cent or more in 1918, the author's purpose being to compare their dividends for the second half of 1915 with those for the corresponding period of 1918. In the former year, most of the companies selected had barely been able to declare dividends of 10 per cent or less; and, with the exception of the Tokyo Stock Exchange, which paid 170 per cent, the highest figure for the four ranking companies was 30 per cent. In 1918, 22 companies declared dividends running between 30 and 35 per cent, 5

being of 40 per cent, 8 of 50, 7 of 60, 1 of 70, 3 of 80, 1 of 100, and 1 of 160 per cent. As regards reserves in 1915, only 8 companies were able to set aside ¥100,000, or more, the Nippon Yusen Kaisha taking the lead with ¥360,000. In 1918, however, 37 were on the list, and, of this number, 7 set aside more than ¥360,000. Here, again, the Nippon Yusen Kaisha was at the head, with ¥3,100,000.

The War Rich.

Since the activity in the promotion of business enterprises, and the size of the dividends and bonuses granted was unprecedented, it is not surprising that the incomes of officials and shareholders rose to amazing figures. One class of the war rich came to be called the *kabu-narikin*, those who had been made suddenly wealthy by stocks and shares. But all the new money was not made by those connected with incorporated firms. Great fortunes were likewise made by those in private business. In this class the shipowner must be given first place. Owing to the fact that the shortage of ships meant an unusual rise in the rates for ocean freights and charterage, shipowners were on the certain road to wealth. It was by no means uncommon for a shipowner to earn profits of many million yen, and the very word *ship-narikin* aroused feelings of envy in the business world. When the theater of war continued to widen, and in the trade of Japan exports were growing to be vastly greater than imports, there sprang up many other *narikin*. They made their fortunes in stocks and shares, in cotton yarn, in iron and steel, in sugar, paper, drugs, and chemicals. In fact, all things were going up, and bringing handsome profits to those who dealt in them; and the result was that the number of *narikin* rose to striking figures. In 1918, on the authority of the *Teikoku-Koshin-jyo*, Japan's mercantile agency, those possessed of between ¥5,000,000 and ¥10,000,000, in Tokyo, numbered 7; in Osaka, 11; and in Hiogo, 6.¹ Even more possessed ¥10,000,000 and upward. There were 18 such in Tokyo, 9 in Hiogo, 4 in Kanagawa, 3 in Osaka, 2 in Hokkaido, and 1 each in Kyoto and Yamagata.

¹ In the prefecture of Hiogo those worth more than ¥10,000,000 numbered 9, and those worth more than ¥5,000,000, 6. Of the total of 15, 9 were shipowners.

High Wages.

When the prosperity of manufacturing raised the prices of commodities to an unprecedented level, the demand for labor experienced a decided increase. Yet at the same time, and unhappily for labor, no rise in wages kept pace with the constant price increases. In 1917 and afterward, as the promotion of business received a great impetus, the power of the labor movement grew markedly under the influence of new ideas; and in 1918 this brought about a considerable increase in wages. In 1919 there was a still greater increase. Table 3 was prepared from the reports of the Chamber of Commerce of Tokyo, which made quarterly surveys of the wages paid to some thirty-nine different classes of labor:

TABLE 3
Average Index Numbers of Wages Paid to Thirty-nine Classes of Labor, 1912-1919.

	<i>Index number (1900 = 100)</i>	<i>Index number brought down to 1912</i>
1912	141	100
1913	146	108
1914	143	101.4
1915	144	102.1
1916	152	107.8
1917	180	127.7
1918	224	158.9
December, 1918	257	182.3
June, 1919	322	228.8

With reference to the difference between the wages paid for various classes of labor, at the beginning of the War, and those paid in 1919, the Chamber of Commerce issued table 4—wages paid in 1900 again being taken as 100: (Columns 1, 2, and 4 are index numbers.)

The foregoing table shows that the peak of ascending wages was attained in September, 1918, when the index numbers were 13 to 130 per cent higher than those at the outbreak of war. In September, 1919, we find that there have been further increases, that for the screen and door makers being 143 per cent, and that for the "geta" makers 153 per cent. It will also be seen that, as compared with index numbers for September, 1914, the smallest increase—

SOCIAL EFFECTS

267

TABLE 4

	<i>September, 1914</i>	<i>September, 1918</i>	<i>Rate of increase</i>	<i>June, 1919</i>	<i>Rate of increase</i>	<i>Increase (+) as between the rates of increase in 1918 and 1919</i>
Potters	108	154	42	308	185	+143
Tailors	170	200	17	250	47	+ 30
Wood sawyers	115	218	89	315	173	+ 74
Carpenters	141	197	39	264	87	+ 48
Plasterers	129	191	48	225	74	+ 26
Tile roofers	109	180	65	267	144	+ 79
Bricklayers	129	235	82	376	191	+109
Floor mat makers	111	197	77	218	96	+ 19
Screen and door makers	95	126	32	263	175	+143
Stonecutters	111	126	13	200	80	+ 67
Founders	113	174	54	323	185	+131
Hipwrights	122	262	114	268	119	+ 5
Coopers	113	147	30	188	66	+ 30
"Geta" makers	137	211	54	421	207	+153
Foot and shoe makers	130	300	130	300	130	—
Typesetters	176	219	24	376	113	+ 89
Printers	144	196	32	333	110	+ 78
Servants (male)	200	400	100	600	200	+100
Servants (female)	225	379	67	525	133	+ 65

47 per cent—was received by the tailors. The largest, 208 per cent was, again, received by the "geta" makers. Other classes following close behind them were male servants with 200 per cent, bricklayers with 191 per cent, founders and potters with 185 per cent each, and saddle makers with 182 per cent. So much for the wages paid in Tokyo; and, although Osaka is regarded as the center of the manufacturing industry, there is hardly any difference between the rates of wages paid there and in Tokyo. At most, it is one of only 10 or 20 per cent.

But even these great wage increases did not keep pace with the increases in the prices of commodities, as will be seen from the following table of averages.

For the years under review, the rate of increase in wages was about 26 per cent less than that of the price of commodities. Further, as compared with the increases in the prices of ten staple articles, all of which are necessities of life, the discrepancy between wages and price increases will be clear beyond doubt.

268 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

TABLE 5

	<i>Index number of commodity prices (based on 100 for 1900)</i>	<i>Index number brought down to 1918</i>	<i>Index number of wages</i>
1912	182	100	100
1913	182	100	103
1914	126	95	101.4
1915	128	96	102.1
1916	155	117	107.8
1917	198	150	127.7
1918	254	192	158.9
June, 1919	336	254	228.8

TABLE 6

Index Numbers of Ten Staple Necessaries of Life during the War.

	<i>June, 1914</i>	<i>June, 1919</i>	<i>Rate of increase</i>
Rice	142	375	264
Miso	187	780	417
Soy sauce	98	201	205
Sugar	217	492	226
Bonito, dried	127	271	213
Eggs	110	201	182
Muslin	90	356	395
Japanese paper	130	266	204
Charcoal	93	240	258
Firewood	127	327	257
Average	132	351	265

The foregoing table shows that the average increase in the price of necessities was 265 per cent (though it does not admit of exact comparison with the preceding table), while the increase in wages was somewhere about 228 per cent. An interesting survey was made by the Metropolitan Police of Tokyo into the living conditions of 56,418 workers, male and female, employed in seventy-four large factories in Tokyo. The Prefectural Government of Osaka also, and at the same time, made a similar survey covering 106,698 employees of nineteen factories in the province. The facts brought out are indicated below:

TABLE 7

	<i>Employees relieved by wage increases</i>	<i>Per- centage</i>	<i>Not relieved</i>	<i>Per- centage</i>	<i>Still in great distress</i>	<i>Per- centage</i>	<i>Un- affected</i>	<i>Per- centage</i>
Tokyo	22,025	39	31,796	56	2,601	5	.....	..
Osaka	30,692	30	30,359	30	6,963	6	38,686	34

TABLE 8
The Cost of Living for the Worker.
 (in yen)

	<i>July, 1914</i>	<i>May, 1916</i>	<i>December, 1917</i>
Rice and other cereals	7.433	5.226	9.287
Tobacco	0.534	0.534	0.625
Fish		1.070	
Meat, eggs, and milk		0.480	
Bean curd, "nimame," pickled vegetables, etc.		0.667	
Vegetables and "kambutsu," etc.	3.855	1.309	7.710
Confectionery and fruit		0.645	
Salt, "miso," soy sauce, sugar, etc.		0.979	
Sake		0.450	
Tea, cider, etc.		0.182	
<i>Household Expenses</i>			
House rent, including water rates	4.472	4.472	5.367
Furniture and kitchen utensils	0.283	0.425	0.566
Firewood and charcoal	0.571	1.712	1.142
Light	0.856		
Clothing, etc.	1.393	2.090	2.786
<i>Bodily Care</i>			
Hair cutting	0.484	1.046	0.585
Baths, soap, etc.	0.355		
Medicines, including doctor's fees	1.104	1.214	1.333
School expenses	0.460	0.919	0.552
Stationery, etc.	0.307		
Carfare, riksha hire, etc.	0.703	0.703	0.984
Correspondence	0.134	0.134	0.134
Fees, contributions, public health charges	0.175	0.175	0.175
Social expenses, including those for gifts, entertainment, etc.	0.673	0.875	1.138
Newspapers, etc.	0.151	0.861	0.217
Recreation	0.121		
Miscellaneous	0.492	0.738	0.984
Interest on debts and payment of same	1.551	1.451	1.451
Total	25.007	27.878	37.460

Although there were certain differences between the returns of the two prefectures, the fact outstanding is that the number of

workers who benefited by the wage increases was not great, as compared with those who, despite their increased pay, were still afflicted by the growing cost of living. Nevertheless industrial workers had every reason to be congratulated. By agitation they succeeded in forcing their employers to grant them either higher pay or bonuses in various forms, such as those made possible by piece work, meal allowances, rewards for regularity, for diligence, for overtime, etc. In all they were able to earn wages that were decidedly large. Two hundred yen a month was not exceptional. But when we turn to the class of small farmers, of petty tradesmen and manufacturers, of government officials, and the like, those who make up the so-called middle class, the cost of living had risen so much more than their incomes, that their position was pitiable.

The Cost of Living and What It Meant to the People.

With such great increases in commodity prices, above all in the necessities of life, it is self-evident that the general cost of living increased proportionately. Authentic statistics, so necessary, are unfortunately lacking in Japan. But the author can at least cite figures from a somewhat incomplete survey of the working class budget, made by Professor Takano of the Imperial University in Tokyo, and Professor Takagi of Keio University.

The foregoing table is based on an investigation made at the end of 1917, and nothing has been published since to shed added light on the matter. The author, therefore, is obliged to quote a table which the *Tokyo Keizai Zasshi* (the *Tokyo Economic Journal*) worked out from the data contained in the various reports of the Tokyo Chamber of Commerce, and other sources.

Regarding the ratio of each item to the total, economists say that the share of rice should be 22.73 per cent, other foodstuffs 21.55 per cent—(it is to be noted that the actual combined total was 44.2 per cent)—household expenses, 16.71; fuel and light, 5.84; clothing, 7.15; and miscellaneous expenses, 26.02 per cent. The price of rice and other foods averaged more than 100 per cent higher than the prices of 1914, and house expenses 55 per cent, so that the total cost of living showed a rise from 100, in 1912, to 197.62 in 1919. Living expenses in the aggregate had almost doubled. But the index numbers for wages did not keep pace.

TABLE 9

Average Index Number of the Cost of Living, 1912-1919.²

	<i>Rice</i>	<i>Foods other than rice</i>	<i>Rent and household expenses</i>	<i>Fuel and light</i>	<i>Clothing</i>	<i>Miscellaneous</i>	<i>Total</i>
1912	100.0	100.0	....	100.0	100.0	100.0	100.00
1913	101.1	101.5	....	100.9	97.8	100.0	100.62
1914	76.8	99.4	100.0	102.0	88.8	93.8	91.50
1915	62.2	94.9	106.1	104.4	85.5	90.6	87.46
1916	64.9	106.5	112.5	118.8	116.7	103.9	97.03
1917	93.8	134.2	125.4	128.8	178.5	132.0	123.60
1918	155.4	173.5	140.5	200.0	250.9	184.1	170.51
May, 1919	201.7	179.3	155.7	261.6	285.4	216.6	197.62

TABLE 10

Wages and the Cost of Living.

	<i>Cost of living</i>	<i>Wages</i>
1912	100	100
1913	100.62	103
1914	91.50	101.4
1915	87.46	102.1
1916	97.03	107.8
1917	123.60	127.7
1918	170.51	158.9
May, 1919	197.62	228.3 (June)

As will be noted, the cost of living fell gradually till 1916, while wages were on the increase. But in 1917 the cost of living began to move in the other direction, and rose faster than wages. In 1918, the former continued to rise, and gave the worker good reason for agitation that was becoming more and more vehement. In 1919, such labor agitation ended in driving wages much higher than the cost of living. But in the second half of 1919 the unusual abundance of money brought about a new and very marked rise in commodity prices. This extraordinary increase was by no means confined to the cities; the country districts felt it, too. In fact, it was nationwide. The result was that not only the city worker, but the petty tradesman and manufacturer, the salaried man, the small farmer, the schoolteacher, and the civil servant—all were seriously affected. In-

² The survey of household expenses was made by the Police, and none had ever been made before 1914.

deed, the condition of government and like employees, and that of other such salaried men might be described as particularly hard. And while, in the end, their salaries were increased, the average increase was only 50 per cent, and 70 to 80 per cent in the case of those whose salaries were the smallest. The rise of commodities was as much as 158 per cent, and the increase in the cost of living 110 per cent. Strictly speaking, this class was better off than the small farmer, the shopkeeper, and the petty producer. No wage increases could help them, or any labor agitation. And for them and their households the rise in the cost of living was very serious indeed.

The Rice Riots.

The price of rice, unaffected by the outbreak of war, was low till well on into 1915, but began to rise in 1916. The rate of increase, becoming more rapid in 1918, its retail price rose to ¥36.20 in June of that year. When it reached ¥45.21 in July, the public was decidedly concerned, and in many places there broke out the so-called Rice Riots. True, the price of rice was then not so high as it became in February, 1920. But, as compared with 1917, it was 170 per cent higher. The outbreak of grave demonstrations was the natural result, and they went on for a month, beginning early in August. The story of these riots might be told briefly, as below:

August 8. A riot was reported from Namerikawa, Toyama. Another took place in the city of Toyama, where the residents of Shimidzu Machi Street organized a parade, marched to the Town Hall, and demanded that rice should be sold at lower prices.

It was also reported that Mr. Nakashoji, Minister of Agriculture and Commerce, was conferring with the Prime Minister regarding the regulation of rice prices.

August 9. Disorders occurred in Nagoya, Kyoto, Osaka, Hiogo, and Misu, Bingo.

August 10. The Ministers of Finance, Home Affairs, and Agriculture and Commerce held a conference at the residence of the Premier, and discussed the situation.

August 11. Further and very grave outbreaks in the streets of Nagoya and Osaka. Others, in Kyoto, were so threatening that troops had to be called out. Disturbances were also reported in Kurashiki, Bicchū.

August 12. The situation in Osaka, Kyoto, and Nagoya had grown so serious that order was preserved only by the presence of the troops. In Kobe rioters set fire to a number of stores and newspaper offices, and it became necessary to have the troops patrol the streets. Toyohashi was also affected. Crowds were likewise gathering in Hibiya Park in Tokyo, which had always boded ill. The Tokyo authorities, after a conference with the Government, decided to hold sales of Korean rice at low prices.

August 13. Rioters assembled in Tokyo, and the gendarmes were called out to maintain peace and order. Incendiarism was reported from Osaka and Okayama. In Maidzuru, Kure, Shidzuoka, Toyohashi, and Sakai, the situation was so ominous that the presence of troops was necessary.

August 16. An Imperial Ordinance was issued calling for the expropriation of rice stocks.

August 18. Trouble in Fukuoka, Miye, Hiroshima, Aichi, and Osaka. In the cities of Niigata and Sendai, soldiers were in the streets. Troops also had to be despatched to a colliery at Ube, Yamaguchi, because of a miners' riot there.

August 19. A disorder which had to be quelled by the troops occurred in O-shima, Yamaguchi. Further disorders were threatened in Osaka.

August 21. Many colliery riots in Fukuoka; and some of the ringleaders of the rioting miners, having refused to heed the orders of those in charge of the troops, were killed.

August 27. More than three thousand coal miners at Niihara, Fukuoka, became very threatening.

August 29. Scenes of disorder at Kaijima and Kinoshima, Saga, and the presence of troops was necessary.

September 4. A threatening situation at the colliery in Manda, Kumamoto.

September 21. Resignation of the Terauchi Cabinet.

Popular comment on these riots was sympathetic. People, while sincerely deploring them, were unanimous in the feeling that, under the prevailing state of affairs, they should be regarded as being what could only be expected. As for those in authority, though at first they were inclined to regard the rioters as mere bands of riff-raff, and though they caused some 269 of them to be arrested, they

treated those arrested with leniency, because of the tone of public opinion. Furthermore, these riots were fraught with import, for they taught the lower classes the power of their movements when organized, and showed them that they, too, could exert an influence on the course of events.

Feeling that these rice riots must be regarded very seriously, the chambers of commerce of Tokyo, Osaka, Kyoto, and four other cities, on December 14, 1918, joined in a memorial to the Government, pointing out how great was the need for state regulation of rice prices. Later, the country's combined chambers of commerce appointed a "Food Committee" which was given the task of making an investigation of the food situation. On March 6, 1919, the members of the Committee called on Mr. Hara, Prime Minister, and laid before him certain suggestions recommended by the chambers of commerce. And, next day, they submitted the following to the officials concerned:

The Government should personally purchase and bring in foreign rice, in order to increase imports of the grain.

The production of sake should be restricted.

All possible encouragement should be given to increasing the production of substitute foods.

Efforts should be made to increase the use of substitute foods.

These recommendations were adopted, and the Government did what it could to bring rice in from abroad. But the market seemed to be beyond control, and, instead of coming down, prices continued to rise.

Salary Increases for Civil Servants.

As has been pointed out above, the average index number of wages was 26 per cent less than the average index number of commodity prices, and 37 per cent less than those of the necessities of life. The discrepancy between wages and the cost of living became serious in spite of an increase of 128 per cent in average money wages. The case of the salaried man was even more grave than was that of the regular worker, the term "salaried man" comprising many and of all conditions. But, for the sake of convenience, the author will confine himself to members of the class of public officials

of every kind. The Thirty-seventh Statistical Report is authority for the statement that there were, at the end of 1917, 228,198 such, of whom 72,567 were of the *hannin* or lowest order, and 146,057 unclassified. This means that about 95 per cent of the aggregate number belonged to these two classes. Formerly, the average yearly salary paid civil service employees of all sorts was: ¥4,023 for the *chokunin*, ¥1,515 for the *sonin*, ¥415 for the *hannin*, ¥209 for those without rank, and ¥251 for those employed by prefectural, district, and local bureaus. Later on, the rate of salaries was raised several times. What the extent of the rise really was, is a question rather difficult to decide, as the necessary statistics are lacking; but there is reason to believe that it was about one-half. The increase granted to teachers in elementary and secondary schools amounted to about the same percentage. With another class of salaried men, employees of banks and business firms, the same rate also held good, though in some cases increases of 70 or 80 per cent were recorded. The remaining groups, ex-officials, and the like who lived on pensions, crippled ex-service men, and tenant farmers, were in the worst situation of all, because they were obliged to meet the increased cost of living—one of 158 per cent—without any rise of income whatsoever.

It was quite natural that men of the *hannin* rank and those without rank—comprising 95 per cent of the total—should demand an increase in their pay. The movement was started by the minor officials of the Revenue Office. It was taken up by the employees of the Departments of Finance, of Agriculture and Commerce, of the Government Tobacco Bureau, and of the Imperial Railways Department who filed with the heads of their respective departments a combined appeal to the effect that, when the cost of living had risen by 150 per cent, an increase in salaries of 50 per cent was far from being sufficient.

The cheapest mode of life for a man without rank is that of the boarding house. Table 11 indicates how wide was the gap between his salary, on the one hand, and the cost of his board, room, and other expenses, on the other. Investigations made in August, 1919, furnished the figures given, and they may be taken as representing the average expenditures, etc., of men living in boarding houses on the various monthly salaries cited.

TABLE 11

<i>Amount of salary (monthly)</i>	<i>Total of salary plus 50 per cent increase, that is the entire income</i>	<i>Board and room</i>	<i>Other expenses</i>	<i>Deficit (—) or surplus (+)</i>	<i>Percentage of deficit (—) or surplus (+)</i>
¥11	¥16.50	¥15.77	¥2.98—	¥—2.25	—13.6
12	18.00	15.56	4.89—	—2.45	—13.6
13	19.50	15.93	4.32—	—0.75	— 3.8
14	21.00	16.16	5.71—	—0.85	— 4.1
15	22.50	16.86	6.00—	—0.86	— 1.6
16	24.00	16.33	6.17+	+1.50	+ 6.2

Even assuming that the employee received allowances which amounted to 50 per cent of his monthly salary, it will be noted that all those whose income fell below ¥24 were harassed by deficits. Only those who received ¥16 in salary and the consequent ¥8 increase had a slight surplus—6.2 per cent—over expenses. Assuming that a man living in a boarding house spends about ¥4 for his clothing per month, his expenditures for clothing and shelter would average from ¥20 to ¥28. Since he would also have to lay aside something for medical care and social entertainment, his living expenses would quite likely be from ¥22 to ¥30. This being true for employees of no rank or standing, officials of the *hannin* class would require ¥40 per month. This, too, be it noted, on the assumption that they, too, are boarders. If married, the minimum would rise to ¥60 at the least, and if there were children, ¥90. Table 12 gives incomes for those of *hannin* rank.

When men are tied down to salaries running between ¥30 and ¥142.50, what can be expected of them, when the cost of living has

TABLE 12

	<i>1st class</i>	<i>2nd class</i>	<i>3d class</i>	<i>4th class</i>	<i>5th class</i>	<i>6th class</i>
Salary (monthly)	¥ 95.00	¥ 75.00	¥65.00	¥55.00	¥50.00	¥45.00
Increase	47.50	37.50	32.50	37.50	25.00	22.50
Total	¥142.50	¥112.50	¥97.50	¥92.50	¥75.00	¥67.50
	<i>7th class</i>	<i>8th class</i>	<i>9th class</i>	<i>10th class</i>	<i>11th class</i>	
Salary (monthly)	¥40.00	¥35.00	¥30.00	¥25.00	¥20.00	
Increase	20.00	17.50	15.00	12.50	10.00	
Total	¥60.00	¥52.50	¥45.00	¥37.50	¥30.00	

risen by 158 per cent? Is it possible for them to maintain their families with decency and comfort? Even the lowest grade of the *sonin* rank, which is immediately above the *hannin*, received but ¥500 a year, the one immediately above them, ¥750, and the next about ¥1,000, which, calculated in monthly payments, would be about ¥40, ¥60, and ¥80, respectively. These amounts, with the special increases of 50 per cent, total only ¥60, ¥90, and ¥120, respectively. The higher-rank men of the *sonin* officials are paid from ¥200 to ¥300 more, with the increase of grade. Consequently their salaries would amount yearly to ¥1,500, ¥2,000, ¥2,500, and ¥3,000, or more, respectively. These sums are at best small enough, and those receiving them were, with every reason, suffering from the extraordinary increase in the cost of living. It was, in fact, a situation that, in January, 1920, led the Government to lay before the Diet a bill increasing such salaries. When introducing it, the Minister of Finance stated that it was the intention of the Government to grant greater rates of increase to those in the lower grades than to those in the upper; that the rate of increase would range between 7 per cent and 100 per cent; that no increase would be given in the case of those who received annual salaries of ¥7,500 or more; that pensioners would receive proportionate increases; and that the members of the Diet would also be granted 50 per cent increases. In this manner the salary question would have been satisfactorily settled, had it not been for the dissolution of the Diet. Since it was a matter of such urgency as to admit of no further delay, the authorities decided temporarily to advance to all government employees amounts equal to those indicated in the Budget as their promised increases.

The Labor Question.

The development of modern manufacturing, with the great machine-operated plants which it involves, also means the decline of household industry, the old system in which the employee is fed and housed by the proprietor. And modern industry means manufacturing carried on by men workers living away from the factory and coming to it for their daily work. When this stage is reached in the industrial development of a nation, labor problems are bound to appear in quick succession. The growth of the labor problem in Japan,

278 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

especially after the outbreak of the War, is no exception to the rule. The Ministry for Home Affairs reports that, between the beginning of hostilities and the end of 1919 strikes occurred as follows:

TABLE 18

<i>Year</i>	<i>Number of strikes</i>	<i>Number of men involved</i>	<i>Average number of men involved</i>
1914	50	7,904	158
1915	64	7,852	123
1916	108	8,413	78
1917	398	57,809	144
1918	417	66,457	159
1919	497	63,137	127

Comparing the number of strikes before and after the outbreak of the War, it will be found that, for the seven years between 1907 and 1913, there were on an average 30 strikes, and on an average they involved 5,174 workers per month. These figures grew to 207 and 29,587, respectively, between 1914 and 1918, and to 417 and 66,457 in 1918 itself. When the armistice was signed, in November, 1918, Japan's business world was at once affected by repeated announcements of shutdowns, temporary or permanent, or of part-time conditions in mines and factories. One result was that the number of disputes and of employees involved for the eight months between October, 1918, and May, 1919, declined sharply to 135 and 8,753. Then, business having begun to boom again in the summer of 1919, and the problem of how to meet the high cost of living having also become grave again, by the end of 1919 strike figures reached a total of 497 and 63,137, respectively.

Undoubtedly, the chief causes of the unrest of the workers were the natural desire to improve their condition, and a sense of injustice aroused by the remarkable contrast between the profiteering of their employers and their own poverty. The influence of western thought was also exercising far-reaching effects on the mind of the worker. The time was thus quickly becoming ripe for the work of the agitator. A certain influence was exerted by the international labor conference held in America. As representatives were sent to it to represent the Government and the capitalist, as well as labor, the working classes began to get some broad comprehension of the aims and methods of the western trade unions. As time went by, agita-

tion arose that became more and more vehement. Although Japan was excepted, at the conference, as a nation not yet ready for the forty-eight hour week, felt compelled to retain that of fifty-seven hours, or nine and a half hours a day,—which occasioned much criticism—the fact of her having a seat in the conference as one of the world's chief industrial nations made a profound impression on the minds of the Japanese working classes.

The commonest causes of labor disputes in Japan were: demands for wage increases; opposition to wage reductions; demands for shorter hours, and for improvements in the treatment of labor; and dislike of those in charge.

Among the above-given causes the first and third were of the greatest importance. The second was a temporary situation arising after the armistice, when, due to depression, many factories tried to reduce wages. In 1919, strikes due to this cause represented 3 per cent of the total number of labor disputes and 2 per cent of the total number of men involved. The fifth cause of labor disputes declined in importance as labor became better organized and its power more orderly and systematic. The number of conflicts due to this cause in 1919 was only 4 per cent of the total, and the number of men only 3 per cent.

The methods of labor agitation, at first highly emotional, gradually came to involve more intelligence and systematic planning. In time workers with a grievance against their employers learned first to lay their demands before them and, only when met by a refusal, to go on strike or practice sabotage. Proportionately as strikers became cleverer and learned to appeal to public feeling, their strikes grew to extraordinary proportions and seriously involved the interests of the general public. Yet the result was in general to leave the workers better off. The number of cases settled by compromise was increasing yearly, while those cases where the terms of the workingmen were accepted or rejected *in toto* were growing fewer. The record of strikes and their outcome, from 1914 to 1919 inclusive, is given in table 14.

The outstanding labor disputes in 1920 were the strike of conductors and motormen on the street railways of Tokyo, and that of the employees of the Steel Works at Yedamitsu, in Kiushiu. The most prominent feature of both these strikes was that they were

280 INDUSTRIES AND SOCIAL HISTORY OF JAPAN

TABLE 14

<i>Outcome of strike</i>	<i>1914</i>		<i>1915</i>		<i>1916</i>	
	<i>Number of strikes</i>	<i>Number of workers involved</i>	<i>Number of strikes</i>	<i>Number of workers involved</i>	<i>Number of strikes</i>	<i>Number of workers involved</i>
Settled by compromise	44	61	33	31	36	43
Demands granted in full	16	20	27	37	16	21
Demands withdrawn	30	17	31	28	36	8
Demands rejected	10	2	9	4	12	23
	<i>1917</i>		<i>1918</i>		<i>1919</i>	
Settled by compromise	43	50	49	66	53	62
Demands granted in full	21	18	15	13	13	9
Demands withdrawn	23	28	20	16	16	12
Terms rejected	13	4	16	5	18	17

carried on without disorders. In December, 1919, there were said to be 838 labor unions, or "locals" with 269,532 members. Seeing that the influence of workingmen was growing rapidly, many attempts were being made by capitalists and social reformers to harmonize the relations between employer and employed. Some already advocated the latter's participation in business management. One organization was devoting its whole energy to this task, the *Kyo-cho Kai*, supported by Baron Shibusawa and others. And it would have been safe to say that labor in Japan was fully awake to the possibilities of its future.